Department of Environmental Protection
Southwest District

Governor

13051 Telecom Parkway
Temple Terrace, FL 33637-0926

Colleen M. Castille
Secretary

Division of Air Resource Management
8407 Laurel Fair Circle
Tampa, Florida 33610-7355

FACSIMILE TRANSMISSION SHEET

Date: 2-27-06 2nd

TO: Jonathan Holtom

FROM: Jim McDonald

PROGRAM: AIR RESOURCES

PHONE: (813) 632-7600 **SUNCOM** 514-9155 **EXT.** 106

MORE

SUBJECT: Test Info for Lakeland Regional Medical Center

AIR PROGRAM FAX NUMBER IS (813) 744-6458
SUNCOM 512-1073

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 6

TABLE I
TEST SUMMARY
LAKELAND REGIONAL MEDICAL CENTER
MEDICAL WASTE INCINERATOR
SEPTEMBER 22, 2004

RUN #	% O_2	PARTICULATE gr/dscf @ 7% O_2	CO ppmv @ 7% O_2	HCL ppmv @ 7% O_2	PROCESS RATE PPH	LIME FEED LBS/HR	BAGHOUSE INLET TEMP, °F	SECONDARY CHAMBER TEMP, °F
1	16.25	0.0004	12.0	1.160	741	15.7	265	1891
2	16.25	0.0033	8.97	1.475	745	10.3	257	1890
3	16.25	0.0022	9.0	1.239	744	10.1	257	1874
AVG	16.25	0.0020	9.96	1.29	743	12.0	260	1885
ALLOWABLE		0.015	40	100	750	7.1	290	1822

TABLE I
TEST SUMMARY
LAKELAND REGIONAL MEDICAL CENTER
MEDICAL WASTE INCINERATOR
SEPTEMBER 30, 2002

RUN #	% O_2	PARTICULATE gr/dscf @ 7% O_2	CO ppmv @ 7% O_2	HCL ppmv @ 7% O_2	PROCESS RATE PPH	LIME FEED LBS/HR	BAGHOUSE INLET TEMP, °F	SECONDARY CHAMBER TEMP, °F
1	13.25	0.0112	0	0.116	710	8.3	279	1889
2	13	0.0031	0.88	0.128	720	8.7	280	1886
3	13	0.0028	0	1.625	713	8.6	280	1888
AVG	13.08	0.0057	0.29	0.62	714	8.5	280	1888
ALLOWABLE		0.015	40	100	750	7.1	290	1822

TABLE I
TEST SUMMARY
LAKELAND REGIONAL MEDICAL CENTER
BIO-WASTE INCINERATOR
AUGUST 31, 2001

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	SO_2 ppmv @ 7% O_2	HCL ppmv @ 7% O_2	CO ppmv @ 7% O_2	PROCESS RATE PPH	LIME RATE PPH
1	13.75	0.0028	0.45	0.1	1.9	760	7.9
2	13.75	0.0016	2.25	0.0	1	730	8
3	13.75	0.0016	0.45	0.1	0.0	729	7.7
AVG	13.75	0.00200	1.05	0.07	0.98	740	7.9

TABLE I
TEST SUMMARY
LAKELAND REGIONAL MEDICAL CENTER
BIO-WASTE INCINERATOR
AUGUST 28, 2000

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	SO_2 ppmv @ 7% O_2	HCL ppmv @ 7% O_2	CO ppmv @ 7% O_2	PROCESS RATE PPH
1	13.75	0.0021	0.28	3.8	5.8	613
2	12.5	0.0019	0.29	5	0	725
3	12	0.0015	0.27	5.1	1.6	576
AVG	12.75	0.00183	0.28	4.63	2.47	638

Lakeland Regional Medical Center

	Start Time	Waste Charge Rate pounds Hourly Total	Waste Charge Rate pounds 3-hour Average	Sorbent Feed Rate pounds Hourly Total	Sorbent Feed Rate pounds 3-hour Average	Secondary Chamber degrees F Hourly Average	Secondary Chamber degrees F 3-hour Average	Fabric Filter Inlet degrees F Hourly Average	Fabric Filter Inlet degrees F 3-hour Average
8/28/00									
Hour #1	10:22	613		11.0		2,013		266	
Hour #2	12:03	725		10.0		2,008		266	
Hour #3	13:22	576	638	10.6	10.5	2,025	2,015	270	267
8/29/00									
Hour #1	8:56	743		10.6		2,040		264	
Hour #2	10:18	753		11.0		2,021		265	
Hour #3	11:42	723	740	10.9	10.8	2,013	2,025	265	264
8/30/00									
Hour #1	11:08	874		10.6		1,940		265	
Hour #2	12:08	730		10.6		1,961		265	
Hour #3	13:08	691	765	10.8	10.7	1,999	1,966	265	
Hour #4	14:08	1,020	814	11.2	10.9	1,954	1,971	264	265
Hour #5	15:45	742	818	10.7	10.9	1,867	1,940	264	265
Hour #6	16:45	652	805	10.8	10.9	1,860	1,894	265	264
8/31/00									
Hour #1	7:06	688		11.1		1,912		265	
Hour #2	8:06	679		11.0		1,887		265	
Hour #3	9:41	849	739	11.0	11.0	1,916	1,905	265	265
Hour #4	10:41	666	731	10.2	10.7	1,931	1,911	266	265
Hour #5	11:41	798	771	10.8	10.7	1,963	1,937	265	265
Hour #6	12:41	783	749	11.2	10.7	1,944	1,946	265	265
Lowest of 3-hour averages			638		10.5		1,894		264
Highest of 3-hour averages			818		11.0		2,025		267

Site-Specific Operating Parameters for BASIC® Pulse Hearth® Boiler:

based upon data measured during the most recent performance test demonstrating compliance with the emission limits

Maximum Charge Rate:	110% of lowest 3-hour average	702	pounds/hour
Minimum Sorbent Flow Rate (HCl control):	90% of highest 3-hour average	9.9	pounds/hour
Minimum Secondary Chamber Temperature	90% of highest 3-hour average	1822	degrees F
Maximum Fabric Filter Inlet Temperature	110% of lowest 3-hour average	291	degrees F

Governor

Department of Environmental Protection
Southwest District

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Colleen M. Castille
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Division of Air Resource Management
8407 Laurel Fair Circle
Tampa, Florida 33610-7355

FACSIMILE TRANSMISSION SHEET

Date: 2-27-06

TO: Jonathan Holtom

FROM: Jim McDonald

PROGRAM: AIR RESOURCES

PHONE: (813) 632-7600 SUNCOM 514-9155 EXT. 106

SUBJECT: Test Info for Lakeland Regional Medical Center

AIR PROGRAM FAX NUMBER IS (813) 744-6458
SUNCOM 512-1073

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 4

TABLE II
TEST SUMMARY
LAKELAND REGIONAL MEDICAL CENTER
BIO-WASTE INCINERATOR
AUGUST 8 - 9, 2005

RUN #	% O_2	SO_2 ppmv @ 7% O_2	PROCESS RATE PPH	% O_2	NOx ppmv @7% O_2	PROCESS RATE PPH	D/F CONCENTRATION ng/dscm @ 7% O_2	TEQ CONCENTRATION ng/dscm @ 7% O_2	PROCESS RATE PPH
1	14.5	4.89	727	12.75	108.6	746	22.52	0.37	769
2	13.5	3.01	733	12	93.9	743	26.89	0.34	739
3	13.5	1.81	754	11.5	77.8	730	21.20	0.31	743
AVG	13.83	3.24	738	12.08	93.4	740	23.5	0.34	750

TABLE I
TEST SUMMARY
LAKELAND REGIONAL MEDICAL CENTER
BIO-WASTE INCINERATOR
AUGUST 8, 2005

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	HCL ppmv @ 7% O_2	CO ppmv @ 7% O_2	CADMIUM gr/dscm @7% O_2	LEAD gr/dscm @7% O_2	MERCURY gr/dscm @7% O_2	PROCESS RATE PPH
1	13.5	0.0027	0.74	1.88	0.0024	0.0171	0.0019	730
2	14.5	0.0029	1.27	10.86	0.0025	0.0185	0.0029	843
3	14.5	0.0014	1.81	5.43	0.0024	0.0397	0.005	607
AVG	14.2	0.0023	1.27	6.06	0.0024	0.0251	0.003267	727

Lakeland Regional Medical Center

	Start Time	Waste Charge Rate pounds Hourly Total	Waste Charge Rate pounds 3-hour Average	Sorbent Feed Rate pounds Hourly Total	Sorbent Feed Rate pounds 3-hour Average	Secondary Chamber degrees F Hourly Average	Secondary Chamber degrees F 3-hour Average	Fabric Filter Inlet degrees F Hourly Average	Fabric Filter Inlet degrees F 3-hour Average
8/8/2005									
Hour #1	9:55	730		7.2		1,909		262	
Hour #2	11:18	843		7.6		1,896		266	
Hour #3	12:47	607	727	7.9	7.6	1,886	1,897	265	264
8/8/2005									
Hour #1	14:27	730		7.4		1,887		265	
Hour #2	15:27	726		7.4		1,885		265	
Hour #3	16:27	770	742	7.4	7.4	1,884	1,885	265	265
Hour #4	17:27	811	769	7.2	7.3	1,885	1,884	265	265
8/9/2005									
Hour #1	7:50	746		6.7		1,919		265	
Hour #2	8:50	743		7.0		1,906		266	
Hour #3	9:50	730	740	7.2	7.0	1,906	1,910	265	265
Hour #4	10:50	743	739	7.0	7.1	1,907	1,906	265	265
8/9/2005									
Hour #1	12:55	716		7.2		1,886		265	
Hour #2	13:55	746		7.6		1,890		265	
Hour #3	14:55	740	734	7.5	7.4	1,891	1,889	265	265
Hour #4	15:55	743	743	7.8	7.6	1,892	1,891	265	265
Lowest of 3-hour averages			727		7.0		1,884		264
Highest of 3-hour averages			769		7.6		1,910		265

Site-Specific Operating Parameters for BASIC® Pulse Hearth® Boiler:

based upon data measured during the most recent performance test demonstrating compliance with all applicable emission limits

				Parameters	
Maximum Charge Rate:	110% of lowest 3-hour average	799	pounds/hour	750	pounds/hour
Minimum Sorbent Flow Rate (HCl control)**:**	90% of highest 3-hour average	6.8	pounds/hour	6.8	pounds/hour
Minimum Secondary Chamber Temperature	90% of highest 3-hour average	1719	degrees F	1800	degrees F
Maximum Fabric Filter Inlet Temperature	110% of lowest 3-hour average	291	degrees F	291	degrees F

AIR TESTING & CONSULTING

333 FALKENBURG RD. N. B-214 • TAMPA, FLORIDA 33619 • (813)651-0878 • Fax (813)653-9082

January 27, 2006

Mr. Jason Waters
Department of Environmental Protection
3804 Coconut Palm Dr.
Tampa, FL 33619

Re: Lakeland Regional Medical Center
FDEP File No.1050095-006-AV

Dear Jason:

The following is to respond to your letter of November 14, 2005 concerning the Title V permit application.

1. The incinerator is subject to the Emission Guidelines of CFR 60. Enclosed is a corrected page 8 of the application.

2. A. Diesel fired generators
   1. There are 7 diesel fired generators at this location.
   2. Model No. 3516 – 107.9 gal/hr @ full load – 1500 kW – 5 units
      Model No. 3412 – 39.3 gal/hr @ full load – 500 kW – 1 unit
      Model No. 3208 – 14.8 gal/hr @ full load – 1 unit
   3. See attached calculations for potential to emit – units are unregulated emission units

   B. There are no parts washers using halogenated solvents or flammable liquids. Other cleaners are used as needed.

   C. They have three small sterilizers using ethylene oxide. The units are loaded with parts and a container with 3.53 oz. of ETO. The container is punched to release the ETO. The usage this year includes 832 loads using 183.5 pounds of ETO. Therefore it is not subject to 40 CFR 63, Subpart O.

D. The fire protection system pump is driven by an electric motor and not a diesel fired motor. Therefore that item has been removed from the list.

E. Air compressors are driven by electric motors, refrigeration systems, including their compressors and condensers are sealed units, and water or steam condensers have very little if any emissions.

3. Enclosed are corrected sheets (pages 17 and 21 – 38) with the incinerator air flow at 3,800 dscfm and emissions changed to reflect the proper flow rate.

4. The HCL emission calculations on page 25 of the application now use 36.5 lbs/mole as the molecular weight. (The calculation includes x 10^{-6} to show that the numbers were divided by 1,000,000.)

5. The instructions say to include the efficiency for the emission control device **if** it is used to calculate the emissions. Since the efficiency is not used in the calculation it was not included in the application.

6. See the enclosed "Procedures for Startup and Shutdown".

7. See enclosed CAM plan for PM and HCL.

8. The potential emissions from the Johnson Boiler for PM, CO, and VOC are less than the threshold amount of 5.0 tons per year. The potential emissions for NOx and SO_2 are greater than the threshold amount of 5.0 tons per year. Please see enclosed new pages 53 through 55. Also, included is a list of pollutants and the total tons emitted for each. One column is for use of gas only and the other is for use of diesel only.

9. See new attached document 01.

10. See new attached document 02.

If you have any questions, please call me at (813) 651-0878.

Sincerely,
Kenneth Given, P.E.
cc: Jerry Carter, LRMC

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: MS. CAROLE F.PHILIPSON, V.P. ENVIROMENTAL MANAGEMENT

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

- [X] For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
- [ ] For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
- [ ] For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
- [ ] The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
Organization/Firm: LAKELAND REGIONAL MEDICAL CENTER
Street Address: 1324 LAKELAND HILLS BLVD
City: LAKELAND State: FLORIDA Zip Code: 33804

4. Application Responsible Official Telephone Numbers...
Telephone: (863) 687-1143 ext. Fax: (863) 687-1416

5. Application Responsible Official Email Address: carole.philipson@lrmc.com

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

Carole F. Philipson — Signature

2/6/06 — Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: KENNETH E. GIVEN
   Registration Number: 23203
2. Professional Engineer Mailing Address...
   Organization/Firm: AIR TESTING & CONSULTING
   Street Address: 333 FALKENBURG RD., N. UNIT B-214
   City: TAMPA State: FLORIDA Zip Code:33619
3. Professional Engineer Telephone Numbers...
   Telephone: (813)651- 0878 ext. Fax: (813) 653- 9082
4. Professional Engineer Email Address: airtest@verizon.net
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☒, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Kenneth E Given — Signature

1-28-06 — Date

(seal)

* Attach any exception to certification statement.

1. The incinerator is subject to the Emission Guidelines of CFR 60. Enclosed is a corrected page 8 of the application.

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☐ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☐ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☒ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☐ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☒ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

2. A. Diesel fired generators

1. There are 7 diesel fired generators at this location.
2. Model No. 3516 – 107.9 gal/hr @ full load – 1500 kW – 5 units
   Model No. 3412 – 39.3 gal/hr @ full load – 500 kW – 1 unit
   Model No. 3208 – 14.8 gal/hr @ full load – 1 unit
3. See attached calculations for potential to emit – units are unregulated emission units

LIST OF PROPOSED INSIGNIFICANT ACTIVITIES

LOCATION	PROCESS/ACTIVITY	EXPLANATION
Engineering	Diesel Storage	Estimated VOC < 5 TPY
Engineering	Cooling Towers	Estimated VOC <5 TPY
Laboratories	Hoods, Sink Drain Vents	Estimated VOC <5 TPY
Plant-wide	Maintenance Activities	Estimated PM < 5 TPY
Maintenance	Parts Washing	Estimated VOC <5 TPY No halogenated solvents
	Laundry	Estimated VOC <5 TPY
	Sterilizers	Estimated ETO <1 TPY
Plant Wide	Compressors, Refrigeration System, Condensers	Exempt per 62-210.300(3)8

	LAKELAND REGIONAL MEDICAL CENTER					
		EMISSION FACTORS				
GENERATOR						
Natural	**Gas:**	**SCC: 2-01-002-02**				
PM =	10	lbs/MMCF x		MMCF x	Tons/2000 lb	
SOx =	0.6	lbs/MMCF x		MMCF x	Tons/2000 lb	
NOx =	2840	lbs/MMCF x		MMCF x	Tons/2000 lb	
VOC =	116	lbs/MMCF x		MMCF x	Tons/2000 lb	
CO =	399	lbs/MMCF x		MMCF x	Tons/2000 lb	
Diesel		**SCC: 2-01-001-02**		%S =	0.05	
PM =	42.5	lbs/MGal x		MGal x	Tons/2000 lb	
SOx = (%S)	39.7	lbs/MGal x		MGal x	Tons/2000 lb	
NOx =	604	lbs/MGal x		MGal x	Tons/2000 lb	
VOC =	49.3	lbs/MGal x		MGal x	Tons/2000 lb	
CO =	130	lbs/MGal x		MGal x	Tons/2000 lb	
3516				RATE,	Gal/hr =	107.9
					HRS =	500
GENERATOR EMISSIONS - TONS PER YEAR					MMCF =	
					MGal =	53.95
PM =	0		1.146		1.146438	25
SOx =	0		1.071		1.070908	40
NOx =	0		16.29		16.2929	40
VOC =	0		1.33		1.329868	40
CO =	0		3.507		3.50675	100

	LAKELAND REGIONAL MEDICAL CENTER					
		EMISSION FACTORS				
GENERATOR						
Natural	Gas:	SCC: 2-01-002-02				
PM =	10	lbs/MMCF x		MMCF x	Tons/2000 lb	
SOx =	0.6	lbs/MMCF x		MMCF x	Tons/2000 lb	
NOx =	2840	lbs/MMCF x		MMCF x	Tons/2000 lb	
VOC =	116	lbs/MMCF x		MMCF x	Tons/2000 lb	
CO =	399	lbs/MMCF x		MMCF x	Tons/2000 lb	
Diesel		SCC: 2-01-001-02		%S =	0.05	
PM =	42.5	lbs/MGal x		MGal x	Tons/2000 lb	
SOx = (%S)	39.7	lbs/MGal x		MGal x	Tons/2000 lb	
NOx =	604	lbs/MGal x		MGal x	Tons/2000 lb	
VOC =	49.3	lbs/MGal x		MGal x	Tons/2000 lb	
CO =	130	lbs/MGal x		MGal x	Tons/2000 lb	
3412				RATE,	Gal/hr =	39.3
					HRS =	500
GENERATOR EMISSIONS - TONS PER YEAR					MMCF =	
					MGal =	19.65
PM =	0		0.418		0.417563	25
SOx =	0		0.39		0.390053	40
NOx =	0		5.934		5.9343	40
VOC =	0		0.484		0.484373	40
CO =	0		1.277		1.27725	100

	LAKELAND REGIONAL MEDICAL CENTER					
		EMISSION FACTORS				
GENERATOR						
Natural	**Gas:**	**SCC: 2-01-002-02**				
PM =	10	lbs/MMCF x		MMCF x	Tons/2000 lb	
SOx =	0.6	lbs/MMCF x		MMCF x	Tons/2000 lb	
NOx =	2840	lbs/MMCF x		MMCF x	Tons/2000 lb	
VOC =	116	lbs/MMCF x		MMCF x	Tons/2000 lb	
CO =	399	lbs/MMCF x		MMCF x	Tons/2000 lb	
Diesel		**SCC: 2-01-001-02**		%S =	0.05	
PM =	42.5	lbs/MGal x		MGal x	Tons/2000 lb	
SOx =(%S)	39.7	lbs/MGal x		MGal x	Tons/2000 lb	
NOx =	604	lbs/MGal x		MGal x	Tons/2000 lb	
VOC =	49.3	lbs/MGal x		MGal x	Tons/2000 lb	
CO =	130	lbs/MGal x		MGal x	Tons/2000 lb	
3208				RATE, Gal/hr =		14.8
					HRS =	500
GENERATOR EMISSIONS - TONS PER YEAR					MMCF =	
					MGal =	7.4
PM =	0		0.157		0.15725	25
SOx =	0		0.147		0.14689	40
NOx =	0		2.235		2.2348	40
VOC =	0		0.182		0.18241	40
CO =	0		0.481		0.481	100

3. Enclosed are corrected sheets (pages 17 and 21 – 38) with the incinerator air flow at 3,800 dscfm and emissions changed to reflect the proper flow rate.

4. The HCL emission calculations on page 25 of the application now use 36.5 lbs/mole as the molecular weight. (The calculation includes x 10^{-6} to show that the numbers were divided by 1,000,000.)

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Incinerator		2. Emission Point Type Code: 1
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: 40 feet	7. Exit Diameter: 1.1 feet
8. Exit Temperature: 200°F	9. Actual Volumetric Flow Rate: 5300 acfm	10. Water Vapor: 7 %
11. Maximum Dry Standard Flow Rate: 3800 dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment:		

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM	2. Total Percent Efficiency of Control: 99%
3. Potential Emissions: 0.489 lb/hour 1.956 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor:0.015 gr/dscf Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0

8. Calculation of Emissions:

0.015 gr/dscf x 3800 dscfm x 60 min/hr x lb / 7000grs = 0.489 lb/hr
0.489 lb/hr x 8000hrs/yr x ton / 2000lbs = 1.956 tons/yr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.015 gr/dscf	4. Equivalent Allowable Emissions: 0.489 lb/hour 1.956 tons/year
5. Method of Compliance: EPA Method 5 or 29 or 26A	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 0.663 lb/hour 2.65 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor:40 ppmv Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0

8. Calculation of Emissions:

40 ppmv x 3800 dscfm x 60 min/hr x 28 lbs/mole x lb-mole / 385 dscf x 10^{-6} = 0.663 lb/hr
0.663 lb/hr x 8000 hrs/yr x ton / 2000lbs = 2.65 tons/yr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 40 ppmv	4. Equivalent Allowable Emissions: 0.663 lb/hour 2.65 tons/year
5. Method of Compliance: EPA Method 10	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: H106 (HCL)	2. Total Percent Efficiency of Control: 93%
3. Potential Emissions: 2.16 lb/hour 8.64 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 100 ppmv Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0

8. Calculation of Emissions:

100 ppmv x 3800dscfm x 60 min/hr x 36.5 lbs/mole x lb-mole / 385 dscf x 10^{-6} = 2.16 lb/hr
2.16 lb/hr x 8000 hrs/yr x ton / 2000lbs = 8.64 tons/yr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 100 ppmv or 93% reduction	4. Equivalent Allowable Emissions: 2.16 lb/hour 8.64 tons/year
5. Method of Compliance: EPA Method 26 or 26A	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: DIOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.79×10^{-6} lb/hour 7.16×10^{-6} tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 125 nanograms / dscm (55gr/10^{9} dscf) Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0
8. Calculation of Emissions: 55gr/10^{9} dscf x 3800dscfm x 60 min/hr x lb / 7000grs = 1.79×10^{-6} lb/hr 1.79×10^{-6} lb/hr x 8000 hrs/yr x ton / 2000lbs = 7.16×10^{-6} tons/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 125 nanograms / dscm (55gr/10^9 dscf)	4. Equivalent Allowable Emissions: 1.79 x 10^{-6} lb/hour 7.16 x 10^{-6} tons/year
5. Method of Compliance: EPA Method 23	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 2.08 lb/hour 8.32 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 55 ppmv Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0

8. Calculation of Emissions:

55 ppmv x 3800 dscfm x 60 min/hr x 64 lbs/mole x lb-mole / 385 dscf x 10^{-6} = 2.08 lb/hr
2.08 lb/hr x 8000 hrs/yr x ton / 2000lbs = 8.32 tons/yr

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 55 ppmv	4. Equivalent Allowable Emissions: 2.08 lb/hour 8.32 tons/year
5. Method of Compliance: EPA Method 6 or 8	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 6.81 lb/hour 27.24 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 250 ppmv Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0

8. Calculation of Emissions:

250 ppmv x 3800 dscfm x 60 min/hr x 46 lbs/mole x lb-mole / 385 dscf x 10^{-6} = 6.81 lb/hr
6.81 lb/hr x 8000 hrs/yr x ton / 2000lbs = 27.24 tons/yr r

9. Pollutant Potential/Estimated Fugitive Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 250 ppmv	4. Equivalent Allowable Emissions: 6.81 lb/hour 27.24 tons/year
5. Method of Compliance: EPA Method 7E	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: H207 (Cadmium)	2. Total Percent Efficiency of Control: 65%
3. Potential Emissions: 0.0023 lb/hour 0.0092 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 0.16mg/dscm (0.07gr/10^3 dscf) Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0
8. Calculation of Emissions: 0.07gr/10^3 dscf x 3800dscfm x 60 min/hr x lb /7000grs = 0.0023 lb/hr 0.0023 lb/hr x 8000 hrs/yr x ton / 2000lbs = 0.0092 tons/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.16mg/dscm (0.07gr/10^3 dscf) or 65% removal	4. Equivalent Allowable Emissions: 0.0023 lb/hour 0.0092 tons/year
5. Method of Compliance: EPA Mehtod 29	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: H114 (Mercury)	2. Total Percent Efficiency of Control: 85%
3. Potential Emissions: 0.00782 lb/hour 0.0313 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 0.55mg/dscm (0.24 gr/10^3 dscf) Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0
8. Calculation of Emissions: 0.24 gr/10^3 dscf x 3800dscfm x 60 min/hr x lb / 7000grs = 0.00782 lb/hr 0. 00782 lb/hr x 8000 hrs/yr x ton / 2000lbs = 0.0313 tons/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.55mg/dscm (0.24 gr/10^3 dscf) or 85% removal	4. Equivalent Allowable Emissions: 0.00782 lb/hour 0.0313 tons/year
5. Method of Compliance: EPA Method 29	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PB (Lead)	2. Total Percent Efficiency of Control: 70%
3. Potential Emissions: 0.0169 lb/hour 0.0676 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 1.2 mg/dscm (0.52 gr/10^3 dscf) Reference: 40CFR 60, Subpart Ce	7. Emissions Method Code: 0
8. Calculation of Emissions: 0.52 gr/10^3 dscf x 3800dscfm x 60 min/hr x lb / 7000grs = 0.0169 lb/hr 0.0169lb/hr x 8000 hrs/yr x ton / 2000lbs =0.0676 tons/yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.2 mg/dscm (0.52 gr/10^3 dscf) or 70% removal	4. Equivalent Allowable Emissions: 0.0169 lb/hour 0.0676 tons/year
5. Method of Compliance: EPA Method 29	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

6. See the enclosed "Procedures for Startup and Shutdown".

SECTION 5: SYSTEM INSPECTION CHECK LISTS

5.1 SHIFT START CHECK LIST

The following is a list of items that should be inspected at the start of each shift. The operator should allow at least 20 minutes for inspecting the BASIC® Pulse Hearth® Boiler. In addition to visually inspecting the machine, the operator should be cognizant of any sound or smell that appears to be out of the ordinary. Whenever maintenance is required, a qualified maintenance person should be notified.

5.1.1 LOADER

WARNING: THE LOADER EMERGENCY STOP BUTTON SHOULD BE SET BEFORE THE LOADER IS INSPECTED.

____ Inspect the Loader hopper and lid. The hopper should be free of any debris or objects that might interfere with the operation of the ram, refractory door, or the hopper lid cycle.

____ Inspect the Loader drive area. Remove any debris on the ram drive rack. Check the limit switches to make sure that there is nothing disrupting their operation.

____ Remove any debris from behind the Loader Ram to prevent fire hazard.

____ Verify that the Hopper Lid cylinder filter is drained, the regulator is adjusted properly, and the lubricator is full.

____ Run the loader through one cycle to be sure that the system is operating properly (See Section 7).

____ Test the hopper water spray by momentarily pressing the water spray pushbutton.

____ Inspect the cart dumper carriage track. The track should be free from any objects that would impede proper carriage movement.

____ Inspect the cart dumper lifting cable for wear. Cable must be replaced if it is frayed or shows other signs of imminent failure.

5.1.2 PULSE HEARTH®/UNITARY BASE

WARNING: IN ORDER TO PREVENT THE PULSE HEARTH® FROM MOVING WHILE IT IS BEING INSPECTED, TURN THE PULSE HEARTH® " OFF/ON" SELECTOR SWITCH TO THE "OFF" POSITION. MANUALLY CLOSE OFF THE COMPRESSED AIR SUPPLY TO THE PULSE HEARTH® AND OPEN THE BALL VALVE ON THE BOTTOM OF THE PULSE HEARTH® ACCUMULATOR TANK TO DROP THE PRESSURE DOWN TO 0 PSI.

SECTION 5 SYSTEM INSPECTION CHECK LISTS

WARNING: THE PULSE HEARTH® MUST NEVER BE TOUCHED WHILE IT IS PULSING OR ENERGIZED.

CAUTION: AIR BAG PRESSURE SHOULD NEVER EXCEED 60 PSIG.

____ Inspect the Pulse Hearth® compressed air system for leaks. Check the pressure regulator for correct air pressure to the air bag system. Adjust if necessary to recommended values of 30 to 40 PSIG.

____ Check the rubber bumpers for wear and ensure they are securely mounted with cables and springs.

____ Verify that the water level in the sides seals and the loader end seal are correct. (See fig. 5.1.2 A and fig. 5.1.2 B) Remove any debris that has accumulated in the bottom of the trough. Make certain that all manual water shut-off valves are open. Check that the drain plugs are properly secured and that there are no leaks.

WARNING: BE EXTREMELY CAREFUL TO AVOID INJURY FROM SHARP ITEMS THAT MAY HAVE WORKED THEIR WAY INTO THE WATER SEAL TROUGHS.

NOTE: EXCESSIVE AIR LEAKS THROUGH ANY SEAL WILL EFFECT COMBUSTION AND DRAFT CONTROL OF THE MODEL 750 BASIC® PULSE HEARTH® BOILER.

____ Inspect the vertical seals. The rubber vertical seals located at the rear of the Pulse Hearth® should be tight against the Pulse Hearth®. (See Figure 5.1.2 C)

____ Inspect the Pulse Hearth® and Unitary Base Sheaves. The Pulse Hearth® is suspended at four points using two steel sheaves with a pre-stretched wire rope wrapped around them. The cables should be tight with no evidence of fraying. The top sheave is anchored to the Unitary Base assembly and the lower sheave to the Pulse Hearth®. The sheaves are bolted to supports and should be inspected for cracks.

____ Verify that the Ash Hood access door is closed.

____ Inspect the Pulse Hearth® blower. Verify that the damper actuator linkage is secure and that there is no binding. Make sure the flexible ductwork is connected and undamaged. (See fig. 5.1.2D)

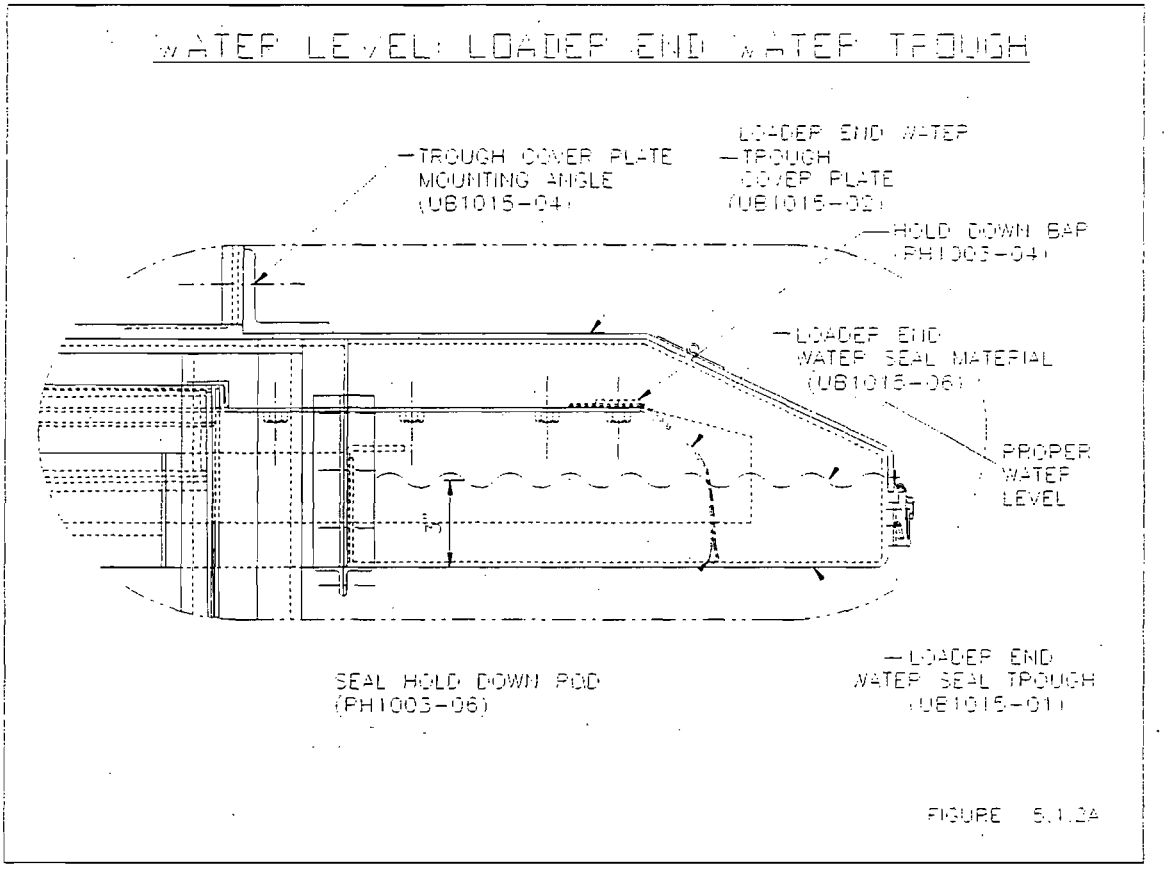


FIGURE 5.1.2A

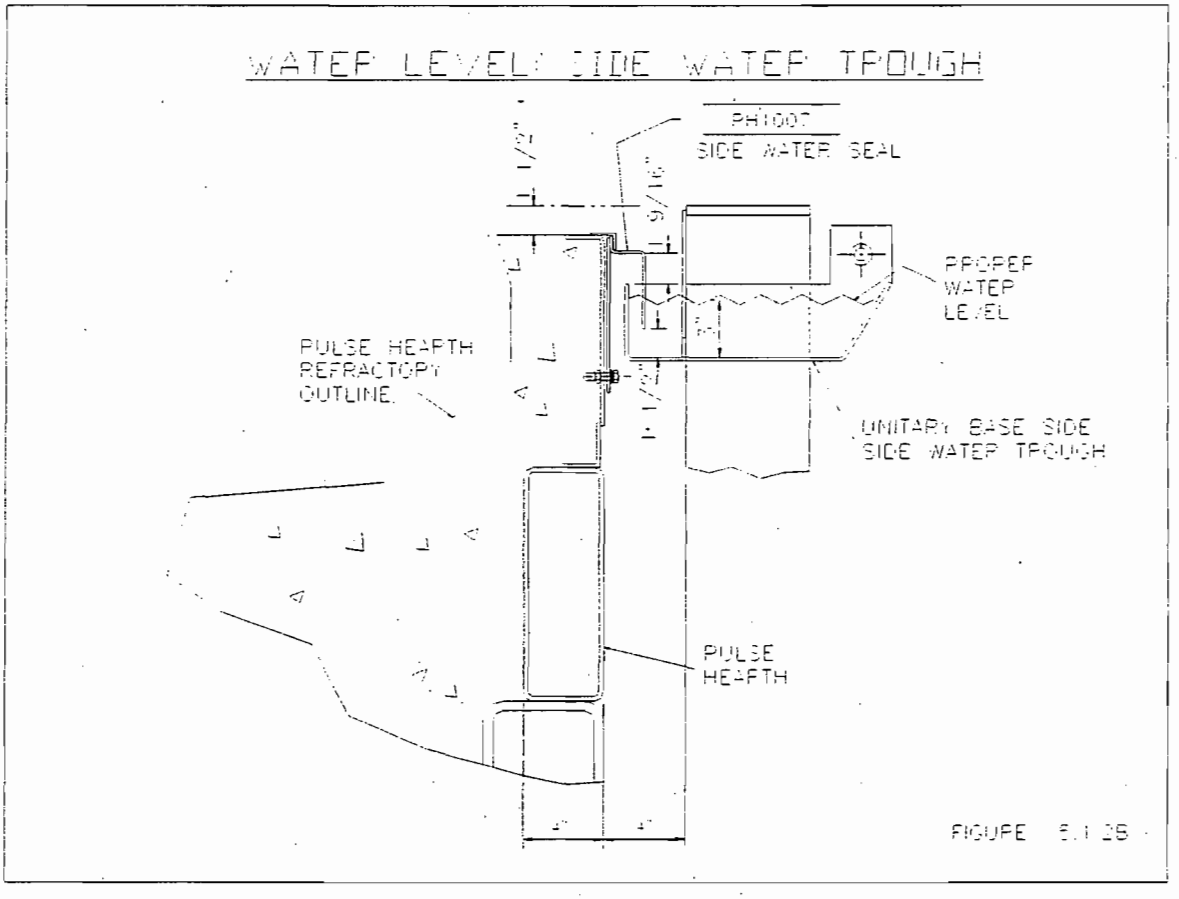


FIGURE 5.1 26

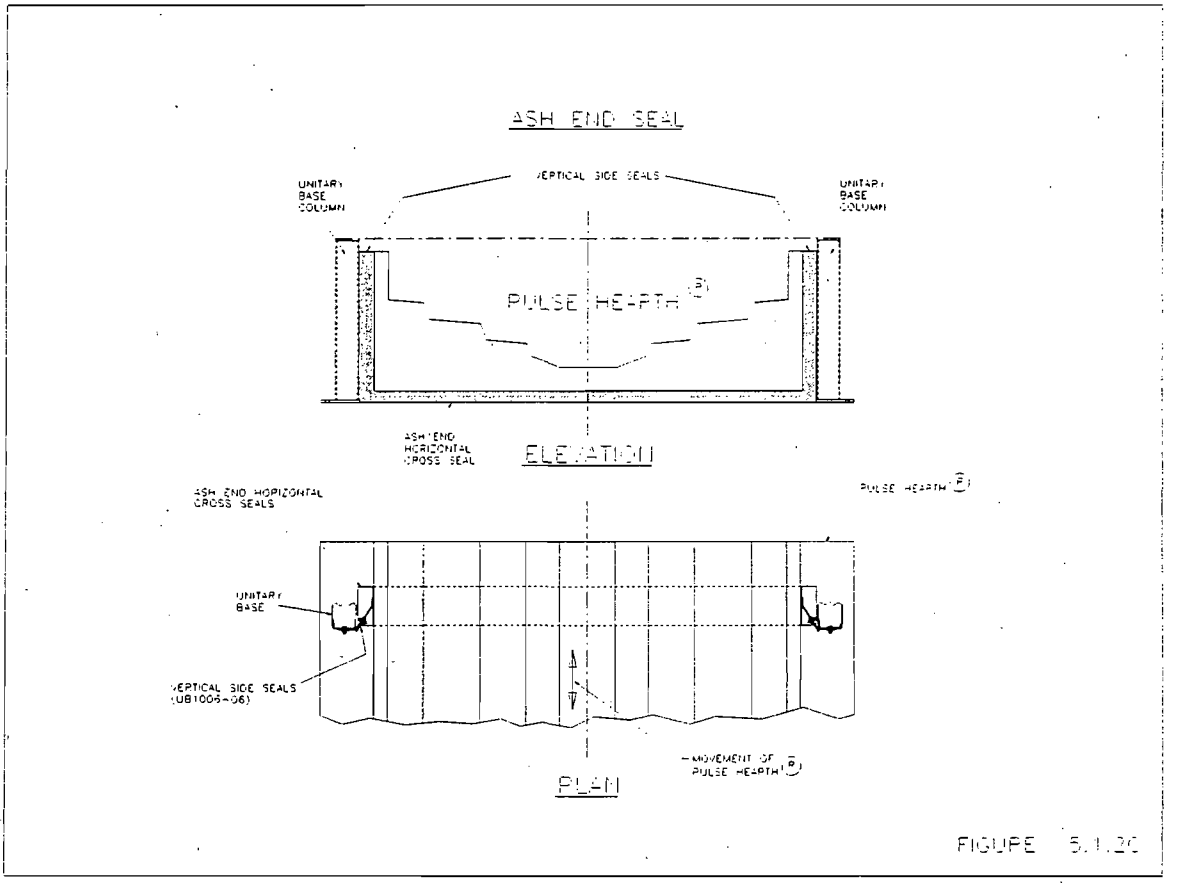


FIGURE 5.1.2C

SECTION 5 SYSTEM INSPECTION CHECK LISTS

5.1.3 ASH REMOVAL SYSTEM

____ Verify that the Ash Scoop filter is drained, the regulator is adjusted properly, and the lubricator is full.

____ Verify that the Ash Trolley wheels are rotating freely. Lubricate if necessary.

____ Verify that the Ash Pit is filled with water to the correct level. (See fig. 5.1.3)

____ Verify that the ash trolley wire rope is not frayed.

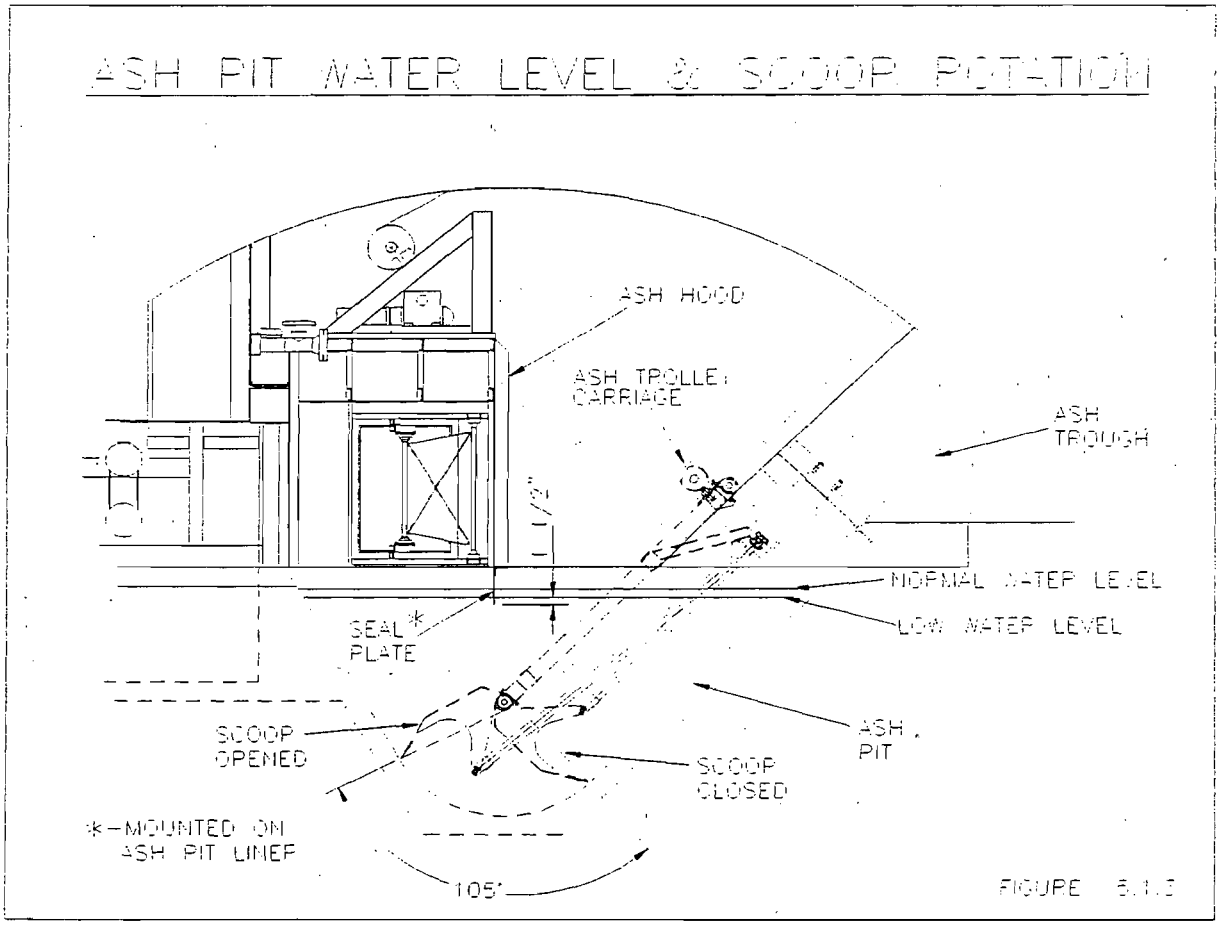


FIGURE 5.1.3

5.1.4 STAGE 1 RADIANT CHAMBER

____ Inspect the Dryer Hearth Blower. Verify that the damper actuator linkage is secure and that there is no binding.

____ Observe the operation of the Radiant Chamber or Stage 1 Burners by looking through the peep sight at the rear of the unit. Look for signs of broken or missing refractory from the internal surfaces of the chamber.

____ Inspect the Stage 1 Burners. The ignition wires should be intact. All manual gas shut-off valves should be open.

____ Inspect the Stage 1 Burners Blower. Verify that all butterfly actuator linkages are secure and that there is no binding. Make sure ductwork is connected and undamaged. (See fig. 5.1.4)

____ Inspect the Stage 1 Burners Control Panels. The burners use a Honeywell flame safety relay that must be manually reset if tripped. The "OFF/ON" selector switch on the panels should be switched to the "ON" position. The panel doors should be kept closed.

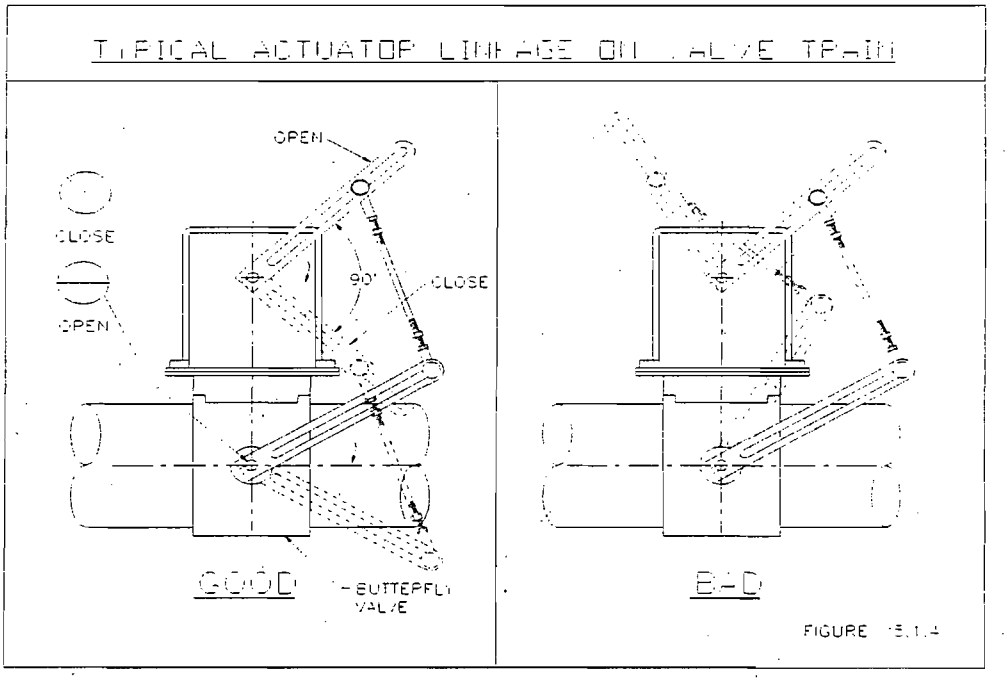


FIGURE 5.1.4

5.1.5 STAGES 2 & 3 REBURN TUNNEL

____ Inspect the Stage 2 Burner. The ignition wire should be intact. All manual gas shut-off valves should be open.

____ Inspect the Stage 2 Burner Blower. Verify that the butterfly gas valve actuator linkages are secure and that there is no binding.

____ Inspect the Stage 2 and Stage 3 Combustion Air Blowers. Verify that the damper actuator linkages are secure and that there is no binding. Make sure crossover ductwork is connected and undamaged.

____ Inspect the Stage 2 Burner Control Panel. The burners use a Honeywell flame safety relay that must be manually reset if tripped. The "OFF/ON" selector switch on the panel should be switched to the "ON" position. The panel doors should be kept closed.

____ Check Reburn Tunnel expansion joints and the expansion zone at throat section from Stage 1. Ensure that material is in place and that there are no air leaks.

5.1.6 STAGE 4®

____ Verify that the fan safety guards are firmly fastened in place.

____ Verify that the damper actuator linkage is secure and that there is no binding.

____ Inspect the fan inlet and outlet expansion joints material for wear and tear.

5.1.7 SAFETY RELIEF DAMPER

____ Verify that the compressed air filter is drained, the regulator is adjusted properly, and the lubricator is full.

____ Verify that the Safety Relief Damper wire rope is secure at both ends and that there is no evidence of fraying or other sign of imminent failure.

5.1.8 CONVECTION/RADIANT HEAT RECOVERY BOILER

____ Verify that the feedwater controller and control valve are maintaining the proper water level. The Boiler site glass should be filled to approximately half way between the first and second tri-cocks. Verify that there is compressed air to the pneumatic controller.

____ Verify that the feedwater piping valves, between the feedwater pressure regulator and the Boiler, are in the proper positions.

____ Blow down boiler level safety switches. Hold "Blow Down Override" pushbutton in while draining each switch. Red indicator light will signal switch action.

5.1.9 HEAT EXCHANGER

____ Verify that the fan belts are not loose.

____ Verify that the fan belts safety guard is firmly fastened in place.

____ Inspect the blower expansion joints for wear and tear.

5.1.10 LIME INJECTION

____ Verify that the lime screw feeder is rotating smoothly.

____ Check that the level of lime in the lime silo is above the low level point. If it is not, a lime silo fill should be ordered.

____ Verify that the power is "ON" at the local volumetric lime feed electrical panel located outside the silo.

____ Inspect all lime duct connections for blockage. Clear blockage from lines.

5.1.11 BAGHOUSE

____ Inspect the compressed air service to the back pulse cleaning system. The compressed air in the accumulator should be set between 40 and 60 PSIG.

CAUTION: DO NOT OPERATE THE PULSE CLEANING SYSTEM ABOVE 85 PSIG OR DAMAGE TO BAGS MAY RESULT.

____ Visually check the operation of the discharge valves at the bottom of the hopper.

____ Verify that the Baghouse hopper discharge screws rotate properly. Check that the belts are not loose, and that the sprocket drive chain is in place. Check that the belt/chain guards are in place.

5.1.12 INDUCED DRAFT FAN

____ Verify that the fan safety guards are firmly fastened in place.

____ Verify that the fan belts are not loose.

____ Inspect the expansion joints material for wear and tear.

____ Note system draft as indicated on the magnehelic gauge at the ID Fan.

5.1.13 CONTROL PANEL

____ Verify that the operator interface screen software and printer are operating properly.

____ Verify that all analog signals (thermocouple, pressure, flow transmitters, etc.) are reading within proper ranges.

____ Review print-outs from prior day. Add blank paper to tray as necessary.

____ Review chart recorder chart from prior shift. Replace chart paper as necessary.

5.2 COLD START CHECK LIST

If the machine is being started from a "Shut Down Condition" or a "Cold Start", in addition to the shift change inspection, the operator should also check the following:

____ **LOCK-OUT/TAG-OUT procedures must be used when servicing this equipment. Verify that there is no maintenance work in progress and that no one is working on or in the machine.**

____ If the main 480 VAC disconnect on the control panel has been switched to the "OFF" position, first check that all individual motor switches are switched to the "OFF" position, then turn "ON" the main Three-Phase Disconnect.

CAUTION: ALTHOUGH THE PROGRAM STORED IN THE PLC CONTROL UNIT IS PROTECTED BY A BATTERY, THE THREE-PHASE POWER SHOULD NOT BE TURNED OFF FOR PROLONGED PERIODS OF TIME.

____ There are separate 480 VAC disconnects located near each motor for use when servicing the motors. Unless the motors are being serviced, these disconnects should be switched to the "ON" position:

____ Pulse Hearth® Blower
____ Dryer Hearth Blower
____ Stage 2 Blower
____ Stage 3 Blower
____ Stage 4® Fan
____ Air-Flue Gas Heat Exchanger Blower
____ Induced Draft Fan
____ Loader Ram Drive
____ Ash Trolley Winch
____ Baghouse Hopper Discharge Screw Conveyor
____ Lime Silo Bin Vibrator

____ The 120 VAC circuit breakers are mounted inside the Main Control Panel. Verify that ALL circuit breakers are turned to the "ON" position. .

____ Verify that the following equipment access doors are closed:

- ____ Unitary Base
- ____ Stage 2
- ____ Relief Damper
- ____ Baghouse plenum entry

____ Verify that the following inspection hatches are closed:

- ____ Convection Boiler
- ____ Economizer
- ____ Air-Flue Gas Heat Exchanger
- ____ Baghouse Inlet Duct (lime clean-outs)
- ____ Stage 4® Fan
- ____ Stage 4® Dropout Box
- ____ Induced Draft Fan

____ Verify that the main steam stop/check valve on top of the Boiler is open.

____ Verify that the clean-out panels are installed on the hoppers near the underside of the Heat Exchanger.

SECTION 6: SEQUENCE START AND WARM-UP PROCEDURE

Once the operator has completed the Inspection Check Lists, the unit is ready to be operated. Starting from a "Cold Start", the operator only has to press the "SEQUENCE START" pushbutton. The Programmable Logic Controller (PLC) controls the start-up sequence.

NOTE:	IF POWER IS INTERRUPTED, THE UNIT AUTOMATICALLY GOES INTO SHUTDOWN. TO BRING THE SYSTEM BACK ON-LINE, THE OPERATOR MUST PRESS THE "SEQUENCE START" BUTTON

6.1 STAGES 1, 2, AND 3 PURGE SEQUENCE

The following items must all be satisfied in order for the sequence start to be initiated:

- ✓ Relief Damper selector switch in the "AUTO" position
- ✓ Relief Damper open (limit switch held closed)
- ✓ Emergency By-pass pushbutton is pulled out (not illuminated)
- ✓ Boiler water level above "low water cut-off" (level switch held closed)
- ✓ Loader Refractory Door down (limit switch held closed)
- ✓ Boiler High Steam Pressure Cut-Off not closed
- ✓ System Emergency Stop not energized

The Sequence Start and subsequent screens on the InTouch computer will guide the operators through the process sequence logic.

The Loader will remain locked out until the Stage 2 minimum temperature is established.

The blowers are programmed to power up one after another every five seconds. Pressure switches monitor each blower. If proper pressure has not been reached in 20 seconds, the operator will receive a BLOWER FAILURE ALARM.

Once all blowers are proved on, the Stages 1, 2 and 3 purge cycle begins. All potential combustible gases are purged out the relief stack. After five minutes, the Stages 1, 2, 3 Purge will be complete. All blowers must be proven "ON" by their individual pressure switches to begin the purge sequence.

6.2 INDUCED DRAFT FAN STARTS

Once the Stage 1, 2, & 3 purge is complete, the Induced Draft Fan motor will start. After the I.D. fan comes up to speed, the fan pressure proving switch will trip and the Variable Speed Controller will start to control the system draft.

6.3 SAFETY RELIEF DAMPER CLOSES

The Safety Relief Damper will close sixty seconds after the Induced Draft Fan is proved "ON".

6.4 EMISSION CONTROL SYSTEM PURGE SEQUENCE

The Induced Draft Fan will purge any potential combustible gases from the Convection Boiler, Economizer, Air-Flue Gas Heat Exchanger, and the Baghouse ductwork out the I.D. Stack.

Three minutes after the Relief Damper closes, the Emission Control System purge will be complete.

6.5 STAGE 4® FAN STARTS

When the Emission Control System purge is complete the Stage 4® Fan will start. The Stage 4® fan inlet damper will start in the closed position and will modulate in order to maintain a Boiler inlet temperature of 1,400°F. After the Stage 4® Fan proving pressure switch is tripped, the Stage 2 burner ignition sequence will begin.

6.6 STAGE 2 BURNER IGNITION SEQUENCE

The Stage 2 burner will light according to the BURNER IGNITION SEQUENCE outlined below.

BURNER IGNITION SEQUENCE:

The burner "start permissive" is received from the Main Panel PLC. The permissive can be verified by observing if the burner permissive relay located inside the burner panel is pulled in.

The following burner interlocks must be satisfied for the sequence to continue:

- ✓ Circuit Breaker in the Main Control Panel is "ON"
- ✓ Combustion air blower is "ON" (Pressure switch is tripped).
- ✓ Selector switch at the Burner Control Panel is switched "ON".
- ✓ Selector switch at the Main Control Panel is switched "ON
- ✓ Natural gas pressure is not lower that than 2" w.c. (Low Gas Pressure),
- ✓ Natural gas pressure is not greater that than 20" w.c. (High Gas Pressure),

If the above safety interlocks are satisfied, the green "READY" light will be illuminated, and the ignition sequence will continue.

The Pilot Solenoid Valve will open and the ignitor plug will fire. This sequence is verified when the amber "PILOT" LED is illuminated.

Flame must be proven by the end of the 10 second Pilot Flame Establishing Period (PFEP) to allow the sequence to continue. If flame is not proven by the end of PFEP, a safety shutdown occurs. In the event of a flame failure, the operator will receive a FLAME FAILURE ALARM and the red "FLAME FAILURE" light will be illuminated.

When the Ultra-Violet (UV) Scanner detects a stable pilot flame within the PFEP, the double Main Gas Safety Shut-off Valves will open and the vent between the valves will close and the green "MAIN" light will be illuminated.

If the UV Scanner does not detect the pilot during start up, or does not detect the main flame during operation the Main Gas Safety Shut-off Valves will close and the vent between the valves will open. The "FLAME FAILURE" alarm will sound and the red "FLAME FAILURE" light will be illuminated. The burner must be manually reset by pressing the "RESET" button on the respective burner panel. The BURNER IGNITION SEQUENCE will restart, after the programmer has been reset.

6.7 STAGE 1 BURNERS #1 AND #2 IGNITION SEQUENCE

In order to prevent "water hammering" in the Radiant/Convection boiler interconnecting pipes, the Stage 1 burners will not turn on until Stage 2 has reached 800°F.

The burners will light according to the BURNER IGNITION SEQUENCE outlined above. There is a thirty (30) second delay between the ignition of each burner.

6.8 MINIMUM TEMPERATURE ESTABLISHED

Once Stage 2 of the Reburn Tunnel has achieved the required minimum temperature, then waste can be loaded into the Pulse Hearth® Boiler.

The BASIC® Pulse Hearth® Boiler contains refractory and is a boiler. To prevent thermal shock and corrosion to boiler tubes, Basic Envirotech Inc. recommends a four hour minimum warm-up from a cold start before inserting waste. The boiler should be brought up to a minimum operating pressure of 175 PSIG steam gauge pressure before any waste is burned to prevent acid dew-point corrosion of the boiler shell. Note: If the boiler has been shutdown for more than three days or if bringing up from 0 psig (cold condensate in the boiler) it will take longer to reach minimum temperature and pressure.

6.9 LIME INJECTION

After minimum temperature is reached in Stage 2 and the first solid waste load is cycled into the furnace, the lime injection sequence will start. The lime screw feeder DC drive will be energized. Lime is injected immediately downstream of the Air-Flue Gas Heat Exchanger.

SECTION 9: SCHEDULED SHUTDOWN PROCEDURES

9.1 BURNDOWN MODE

When no waste is available the operator may elect to shutdown the solid waste boiler.

To shutdown the solid waste boiler, the operator must press the "SCHEDULED SHUTDOWN" pushbutton. When the button is pressed, the red light on the button will be illuminated.

At this point, the Loader will be "LOCKED OUT". All burners will continue operating for two hours while the material on the Pulse Hearth® burns down.

The Shutdown Sequence can be canceled at any time during the "BURNDOWN MODE" by pressing the "SEQUENCE START" pushbutton. This brings the system back on-line.

9.2 COOLDOWN MODE

After the burndown period, no material should remain on the Pulse Hearth®. All material should be burned and pulsed into the wet ash pit.. Once the Pulse Hearth® is pulsed clean, the Pulse Hearth® selector switch can be placed in the "OFF" position. When the burndown timer expires, the system will enter the cooldown mode. The following will occur:

1. The Lime Feeder will shut off.
2. The Stage 4® Fan and Heat Exchanger Fan will shut off.
3. The Safety Relief Damper will open.
4. The Induced Draft Fan will shut off.
5. The following solid waste boiler blowers will remain "ON" until cooldown counter is complete (10 hours)
   - Pulse Hearth® Blower
   - Dryer Hearth Blower
   - Stage 1 Burners Combustion Air Blower
   - Stage 2 Burner Combustion Air Blower
   - Stage 2 Blower
   - Stage 3 Blower

9.3 EXTENDED SHUTDOWN

The Boiler should never be drained until all waste has been pulsed off the Pulse Hearth® and the unit has been placed in burndown/cooldown for at least 48 hours. When the unit is cooling, there is a danger in creating a vacuum on the water side of the boiler. Therefore, to prevent damage to the pressure vessel, at 5 psig on the steam pressure header gauge, slowly open the vent valve. This will eliminate any vacuum. Once the Boiler is cooled to 0 psig, it can be drained through the blowdown connections on the convection boiler and the mud drums on the radiant section.

If the BASIC® MODEL 750 will not be operating for an extended period of time, all Boiler sections must be completely drained.

An extended shutdown may require the use of a nitrogen purge to prevent internal corrosion. The Boiler should never be left empty and without a nitrogen purge for more than a few days.

9.4 EMERGENCY SHUTDOWN

In the event that electrical power to the system is interrupted, all motors will stop. The Safety Relief Damper will open. Once normal electrical power has been restored, the operator can restart the system by pressing the Sequence Start pushbutton located on the Main Control Panel.

7. See enclosed CAM plan for PM and HCL.

Lakeland Regional Medical Center – HMIWI

Emissions Unit -002

HMIWI

Particulate matter emissions are controlled by an Aeropulse Model 108-10 Baghouse and HCL is controlled by the addition of lime to the baghouse.

Monitoring Approach

TABLE 1: MONITORING APPROACH

EMISSION UNIT 002 – HMIWIW	
	Indicator No. 1
I. Indicator	Baghouse pressure differential.
Measurement Approach	The pressure differential is measured by differential pressure transducer on a continuous basis.
II. Indicator Range	An excursion is defined as a pressure differential <1 to > 6 inches of water. Excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria **A. Data Representativeness**	The magnehelics and differential transmitters measure the pressure differential between the inlet and outlet of the baghouse.
B. Verification of Operational Status	Computer readout.
C. QA/QC Practices and Criteria	The units are calibrated on a yearly basis. The operational status of each unit is checked if the pressure differential is outside the proposed range. The units are calibrated against manometer.
D. Monitoring Frequency	The pressure differential is observed continuously on the computer screen.
E. Data Collection Procedures	Pressure differential recorded on the daily log sheet with the time, date, and name of the observer.
F. Averaging Period	Not Applicable.

TABLE 1: MONITORING APPROACH

EMISSION UNIT 002 – HMIWIW	
	Indicator No. 2
I. Indicator	Lime feed rate.
Measurement Approach	Lime is metered in a loss-in-weight mode, which is controlled by a PLC coupled to the lime feeder's variable speed drive. (When the amount of lime in the surge hopper falls below a specific weight, the PLC controller will initiate a "refill" sequence)
II. Indicator Range	An excursion is defined as lime flow below 6.9 lbs/hr. Excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria	
A. Data Representativeness	The loss-in-weight system measures the lime weight in the hopper
B. Verification of Operational Status	Visible inspection..
C. QA/QC Practices and Criteria	The flow meters will be checked if the flow falls out of range. Calibration is performed annually.
D. Monitoring Frequency	The lime flow rate is logged once per minute on the system computer.
E. Data Collection Procedures	Lime flow rate logged with the time and date on the computer.
F. Averaging Period	Hourly.

COMPLIANCE ASSURANCE MONITORING
BAGHOUSE FOR PM & HCL CONTROL

I. Background

A. Emissions Units

Description:	HMIWI
Identification:	Hospital Incinerator
Facility:	Lakeland Regional Medical Center – Hospital Incinerator Lakeland, Florida

B. Applicable Regulation, Emission Limit and Monitoring Requirements

Regulation: 40 CFR 60, Subpart Ce – Table 1

Emissions Limit:

Particulate Matter (PM):	0.015 grains/dscf @ 7% O_2
Hydrogen Chloride (HCL)	100 ppmv @ 7% O_2

The state also specifies that the opacity of visible emissions shall be no visible emissions (5% opacity) except that visible emissions not exceeding 20% opacity are allowed for up to three minutes in any one-hour. (Rule 62-296.401(1)(a).

Monitoring Requirements: Annual compliance test for PM concentration (EPA Method 5) plus opacity test (EPA Method 9) and HCL concentration (EPA Method 10). Also, oxygen (EPA Method 3A) must be tested to get emission concentration at 7% O_2.

C. Control Technology

Baghouse with the addition of lime.

II. Monitoring Approach

The key elements of the monitoring approach are presented in Table 1. The indicator of performance is the differential pressure across the baghouse and the lime addition rate.

MONITORING APPROACH JUSTIFICATION

I. Background

The facility has a 750 lbs/hr MWIFI to burn hospital waste. The exhaust gases from the burn pass through a waste heat boiler which recovers the heat and generates steam which is used in the laundry room.

The exhaust with pollutants passes through a baghouse which has a lime addition system and then exits through an exhaust stack. The lime is added to remove acid gases such as HCL and H_2SO_4. The baghouse is designed to remove particulate matter. It also removes metals and dioxins.

II. Rational for Selection of Performance Indicators

The incinerator operation is fairly constant from day to day. Therefore the operation of the control device was selected as an indicator of performance.

The baghouse differential pressure was selected as the indicator of control device performance. The bags operate with a slight buildup for best removal efficiency. If the baghouse differential pressure increases beyond recommendations (> 6 inches H_2O) the air flow through will fall below that desired and affect the incinerator operation. Too low a pressure differential would indicate the possibility of holes in the bags.

The lime is used to remove the acid gases, therefore the lime feed rate indicates the system ability to remove the acid gases.

III. Rational for Selection of Indicators Ranges

The unit has operated for several years and has been tested all but one year for PM and HCL. Every year the unit has passed.

8. The potential emissions from the Johnson Boiler for PM, CO, and VOC are less than the threshold amount of 5.0 tons per year. The potential emissions for NOx and SO_2 are greater than the threshold amount of 5.0 tons per year. Please see enclosed new pages 53 through 55. Also, included is a list of pollutants and the total tons emitted for each. One column is for use of gas only and the other is for use of diesel only.

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NOx	2. Total Percent Efficiency of Control:
3. Potential Emissions: 3.6 lb/hour 15.77 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 20 lbs/MGal Reference: AP-42 – 1-03-005-02	7. Emissions Method Code: 3
8. Calculation of Emissions: 20 lbs / MGal x 0.18 MGal/hr = 3.6 lbs/hr 3.6 lbs/hr x 8,760 hrs/yr x ton / 2000lbs = 15.77 tons / yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO_2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1.28 lb/hour 5.61 tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: 142 x (%S) lbs/MGal Reference: AP-42	7. Emissions Method Code: 3
8. Calculation of Emissions: 142 x 0.05 lbs/MGals x 0.18 MGal/hr = 1.28 lbs/hr 1.28 lbs/hr x 8,760 hrs/yr x ton / 2000lbs = 5.61 tons / yr	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: BACT	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.05 % S	4. Equivalent Allowable Emissions: 1.28 lb/hour 5.61 tons/year
5. Method of Compliance: Purchasing of 0.05 %S diesel fuel oil	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

LAKELAND REGIONAL MEDICAL CENTER
EMISSION FACTORS

BOILER

Natural	**Gas:**	**SCC: 1-03-006-02**		
PM =	3	lbs/MMCF x	MMCF x	Tons/2000 lb
SOx =	0.6	lbs/MMCF x	MMCF x	Tons/2000 lb
NOx =	140	lbs/MMCF x	MMCF x	Tons/2000 lb
VOC =	2.8	lbs/MMCF x	MMCF x	Tons/2000 lb
CO =	35	lbs/MMCF x	MMCF x	Tons/2000 lb

Diesel		**SCC: 1-03-005-02**	%S = 0.05	
PM =	2	lbs/MGal x	MGal x	Tons/2000 lb
SOx = (%S)	142	lbs/MGal x	MGal x	Tons/2000 lb
NOx =	20	lbs/MGal x	MGal x	Tons/2000 lb
VOC =	0.34	lbs/MGal x	MGal x	Tons/2000 lb
CO =	5	lbs/MGal x	MGal x	Tons/2000 lb

BOILER EMISSIONS - TONS PER YEAR

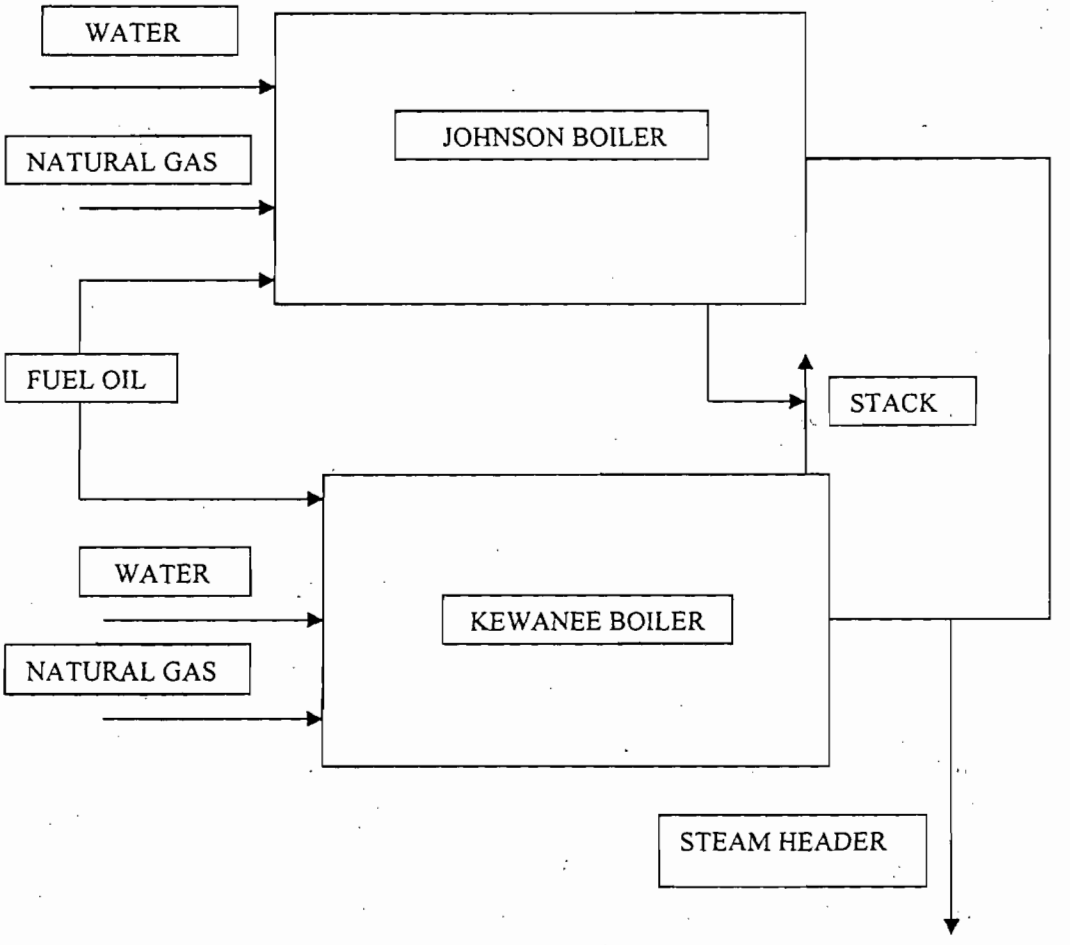
	GAS	DIESEL
PM =	0.32	1.58
SOx =	0.06	5.60
NOx =	14.72	15.77
VOC =	0.29	0.27
CO =	3.68	3.94

MMCF = 210.24
MGal = 1576.8
HRS = 8760

9. See new attached document 01.

01 - PROCESS FLOW DIAGRAM

PROCESS FLOW DIAGRAM – BOILERS LAKELAND REGIONAL MEDICAL CENTER



10. See new attached document 02.

02 - FUEL SPECIFICATION

Diesel, Heating and Marine Fuel Specifications

Property	Test Method ASTM	#2 Diesel Fuel	California Reformulated Test Diesel	#1 Diesel Fuel	#2 Heating Fuel	Marine
						MGO/DMA
Appearance		Clear to tan or Red Dye[2]	Clear or Red Dye[2]	Clear to Tan or Red Dye[2]	Red Dye	Red Dye
Cetane No., Min.	D 613	40	48[1]	40		40
Cloud Point, ° F, Min	D 2500	Seasonal by location	Seasonal by location	Seasonal by location		
Pour Point, ° F, Min.	D 97				22	22
Viscosity, cSt at 40 ° C, Min.-to-Max.[3]	D 455	1.9 – 4.1	2.0 –4.1	1.3-2.4		1.4 – 5.5
Gravity, API Min.	D 4502		33 – 39		30	27.4
Copper Strip Corrosion, Max.	D 130	No. 3	No. 3	No. 3	No. 3	
Flash Point, PMCC, °F:	D 93					
Land		125	130	100	100	
Marine		140				140
Distillation, ° F:	D 86					
Initial Boiling Point, Min-to-Max.			340–400	550	540-640	
90% Recovered Min-to-Max.[3]		540-640	580-660			
Sulfur, % Mass, Max:	D 2622					
On Road (EPA)		0.05		0.50		
Off Road (High Sulfur)		0.50			0.50	
Vehicle (CARB)			0.050[1]			1.5
Non-vehicle (High S)			0.50			
Aromatics, Volume %	D 1319	35	10[1]			

Notes:

1. CARB regulation limits the aromatics to 10-volume % maximum based on 90 day averaging or perm CARB certified "alternate diesel" formulation. CARB alternate formulations specify the sulfur, cetan aromatics, nitrogen and PNA limits. The supplier must confirm that the product is certified per Title Code of Regulations, Sections 2281 and 2282. CARB originally designated D 1319 as the requirec aromatics. The CARB diesel limits and D 1319 are expressed in volume %. Unfortunately D 1319 designed for diesel fuel and has poor reproducibility. For this reason, CARB later allowed the use o test, D 5186. D 5186 results come in mass %. Therefore, D 5186 results must be converted to volu CARB approved equation: D 1319 (volume %) = 0.916(D 5186 (mass %)) + 1.33. If the D 5186 test