Enron North America Corp.
P.O. Box 1188
Houston, TX 77251-1188

August 21, 2000

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Al Linero, PE
Administrator, New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS#5505
Tallahassee, FL 32399-2400

RE: Medley Electric Generating Plant
Midway-St. Lucie Electric Generating Plant
Broward-Thornborough Electric Generating Plant
Applications for Air Construction Permit
Request to Terminate Application Review

Dear Mr. Linero:

On July 19, 2000 Enron North America submitted permit applications for air construction permits for the Medley and Midway-St. Lucie Electric Generating Facilities. A permit application for the Broward-Thornborough Electric Generating Plant was submitted on August 9, 2000. At the time of application submittal, the fees for permit review were also submitted. These applications were submitted in anticipation of achieving a June, 2001 startup date at one or more of these sites.

After a recent evaluation of the environmental and land use approvals required for these sites, we have decided that developing these projects for a start date in calendar year 2001 is not realistic. As a result, we are advising the Florida Department of Environmental Protection (DEP) to halt review of these permit applications.

It is our intention to continue development of these sites for projects that would be commercially viable in the year 2002. However, it is possible that for this later start date we would employ combustion turbine configurations that differ from those identified in the applications we have submitted. As a result, we feel that it would not be productive to receive permits for the LM6000 configuration.

Please feel free to contact me at (713) 853-3161 if you have any questions regarding this request.

Sincerely,
Enron North America

David A. Kellermeyer

David A. Kellermeyer
Director

cc: Greg Krause
Steve Krimsky

Facsimile Cover Sheet

To: Al Linero
Company: Florida DEP
Phone: (850) 921-9523
Fax: (850) 922-6979

From: Dave Kellermeyer
Company: Enron North America
Phone: (713) 853-3161
Fax: (713) 646-3037

Date: 08/21/00
Pages including this cover page: 3

Comments:

Al-

Please see attached re: pending permit applications.

Dave Kellermeyer

Enron North America Corp.
P.O. Box 1188
Houston, TX 77251-1188

August 21, 2000

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

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Administrator, New Source Review Section
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Enron North America

David A. Kellermeyer

David A. Kellermeyer
Director

cc: Greg Krause
Steve Krimsky

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 9, 2000

to Files -

We gave them this letter at the meetings.

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Janet Dietrich
Managing Director
1400 Smith Street
Houston, Texas 77002-7631

Re: DEP File No. 0251029-001-AC and 1110099-001-AC
Medley Electric Generating Plant
Midway-St. Lucie Electric Generating Plant

Dear Ms. Dietrich:

On July 19, 2000 the Department received your application and complete fee for an air construction permit for the above reference electric generating plant projects to be located at Dade and St. Lucie Counties. Based on our initial review, the application is incomplete. Pursuant to Rules 62-4, 62-204, 62-210, 62-212, and 62-297, F.A.C., please submit the information requested below:

1. Address all phases planned for these two projects, if any. [Rule 62-212.400(6)(b), F.A.C. and 40CFR51.166(j)(4)].
2. Submit a design and operating features of the GE LM6000PC SPRINT® including type of combustors, drawings, heat input curves, manufacturer's emissions performance vs load diagrams, etc. [Rule 62-4.070(3), F.A.C.]
3. Estimate emissions of sulfuric acid mist (SAM). [Rules 62-212.400(2)(d), F.A.C and 62-4.070(3), F.A.C.]

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

If you have any questions regarding this matter, please call Teresa Heron at 850/921-9529 or e-mail her at teresa.heron@dep.state.fl.us.

Sincerely,

8/9

A.A. Linero, P.E. Administrator
New Source Review Section

Cc: Lennon Anderson SED
Patrick Wong, DERM

Enron North America Corp.
P.O. Box 1188
Houston, TX 77251-1188

July 17, 2000

Mr. Al Linero, P.E.
Administrator, New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Challenger Development Company, LLC
Permit Application for Medley Electric Generating Plant

Dear Mr. Linero:

On behalf of Challenger Development Company, LLC, enclosed are four (4) copies of an air permit application for the Medley Electric Generating Plant in Dade County, Florida. This application is for a non-PSD permit for a simple cycle combustion turbine power plant consisting of 6 LM6000 dual-fuel units. Also enclosed is a check for $5,750 to cover the permit application fee. Separate copies of this application are being sent to the Southeast District of the DEP as well as to the local air quality agency in Dade County.

If you have any questions, please don't hesitate to call me at (713) 853-3161.

Sincerely,
Enron North America

David A. Kellermeyer

David A. Kellermeyer
Director

Enclosures

cc: Lennon Anderson, Southeast District
Courtney Pitters, Dade County

Challenger Development Company, LLC Houston, Texas

ENSR®

Air Permit Application for Medley Electric Generating Plant

ENSR Corporation
July 2000
Document Number 6792-123-710

Challenger Development Company, LLC
Houston, Texas

Air Permit Application for Medley Electric Generating Plant

RECEIVED
JUL 19 2000
BUREAU OF AIR REGULATION

ENSR Corporation
July 2000
Document Number 6792-123-710

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LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

Challenger Development Company, L.L.C. is proposing to construct and operate a simple cycle combustion turbine peaking electric generating facility in Dade County, Florida. The Medley Electric Generating Facility (the Facility) will be a non-utility power generating facility (merchant plant) designed to produce electric energy for sale to the wholesale power market.

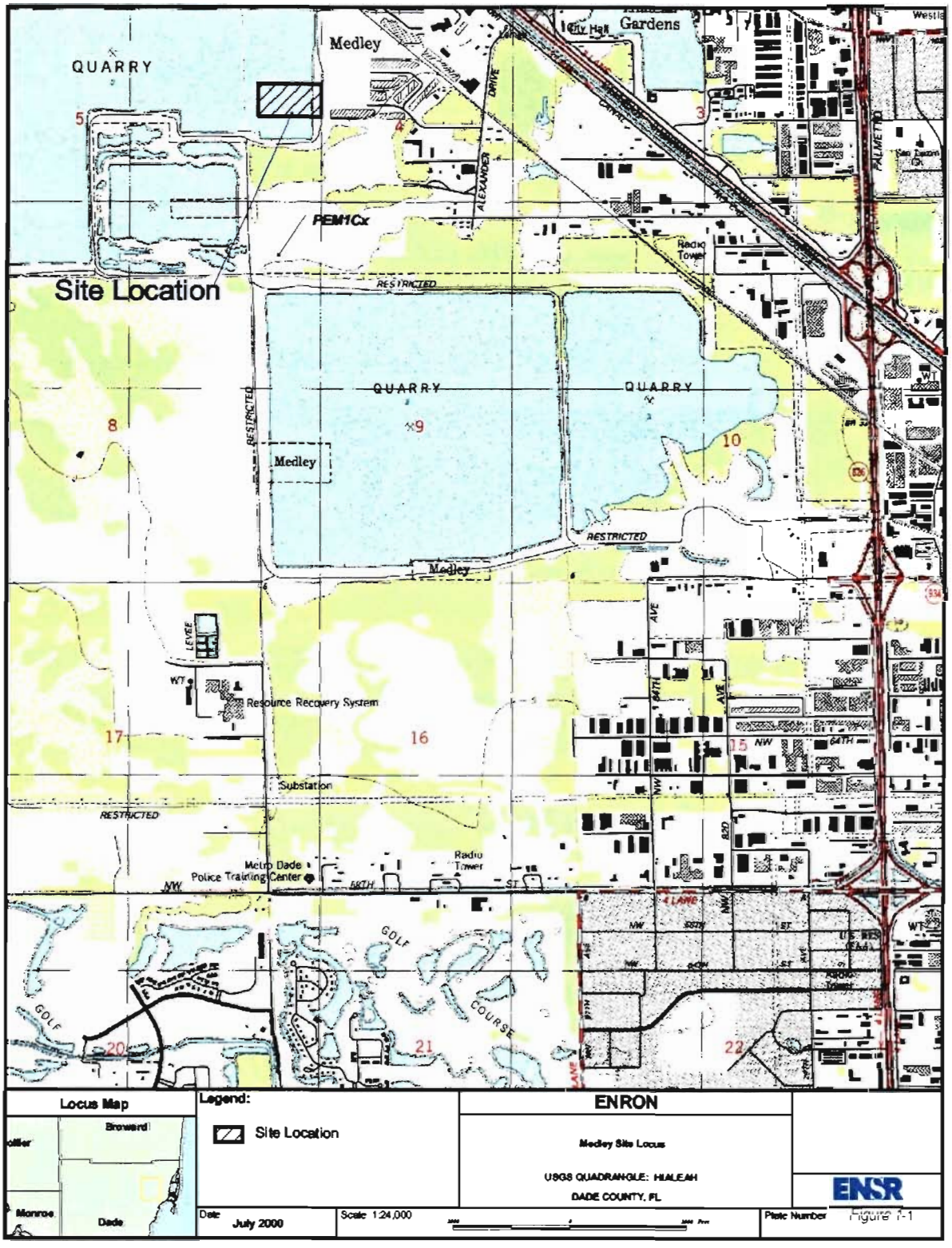
The Facility will be sited on approximately 20 acres located in Dade County, Florida (see Figure 1-1). The facility will consist of six GE LM6000 PC SPRINT® simple cycle combustion turbines with a nominal generating capacity of approximately 288 megawatts (MW). The plant will fire natural gas and low sulfur distillate fuel oil. Natural gas will be the primary fuel. Distillate fuel will be used as a back-up fuel, in the event that natural gas is unavailable to the facility. The turbines will use water injection to minimize NO_x formation and good combustion practices for control of CO and VOC emissions. The turbines will be equipped with inlet air chilling and SPRINT® (SPRay INTercooling) for power augmentation.

The facility is scheduled to begin producing power in June, 2001. Construction will take approximately 6 months with a planned start date of December 1, 2000 (upon receipt of all necessary local and environmental approvals).

As a peaking facility, the project will operate on an intermittent basis, primarily during periods when short-term electrical demand exceeds base load supply. Hence, the facility will run primarily during the peak demand hours of the summer months and to a limited extent on the coldest winter days. In order to be permitted as a minor source of air emissions, the facility will limit emissions of all criteria pollutants to less than 248 tons per year (TPY) by accepting an enforceable limitation on tons per year of all criteria pollutants emitted. NO_x and CO have been determined to be the limiting pollutants for major source status. As such, it is proposed that NO_x and CO emissions be limited to no more than 248 TPY, as measured by NO_x and CO continuous emission monitoring systems.

Section 2 of this application provides a more detailed project description. Section 3 presents a summary of the project emissions and the basis and methods used to calculate emissions. The required Florida Department of Environmental Protection (FDEP) application forms are presented in Appendix A, with supporting calculations for emissions included in Appendix B. As "new affected units" under Phase II of the Acid Rain Program, the facility is required to obtain SO_2 allowances. The application for the Phase II Acid Rain permit will be submitted shortly after this application is filed.

Figure 1-1 Site Location Map



2.0 PROJECT DESCRIPTION

The GE LM 6000 PC SPRINT® combustion turbine (CT) is a nominal 48 MW class industrial gas turbine. The LM 6000 is a 2-shaft gas turbine engine derived from the core of the CF6-80C2 - GE's high thrust, high efficiency aircraft engine. Over eighteen hundred CF6-80C2's are in service and over 2000 more are on order or option. The CF6-80C2 has logged more than 30,000,000 flight hours in the Boeing 747 and other wide-body aircraft, with a 99.88% dispatch reliability. GE used the extensive flight experience of the CF6-80C2 to create the LM 6000. Both engines have a common design and share most major parts. The Low Pressure Turbines, High Pressure Compressors, High Pressure Turbines, and Combustors are virtually identical. This use of flight-proven parts, produced in high volume, contributes to the low initial cost and high operating efficiency of the LM6000.

The GE LM6000 PC SPRINT® enhances the efficiency and output of the LM6000 gas turbine engine by injecting micro-droplets of atomized water into the interstage air stream between the Low Pressure Compressor and the High Pressure Compressor. The SPRINT® system increases the power output by as much as 20% at 90 °F and by improving the expected heat rate from 9,330 Btu/kWh LHV to 8,984 Btu/kWh LHV at 90 °F.

The proposed facility will utilize six GE LM6000 CTs, providing a total nominal generating capacity of approximately 288 MWs. Emissions from each turbine will be vented through stacks that are 45 feet tall and 10 feet in diameter. Figure 2-1 is a conceptual drawing depicting the layout of the proposed turbine configuration, Figure 2-2 is a process flow diagram for the proposed combustion turbines.

The turbines will be equipped to fire both natural gas and fuel oil, utilizing natural gas as the primary fuel. The project will not use any other fuel source for startup, shutdown, or backup. The Facility will have the ability to utilize power from the grid for startup. Electrical power produced by the project will be interconnected to the electric grid by a transmission line to FPL's transmission line in the vicinity of the property.

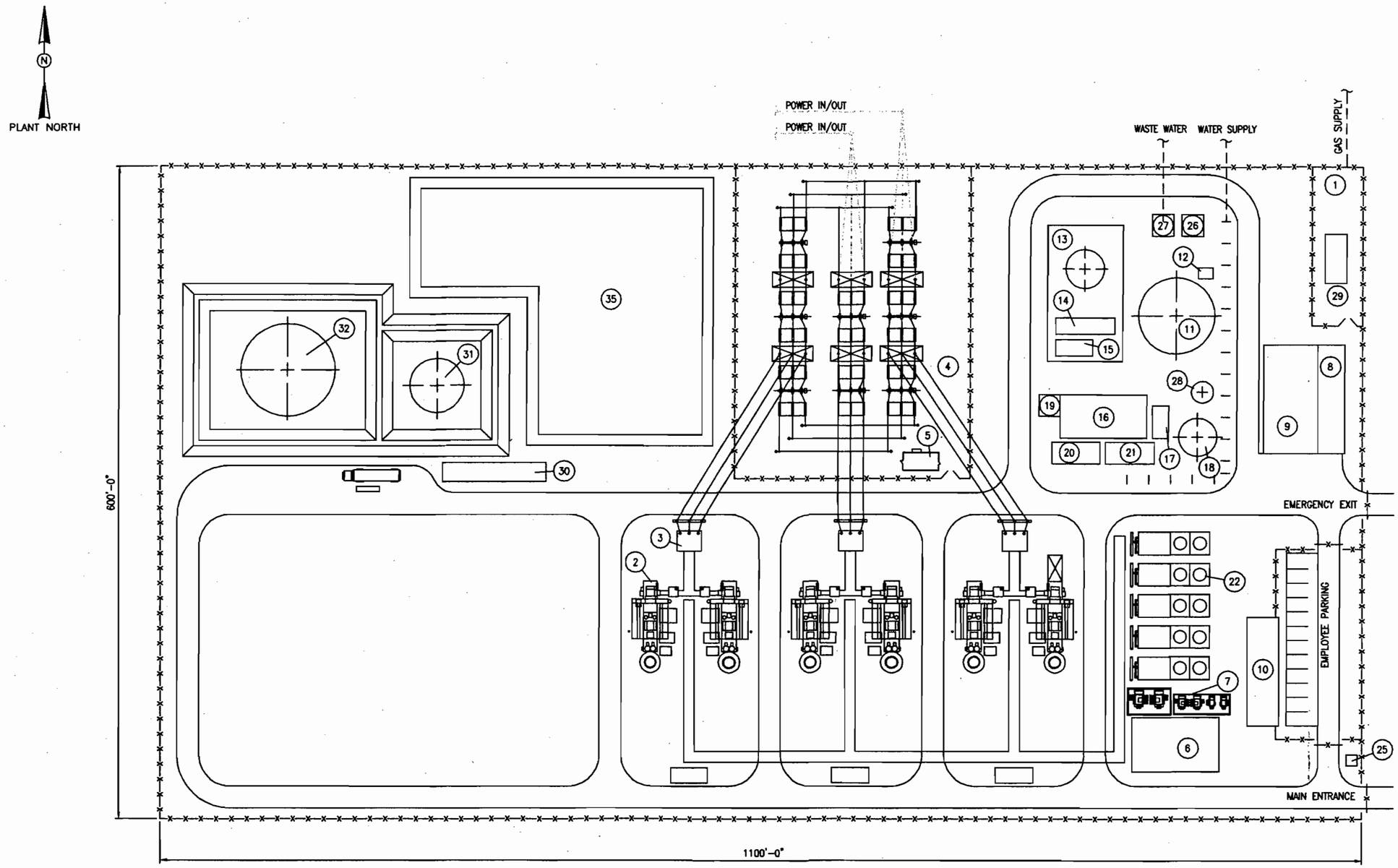
The Facility will use simple cycle power generation for peaking electrical generation for periods when short-term electrical demand exceeds base load supply. Peaking units have the ability to be brought on-and off-line quickly in response to fluctuations in electrical demand. Typical startup to 100% load and shutdown from 100% load can be achieved in approximately 20 minutes .

The Facility will be permitted and operated as a synthetic minor source under the Clean Air Act by accepting a permit limitation on tons per year of criteria pollutants emitted. Figure 2-3 illustrates the relative emissions rates of criteria pollutants from the proposed turbines. Based on the proposed permit limits, the most limiting pollutants are NO_x during distillate oil operation and CO during natural gas operation. Challenger Development Company, LLC proposes to limit potential emissions from the Facility through the use of a Continuous Emission Monitoring System (CEMS) for NO_x and CO. By

limiting emissions of NO_x and CO to less than the major source threshold of 248 tons per year, it can be seen than none of the remaining criteria pollutants will exceed the 250 ton per year threshold. Although performance data has been included for operating conditions from 50% to 100% load, each CT will typically be operated at full (100%) load. Depending upon demand, all units may not be in operation.

The Facility will also incorporate two tanks used to store distillate oil for the combustion turbines and a fire-water pump engine. The on site oil storage requirements have been estimated to be a maximum of 1,500,000 gallons, with a maximum day storage tank requirement of 300,000 gallons. The working and breathing losses from the two tanks has been estimated using the Tanks 4.0 program to be 0.7 tons per year.

For emergency purposes the Facility will incorporate a fire water pump powered by a 250 hp diesel engine. The emissions from this engine have been estimated using AP-42 emission factors, assuming a maximum operation of 500 hours per year. Based on this operational limitation the fire water pump engine satisfies the applicable criteria of Rule 62-210.300(b)1 for exemption from permitting and thus has not been addressed in the Section III of the FDEP application forms. In addition, a 6 MMBtu/hour fuel gas heater will be included in the Facility design for use as a means to prevent condensation of moisture and hydrates in natural gas used in the gas turbines. This emissions unit also meets the criteria for the generic emissions unit exemption under Rule 62.210.300(b)1 and has not been included in Section III of the application forms.



SCHEDULE OF COMPONENTS	
1	GAS RECEIVING/METERING
2	GAS TURBINE/GENERATOR
3	MAIN STEP-UP TRANSFORMER
4	SUBSTATION
5	SUBSTATION CONTROL ROOM
6	CONTROL ROOM
7	PLANT SWITCHGEAR/MCC AREA
8	SHOP
9	WAREHOUSE
10	ADMINISTRATION BUILDING
11	RAW WATER/FIRE WATER TANK
12	FIRE WATER PUMP HOUSE
13	CLARIFIER, IF REQUIRED
14	WATER FILTERS
15	CLEAR WELL
16	WATER TREATMENT DEMINERALIZER/R.O.
17	REGENERATE STORAGE
18	DEMINERALIZED WATER TANK
19	LABORATORY
20	CHEMICAL STORAGE
21	OIL DRUM STORAGE
22	CHILLER/COOLING TOWER PACKAGE
23	NOT USED
24	PIPE/CABLE WAY
25	GUARD HOUSE
26	OILY WATER SUMP
27	SEWAGE TREATMENT
28	NEUTRALIZATION TANK
29	FUEL GAS COMPRESSOR
30	FUEL TREATMENT/FORWARDING EQUIPMENT
31	FUEL OIL DAY TANK
32	FUEL OIL STORAGE
33	NOT USED
34	NOT USED
35	DETENTION POND

CONCEPTUAL

50 0 50 100 150 200
FEET

Figure 2-1 Equipment Arrangement Plan

DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION – DESCRIPTION	BY	DATE	CHK'D	APP'D
		A	ISSUED PRELIMINARY	WW	08/27/00		

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PRELIM.						
BID						
CONSTR.						
CADDS	PLOT DATE: 08/27/2000 – 15:05					
	FILE NAME: 548M31C1.DWG					

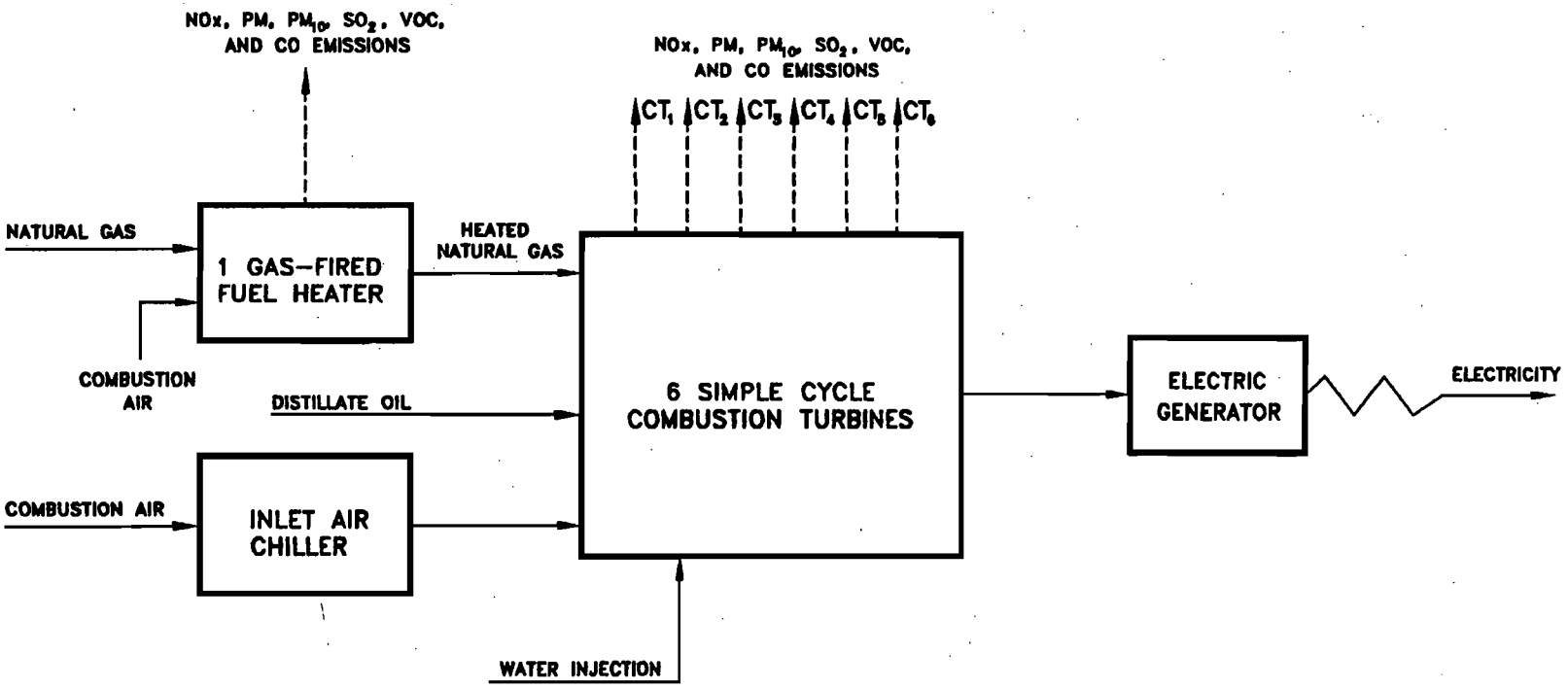
P.I./STA. ACCT. NO.		
CONSTRUCTION YR	BY	DATE
DESIGN		
DRAWN	WW	8/00
ASBUILT		
FILE NO.	-548M31C1B.DWG	
SCALE	1"=50'-0" @ 34"x22"	

Enron Engineering & Construction Co.

MEDLEY PEAKER POWER PROJECT
(6) GE LM6000 SIMPLE CYCLE

PLOT PLAN
DADE COUNTY, FLORIDA

APE/WORK ORDER	
ASBUILT DWG. NO.	
CONSTRUCTION DWG. NO.	M3-01-C
SHEET 1 OF 1	REV. NO. A



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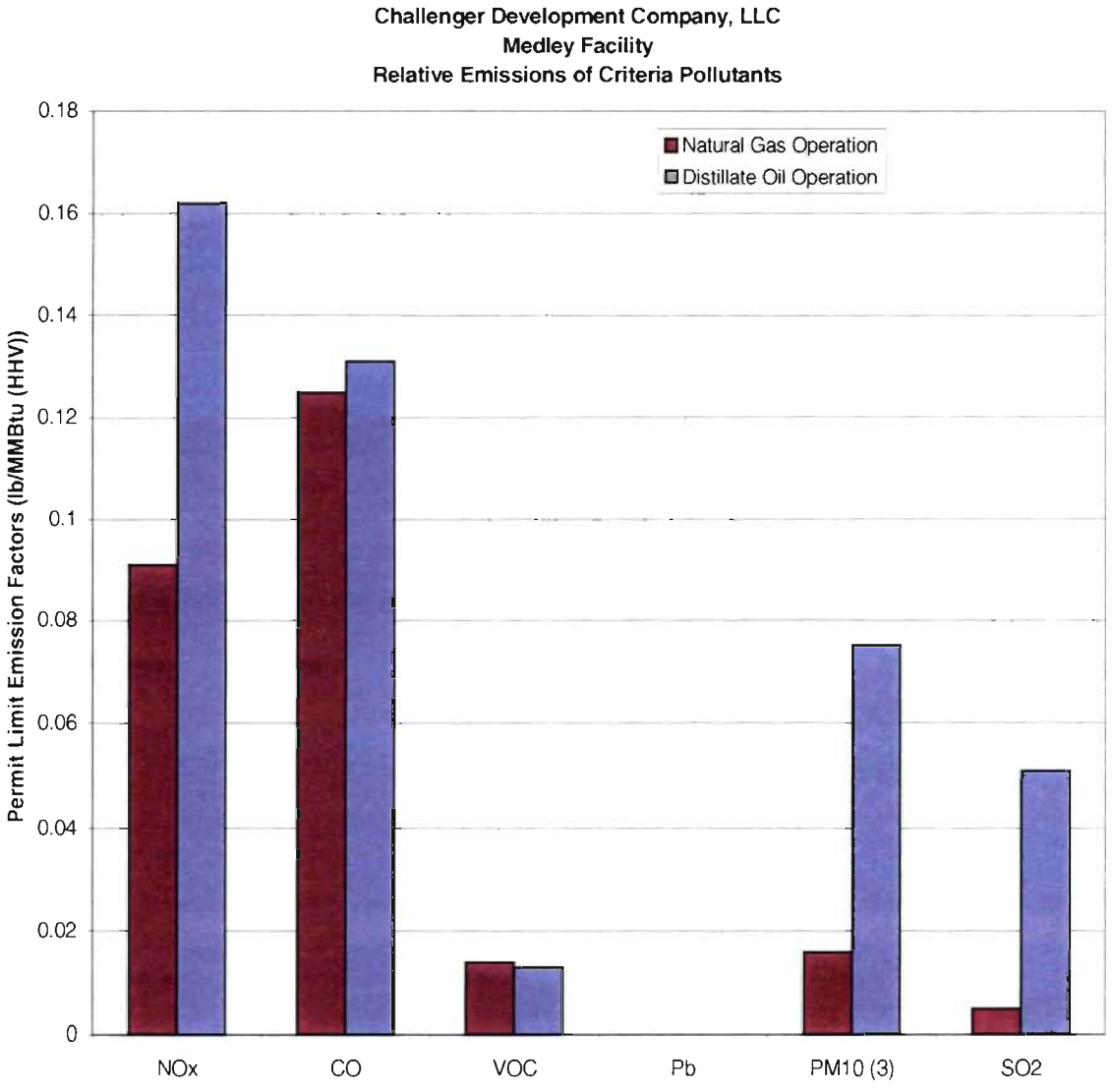
ENSR CONSULTING AND ENGINEERING

FIGURE 2-2
PROCESS FLOW DIAGRAM
SIMPLE CYCLE COMBUSTION TURBINE

DRAWN:	JK	DATE:	6/00	PROJECT NUMBER:	REV.
APPV'D:	DD	REVISED:	X	6792-123	0

697205A.DWG

Figure 2-3 CTG Relative Criteria Pollutant Emission Rates



3.0 EMISSIONS SUMMARY

This section discusses the basis and methods used to estimate potential emissions for the Facility.

The data used during the development of this application rely on process information developed by GE for Challenger Development Company, L.L.C. The summary presented in Table 3-1 has been prepared for the six GE LM6000 PC SPRINT® combustion turbines. Similar to other machines, as combustion turbines age the performance achieved in practice will degrade from the initial condition. The most noticeable result of the aging process for combustion turbines is that the heat rate of the turbine will rise over time (i.e. efficiency will drop) The result of this aging effect is that to achieve the same electrical output more fuel will need to be consumed. To account for this aging effect the hourly emissions, presented in Table 3-1, include a 10% margin on the mass emission rate above what has been calculated from the manufacturer's performance data. This aging effect only influences the mass emission rate and not the emission concentration. The 10% margin is based on previous experience with similar combustion turbines.

Detailed emission calculations for these turbines are presented at 100%, 75%, and 50% load cases in Appendix B along with operating specifications at the following ambient conditions:

- 42°F dry bulb at 72% relative humidity,
- 90°F dry bulb at 65% relative humidity chilled to 50°F and 95% relative humidity.

The effect of the SPRINT® power augmentation system is included in both temperature cases.

3.1 Criteria Pollutant Emissions

The primary emission sources at the Facility will be the six CTs. Each CT, when used, will typically operate at 100% load, but may, at times, be operated down to 50% load. The turbines will fire natural gas, supplied directly to the site by pipeline and fuel oil, provided by onsite storage. Hourly emissions from these units were calculated from manufacturers' operating parameters and guaranteed in-stack concentrations for CO, NO_x, and VOC.

According to GE, limited data are available for particulate emissions; however, GE guarantees 4.5 lbs/hr per turbine while firing natural gas, including condensable and filterable particulate matter, under a load range of 50 to 100% of full load. Particulate emissions are estimated to be 20 lb/hour while firing fuel oil. As PM_{10} emissions are based on manufacturer's guaranteed hourly emission rates, a worst case lb/MMBtu emission factor has been calculated from the lb/hr guarantee emission rate for purposes of calculating annual PM_{10} emissions. SO_2 emissions were calculated using the manufacturers' supplied fuel consumption data and expected maximum fuel gas sulfur contents of 2.0 grains per 100 standard cubic feet for natural gas and 0.05% for fuel oil.

Table 3-1 Combustion Turbine Maximum Hourly Emission Rate Summary

Compound	Load (%)	Temperature (deg F)			
		90	42	90	42
Emissions for one GE LM 6000 Turbine - With Margin (lb/hr)					
		Natural Gas		Distillate Oil	
NOx	100	46.3	47.1	78.7	79.9
	75	36.6	36.5	62.8	62.1
	50	27.8	27.6	47.7	47.3
CO	100	63.2	64.2	63.9	64.9
	75	49.9	49.8	51.0	50.4
	50	37.9	37.6	38.7	38.4
VOC	100	7.2	7.3	6.5	6.6
	75	5.7	5.6	5.2	5.2
	50	4.3	4.1	4.0	3.9
SO2	100	2.8	2.8	24.6	25.0
	75	2.2	2.2	19.7	19.5
	50	1.7	1.7	15.0	14.9
Pb	100	0.000	0.000	0.007	0.007
	75	0.000	0.000	0.005	0.005
	50	0.000	0.000	0.004	0.004
PM10	100	5.0	5.0	22.0	22.0
	75	5.0	5.0	22.0	22.0
	50	5.0	5.0	22.0	22.0
Notes: **Margin on Emissions 10%**					
Emissions for six GE LM 6000 PC SPRINT Turbines - With Margin (lb/hr)					
NOx	100	278.1	282.3	472.0	479.4
	75	219.6	219.1	376.7	372.9
	50	166.9	165.6	285.9	283.6
CO	100	379.2	385.1	383.1	389.2
	75	299.5	298.7	305.8	302.7
	50	227.6	225.9	232.1	230.2
VOC	100	43.4	43.9	39.2	39.8
	75	34.3	33.4	31.3	31.0
	50	25.8	24.8	23.7	23.5
SO2	100	16.6	16.9	147.7	150.2
	75	13.1	13.1	118.2	117.1
	50	10.0	9.9	89.8	89.2
Pb	100	0.0	0.0	0.0	0.0
	75	0.0	0.0	0.0	0.0
	50	0.0	0.0	0.0	0.0
PM10	100	29.7	29.7	132.0	132.0
	75	29.7	29.7	132.0	132.0
	50	29.7	29.7	132.0	132.0
Notes: **Margin on Emissions 10%**					

Maximum hourly emission rates for each pollutant were established after reviewing the calculations for the two ambient temperatures at three turbine load conditions (50%, 75%, and 100%) that represent the range of expected operating conditions. The maximum emissions for all criteria pollutants are at 100% load, 42°F. The annual facility emissions of NO_x and CO will be limited through the use of CEMS, to a maximum of 248 tons per year. Although annual operation is restricted through the use of NO_x and CO CEMS rather than a fuel cap, an estimate of the maximum annual fuel consumption is used to calculate the maximum annual emissions of VOC, SO_2, Pb, and PM_{10}.

Based on the guaranteed emission concentrations, during natural gas operation CO is the limiting pollutant, while during distillate oil operation NO_x is the limiting pollutant. The CO emissions presented in this application are based on a guaranteed CO emission concentration of 56 ppmvd @ 15% O_2. This guaranteed concentration covers turbine operation over a broad range of ambient conditions, including extremely low temperatures that will not be experienced by a turbine used for summer peaking in Florida. At typical ambient temperatures for the Facility, Challenger Development Company, L.L.C. expects actual CO emission concentrations to be substantially lower than the guaranteed emission concentration. Thus, annual emissions of VOC, SO_2, Pb, and PM_{10} have been estimated assuming NO_x to be the limiting pollutant as not as much variability is expected in the NO_x concentration. The data used in this analysis is presented in Appendix B. Table 3-2 presents a summary of annual emissions for the six combustion turbines, the natural gas fuel heater, the distillate oil storage tank, and the fire-water pump engine. Tables 3-4 and 3-5 provide a summary of proposed permit limits for the combustion turbines.

Table 3-2 Annual Criteria Pollutant Emissions

Source Name	NO_x (1)	CO (1)	VOC (2)	SO_2 (2)	Pb (2)	PM (2)	PM_{10} (2)
Annual Emission Rates (tons/year)							
LM 6000 Combustion Turbines.	245.5	247.2	41.6	85.0	0.02	125.1	125.1
Distillate Oil Storage Tank	N/A	N/A	0.9	N/A	N/A	N/A	N/A
Fire-Water Pump Engine	2.0	0.4	0.2	0.1	0.0	0.2	0.2
Natural Gas Fuel Heater	0.5	0.4	0.3	0.0	0.0	0.0	0.0
Total	**248.0**	**248.0**	**43.0**	**85.1**	**0.02**	**125.3**	**125.3**

Notes:
(1) Limited by CEMS on NO_x and CO.
(2) Estimated from CEMS limitation on NO_x and CO. Annual emissions of VOC, SO_2, Pb, and PM/PM_{10} increased by 10% margin.

3.2 Hazardous Air Pollutant Emissions

Emissions of hazardous air pollutants (HAPs) were calculated to confirm that the Facility will not be a new major HAP source subject to preconstruction permitting under 40 CFR 63 Subpart B. HAP emissions (with the exception of formaldehyde) were derived from the April 2000 version of AP-42 Section 3.1 which provides emission factors for stationary combustion turbines. An emission factor for

formaldehyde was developed from a subset of the database used by EPA to develop the AP-42 emission factors (see Appendix B for details).

Annual HAP emissions are presented in Table 3-3. Total facility-wide emissions for all HAPs combined is 2.7 TPY with the largest single HAP being less than 1.1 TPY. Both of these values are well below the 25/10 tpy major source thresholds for HAPs.

Table 3-3 HAP Emission Summary, Medley Electric Generating Facility

Pollutant	CTG Natural Gas		CTG Distillate Oil		Facility	
	Emission Rate, Per Turbine		Emission Rate, Per Turbine		Emission Rate All CTGs	
	Max Hourly (lb/hr)	Annual (tpy)	Max Hourly (lb/hr)	Annual (tpy)	Max Hourly (lb/hr)	Annual (tpy)
1,3-Butadiene	2.01E-04	1.56E-04	7.20E-03	4.45E-03	4.32E-02	2.67E-02
Acetaldehyde	1.87E-02	1.45E-02	0.00E+00	0.00E+00	1.12E-01	8.70E-02
Acrolein	3.00E-03	2.32E-03	0.00E+00	0.00E+00	1.80E-02	1.39E-02
Benzene [a]	6.07E-03	4.70E-03	2.48E-02	1.53E-02	1.49E-01	9.17E-02
Ethylbenzene	1.50E-02	1.16E-02	0.00E+00	0.00E+00	9.00E-02	6.96E-02
Formaldehyde [b]	5.93E-02	4.59E-02	1.26E-01	7.78E-02	7.56E-01	4.67E-01
Naphthalene	6.09E-04	4.71E-04	1.58E-02	9.72E-03	9.45E-02	5.83E-02
PAHs	1.03E-03	7.98E-04	1.80E-02	1.11E-02	1.08E-01	6.67E-02
Propylene Oxide	1.36E-02	1.05E-02	0.00E+00	0.00E+00	8.15E-02	6.31E-02
Toluene [a]	3.18E-02	2.46E-02	0.00E+00	0.00E+00	1.91E-01	1.48E-01
Xylene	3.00E-02	2.32E-02	0.00E+00	0.00E+00	1.80E-01	1.39E-01
Arsenic	0.00E+00	0.00E+00	4.95E-03	3.06E-03	2.97E-02	1.83E-02
Beryllium	0.00E+00	0.00E+00	1.40E-04	8.61E-05	8.37E-04	5.17E-04
Cadmium	0.00E+00	0.00E+00	2.16E-03	1.33E-03	1.30E-02	8.00E-03
Chromium	0.00E+00	0.00E+00	4.95E-03	3.06E-03	2.97E-02	1.83E-02
Lead	0.00E+00	0.00E+00	6.30E-03	3.89E-03	3.78E-02	2.33E-02
Manganese	0.00E+00	0.00E+00	3.56E-01	2.19E-01	2.13E+00	1.32E+00
Mercury	0.00E+00	0.00E+00	5.40E-04	3.33E-04	3.24E-03	2.00E-03
Nickel	0.00E+00	0.00E+00	2.07E-03	1.28E-03	1.24E-02	7.67E-03
Selenium	0.00E+00	0.00E+00	1.13E-02	6.95E-03	6.75E-02	4.17E-02
				Facility Total HAPs		**2.7**
				Maximum Individual HAP		**1.3**

Proposed emission limits for the combustion turbines during natural gas and distillate oil operation are presented in Tables 3-4 and 3-5, respectively. Annual limits for VOCs, SO_2, PM_{10}, and Pb are not proposed to be included in the permit. This is because compliance with a 248 ton/year limit for NO_x

and CO will insure that these other pollutants are emitted in quantities considerably lower than the 250 ton/year major source threshold.

Table 3-4 Summary of Proposed Permit Limits for Combustion Turbine, Natural Gas Operation

	ppmvd @ 15% O_2	Lb/hr[1] Each Turbine	CTG Annual Tons/Yr	Control Technology	Test Method
NO_x	25	47.1	245.5	Water Injection	Stack Test Ref. Method 19 & 20
CO	56	64.2	247.2	Good Combustion Practices	Stack Test Ref. Method 10 & 19
VOC	10	7.3		Good Combustion Practices	Stack Test Ref. Method 25a less Methane via bag sample & Method 18
SO_2	N/A	2.8		Low Sulfur Fuel (less than 2.0 grain S/100 SCF gas)	Fuel Monitoring
PM_{10}	N/A	5.0		Low Sulfur and Ash Fuel (less than 2.0 grain S/100 SCF gas)	Stack Test Ref. Method 5 & 202

[1]lb/hr for each turbine is based on 100% load at 42°F and includes a margin of 10% representing maximum potential to emit

Table 3-5 Summary of Proposed Permit Limits for Combustion Turbine, Distillate Oil Operation

	Ppmvd @ 15% O_2	Lb/hr[1] Each Turbine	CTG Annual Tons/Yr	Control Technology	Test Method
NO_x	42	79.9	245.5	Water Injection	Stack Test Ref. Method 19 & 20
CO	56	64.9	247.2	Good Combustion Practices	Stack Test Ref. Method 10 & 19
VOC	10	6.6		Good Combustion Practices	Stack Test Ref. Method 25a less Methane via bag sample & Method 18
SO_2	N/A	25		Low Sulfur Fuel	Fuel Monitoring
Pb	N/A	<0.01		Low Ash Fuel	N/A
PM_{10}	N/A	22		Low Sulfur and Ash Fuel	Stack Test Ref. Method 5 & 202

[1]lb/hr for each turbine is based on 100% load at 42°F and includes a margin of 10% representing maximum potential to emit

4.0 REFERENCES

Pequot Publishing, 1997. Gas Turbine World 1997 Handbook.

Rasnic, John B., August 1987. Letter to Air Compliance Branch Chiefs, Regions I-IX, RC: NSPS Custom Fuel Monitoring.

U.S. EPA. September 1977. Standards Support and Environmental Impact Statement - Volume I: Proposed Standards of Performance for Stationary Gas Turbines. EPA 450/2-77-017a.

U.S. EPA. October 1990. New Source Review Workshop Manual. Draft.

U.S. EPA. October 1996. AP-42.

APPENDIX A

APPLICATION FOR AIR PERMIT – TITLE V SOURCE
DEP FORM NO. 62-210.900(1)

Department of Environmental Protection

Division of Air Resources Management

APPLICATION FOR AIR PERMIT - TITLE V SOURCE

See Instructions for Form No. 62-210.900(1)

I. APPLICATION INFORMATION

Identification of Facility

1. Facility Owner/Company Name: **Challenger Development Company, L.L.C.**	
2. Site Name: **Medley Electric Generating Plant**	
3. Facility Identification Number: [✓] Unknown	
4. Facility Location: Street Address or Other Locator: **South side of NW 106th St. on NW 97th Ave.** City: **Medley** County: **Dade** Zip Code:	
5. Relocatable Facility? [ ] Yes [✓] No	6. Existing Permitted Facility? [ ] Yes [✓] No

Application Contact

1. Name and Title of Application Contact: **Dave Kellermeyer, Director**
2. Application Contact Mailing Address: Organization/Firm: **Challenger Development Company, L.L.C.** Street Address: **1400 Smith Street** City: **Houston** State: **TX** Zip Code: **77002-7631**
3. Application Contact Telephone Numbers: Telephone: **(713) 853-3161** Fax: **(713) 646-3037**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	7-19-00
2. Permit Number:	0251029-001-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

Purpose of Application

Air Operation Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[ ] Initial Title V air operation permit for an existing facility which is classified as a Title V source.

[ ] Initial Title V air operation permit for a facility which, upon start up of one or more newly constructed or modified emissions units addressed in this application, would become classified as a Title V source.

Current construction permit number:_____

[ ] Title V air operation permit revision to address one or more newly constructed or modified emissions units addressed in this application.

Current construction permit number:_____

Operation permit number to be revised:_____

[ ] Title V air operation permit revision or administrative correction to address one or more proposed new or modified emissions units and to be processed concurrently with the air construction permit application. (Also check Air Construction Permit Application below.)

Operation permit number to be revised/corrected:_____

[ ] Title V air operation permit revision for reasons other than construction or modification of an emissions unit. Give reason for the revision; e.g., to comply with a new applicable requirement or to request approval of an "Early Reductions" proposal.

Operation permit number to be revised:_____

Reason for revision:_____

Air Construction Permit Application

This Application for Air Permit is submitted to obtain: (Check one)

[✓] Air construction permit to construct or modify one or more emissions units.

[ ] Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.

[ ] Air construction permit for one or more existing, but unpermitted, emissions units.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official:
   Janet Dietrich – Managing Director

2. Owner/Authorized Representative or Responsible Official Mailing Address:
   Organization/Firm: **Challenger Development Company, L.L.C.**
   Street Address: **1400 Smith Street**
   City: **Houston** State: **TX** Zip Code: **77002-7631**

3. Owner/Authorized Representative or Responsible Official Telephone Numbers:
   Telephone: **(713) 853-4836** Fax: **(713) 646-3239**

4. Owner/Authorized Representative or Responsible Official Statement:

   I, the undersigned, am the owner or authorized representative(check here [ ], if so) or the responsible official (check here [ ], if so) of the Title V source addressed in this application, whichever is applicable. 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. 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 any permitted emissions unit.*

   Janet R. Dietrich — Signature

   7-18-00 — Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: **Blair Burgess**
   Registration Number: **45460**

2. Professional Engineer Mailing Address:
   Organization/Firm: **ENSR**
   Street Address: **2809 West Mall Drive**
   City: **Florence** State: **AL** Zip Code: **35630**

3. Professional Engineer Telephone Numbers:
   Telephone: **(256) 767-1210** Fax: **(256) 767-1211**

4. 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.

If the purpose of this application is to obtain a Title V source 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 schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit 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.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision 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.

7/12/00

Signature

7/12/00

Date

EMBOSSED METALLIC

(seal)

* Attach any exception to certification statement.

Scope of Application

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
CT001 – CT06	LM6000 Simple Cycle Combustion Turbines (Six identical combustion turbines)	AC1B	$5,000 Similar emissions unit fee per Rule 62-4.050(4)(a)(4)
T001 – T002	Distillate Fuel Oil Storage Tanks	AC1E	$250
FWP	Firewater Pump Diesel Engine	AC1F	$250
NGH	Natural Gas Fuel Heater	ACIF	$250

Application Processing Fee

Check one: [✓] Attached - Amount: $5,750 [ ] Not Applicable

Construction/Modification Information

1. Description of Proposed Project or Alterations

Challenger Development Company, L.L.C. proposes to construct and operate a peaking electrical power generating facility at a greenfield site in Dade County, Florida. The facility will consist of up to six (6) GE LM6000 combustion turbines operating in simple cycle mode; each turbine has a nominal generating capacity of 48 MW. The combustion turbines will be fired primarily with natural gas with low sulfur distillate oil as a backup fuel. NO_x emissions will be controlled with water injection. Permit conditions will limit total facility annual emissions to less than 248 tons per year of any regulated air pollutant in order to be permitted as a synthetic minor source with respect to Rule 62-212.400, Prevention of Significant Deterioration. Ancillary equipment includes one 1.5 million gallon distillate oil storage tank, one 300,000 gallon distillate oil storage tank, one natual gas fuel heater and one emergency diesel fired IC engine driving a firewater pump.

2. Projected or Actual Date of Commencement of Construction:

December 1, 2000

3. Projected Date of Completion of Construction:

June 1, 2001

Application Comment

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates: Zone: **17** East (km): **564.797** North (km): **2860.747**			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): **25° 51' 46"N** Longitude (DD/MM/SS): **80° 21'05"W**			
3. Governmental Facility Code: **0**	4. Facility Status Code: **C**	5. Facility Major Group SIC Code: **49**	6. Facility SIC(s): **4911**
7. Facility Comment (limit to 500 characters):			

Facility Contact

1. Name and Title of Facility Contact: **Dave Kellermeyer, Director**
2. Facility Contact Mailing Address: Organization/Firm: **Challenger Development Company, L.L.C.** Street Address: **1400 Smith Street** City: **Houston** State: **TX** Zip Code: **77002-7631**
3. Facility Contact Telephone Numbers: Telephone: **(713) 853-3161** Fax: **(713) 646-3037**

Facility Regulatory Classifications

Check all that apply:

1. [ ] Small Business Stationary Source? [ ] Unknown
2. [✓] Major Source of Pollutants Other than Hazardous Air Pollutants (HAPs)?
3. [ ] Synthetic Minor Source of Pollutants Other than HAPs?
4. [ ] Major Source of Hazardous Air Pollutants (HAPs)?
5. [ ] Synthetic Minor Source of HAPs?
6. [✓] One or More Emissions Units Subject to NSPS?
7. [ ] One or More Emission Units Subject to NESHAP?
8. [✓] Title V Source by EPA Designation?
9. Facility Regulatory Classifications Comment (limit to 200 characters):

List of Applicable Regulations (Facility-wide)

Title V Core List (3/21/96) of presumptively applicable requirements.	

B. FACILITY POLLUTANTS

List of Pollutants Emitted

1. Pollutant Emitted	2. Pollutant Classif.	3. Requested Emissions Cap lb/hour	tons/year	4. Basis for Emissions Cap	5. Pollutant Comment
NOX	**A, SM (PSD/248 tpy)**		**248**	**ESCPSD**	**Units CT001-CT06, FWP + NGH included under NO_x cap.**
CO	**A, SM (PSD/248 tpy)**		**248**	**ESCPSD**	**Units CT001-CT06, FWP + NGH included under CO cap.**
SO2	**B**				**CT SO_2 emissions and fuel sulfur content regulated under 40 CFR 60, Subpart GG**
VOC	**B**				**Unit T001 subject to record keeping requirements of 40 CFR 60, Subpart Kb**

C. FACILITY SUPPLEMENTAL INFORMATION

Supplemental Requirements

1. Area Map Showing Facility Location:
   [✓] Attached, Document ID: **Fig. 1-1** [ ] Not Applicable [ ] Waiver Requested

2. Facility Plot Plan:
   [✓] Attached, Document ID: **Fig. 2-1** [ ] Not Applicable [ ] Waiver Requested

3. Process Flow Diagram(s):
   [ ] Attached, Document ID: **Fig. 2-2** [ ] Not Applicable [ ] Waiver Requested

4. Precautions to Prevent Emissions of Unconfined Particulate Matter:
   [ ] Attached, Document ID:_____ [✓] Not Applicable [ ] Waiver Requested

5. Fugitive Emissions Identification:
   [ ] Attached, Document ID:_____ [✓] Not Applicable [ ] Waiver Requested

6. Supplemental Information for Construction Permit Application:
   [✓] Attached, Document ID: **ENSR Document No. 6792-123-710** [ ] Not Applicable

7. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

8. List of Proposed Insignificant Activities:
   [✓] Attached, Document ID: **Section 2** [ ] Not Applicable

9. List of Equipment/Activities Regulated under Title VI:
   [ ] Attached, Document ID:_____
   [ ] Equipment/Activities On site but Not Required to be Individually Listed
   [✓] Not Applicable

10. Alternative Methods of Operation:
    [ ] Attached, Document ID:_____ [✓] Not Applicable

11. Alternative Modes of Operation (Emissions Trading):
    [ ] Attached, Document ID:_____ [✓] Not Applicable

12. Identification of Additional Applicable Requirements:
    [ ] Attached, Document ID:_____ [✓] Not Applicable

13. Risk Management Plan Verification:
    [ ] Plan previously submitted to Chemical Emergency Preparedness and Prevention Office (CEPPO). Verification of submittal attached (Document ID:_____) or previously submitted to DEP (Date and DEP Office:_____)
    [ ] Plan to be submitted to CEPPO (Date required:_____)
    [✓] Not Applicable

14. Compliance Report and Plan:
    [ ] Attached, Document ID:_____ [✓] Not Applicable

15. Compliance Certification (Hard-copy Required):
    [ ] Attached, Document ID:_____ [✓] Not Applicable

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[✓] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[✓] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
CT001 through CT06 are identical LM6000 simple cycle combustion turbines (CT) each having a nominal rating 48 megawatts (MW). Each CT will be fired primarily with natural gas with low sulfur distillate oil as a back up fuel.

4. Emissions Unit Identification Number: [✓] No ID
ID: **CT001 – CT06** [ ] ID
Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	**June 2001**	**49**	[✓]

9. Emissions Unit Comment: (Limit to 500 Characters)
Each combustion turbine (CT001 to CT06) should be considered separate emissions units. The grouping of all turbines into one Emissions Unit Information Section has been done for administrative convenience since the information required in Subsections A through J is identical for each combustion turbine.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

   Each turbine will be equipped with water-injected combustors to control NO_x formation.

2. Control Device or Method Code(s): **028**

Emissions Unit Details

1. Package Unit: Manufacturer: **General Electric**	Model Number: **LM6000 PC Sprint**	
2. Generator Nameplate Rating:	**48** MW **(nominal)**	
3. Incinerator Information: **N/A**		
Dwell Temperature:		°F
Dwell Time:		seconds
Incinerator Afterburner Temperature:		°F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate:	**469** mmBtu/hr **HHV (base load on natural gas @ 42°F)**
2. Maximum Incineration Rate:	**N/A** lb/hr **N/A** tons/day
3. Maximum Process or Throughput Rate:	**N/A**
4. Maximum Production Rate:	**N/A**
5. Requested Maximum Operating Schedule:	
	24 hours/day **7** days/week
	52 weeks/year **8760**[1] hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):	
1 – Annual operations will be limited through the use of a Continuous Emissions Monitoring System for NO_x and CO.	

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 60, Subpart A (General Provisions for New Source Performance Standards)	
40 CFR 60.332(a)(1) – NO_x standards for Stationary Gas Turbines	
40 CFR 60.333 – SO_2 standards for Stationary Gas Turbines	
40 CFR 60.334 – Monitoring Provisions for Stationary Gas Turbines	
40 CFR Part 72 – Acid Rain Program Requirements Regulations	
40 CFR Part 73 – Acid Rain Program SO_2 Allowances System	
40 CFR Part 75 – Acid Rain Program Continuous Emissions Monitoring	
Rule 62-296(4)(b)1 – Visible emissions	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? **CT1 through CT6**	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **Exhaust stacks for combustion turbines; one stack per turbine unit.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **N/A**		
5. Discharge Type Code: **V**	6. Stack Height: **45** feet	7. Exit Diameter: **10** feet
8. Exit Temperature: **842°F (NG)** **845°F (Oil)**	9. Actual Volumetric Flow Rate: **602,800 acfm (NG)** **594,500 acfm (Oil)**	10. Water Vapor: **10.25 % (NG)** **8.3 % (Oil)**
11. Maximum Dry Standard Flow Rate: **219,397 dscfm (NG)** **215,878 dscfm (Oil)**	12. Nonstack Emission Point Height: **N/A** feet	
13. Emission Point UTM Coordinates: Zone: **17** East (km): * North (km): *		
14. Emission Point Comment (limit to 200 characters): **Exhaust temperatures and flow rates are at 100% load and 42° F operating conditions. Stack temperatures and flow rates will vary with load and ambient temperature.** *** For UTM coordinates of combustion turbine stacks, please see Attachment A.**		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment __1___ of __2___

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Natural gas**		
1. Source Classification Code (SCC): **2-01-002-01**	3. SCC Units: **Million Cubic Feet Burned**	
6. Maximum Hourly Rate: **0.4479**	7. Maximum Annual Rate: **5163.89**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **2 grains/100 SCF**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **1047**
10. Segment Comment (limit to 200 characters): **Annual operation will be restricted through the use of NOx and CO CEMS. Maximum Annual Rate is an estimate only.**		

Segment Description and Rate: Segment __2___ of __2___

2. Segment Description (Process/Fuel Type) (limit to 500 characters): **No. 2 Distillate Fuel Oil**		
3. Source Classification Code (SCC): **2-01-001-0**	3. SCC Units: **Thousand Gallons Burned**	
4. Maximum Hourly Rate: **3.12**	5. Maximum Annual Rate: **23120**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **0.05**	8. Maximum % Ash: **Trace**	9. Million Btu per SCC Unit: **144.5**
10. Segment Comment (limit to 200 characters): **Annual operation will be restricted through the use of NOx and CO CEMS. Maximum Annual Rate is an estimate only.**		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX	**028**		**EL**
CO			**EL**
PM			**NS**
PM10			**NS**
SO2			**NS**
VOC			**NS**
PB			**NS**

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **NOX**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **79.9** lb/hour (per turbine) **246** tons/year (total six turbines)	4. Synthetically Limited? [✓]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.162 lb/MMBtu (HHV)** Reference: **See Appendix B for emissions calculations**	7. Emissions Method Code: **2**
8. Calculation of Emissions (limit to 600 characters): **Hourly emission rate is based on worst case emission rate for both natural gas and distillate oil. Hourly emission rate includes a 10% margin. Annual NOx emissions will be restricted through the use of CEMS.**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ___1___ of __2____

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions: **N/A**
3. Requested Allowable Emissions and Units: **246 tons/yr (CT1 –CT6)**	4. Equivalent Allowable Emissions: **N/A** lb/hour **N/A** tons/year
5. Method of Compliance (limit to 60 characters): **Direct emissions monitoring of stack emissions using Part 75-certified CEMs**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **64.9** lb/hour (per turbine) **247.2** tons/year (total six turbines)	4. Synthetically Limited? [✓]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.131 lb/MMBtu (HHV)** Reference: **See Appendix B for emission calculations**	7. Emissions Method Code: **2**
8. Calculation of Emissions (limit to 600 characters): **Hourly emission rate is based on worst case emissions for both natural gas and distillate oil. Hourly emission rate includes a 10% margin. Annual CO emissions will be restricted through the use of CEMS.**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions ___2___ of __2____

1. Basis for Allowable Emissions Code: **ESCPSD**	2. Future Effective Date of Allowable Emissions: **N/A**
3. Requested Allowable Emissions and Units: **248 tons/yr (CT1 – CT6)**	4. Equivalent Allowable Emissions: **N/A** lb/hour **N/A** tons/year
5. Method of Compliance (limit to 60 characters): **Direct emissions monitoring of stack emissions using certified continuous emissions monitors on each turbine stack**	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **22.0** lb/hour(per turbine) **125.07** tons/year (total six turbines)	4. Synthetically Limited? [✓]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.034 lb/MMBtu (HHV)** Reference: **See Appendix B for emissions calculations**	7. Emissions Method Code: **2**
8. Calculation of Emissions (limit to 600 characters): **Hourly emission rate is based on worst case emission rate for both natural gas and distillate oil. Hourly emission rate includes a 10% margin.**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____ **N/A**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **22.0** lb/hour (per turbine) **125.07** tons/year (total six turbines)	4. Synthetically Limited? [✓]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.034 lb/MMBtu (HHV)** Reference: **See Appendix B for emissions calculations**	7. Emissions Method Code: **2**
8. Calculation of Emissions (limit to 600 characters): **Hourly emission rate is based on worst case emission rate for both natural gas and distillate oil. Hourly emission rate includes a 10% margin.**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____ **N/A**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **SO2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **25** lb/hour (per turbine) **85.03** tons/year (total six turbines)	4. Synthetically Limited? [✓]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.051 lb/MMBtu (HHV)** Reference: **See Appendix B for emissions calculations**	7. Emissions Method Code: **2**
8. Calculation of Emissions (limit to 600 characters): **Hourly emission rate is based on worst case emission rate for both natural gas and distillate oil. Hourly emission rate includes a 10% margin.**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____ **N/A**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7.3** lb/hour (per turbine) **41.6** tons/year (total six turbines)	4. Synthetically Limited? [✓]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: **0.014 lb/MMBtu (HHV)** Reference: **See Appendix B for emissions calculations**	7. Emissions Method Code: **2**
8. Calculation of Emissions (limit to 600 characters): **Hourly emission rate is based on worst case emission rate for both natural gas and distillate oil. Hourly emission rate includes a 10% margin.**	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions _____ of _____ **N/A**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation ___1___ of ___1___

1. Visible Emissions Subtype: **VE20**	2. Basis for Allowable Opacity: [✓] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Reference Method 9**	
5. Visible Emissions Comment (limit to 200 characters): **The general visible emission standard requirements of Rule 62-296.320(4)(b)1, F.A.C. applies to each turbine stack.**	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor __1___ of __1___

1. Parameter Code: **EM**	2. Pollutant(s): **NOX and CO**
3. CMS Requirement:	[✓] Rule (**NOX**) [✓] Other (**CO**)
4. Monitor Information: **TBD** Manufacturer: **TBD** Model Number: **TBD**	Serial Number: **TBD**
5. Installation Date: **Prior to start up**	6. Performance Specification Test Date: **90 days after unit commences commercial operation in accordance with 40 CFR 75.4(b)(2)**
7. Continuous Monitor Comment (limit to 200 characters): **Annual emissions of NO_x and CO from the facility will be limited to a maximum of 248 tons per year. Compliance with these annual limits will be demonstrated using continuous emissions monitoring systems for NO_x and CO.**	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [✓] Attached, Document ID:**Fig. 2-2** [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [✓] Attached, Document ID:**App. B** [ ] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [✓] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [✓] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:_____ [ ] Previously submitted, Date:_____ [✓] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [✓] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [✓] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [✓] Attached, Document ID: **ENSR Doc. No. 6792-123-710**
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [✓] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [✓] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [✓] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [✓] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:_____ [✓] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID: _____

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
Attached, Document ID:_____

[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[ ] Not Applicable

III. TANK EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[✓] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[ ] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[✓] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
Distillate fuel oil storage tanks

4. Emissions Unit Identification Number:
ID: **T001, T002**
[✓] No ID
[ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C	**June 2001**	**49**	[ ]

9. Emissions Unit Comment: (Limit to 500 Characters)

T001 – main storage tank
T002 – day storage tank.

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

   None

2. Control Device or Method Code(s):

Emissions Unit Details

1. Package Unit:
   Manufacturer: Model Number:
2. Generator Nameplate Rating: MW
3. Incinerator Information:
   Dwell Temperature: °F
   Dwell Time: seconds
   Incinerator Afterburner Temperature: °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate: **N/A** mmBtu/hr	
2. Maximum Incineration Rate: **N/A** lb/hr	**N/A** tons/day
3. Maximum Process or Throughput Rate: **24,300,000 gal/year**	
4. Maximum Production Rate: **N/A**	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8760** hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters):	

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

40 CFR 60, Subpart A (General Provisions for New Source Performance Standards)	
40 CFR 60.116b(a) and (b) – Record Keeping requirements under Subpart Kb	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? **T001 + T002**	2. Emission Point Type Code: **4**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): **N/A**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: **N/A**		
5. Discharge Type Code: **V**	6. Stack Height: **N/A** feet	7. Exit Diameter: **N/A** feet
8. Exit Temperature: **N/A**	9. Actual Volumetric Flow Rate: **N/A**	10. Water Vapor: **N/A**
11. Maximum Dry Standard Flow Rate: **N/A** dscfm	12. Nonstack Emission Point Height: **N/A** feet	
13. Emission Point UTM Coordinates: Zone: **17** East (km): * North (km): *		
14. Emission Point Comment (limit to 200 characters): *** For UTM coordinates of Distillate oil tanks, please see Attachment A.**		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type) (limit to 500 characters): **Distillate fuel oil storage tanks**		
2. Source Classification Code (SCC): **40301021**	3. SCC Units: **Thousand Gallons Throughput**	
4. Maximum Hourly Rate: **N/A**	5. Maximum Annual Rate: **24,300,000**	6. Estimated Annual Activity Factor: **N/A**
7. Maximum % Sulfur: **N/A**	8. Maximum % Ash: **N/A**	9. Million Btu per SCC Unit: **N/A**
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment ___ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? []]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 _____ to _____ tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8. Calculation of Emissions (limit to 600 characters):	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters): **Potential VOC emissions from distillate fuel oil storage tanks are less than 5 tons per year (less than the threshold amount for reporting in this subsection). See Appendix B for emission calculations.**	

Allowable Emissions Allowable Emissions **1** of **1** **N/A**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: N/A

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: N/A

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule (**NOX**) [ ] Other (**CO**)
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements N/A

1. Process Flow Diagram [ ] Attached, Document ID: [ ] Not Applicable [ ] Waiver Requested
2. Fuel Analysis or Specification [ ] Attached, Document ID: [ ] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:_____ [ ] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:_____ [ ] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:_____ [ ] Previously submitted, Date:_____ [ ] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:_____ [ ] Not Applicable [ ] Waiver Requested
7. Operation and Maintenance Plan [ ] Attached, Document ID:_____ [ ] Not Applicable [ ] Waiver Requested
8. Supplemental Information for Construction Permit Application [ ] Attached, Document ID:
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:_____ [ ] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation
[ ] Attached, Document ID:_____ [ ] Not Applicable

12. Alternative Modes of Operation (Emissions Trading)
[ ] Attached, Document ID:_____ [ ] Not Applicable

13. Identification of Additional Applicable Requirements
[ ] Attached, Document ID:_____ [ ] Not Applicable

14. Compliance Assurance Monitoring Plan
[ ] Attached, Document ID:_____ [ ] Not Applicable

15. Acid Rain Part Application (Hard-copy Required)

[ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a))
Attached, Document ID:

[ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
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[ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.)
Attached, Document ID:_____

[ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
Attached, Document ID:_____

[ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
Attached, Document ID:_____

[ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
Attached, Document ID:_____

[ ] Not Applicable

ATTACHMENT A

UTM COORDINATES

Emission Source/ID Number	UTM Easting(km)	UTM Northing(km)
Combustion Turbines CT1-CT6	564.773	2860.702
	564.796	2860.702
	564.819	2860.702
	564.842	2860.702
	564.865	2860.702
	564.888	2860.702
Distillate Oil Storage Tanks T001 and T002	564.674	2860.784
	564.715	2860.780

APPENDIX B

EMISSION CALCULATIONS

ENSR
Challenger Development Company, L.L.C.
Medley Facility
GE LM 6000 SPRINT Simple Cycle Emissions
EMISSIONS COMPUTATION PER SINGLE CTG
GAS Fired CTG

Date 7/5/00
Author MDK Griffin
Revision 2

		1	2	3	4	5	6
CASE NUMBER and OPERATION CONDITIONS							
(1) AMBIENT TEMPERATURE, °F		90	42	90	59	90	42
(1) RELATIVE HUMIDITY, %		55%	72%	55%	72%	55%	72%
CTG LOAD		100%	100%	75%	75%	50%	50%
SPRINT STATUS		ON	ON	OFF	OFF	OFF	OFF
CHILLER STATUS		ON	OFF	ON	OFF	OFF	OFF
(1) CTG EFFECTIVE INLET TEMPERATURE, F		50	42	75	42	90	42
(1) CTG EFFECTIVE INLET RELATIVE HUMIDITY, %		95%	72%	90%	72%	55%	72%
(1) CTG GROSS POWER OUTPUT, kW		48,097	49,044	38,153	38,890	24,027	24,522
(1) CTG FUEL CONSUMPTION, MMBtu/hr LHV		416	421	330	329	251	249
(1) CTG FUEL CONSUMPTION, lb/hr		21,919	22,282	17,347	17,316	13,195	13,111
CTG FUEL CONSUMPTION, MMBtu/hr HHV		461	469	365	364	277	276
(1) CTG EXHAUST GAS FLOW RATE, 1000 lb/hr		1,055	1,072	927	981	785	860
(1) STACK TEMPERATURE, °F		847	842	829	756	810	703
CTG STACK EXHAUST ANALYSIS (%VOL)							
(1) ARGON + NITROGEN	28.154	73.25%	73.49%	72.83%	74.48%	73.27%	75.30%
(1) OXYGEN	31.998	12.92%	12.99%	13.51%	14.02%	14.20%	15.16%
(1) CARBON DIOXIDE	44.009	3.36%	3.96%	3.02%	2.87%	2.72%	2.30%
(1) WATER	18.015	10.58%	10.25%	10.64%	8.43%	9.80%	7.02%
TOTAL		100.10%	100.09%	100.00%	99.99%	100.00%	100.00%
CTG EXHAUST MOLECULAR WEIGHT		28.14	28.17	28.07	28.30	28.14	28.42
CTG EXHAUST GAS FLOW RATE, lb mol/hr		37,497	38,042	33,035	34,652	27,905	30,275
CTG EXHAUST GAS FLOW RATE, DRY, lb mol/hr		33,528	34,141	29,519	31,730	25,170	28,148
EXH. PARAMETERS @ STACK							
(5) STACK DIAMETER, ft		10	10	10	10	10	10
MOLECULAR WEIGHT		28.14	28.17	28.07	28.30	28.14	28.42
STACK EXHAUST GAS FLOW RATE, lb/hr		1,055,075	1,071,756	927,360	980,640	785,160	860,400
SPECIFIC VOLUME, ft³/lb		33.9	33.7	33.4	31.4	32.9	29.9
VOLUMETRIC FLOW, acfm		596,093	602,782	516,881	512,663	431,177	428,379
EXIT VELOCITY, ft/sec		126.49	127.91	109.69	108.79	91.50	90.90
ACTUAL O2% DRY		14.5%	14.5%	15.1%	15.5%	15.7%	15.3%
MOLES EXHAUST GAS per HOUR WET		37,497	38,042	33,035	34,652	27,905	30,275
MOLES EXHAUST GAS per HOUR DRY		33,528	34,141	29,519	31,730	25,170	28,148
NOx EMISSION CALCULATION							
(1) LIMIT, ppmVd @ 15% O2		25.0	25.0	25.0	25.0	25.0	25.0
LIMIT, ppmVd		27.3	27.2	24.5	22.7	21.8	19.4
CORRESPONDING MASS RATE, lb/hr as NO2		42.1	42.8	33.3	33.2	25.3	25.1
CORRESPONDING EMISSIONS FACTOR, lb/MMBtu HHV		0.091	0.091	0.091	0.091	0.091	0.091
CO EMISSION CALCULATION							
(6) LIMIT, ppmVd @ 15% O2		50	50	50	50	50	50
CTG Exhaust, ppmVd		61.2	61.0	54.9	50.9	48.9	43.4
CTG MASS RATE, lb/hr		57.5	58.3	45.4	45.3	34.5	34.2
CTG EMISSIONS FACTOR, lb/MMBtu HHV		0.125	0.125	0.124	0.124	0.124	0.124
PARTICULATE EMISSION CALCULATION							
(2) CTG EXHAUST, lb/hr		4.5	4.6	4.6	4.6	4.5	4.5
CORRESPONDING EMISSIONS FACTOR, lb/MMBtu HHV		0.010	0.010	0.012	0.012	0.016	0.016
VOC EMISSION CALCULATION							
(3) LIMIT, ppmVd @ 15% O2		10.0	10.0	10.0	10.0	10.0	10.0
CTG Exhaust, ppmVw		10.9	10.9	9.8	9.1	8.7	7.8
CTG MASS RATE, lb/hr		6.6	6.6	5.2	5.1	3.9	3.8
CTG EMISSIONS FACTOR, lb/MMBtu HHV		0.014	0.014	0.014	0.014	0.014	0.014
Pb EMISSION CALCULATION							
PB EMISSION FACTOR, lb/MMBtu		0.0	0.0	0.0	0.0	0.0	0.0
STACK EMISSIONS, lb/hr		0.0	0.0	0.0	0.0	0.0	0.0
SO2 EMISSION CALCULATION							
(4) CTG EMISSIONS, lb/hr		2.513	2.555	1.989	1.985	1.513	1.503
CTG EMISSIONS FACTOR, lb/MMBtu HHV		0.005	0.005	0.005	0.005	0.005	0.005
STACK EMISSIONS, ppmVd @ ACTUAL O2		1.170	1.168	1.052	0.977	0.938	0.834
STACK EMISSIONS, ppmVd @ 15% O2		1.071	1.072	1.073	1.074	1.074	1.075

SITE CONDITIONS	
FUEL TYPE	Natural Gas
FUEL LHV, Btu/lb	19000
FUEL LHV, Btu/SCF	946
FUEL HHV, Btu/SCF	1047
FUEL SULFUR CONTENT [grains per 100 SCF]	2
CONTROL EQUIPMENT LIMITS	
NOx PERMIT LIMIT, ppmVd @ 15% O2	25

Notes
1 Based on GE LM6000-PC SPRINT data provided in e-mail from Dave Kellermeyer (e-mail dated May 12, 2000).
2 PM10 Emission rate based on data provided in e-mail from Dave Kellermyer April 19, 2000
3 VOC Emission limit based on data provided in e-mail from Dave Kellermyer April 19, 2000
4 SO2 emissions calculated based on fuel sulfur content of 2 grains per 100 standard cubic feet.
5 Stack diameter based on conversation with Dave Kellermeyer June 14, 2000
8 CO emissions limit based on guaranteed value.

Challenger Development Company, L.L.C.
Medley Facility
GE LM 6000 SPRINT Simple Cycle Emissions
EMISSIONS COMPUTATION PER SINGLE CTG
Oil Fired CTG

		1	2	3	4	5	6
CASE NUMBER and OPERATION CONDITIONS							
(1) AMBIENT TEMPERATURE, °F		90	42	50	42	90	42
(1) RELATIVE HUMIDITY, %		65%	72%	63%	72%	65%	72%
CTG LOAD		100%	100%	78%	70%	60%	60%
SPRINT STATUS		ON	ON	OFF	OFF	OFF	OFF
CHILLER STATUS		YES	NO	YES	NO	NO	NO
(1) CTG EFFECTIVE INLET TEMPERATURE, F		80	42	77	42	80	42
(1) CTG EFFECTIVE INLET RELATIVE HUMIDITY, %		65%	72%	63%	72%	65%	72%
(1) CTG NET POWER OUTPUT, kW		35,923	37,877	26,430	25,007	23,440	23,838
(1) CTG FUEL CONSUMPTION, MMBtu/hr LHV		412	419	290	277	261	269
(1) CTG FUEL CONSUMPTION, lb/hr		22,401	22,777	17,920	17,756	13,920	13,829
CTG FUEL CONSUMPTION, MMBtu/hr HHV		443	450	354	351	269	267
(1) CTG EXHAUST GAS FLOW RATE, 1000 lb/hr		1,052	1,069	820	972	780	808
(1) STACK TEMPERATURE, °F		850	845	850	789	817	768
CTG STACK EXHAUST ANALYSIS (%VOL)							
(1) ARGON	39.948	0.90%	0.90%	0.88%	0.88%	0.87%	0.89%
(1) NITROGEN + ARGON	28.013	72.66%	73.15%	72.10%	74.09%	72.73%	74.72%
(1) OXYGEN	31.998	10.17%	9.15%	12.37%	14.38%	12.31%	13.30%
(1) CARBON DIOXIDE	44.009	4.43%	4.43%	4.02%	3.80%	3.82%	3.30%
(1) WATER	18.015	8.04%	8.30%	9.26%	6.65%	8.47%	7.78%
TOTAL		100.06%	100.07%	99.99%	99.99%	99.99%	99.99%
CTG EXHAUST MOLECULAR WEIGHT		28.52	28.55	28.36	28.61	28.42	28.68
CTG EXHAUST GAS FLOW RATE, lb mol/hr		36,879	37,426	32,428	33,981	27,440	29,851
CTG EXHAUST GAS FLOW RATE, DRY, lb mol/hr		33,693	34,320	29,397	31,653	25,115	28,125
ACTUAL O2% DRY FROM CTG		14.42%	14.44%	14.97%	15.45%	15.63%	16.23%
EXH. PARAMETERS @ STACK							
(5) STACK DIAMETER, ft		10	10	10	10	10	10
MOLECULAR WEIGHT		28.52	28.55	28.36	28.61	28.42	28.68
EXHAUST GAS FLOW RATE, lb/hr		1,051,723	1,068,677	919,800	972,360	779,760	856,080
SPECIFIC VOLUME, ft³/lb		33.5	33.4	33.4	31.2	32.8	29.7
VOLUMETRIC FLOW, acfm		587,685	594,458	512,127	505,639	426,334	424,201
EXIT VELOCITY, ft/sec		124.71	126.15	108.68	107.30	90.47	90.02
ACTUAL O2% DRY		14.4%	14.4%	15.0%	15.5%	15.6%	16.2%
MOLES EXHAUST GAS per HOUR WET		36,879	37,426	32,428	33,981	27,440	29,851
MOLES EXHAUST GAS per HOUR DRY		33,693	34,320	29,397	31,653	25,115	28,125
NOx EMISSION CALCULATION							
(1) CTG, ppmVd @ 15% O2		42	42	42	42	42	42
CTG, ppmVd		46.1	46.0	42.2	38.8	37.5	33.2
CTG, lb/hr as NO2		71.5	72.8	57.1	56.5	43.3	43.0
CORRESPONDING EMISSIONS FACTOR, lb/MMBtu HHV		0.1615	0.1613	0.1611	0.1610	0.1609	0.1608
CO EMISSION CALCULATION							
(6) CTG, ppmVd @ 15% O2		50	55	50	55	50	55
CTG Exhaust, ppmVd		61.5	61.3	56.3	51.7	50.0	44.3
CTG MASS RATE, lb/hr		58	59	46	46	35	35
CTG EMISSIONS FACTOR, lb/MMBtu HHV		0.1311	0.1310	0.1308	0.1307	0.1307	0.1305
PARTICULATE EMISSION CALCULATION							
(2) CTG EXHAUST, lb/hr		20	20	20	20	20	20
CORRESPONDING EMISSIONS FACTOR, lb/MMBtu HHV		0.0452	0.0444	0.0565	0.0570	0.0743	0.0748
VOC EMISSION CALCULATION							
(3) VOC CTG, ppmVd @ 15% O2		10	10	10	10	10	10
VOC CTG, ppmVd		11.0	11.0	10.0	9.2	8.9	7.9
CTG Exhaust, ppmVw		10.0	10.0	9.1	8.6	8.2	7.4
CTG MASS RATE, lb/hr		5.9	6.0	4.7	4.7	3.6	3.6
CTG EMISSIONS FACTOR, lb/MMBtu HHV		0.0134	0.0134	0.0134	0.0134	0.0134	0.0133
Pb EMISSION CALCULATION							
PB EMISSION FACTOR - OIL, lb/MMBtu		0.000014	0.000014	0.000014	0.000014	0.000014	0.000014
STACK EMISSIONS, lb/hr		0.006	0.006	0.005	0.005	0.004	0.004
SO2 EMISSION CALCULATION							
(4) CTG EMISSIONS, lb/hr		22.378	22.754	17.905	17.736	13.906	13.809
CORRESPONDING EMISSIONS FACTOR, lb/MMBtu HHV		0.0505	0.0505	0.0505	0.0505	0.0505	0.0506

SITE CONDITIONS

	Natural Gas	Distillate Oil
FUEL TYPE		
FUEL LHV, Btu/lb		18400
FUEL HHV, Btu/lb		19764
FUEL LHV, Btu/SCF	927	
FUEL HHV, Btu/SCF	1020	
FUEL SULFUR CONTENT (grains per 100 SCF)	2	
FUEL SULFUR CONTENT (wt%)		0.05%

CONTROL EQUIPMENT LIMITS

NOx PERMIT LIMIT, ppmVd @ 15% O2 42

Lead Emission Factor for Oil AP-42 04/00 - Section 3.1

Emission Factor, lb/MMBtu 1.40E-05

Notes

1 Based on GE LM6000-PC SPRINT data provided in e-mail from Dave Kellermeyer (e-mail dated May 12, 2000).
2 PM10 emission rate assumed to be double the natural gas PM10 emission rate.
3 VOC Emission limit based on data provided in e-mail from Dave Kellermyer April 19, 2000
4 SO2 emissions calculated based on fuel sulfur content of 0.05 wt %.
5 Stack diameter based on conversation with Dave Kellermeyer June 14, 2000
6 CO emissions limit based on guaranteed value.

CALCULATIONS AND COMPUTATIONS

Project: Challenger Development Company L.L.C., Medley Facility
Project Number: 6792-123-710 Computed by: C. Godleski Date: 6/15/00
Subject: Natural Gas Heater - Emission Calculations Checked by: B.Burgess Date: 6/28/00

Emission Source:	Natural Gas Heater
Heat Input (MMBtu/hr):	6
Number of Units:	1
Sulfur Content of Fuel (grains/scf):	0.02
Fuel Heating Value, HHV (Btu/scf):	1047
LHV (Btu/scf):	946
Operating Hours per Year:	1500
Fuel Feed Rate (scf/HR):	5731

Compound	Emission Factor (a) (Lbs/MMBtu)	Emission Rate - per Unit Hourly (b) (Lbs/Hr)	Annual (c) (Tons/Year)
Nitrogen Oxides	0.102	0.612	0.459
Carbon Monoxide	0.09	0.54	0.405
Volatile Organic Carbon	0.06	0.36	0.27
Sulfur Oxides (d)	0.003	0.016	0.012
Particulate	0.01	0.06	0.045

Notes:

(a) Emission Factors based on the information supplied by ENRON on 8/11/99.
(b) Hourly Emission Rate (Lbs/Hr) = (Heat Input * Emission Factor)
(c) Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)
(d) Sulfur Oxides Emission Rate (Lbs/Hr) based on the sulfur content of the fuel.

CALCULATIONS AND COMPUTATIONS

Project: Challenger Development Company, L.L.C., Medley Facility
Project Number: 6792-123-710 Computed by: M. Griffin Date: 5/30/00
Subject: Fire-Water Pump Emission Calculations Checked by: B.Burgess Date: 6/28/00

Emission Source: Fire-Water Pump Engine

Source Type: Diesel Fueled Reciprocating Engine
250 Horsepower

Operating Hours per Year: 500

Compound	Emission Factor (a) (Lbs/hp hr)	Emission Factor (a) (lb/MMBtu)	Emission Rate Hourly (b) (Lbs/Hr)	Emission Rate Annual (c) (Tons/Year)
Nitrogen Oxides	0.031		7.8	2.0
Carbon Monoxide	0.00668		1.7	0.4
Volatile Organic Carbon	0.00247		0.6	0.2
Sulfur Oxides	0.00205		0.5	0.1
Particulate	0.0022		0.6	0.2
Benzene	6.53E-06	9.33E-04	1.63E-03	4.08E-04
Toluene	2.86E-06	4.09E-04	7.16E-04	1.79E-04
Xylenes	2.00E-06	2.85E-04	4.99E-04	1.25E-04
Propylene	1.81E-05	2.58E-03	4.52E-03	1.13E-03
1,3-Butadiene	2.74E-07	3.91E-05	6.84E-05	1.71E-05
Formaldehyde	8.26E-06	1.18E-03	2.07E-03	5.16E-04
Acetaldehyde	5.37E-06	7.67E-04	1.34E-03	3.36E-04
Acrolein	6.48E-07	9.25E-05	1.62E-04	4.05E-05
PAH	1.18E-06	1.68E-04	2.94E-04	7.35E-05

Total HAPS 5.6 lb/year

Notes:
(a) Emission Factors from AP-42, Section 3.3, Table 3.3-1
(b) Hourly Emission Rate (Lbs/Hr) = (Emission Factor, Lbs/BHP) * (Horsepower, BHP)
(c) Annual Emission Rate (Tons/Yr) = (Hourly Emission Rate, Lbs/Hr) * (Hour of Operation Per Year, Hr/Yr) / (2,000 Lbs/Ton)

Annual Emissions Calculation
Challenger Development Company, L.L.C., Medley Facility

Pollutant	CTG Natural Gas Short Term Emission Limits			CTG Distillate Oil Short Term Emission Limit			Fuel Use Calculation				Annual Emissions			
							Compliance Method	Maximum CTG Emissions for Minor Source [2]	Natural Gas Annual Fuel Use [6]	Distillate Oil Annual Fuel Use [6]	Natural Gas Fired CTGs [7]	Distillate Oil Fired CTGs [7]	Worst Case CTG Emissions [5]	Ancilliary Equipment Emissions
	ppmvd @ 15% O2	*lb/MMBtu (HHV)*	*Max lb/hr [1]*	*ppmvd @ 15% O2*	*lb/MMBtu (HHV)*	*Max lb/hr [1]*		*tons/year*	*MMBtu/yr (HHV)*	*MMBtu/yr (HHV)*	*(tpy)*	*(tpy)*	*(tpy)*	*(tpy)*
NOx	25	0.091	47.1	42	0.162	79.9	CEMS	245.5	5,395,604	3,030,864	245.5	245.5	245.5	2.5
CO	56	0.125	64.2	56	0.131	64.9	CEMS	247.2	3,955,200	3,774,046	247.2	198.5	247.2	0.8
VOC	10	0.014	7.3	10	0.013	6.6	Fuel Tracking	218.6	31,228,571	33,630,769	37.8	19.7	41.58	1.4
Pb	N/A	0	0	N/A	0.000014	0.007	Fuel Tracking	220	N/A	N/A	0	0.02	0.022	0.0
PM10 [3]	N/A	0.016	5	N/A	0.075	22	Fuel Tracking	219.8	27,475,000	5,861,333	43.2	113.7	125.07	0.2
SO2	N/A	0.005	2.8	N/A	0.051	25	Fuel Tracking	219.9	87,960,000	8,623,529	13.5	77.3	85.03	0.1
							Minimum Fuel Cap [4]		3,955,200	3,030,864			Margin	10%

Notes
(1) Maximum hourly emission rate includes 10% margin.
(2) CTG Emissions = Total Facility Emissions - Fire Water Pump Engine Emissions
(3) PM10 emissions limited based on lb/hr emission rate, lb/MMBtu value calculated only for demonstration of compliance with Minor Source Status.
(4) NOx and CO limited based on CEMS. Fuel cap calculated to estimate emissions of VOC, PM10, and SO2. Minimum Fuel Cap is used for all pollutants.
(5) Worst Case of Natural Gas and Distillate Oil Case. VOC, PM10, and SO2 emissions include a margin of 10%.
(6) [Annual Fuel Use (MMBtu/yr (HHV)] = [Maximum CTG Emissions (tons/year)] x [2,000 lb/ton] / [Emission Factor (lb/MMBtu (HHV))]
(7) [CTG Annual Emissions (tons/year)] = [Minimum Fuel Cap (MMBtu/yr (HHV))] * [Emission Factor (lb/MMBtu (HHV))] / [2,000 lb/ton]

Challenger Development Company, L.L.C., Medley Facility
NSPS NO_X Emission Standard Calculation

Turbine General Electric Model LM 6000		
Fuel Natural Gas		
Nominal Maximum Electrical Capacity	48.0	MW
Maximum Energy Input	423	MMBtu/hr (LHV)
	446,891,394	kJ/hr
Heat Rate	8,820	Btu/kWh
	9.3	kJ/Wh
NSPS Subpart GG NOx Limit	0.0116%	Volume % NOx @ 15% O2
	116	ppmvd @ 15% O2

Turbine General Electric Model LM 6000		
Fuel Distillate Oil		
Nominal Maximum Electrical Capacity	48	MW
Maximum Energy Input	419	MMBtu/hr (LHV)
	442,404,310	kJ/hr
Heat Rate	8,754	Btu/kWh
	9.2	kJ/Wh
NSPS Subpart GG NOx Limit	0.0117%	Volume % NOx @ 15% O2
	117	ppmvd @ 15% O2

Calculations and Computations
HAP Emissions from Combined Cycle CTG Facility

Project: Challenger Development Company L.L.C., Medley Facility
Project Number: 6792-123-710
Subject: Natural Gas/Distillate Oil Fired Turbine Non-Criteria Regulated Pollutant Emissions Calculations

Computed by: M. Griffin Date: 5/12/00
Checked by: B.Burgess Date: 6/28/00

Pollutant	Type[a]	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Natural Gas ($lb/10^6$ scf)	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Natural Gas (lb/MMBtu)[d]	Rating	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine No. 2 Fuel Oil ($lb/10^3$ gallons)	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine No. 2 Fuel Oil (lb/MMBtu)[d]	Rating	CTG Natural Gas Combustion: Maximum Heat Input, per turbine (MMBtu/Hr)[b]	CTG Natural Gas Combustion: Averge Heat Input, per turbine (MMBtu/Hr)[c]	Distillate Oil: Maximum Heat Input, per turbine (MMBtu/Hr)[b]	Distillate Oil: Averge Heat Input, per turbine (MMBtu/Hr)[c]	CTG Natural Gas: Emission Rate, Per Turbine: Hourly[e] (lb/hr)	CTG Natural Gas: Emission Rate, Per Turbine: Annual[f] (tpy)	CTG Distillate Oil: Emission Rate, Per Turbine: Hourly[e] (lb/hr)	CTG Distillate Oil: Emission Rate, Per Turbine: Annual[f] (tpy)	Facility: Emission Rate All CTGs: Hourly[e] (lb/hr)	Facility: Emission Rate All CTGs: Annual[f] (tpy)	Facility Major Source (Y/N)
1,3-Butadiene	HAP		4.30E-07	D		1.60E-05	D	469	469	450	450	2.01E-04	1.56E-04	7.20E-03	4.45E-03	4.32E-02	2.67E-02	No
Acetaldehyde	HAP		4.00E-05	C				469	469	450	450	1.87E-02	1.45E-02	0.00E+00	0.00E+00	1.12E-01	8.70E-02	No
Acrolein	HAP		6.40E-06	C				469	469	450	450	3.00E-03	2.32E-03	0.00E+00	0.00E+00	1.80E-02	1.39E-02	No
Benzene[g]	HAP	1.36E-02	1.30E-05			5.50E-05	C	469	469	450	450	6.07E-03	4.70E-03	2.48E-02	1.53E-02	1.49E-01	9.17E-02	No
Ethylbenzene	HAP		3.20E-05	C				469	469	450	450	1.50E-02	1.16E-02	0.00E+00	0.00E+00	9.00E-02	6.96E-02	No
Formaldehyde[h]	HAP	1.32E-01	1.27E-04			2.80E-04	B	469	469	450	450	5.93E-02	4.59E-02	1.26E-01	7.78E-02	7.56E-01	4.67E-01	No
Naphthalene	HAP		1.30E-06	C		3.50E-05	C	469	469	450	450	6.09E-04	4.71E-04	1.58E-02	9.72E-03	9.45E-02	5.83E-02	No
PAHs	HAP		2.20E-06	C		4.00E-05	C	469	469	450	450	1.03E-03	7.98E-04	1.80E-02	1.11E-02	1.08E-01	6.67E-02	No
Propylene Oxide	HAP		2.90E-05	D				469	469	450	450	1.36E-02	1.05E-02	0.00E+00	0.00E+00	8.15E-02	6.31E-02	No
Toluene[g]	HAP	7.10E-02	6.79E-05					469	469	450	450	3.18E-02	2.46E-02	0.00E+00	0.00E+00	1.91E-01	1.48E-01	No
Xylene	HAP		6.40E-05	C				469	469	450	450	3.00E-02	2.32E-02	0.00E+00	0.00E+00	1.80E-01	1.39E-01	No
Arsenic	HAP			E		1.10E-05	D	469	469	450	450	0.00E+00	0.00E+00	4.95E-03	3.06E-03	2.97E-02	1.83E-02	No
Beryllium	HAP					3.10E-07	D	469	469	450	450	0.00E+00	0.00E+00	1.40E-04	8.61E-05	8.37E-04	5.17E-04	No
Cadmium	HAP			E		4.80E-06	D	469	469	450	450	0.00E+00	0.00E+00	2.16E-03	1.33E-03	1.30E-02	8.00E-03	No
Chromium	HAP					1.10E-05	D	469	469	450	450	0.00E+00	0.00E+00	4.95E-03	3.06E-03	2.97E-02	1.83E-02	No
Lead	HAP			E		1.40E-05	D	469	469	450	450	0.00E+00	0.00E+00	6.30E-03	3.89E-03	3.78E-02	2.33E-02	No
Manganese	HAP			E		7.90E-04	D	469	469	450	450	0.00E+00	0.00E+00	3.56E-01	2.19E-01	2.13E+00	1.32E+00	No
Mercury	HAP			E		1.20E-06	D	469	469	450	450	0.00E+00	0.00E+00	5.40E-04	3.33E-04	3.24E-03	2.00E-03	No
Nickel	HAP					4.60E-06	D	469	469	450	450	0.00E+00	0.00E+00	2.07E-03	1.28E-03	1.24E-02	7.67E-03	No
Selenium	HAP					2.50E-05	D	469	469	450	450	0.00E+00	0.00E+00	1.13E-02	6.95E-03	6.75E-02	4.17E-02	No

	Annual Fuel Use (MMBtu/yr)			
CTG Natural Gas Maximum[f]	4,350,720	Facility Total HAPs	2.7	No
CTG Distillate Oil Maximum[f]	3,333,951			
Number of CTGs per Facility	6	Maximum Individual HAP	1.3	No

Natural Gas Heating Value 1047 Btu/SCF (HHV)

Notes:
(a) Type = NC for Non-Criteria Pollutants, HAP/POM for compounds included as polycyclic organic matter or HAP for Hazardous Air Pollutant.
(b) Maximum heat input rate for turbine is based on HHV data at an ambient temperature of 42°F and base load operating conditions.
(c) Average heat input rate is based on data at an average ambient temperature of 42°F and base load operating conditions.
(d) Emission Factor (lb/MMBtu) = (Emission Factor, $lb/10^6$ scf) / (Heat Value Btu/scf)
(e) Hourly Emission Rate (lb/hr) = [Heat Input (MMBtu/Hr) * Emission Factor (lb/MMBtu)]
(f) Annual Emission Rate (tons/year) = [Annual Heat Input (MMBtu/Yr) * Emission Factor (lb/MMBtu) / (2,000 lb/ton)]
(g) Emission Factors from CARB CATEF emission factor database for natural gas fired combustion turbines.
(h) Modified from AP-42 Section 3.1 emissions database for aero derivative turbines.
(i) Annual Fuel Use increased by 10% margin.

Table
AP-42 Emission Factor for Formaldehyde Emissions from Natural Gas Fired Combustion Turbine

ID Number	Facility	Turbine	Turbine Rating	Turbine Load	AP-42 (lb/Mmcuft)	AP-42 Expected Final Value (lb/Mmcuft)	AP-42 Less Outliers (lb/Mmcuft)	GE LM2500 Turbines (lb/Mmcuft)	GE LM2500 Turbines Less Outliers (lb/Mmcuft)
11	Gilroy Energy Co./Gilroy, CA	General Electric Frame 7	87 MW	NR	0.72	0.72	0.72		
12.1	Sithe Energies, 32nd St. Naval S/San Diego, CA	General Electric MS6000	44 MW	100	0.11	0.11	0.11		
13.1	SD Gas & Electric Co./San Diego, CA	General Electric 5221	17 MW	95	0.48	0.48	0.48		
15.1	Modesto Irrigation District/Mclure/Modesto, CA	General Electric Frame 7B	50 MW	100	0.14	0.14	0.14		
16	Willamette Industries, Inc./Oxnard, CA	General Electric LM2500-PE	67.4 MW	33	0.04	0.04	0.04	0.04	0.04
18	Sycamore Cogen. Co./Bakersfield, CA	General Electric Frame 7	75 MW	100	0.09	0.09	0.09		
2	Calpine / Agnews Cogen./San Jose, CA	General Electric LM5000	23.33 MW	100	0.06	0.06	0.06	0.06	0.06
21	Dexzel Inc./Bakersfield, CA	General Electric LM2500	29.1 MW	77	0.03	0.03	0.03	0.03	0.03
22	Procter & Gamble Manufacturing/Sacramento, CA	General Electric LM2500	20.5 MW	95	0.09	0.09	0.09	0.09	0.09
23	Chevron Inc./Gaviota, CA	Allison K501	2.5 MW	NR	3.57	3.57	3.57		
25 [2]	Ell / Stewart & Stevenson/Berkeley, CA	General Electric LM2500	25 MW	NR	0.48	0.48	0.48	0.48	
26	Calpine Corp./Sumas, WA	General Electric MS7001EA	87.83 MW	100	0.01	0.01	0.01		
27	Sargent Canyon Cogen/Bakersfield, CA	General Electric Frame 6	42.5 MW	50	0.06	0.06	0.06		
28	Watsonville Cogen, Partnership/Watsonville, CA	General Electric LM 2500	24 MW	100	0.09	0.09	0.09	0.09	0.09
3.1	Southern Cal. Edison Co./Long Beach, CA	Brown-Boveri-Sulzer 11-D	61.75 MW	107	1.33	1.33	1.33		
313.1.1	NR/NR	General Electric Frame 3	7.7 MW	100	0.27	0.27	0.27		
313.1.2	NR/NR	General Electric Frame 3	7.7 MW	25	0.43	0.43	0.43		
313.2.1	NR/NR	Solar T12000	9.4 MW	100	0.02	0.02	0.02		
313.2.2	NR/NR	Solar T12000	9.4 MW	25	9.62	9.62	9.62		
315.1	NR/NR	General Electric LM1500	10.6 MW	100	4.27	4.27	4.27		
315.2	NR/NR	General Electric LM1500	10.6 MW	25	25.91	25.91			
4.1.2x [1]	Southern Cal. Edison Co./Coolwater, CA	Westinghouse PACE520	63 MW	100	38.96				
4.2	Southern Cal. Edison Co./Coolwater, CA	Westinghouse PACE520	63 MW	100	0.35	0.35	0.35		
6.2	Imperial Irrigation D / Choachella/Imperial, CA	General Electric NS5000P	46.3 MW	100	0.31	0.31	0.31		
7	Bonneville Pacific Corp./Somis, CA	Solar Mars	9 MW	100	0.74	0.74	0.74		
9	WSPA/SWEPI GT/Bakersfield, CA	Allison 501 KB5	4 MW	85	0.01	0.01	0.01		
				Mean (lb/Mmcuft)	3.39	1.97	0.97	0.13	0.06
				Std Dev	8.98	5.41	2.13	0.17	0.03

Notes:

[1] Formaldehyde data point was an outlier. Retest of the same turbine (ID Number 4.2) generated formaldehyde data more consistent with other formaldehyde data in the database.

[2] The data point for the Ell/Stewart & Stevenson facility was calculated from three "non-detects"; the Test Method employed an unusually high detection limit.

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Medley Fuel Oil Day Tank
City:	Dade County
State:	FL
Company:	Challenger Development Company, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Distillate Oil Day Storage Tank

Tank Dimensions

Shell Height (ft):	24.00
Diameter (ft):	50.00
Liquid Height (ft):	21.00
Avg. Liquid Height (ft):	21.00
Volume (gallons):	285,000.00
Turnovers:	85.26
Net Throughput (gal/yr):	24,300,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft):	32.00
Slope (ft/ft) (Cone Roof):	1.28

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Miami, Florida (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	Jan	73.59	69.37	77.80	75.91	0.0100	0.0088	0.0114	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Feb	74.43	69.94	78.93	75.91	0.0103	0.0089	0.0118	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Mar	76.23	71.60	80.86	75.91	0.0109	0.0094	0.0126	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Apr	78.12	73.22	83.02	75.91	0.0115	0.0099	0.0134	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	May	79.68	75.05	84.31	75.91	0.0121	0.0105	0.0139	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Jun	80.68	76.33	85.04	75.91	0.0125	0.0109	0.0143	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Jul	81.34	76.83	85.86	75.91	0.0127	0.0111	0.0146	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Aug	81.35	77.02	85.68	75.91	0.0127	0.0112	0.0145	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Sep	80.61	76.62	84.60	75.91	0.0125	0.0110	0.0141	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Oct	78.82	74.94	82.69	75.91	0.0118	0.0105	0.0133	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Nov	76.43	72.58	80.28	75.91	0.0110	0.0097	0.0123	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Dec	74.32	70.34	78.31	75.91	0.0103	0.0091	0.0116	130.0000			188.00	Option 5: A=12.101, B=8907

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	5.2186	5.1942	6.2340	6.7753	6.8421	6.3479	6.9433	6.6231	5.7208	5.4536	4.9112	4.9883
Vapor Space Volume (cu ft):	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002
Vapor Space Expansion Factor:	0.0277	0.0298	0.0307	0.0326	0.0305	0.0284	0.0295	0.0281	0.0257	0.0249	0.0248	0.0259
Vented Vapor Saturation Factor:	0.9928	0.9926	0.9922	0.9917	0.9913	0.9910	0.9909	0.9909	0.9911	0.9915	0.9921	0.9926
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372	26,834.4372
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Space Outage (ft):	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667
Tank Shell Height (ft):	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000	24.0000
Average Liquid Height (ft):	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000
Roof Outage (ft):	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667
Roof Outage (Cone Roof)												
Roof Outage (ft):	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667	10.6667
Roof Height (ft):	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000
Roof Slope (ft/ft):	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800	1.2800
Shell Radius (ft):	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000
Vapor Density												
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Daily Avg. Liquid Surface Temp. (deg. R):	533.2556	534.1039	535.9009	537.7905	539.3510	540.3530	541.0146	541.0194	540.2777	538.4877	536.1033	533.9923
Daily Average Ambient Temp. (deg. F):	67.2000	68.4500	71.6500	75.1000	78.7000	81.3500	82.6000	82.8500	81.8500	78.3000	73.5500	69.1000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817
Tank Paint Solar Absorptence (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,122.1840	1,344.2730	1,633.9405	1,910.5999	1,893.1501	1,771.0011	1,854.1259	1,775.7602	1,551.1330	1,381.3936	1,162.1600	1,048.2601
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0277	0.0298	0.0307	0.0326	0.0305	0.0284	0.0295	0.0281	0.0257	0.0249	0.0248	0.0259
Daily Vapor Temperature Range (deg. R):	16.8616	17.9907	18.5056	19.6065	18.5154	17.4300	18.0416	17.3086	15.9514	15.5034	15.3959	15.9337
Daily Vapor Pressure Range (psia):	0.0027	0.0029	0.0031	0.0035	0.0034	0.0033	0.0035	0.0034	0.0030	0.0028	0.0026	0.0026
Breather Vent Press. Setting Range(psia):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0088	0.0089	0.0094	0.0099	0.0105	0.0109	0.0111	0.0112	0.0110	0.0105	0.0097	0.0091
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0114	0.0118	0.0126	0.0134	0.0139	0.0143	0.0146	0.0145	0.0141	0.0133	0.0123	0.0116
Daily Avg. Liquid Surface Temp. (deg R):	533.2556	534.1039	535.9009	537.7905	539.3510	540.3530	541.0146	541.0194	540.2777	538.4877	536.1033	533.9923
Daily Min. Liquid Surface Temp. (deg R):	529.0402	529.6062	531.2745	532.8889	534.7222	535.9955	536.5042	536.6922	536.2899	534.6119	532.2543	530.0089
Daily Max. Liquid Surface Temp. (deg R):	537.4710	538.6016	540.5273	542.6921	543.9799	544.7105	545.5250	545.3465	544.2656	542.3636	539.9523	537.9758
Daily Ambient Temp. Range (deg. R):	16.0000	16.1000	14.9000	14.6000	13.2000	12.5000	12.8000	12.3000	11.9000	12.4000	13.7000	15.2000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9928	0.9926	0.9922	0.9917	0.9913	0.9910	0.9909	0.9909	0.9911	0.9915	0.9921	0.9926
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Vapor Space Outage (ft):	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667	13.6667

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Losses (lb):	32.6013	33.4777	35.4031	37.5321	39.3745	40.5989	41.4256	41.4316	40.5058	38.3458	35.6260	33.3613
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Net Throughput (gal/mo.):	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000
	0	0	0	0	0	0	0	0	0	0	0	0
Annual Turnovers:	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632	85.2632
Turnover Factor:	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185	0.5185
Maximum Liquid Volume (gal):	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000	285,000.0000
Maximum Liquid Height (ft):	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000	21.0000
Tank Diameter (ft):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Working Loss Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	37.8199	38.6719	41.6371	44.3074	46.2166	46.9468	48.3689	48.0547	46.2266	43.7994	40.5372	38.3495

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January , February , March , April , May , June , July , August , September , October , November , December

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	449.68	71.25	520.94

TANKS 4.0
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Medley Main Storage Tank
City:	Dade County
State:	FL
Company:	Challenger Development Company, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Distillate Oil Storage Tank

Tank Dimensions

Shell Height (ft):	40.00
Diameter (ft):	85.00
Liquid Height (ft):	36.00
Avg. Liquid Height (ft):	32.00
Volume (gallons):	1,425,000.00
Turnovers:	17.05
Net Throughput (gal/yr):	24,300,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft):	54.00
Slope (ft/ft) (Cone Roof):	1.27

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig):	0.03

Meteorological Data used in Emissions Calculations: Miami, Florida (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Mixture/Component	Month	Daily Liquid Surf. Temperatures (deg F) Avg.	Min.	Max.	Liquid Bulk Temp. (deg F)	Vapor Pressures (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	Jan	73.59	69.37	77.80	75.91	0.0100	0.0088	0.0114	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Feb	74.43	69.94	78.93	75.91	0.0103	0.0089	0.0118	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Mar	76.23	71.60	80.86	75.91	0.0109	0.0094	0.0126	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Apr	78.12	73.22	83.02	75.91	0.0115	0.0099	0.0134	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	May	79.68	75.05	84.31	75.91	0.0121	0.0105	0.0139	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Jun	80.68	76.33	85.04	75.91	0.0125	0.0109	0.0143	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Jul	81.34	76.83	85.86	75.91	0.0127	0.0111	0.0146	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Aug	81.35	77.02	85.68	75.91	0.0127	0.0112	0.0145	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Sep	80.61	76.62	84.60	75.91	0.0125	0.0110	0.0141	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Oct	78.82	74.94	82.69	75.91	0.0118	0.0105	0.0133	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Nov	76.43	72.58	80.28	75.91	0.0110	0.0097	0.0123	130.0000			188.00	Option 5: A=12.101, B=8907
Distillate fuel oil no. 2	Dec	74.32	70.34	78.31	75.91	0.0103	0.0091	0.0116	130.0000			188.00	Option 5: A=12.101, B=8907

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	28.5068	28.3685	34.0344	36.9739	37.3251	34.6212	37.8618	36.1157	31.2016	29.7569	26.8116	27.2443
Vapor Space Volume (cu ft):	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002
Vapor Space Expansion Factor:	0.0277	0.0298	0.0307	0.0326	0.0305	0.0284	0.0295	0.0281	0.0257	0.0249	0.0248	0.0259
Vented Vapor Saturation Factor:	0.9864	0.9860	0.9852	0.9843	0.9836	0.9831	0.9827	0.9827	0.9831	0.9840	0.9851	0.9861
Tank Vapor Space Volume												
Vapor Space Volume (cu ft):	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448	147,537.0448
Tank Diameter (ft):	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000
Vapor Space Outage (ft):	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000
Tank Shell Height (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Average Liquid Height (ft):	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000	32.0000
Roof Outage (ft):	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000
Roof Outage (Cone Roof)												
Roof Outage (ft):	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000
Roof Height (ft):	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000	54.0000
Roof Slope (ft/ft):	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700	1.2700
Shell Radius (ft):	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000	42.5000
Vapor Density												
Vapor Density (lb/cu ft):	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Daily Avg. Liquid Surface Temp. (deg. R):	533.2556	534.1039	535.9009	537.7905	539.3510	540.3530	541.0146	541.0194	540.2777	538.4877	536.1033	533.9923
Daily Average Ambient Temp. (deg. F):	67.2000	68.4500	71.6500	75.1000	78.7000	81.3500	82.6000	82.8500	81.8500	78.3000	73.5500	69.1000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817	535.5817
Tank Paint Solar Absorptance (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,122.1840	1,344.2730	1,633.9405	1,910.5999	1,893.1501	1,771.0011	1,854.1259	1,775.7602	1,551.1330	1,381.3936	1,162.1600	1,048.2601
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0277	0.0298	0.0307	0.0326	0.0305	0.0284	0.0295	0.0281	0.0257	0.0249	0.0248	0.0259
Daily Vapor Temperature Range (deg. R):	16.8616	17.9907	18.5056	19.6065	18.5154	17.4300	18.0416	17.3086	15.9514	15.5034	15.3959	15.9337
Daily Vapor Pressure Range (psia):	0.0027	0.0029	0.0031	0.0035	0.0034	0.0033	0.0035	0.0034	0.0030	0.0028	0.0026	0.0026
Breather Vent Press. Setting Range(psia):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0088	0.0089	0.0094	0.0099	0.0105	0.0109	0.0111	0.0112	0.0110	0.0105	0.0097	0.0091
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0114	0.0118	0.0126	0.0134	0.0139	0.0143	0.0146	0.0145	0.0141	0.0133	0.0123	0.0116
Daily Avg. Liquid Surface Temp. (deg R):	533.2556	534.1039	535.9009	537.7905	539.3510	540.3530	541.0146	541.0194	540.2777	538.4877	536.1033	533.9923
Daily Min. Liquid Surface Temp. (deg R):	529.0402	529.6062	531.2745	532.8889	534.7222	535.9955	536.5042	536.6922	536.2899	534.6119	532.2543	530.0089
Daily Max. Liquid Surface Temp. (deg R):	537.4710	538.6016	540.5273	542.6921	543.9799	544.7105	545.5250	545.3465	544.2656	542.3636	539.9523	537.9758
Daily Ambient Temp. Range (deg. R):	16.0000	16.1000	14.9000	14.6000	13.2000	12.5000	12.8000	12.3000	11.9000	12.4000	13.7000	15.2000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9864	0.9860	0.9852	0.9843	0.9836	0.9831	0.9827	0.9827	0.9831	0.9840	0.9851	0.9861
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Vapor Space Outage (ft):	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000	26.0000

TANKS 4.0
Emissions Report - Detail Format
Detail Calculations (AP-42)- (Continued)

Working Losses (lb):	62.8739	64.5641	68.2775	72.3834	75.9366	78.2979	79.8923	79.9038	78.1182	73.9525	68.7073	64.3396
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0100	0.0103	0.0109	0.0115	0.0121	0.0125	0.0127	0.0127	0.0125	0.0118	0.0110	0.0103
Net Throughput (gal/mo.):	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000	2,025,000.000
	0	0	0	0	0	0	0	0	0	0	0	0
Annual Turnovers:	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526	17.0526
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000	1,425,000.000
	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Liquid Height (ft):	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000	36.0000
Tank Diameter (ft):	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000	85.0000
Working Loss Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	91.3807	92.9326	102.3119	109.3573	113.2616	112.9190	117.7541	116.0195	109.3198	103.7094	95.5189	91.5839

TANKS 4.0
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January , February , March , April , May , June , July , August , September , October , November , December

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	867.25	388.82	1,256.07

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