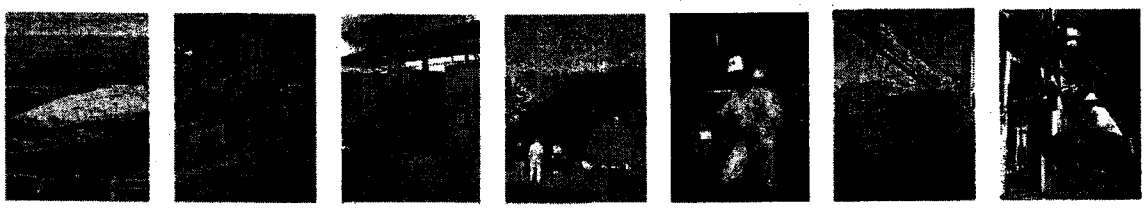
EXHIBIT E
Part 1

EXHIBIT E
Part 1

SCS ENGINEERS



CLASS I-B OPERATING PERMIT
SIGNIFICANT REVISION
LOCKWOOD LANDFILL
STOREY COUNTY, NEVADA

Presented to:

Waste Management of Nevada, Inc.

100 Vassar Street
Reno, Nevada 89520

Presented by:

SCS ENGINEERS
3900 Kilroy Airport Way, Suite 100
Long Beach, California
(562) 426-9544

September 2010
File No. 01201097.00

Offices Nationwide
www.scsengineers.com

Class I-B Operating Permit
Class I Operating Permit
Significant Revision Application
Lockwood Landfill
Storey County, Nevada

Presented To:

Waste Management of Nevada, Inc.
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Reno, Nevada 89520

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The following information is provided for the Lockwood Landfill (Lockwood) in support of a Class I-B Operating Permit (Title V) Significant Revision for the installation of three landfill gas (LFG)-fired engines. The information is provided in the order corresponding to the application certification of content. Note that the NDEP application is broken down into appendices. SCS will reference the appendix that is in the NDEP application as applicable.

GENERAL COMPANY INFORMATION

The general company information form is provided in Section 1 of this application.

EMISSION UNIT APPLICATION FORMS

The emission unit application forms which is referenced as Appendix 1 in the NDEP application packet as well as the emission unit specific requirements tables which is referenced as Section 8 in the NDEP application packet are located in Section 2 for the following emission units:

Combustion Sources:

- 17.82 MMBtu/hr Internal Combustion (IC) Engine (LFG ENG-01)
- 17.82 MMBtu/hr IC Engine (LFG ENG-02)
- 17.82 MMBtu/hr IC Engine (LFG ENG-03)

INSIGNIFICANT EMISSIONS UNIT INFORMATION

There are no insignificant emissions units associated with this application; therefore, no information is included per Appendix 2 of the NDEP application packet. Note insignificant emissions are associated with the facility-wide emissions, which are shown in Table 1 with supporting tables.

FACILITY-WIDE APPLICABLE REQUIREMENTS

The facility-wide applicable requirements Table 1 that is referenced in Appendix 3 of the NDEP application packet is located in Section 3.

STREAMLINING AND SHIELD ALLOWANCE

The streamlining proposal for the IC engines can be found in Section 4.

FACILITY-WIDE POTENTIAL TO EMIT TABLES

The facility-wide potential to emit and insignificant emissions are provided in Table 1 and Table 2 as referenced in Appendix 5 of the NDEP application packet and is located in Section 5.

DETAILED EMISSIONS CALCULATIONS

The detailed emission calculations for the IC engines are located in Section 2. In addition, the manufacturer's specifications for the IC engines can be found in Section 2. As defined by Nevada Administrative Code (NAC) 445B.094, the facility is considered a major source since the facility has the potential to emit more than 100 tons per year (tpy) or more of any regulated air pollutant, excluding particulate matter more than 10 microns in diameter; or 10 tpy or more of a hazardous air pollutant (HAP) or 25 tpy or more of any combination of HAPs or a lesser quantity.

- **Nitrogen Oxides (NOx).** The application represents an increase in NOx such that the site-wide total is less than 100 tpy; therefore, the facility is not a major source for NOx. The proposed IC engines emissions estimated are approximately 38.81 tpy of NOx; an increase from the existing site-wide estimate of 43.51 tpy to a total of 82.32 tpy. This total and increase is less than the federal prevention of significant deterioration (PSD) trigger level of 250 tpy. An environmental evaluation that includes modeling is required to meet compliance with the NAC 445B.310, which states that modeling must be performed if the proposed modification has the potential to emit greater than 10 tons of a regulated air pollutant per year. Air Quality Modeling is also required to show compliance with the National Ambient Air Quality Standards (NAAQS) and Nevada Ambient Air Quality Standards (AAQS). The results of the modeling will be submitted under separate cover. The results of the modeling, which included the IC engines, demonstrated that NOx emissions from all sources at the landfill neither cause nor contribute to a violation of either Nevada or National AAQS.

- **Non-Methane Organic Compounds (NMOCs)/Volatile Organic Compounds (VOCs).** The application represents an increase in VOCs such that the site-wide total is more than 100 tpy; therefore, the facility is a major source for VOCs. The application represents an increase in VOCs of approximately 11.23 tpy; an increase from the existing site-wide estimate of 102.75 tpy to a total of 113.98 tpy. The application represents an increase in NMOCs of approximately 11.23 tpy from the IC engines; an increase from the existing site-wide estimate of 251.1 tpy to a total of 262.32 tpy. Although there is no ambient standard for VOCs, modeling was performed as required by the Nevada Division of Environmental Protection (NDEP). VOCs are not modeled under PSD, and fugitive VOCs from LFG surface emissions are not counted toward PSD applicability as long as the site is not major for other pollutants. No modeling is required for NMOCs as no ambient standards exist and fugitive NMOCs are also not counted toward PSD applicability. The results of the modeling will be submitted under separate cover. The results of the modeling, which included the IC engines, demonstrated that VOC emissions neither cause nor contribute to a violation of either Nevada or National AAQS and ozone impacts were below acceptable levels.

- **Carbon Monoxide (CO).** The facility is already a major source for CO since the facility-wide emissions are greater than 100 tpy. The proposed IC engines emissions

estimated are approximately 252.28 tpy of CO; an increase of from the existing site-wide estimate of 112.95 to a total of 365.23 tpy. Refuse, Inc. (RI) requests that each air pollution control device (i.e. flare and IC engines), be permitted to their maximum capacity, 63 MMBtu/hr and 17.82 MMBtu/hr per engine, respectively and 100% load. However, if all control devices were operating concurrently at full capacity, emissions will trigger federal PSD requirements, which would delay and likely jeopardize this renewable energy project. As such, a facility-wide cap is proposed to create a synthetic minor facility under PSD. Under this capped scenario, the LFG-to-energy (LFGTE) facility and flare could operate in any configuration as long as emissions remained at 249 tpy or less. If the LFGTE facility was offline for maintenance or scheduled downtime, the flare would operate as the main air pollution control device, or vice-versa. Since the amount of LFG is limited, both the flare and engines could not operate at full capacity. Modeling is triggered under the provisions of NAC 445B.310. Air Quality Modeling is also required to meet compliance with the NAAQS and AAQS. The results of the modeling will be submitted under separate cover. The results of the modeling, which included the IC engines, demonstrated that CO emissions neither cause nor contribute to a violation of either Nevada or National AAQS. Please note that CO emissions from the landfill (approximately 5.38 tpy) that were included in the approved July 21, 2008 emissions spreadsheet were not included in the modeling, as the emissions are considered fugitive. These emissions would only occur in the event of a landfill fire and we do not assume that the Lockwood Landfill is perpetually on fire because landfill fires are rare and in some cases, never occur.

- **Sulfur Oxides (SOx).** The application represents an increase in SOx such that the site-wide total is more than 100 tpy; therefore the facility is a major source for SOx. The proposed IC engines emissions estimated is approximately 38.56 tpy of SOx; an increase of from the existing site-wide estimate of 88.68 tpy to a total of 127.24 tpy. This increase is less than the PSD trigger level of 250 tpy. Modeling is triggered under the provisions of NAC 445B.310. Air Quality Modeling is also required to meet compliance with the NAAQS and AAQS. The results of the modeling will be submitted under separate cover. The results of the modeling, which included the IC engines, demonstrated that SOx emissions neither cause nor contribute to a violation of either Nevada or National AAQS.

- **Particulate Matter Less Than 10 Microns (PM-10).** The application represents an increase in PM-10 and PM emissions of 6.47 tpy per each pollutant since the PM emissions from the IC engines are due to combustion and thus all PM-10. This brings the total non-fugitive PM-10 and PM emissions to 21.89 tpy and 25.79 tpy, respectively. The facility is not considered a major source for PM-10 because the facility is not located in a "serious" non-attainment area as defined in NAC 445B.094(3). Modeling is triggered for PM-10 under the provisions of NAC 445B.310. Air Quality Modeling is required to meet compliance with the NAAQS and AAQS. The results of the modeling will be submitted under separate cover. The results of the modeling, which included the IC engines, demonstrated that PM-10

emissions neither cause nor contribute to a violation of either Nevada or National AAQS.

A summary of facility-wide emission estimates from the approved NDEP spreadsheet with the additional IC engine emissions, and a revised facility-wide summary for this application is provided in Table 3 in Section 5. This application has fulfilled the requirements under NAC 445B.308 to 445B.313.

The new LFGTE facility will be subject to 40 Code of Federal Regulations (CFR) 60, Subpart WWW "New Source Performance Standards (NSPS)" and National Emission Standards for Hazardous Air Pollutants (NESHAP) Part 63, Subpart AAAA for MSW landfills. Examples of permits that incorporate LFG engines into an NSPS can be provided to NDEP upon request. However, please note that the facility will likely seek a treatment exemption which would avoid NSPS and NESHAP requirements for the engines. The facility would demonstrate that the LFG consumed in the LFGTE facility meets the treatment requirements of 40 CFR 60.752(b)(2)(iii)(C) and that the LFG treated in this manner is not subject to the requirements of Subpart WWW or NESHAP for MSW landfills.

EMISSIONS CAP INFORMATION

RI requests a federally enforceable emissions cap; therefore, information required under Appendix 7 of the NDEP application packet can be found in Section 6.

PROCESS NARRATIVE, PROCESS FLOW DIAGRAM, PLOT PLAN, MAP, DUST CONTROL PLAN

A narrative description is required for the new source at the facility. The following is the narrative description including descriptions of all emissions of any regulated air pollutants for which the source is defined as major, and a description of all emissions of regulated air pollutants from all emission units.

The primary function of the Lockwood Landfill is for the disposal of municipal solid waste (MSW) and other wastes, which are brought to the landfill under contract to Waste Management of Nevada, Inc. (WM).

The majority of these vehicles deliver MSW to the main portion of the landfill where it is deposited and covered with cover soils. Microbial degradation of this buried refuse generates potential LFG emissions (LFG-01), containing NMOCs, VOCs, and HAPs. These emissions are both fugitive and non-fugitive. The emissions will be controlled by a gas collection and control system (GCCS) which includes the following:

- A system of vertical wells (54 wells estimated);
- A number of horizontal collectors (2 collectors estimated);
- A system of lateral piping which connects the vertical wells and horizontal collectors to a main header system;

- A main collection header which transports LFG to the blower/flare station and LFGTE facility;
- A blower/flare station which includes of a 64 MMBtu/hr candlestick flare;
- A LFGTE facility which includes three (3) 17.82 MMBtu/hr IC engines; and
- A condensate collection system

Emissions from the landfill will be controlled with 98% efficiency or 20 parts per million by volume (ppmv) as hexane at 3% oxygen, as an outlet concentration by the flare and IC engines. The amounts of NMOCs/VOCs generated by the landfill are reduced after it goes through the flare and/or IC engines.

Appendix 8 of the NDEP application packet also requires process flow diagrams, a plot plan, topographic map, and a dust control plan. The process flow diagram for can be found in Section 7. The plot plan including a topographic map can be found in Section 8. The dust control plan was submitted to NDEP during the permit renewal process and was received September 11, 2007.

ENVIRONMENTAL EVALUATION AND DISPERSION MODELING FILES

The modeling for the facility will be submitted under separate cover. The results of the modeling, which included the flare and proposed IC engines, demonstrated that emissions from landfilling activities neither cause nor contribute to a violation of either Nevada or National AAQS.

APPLICATION CERTIFICATION

The application certification and checklist are provided in Section 9.

The site is exempted from the requirements of Compliance Assurance Monitoring (CAM) based on 40 CFR 64.2(b)(i), which states that the requirements of this part shall not apply to emission limitations or standard proposed by the Administrators after November 15, 1990 pursuant to section 111 or 112 of the Clean Air Act. Section 111 includes the NSPS for MSW landfill to which the site is subject, the reason the flare was installed and the engines will provide more control, and which was promulgated on March 12, 1996 (after November 1990).

The compliance plan/certification under required under NAC 445B.3368.2.(h) can be found in Section 9.

ADDITIONAL INFORMATION REQUESTED BY THE DIRECTOR

NDEP had noted that No additional information has been requested by the Director at this time; however a copy of the modeling protocol submitted under separate cover has been provided in this application in Section 10.

SECTION 1

GENERAL COMPANY INFORMATION

GENERAL COMPANY INFORMATION

All applicants shall complete each item or explain in the space provided why no information is needed. Please specify "N/A" (Not Applicable) if necessary. The application will be returned to the applicant if it is deemed incomplete.

1. **COMPANY NAME AND ADDRESS THAT ARE TO APPEAR ON THE OPERATING PERMIT** [NAC 445B.295.1]:

Refuse, Inc.
(Name)

2401 Canyon Way
(Address)

Sparks (City) Nevada (State) 89434 (Zip Code)

2. Owner's Name and Address [NAC 445B.295.1]:

Waste Management of Nevada, Inc.
(Name)

100 Vassar Street
(Address)

Reno (City) Nevada (State) 89520 (Zip Code)

3. Source Name and Mailing Address, if different from #1 [NAC 445B.295.1]:

Lockwood Regional Landfill
(Name)

2401 Canyon Way
(Address)

Sparks (City) Nevada (State) 89434 (Zip Code)

4. Name and Address of Owner's Agent [NAC 445B.295.1]

(Name)

(Address)

(City) (State) (Zip Code)

5. Physical Location of Stationary Source [NAC 445B.295.8]: (if no physical address, describe location, e.g., 4 miles south of I-80 at xx Interchange)

2401 Canyon Way, Sparks, Nevada 89434

Township(s) 19N Range(s) 21E Section(s) 22-23, 26-27

GENERAL COMPANY INFORMATION (CONTINUED)

6. Plant Manager or Other Appropriate Contact [NAC 445B.295.1]:

William Carr — District Manager
(Name) (Title)

2401 Canyon Way
(Address)

Sparks — Nevada — 89434
(City) (State) (Zip Code)

(775) 342-0401 — (775) 342-0101 — wcarr@wm.com
(Telephone #) (FAX #) (E-mail address)

7. Responsible Official Name, Title and Address [NAC 445B.295.1]:

William Carr — District Manager
(Name) (Title)

2401 Canyon Way
(Address)

Sparks — Nevada — 89434
(City) (State) (Zip Code)

(775) 342-0401 — (775) 342-0101 — wcarr@wm.com
(Telephone #) (FAX #) (E-mail address)

8. If records required under the operating permit will be kept at a location other than the source, specify that location [NAC 445B.295.7].

(Name)

(Address)

(City) (State) (Zip Code)

GENERAL COMPANY INFORMATION (CONTINUED)

9. This application is submitted for (please check appropriate boxes below):

☐ **A new Class I Operating Permit**

☐ This application is for a source subject to PSD requirements (40 CFR § 52.21).

☐ This application is for a source subject to the following NSPS requirements (40 CFR § 60):

_____

_____

_____

☐ This application is for a source subject to the following NESHAP requirements (40 CFR § 63):

_____

_____

_____

☒ **A significant modification of an existing Class I Operating Permit**

☐ This application is for a source subject to PSD requirements (40 CFR § 52.21).

☒ This application is for a source subject to the following NSPS requirements (40 CFR § 60):

40 CFR 60.1-60.19	40 CFR 60 Subpart WWW
40 CFR 61.01-61.19	40 CFR 60 Subpart JJJJ
40 CFR 60.140-60.157	

☒ This application is for a source subject to the following NESHAP requirements (40 CFR § 63):

40 CFR 63.1-63.15	
40 CFR 63 Subpart AAAA	

_____

☐ **The renewal of an existing Class I Operating Permit**

☐ This application is for a source subject to PSD requirements (40 CFR § 52.21).

☐ This application is for a source subject to the following NSPS requirements (40 CFR § 60):

_____

_____

_____

☐ This application is for a source subject to the following NESHAP requirements (40 CFR § 63):

_____

_____

_____

10. The application must contain, if applicable:
    a. For a proposed new major source, or a proposed significant modification to an existing stationary source which is not subject to the provisions of 40 CFR §52.21, include all information as required by NAC 445B.308 to 445B.313, inclusive [NAC 445B.3368.3(b)].
    b. For stationary sources subject to the provisions regarding new source review set forth in 42 USC §§7501 - 7515, inclusive (nonattainment areas), all information required by 42 USC §7503 [NAC 445B.3363.2(b)(3)].
    c. For a proposed new major source or a proposed significant modification to an existing stationary source that is subject to the provisions of 40 CFR §52.21, include all information required by 40 CFR §52.21 [NAC 445B.3368.3(a)].
    d. For a proposed new major source or a proposed significant modification to an existing stationary source which is subject to the requirements of 42 USC §7412 regarding hazardous air pollutants, include all information required by NAC 445B.308 to 445B.313, inclusive [NAC 445B.3368.3(c)].

11. Will the construction occur in more than one phase? ☐ Yes ☒ No

12. If the construction will occur in more than one phase, please provide the projected date of the commencement for each phase of construction:

    Phase 1: _____

    Phase 2: _____

    Phase 3: _____

13. For a new source or modification of a stationary source, provide a Compliance Assurance Monitoring (CAM) plan for all emission units subject to the monitoring requirements of 40 CFR Part 64. For significant revisions provide a CAM plan for those emission units for which a significant revision to the operating permit is requested and which is required pursuant to the monitoring requirements of 40 CFR Part 64. If a CAM plan is not required, provide an explanation. [NAC 445B.295.8]

14. Compliance Plan/Certification
    a. Attach a compliance plan, signed by the responsible official, that contains the following with respect to all applicable requirements:
        (1) A narrative description of the compliance status of the stationary source with respect to all applicable requirements. [NAC 445B.3368.2(h)(1)]
        (2) A compliance certification by a responsible official stating that the stationary source will comply in a timely manner with any new applicable requirements that become effective during the operating permit term. Include a description of the test methods and the requirements for monitoring, enhanced monitoring, recordkeeping and reporting that will be used to comply with the new applicable requirements, fuel use, the rate of production, raw materials, and operating schedules which are used to determine the compliance status of the stationary source. [NAC 445B.3368.2(h)(2)]
        (3) If the stationary source is not in compliance with any applicable requirements at the time the operating permit is issued, include a narrative description and a proposed schedule for achieving compliance which includes remedial measures, an enforceable sequence of actions with milestones, and a schedule to submit certified progress reports every six months. This schedule must be at least as stringent as that contained in any consent decree rendered by a federal court, a court of this state, or an administrative order which applies to the stationary source. [NAC 445B.3368.2(h)(3))III)]
    b. A schedule for submission of compliance certifications during the term of the operating permit, to be submitted annually or more frequently to the Bureau of Air Pollution Control. [NAC 445B.3368.2(i)(3)]

15. **Application Submittal:**
    Please remove the cover page, Table of Contents and General Information page and all Attachments of the application packet. Submit the remainder of the application packet as your formal application. This should consist of, at a minimum, the Class I-B Application cover page, the general Company Information, and Appendices 1 through 10.

SECTION 2

EMISSION UNIT APPLICATION FORM AND EMISSION UNIT SPECIFIC REQUIREMENTS

DETAILED EMISSIONS CALCULATIONS

MANUFACTURER'S SPECIFICATIONS

COMBUSTION EQUIPMENT
APPLICATION FORM
CLASS I-B

9Check here if this is an alternative operating scenario

Section 1 - Equipment Description

a. Type of equipment Internal Combustion Engine

b. Standard Industrial Classification (SIC) Code 4931

c. Manufacturer of equipment Caterpillar

d. Model number G3520C Serial number TBD *Equip. number _____

e. Date equipment manufactured: 2010

f. Please check one: ☐ Temporary (At the same location for less than 12 months)
☒ Stationary (At the same location for more than 12 months)

g. Please check if portable: ☐ Portable (transportable or movable within the confines of the stationary source)

h. UTM Coordinates 4374524 meters N; 274836 meters E; Zone 11
(Please specify NAD 27 ☒ or NAD 83 ☐)

i. Basic equipment dimensions (feet): L 21.17 W 6.58 H 8.08

* The equipment number is the facility's own numbering system for this piece of equipment.

Section 2 - Design Rate/Operating Parameters

a. **Maximum** design horsepower **OUTPUT** (horsepower per hour) 2,233
(Please provide for internal combustion engines only)

b. **Maximum** design heat **INPUT** (million Btu per hour) _____
(Please provide for all combustion units except for internal combustion engines)

c. *Requested operating time: time of day _____ to _____

Hours per day 24 Days per year 365 Hours per year 8,760

*Note: Please complete if other than the maximum hours of operation (24 hours per day, 8760 hours per year), are being requested. The permit will be limited to these values.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 3 - Fuel Usage

Type of Fuel	Amount Used Per Hour	Heat Content (specify in Btu's)	Ash Content (% by weight)	Sulfur Content (% by weight)	Trace Elements (% by weight)
Oil- Specify Type(s)	N/A				
	gallons				
	gallons				
Gasoline	N/A gallons				
Propane	gallons/cubic feet				
Natural Gas	N/A cubic feet				
*Waste Oil	N/A gallons				
Other - Landfill Gas	35,280 cubic feet	17.82 MMBtu/hr	N/A	0.05	N/A

Type of Fuel	Amount Used Per Hour (tons)	Heat Content (specify in Btus)	Ash Content (% by weight)	Sulfur Content (% by weight)	Trace Elements (% by weight)	Percent moisture	Percent volatile matter	Percent fixed carbon
Coal - Specify Type(s)	N/A							

If more than one type of fuel is combusted, under this operating scenario, please specify primary fuel and percentage on a maximum hourly and annual basis. If fuel blending is the primary fuel, identify percentages of each fuel blended. Attach additional information to this form if necessary.

*Firing of waste oil will require multi-metals test to ensure fuel is non-hazardous.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 4 - Pollution Control Equipment/Exhaust Stack Parameters. This section *must* be completed.

-Complete for emissions exhausting through a stack, chimney or vent: (baghouse, wet scrubber, cyclone, low NO_x burner, no control, etc.)

	Control #1	Control #2
Type of Control: (Specify "uncontrolled" if no pollution control device is installed)	Internal Combustion Engine	
Pollutant(s) Controlled	Landfill Gas including NMOCs, VOCs, and HAPs	
Manufacturer	Caterpillar	
Manufacturer's Guarantee (see Note 1)	0.60 g/bhp-hr for NOx and 3.9 g/bhp-hr for CO	
Stack height (feet from ground level)	37 feet 8 inches	
Stack inside diameter (feet)	15.5 inches	
Temperature (°F) at design capacity	898 (exhaust)	
Stack exit velocity (feet per second)	165	
Gas volume flow rate: actual cubic feet per minute	12,476 ±6% (wet) (exhaust) or 4,307 scfm @ 9% oxygen (dry) (exhaust)	
Gas volume flow rate: dry standard cubic feet per minute	588	
Unusual stack characteristics (e.g., raincap, horizontal discharge)	None	

Note 1: Manufacturer's guarantee of control efficiency must be attached to this form if the control efficiency claimed is greater than the control efficiency ratings provided in the Bureau of Air Pollution Control's Emissions Control Technology - Control Efficiency Ratings provided in Attachment 4.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 5 - Identify and Describe Compliance Monitoring Devices or Activities (attach additional pages if necessary)

(Eg., Emissions from this unit will be monitored by CEMS for NO_x and CO. Emissions for all other pollutants will be monitored periodically by annual stack test, daily opacity readings using Method 9 with weekly O&M baghouse checks and daily ΔP readings.)

The LFGTE facility will be equipped with a single device that records flow. Flow can then be calculated, if necessary, to each engine using a ratio based on total flow and the power output to each engine. The IC engine will meet the emission limits of 40 CFR 60 Subpart JJJJ and maintain and operate the engines in a manner consistent with good air pollution control practices and perform an initial performance test to demonstrate compliance.

Section 6 - Identify and Describe Work Practice Standards, Etc. (attach additional pages if necessary

(Eg., 1. At all times, including startup, shutdown and malfunction, the emission unit will be operated in a manner consistent with good air pollution control practices.
2. Water spray nozzles will be checked to verify proper operation and adequate water flow is present.)

The IC engine will be installed, calibrated, maintained and operated in accordance with manufacturer's specifications as well as in a manner consistent with good air pollution control practices.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 7 - Requested Emission Limits

Pollutant	Potential to Emit (pounds/hour*)	Potential to Emit (tons/year)	Calculation (including reference) on Which Emissions Information is Based (attach supporting information if necessary)
Total Particulate Matter (PM)	0.49	2.16	See Attached, Table 2
Particulates as PM_{10}	0.49	2.16	See Attached, Table 2
Sulfur Dioxide	2.93	12.85	See Attached, Table 2
Carbon Monoxide	19.20	84.09	See Attached, Table 2
Oxides of Nitrogen	2.95	12.94	See Attached, Table 2
Volatile Organic Compounds	0.85	3.74	See Attached, Table 2
Lead	N/A	N/A	
Hydrogen Sulfide	5.12E-06	4.48E-02	See Attached, Table 2
Hazardous Air Pollutants (Specify Each Pollutant[1])			
1,1,1-Trichloroethane	3.80E-08	3.33E-04	See Attached, Table 2
1,1,2,2 - Tetrachloroethane	3.23E-09	2.83E-05	See Attached, Table 2
1,1-Dichloroethane	8.06E-07	7.06E-03	See Attached, Table 2
1,1-Dichloroethene	7.90E-09	6.92E-05	See Attached, Table 2
1,2-Dichloroethane	1.57E-08	1.38E-04	See Attached, Table 2
Acrylonitrile	8.45E-09	7.40E-05	See Attached, Table 2
Benzene	1.81E-07	1.59E-05	See Attached, Table 2
Carbon Disulfide	1.55E-07	1.36E-03	See Attached, Table 2
Carbon Tetrachloride	3.95E-09	3.46E-05	See Attached, Table 2
Carbonyl Sulfide	7.00E-08	6.13E-04	See Attached, Table 2
Chlorobenzene	3.61E-09	3.16E-05	See Attached, Table 2
Chloroethane	8.11E-08	7.11E-04	See Attached, Table 2
Chloroform	1.19E-08	1.04E-04	See Attached, Table 2
Dichlorobenzene	1.24E-08	1.08E-04	See Attached, Table 2
Dichloromethane	1.85E-06	1.62E-02	See Attached, Table 2
Ethylbenzene	1.07E-06	9.36E-03	See Attached, Table 2
Ethylene Dibromide	3.62E-09	3.17E-05	See Attached, Table 2
Hexane	1.28E-06	1.12E-02	See Attached, Table 2
Mercury	5.51E-09	4.83E-05	See Attached, Table 2
Methyl Ethyl Ketone	4.85E-06	4.52E-02	See Attached, Table 2
Methyl Isobutyl Ketone	4.78E-07	4.19E-03	See Attached, Table 2
Perchloroethylene	3.39E-07	2.97E-03	See Attached, Table 2

Toluene	1.03E-05	9.05E-02	See Attached, Table 2
Trichloroethylene	1.04E-07	9.15E-04	See Attached, Table 2
Vinyl Chloride	3.49E-09	3.06E-05	See Attached, Table 2
Xylenes	4.47E-06	3.91E-02	See Attached, Table 2
Other Regulated Pollutants (Specify[2])			
Non-Methane Organic Compounds (NMOCs)	0.85	3.74	See Attached, Table 2

*Note: Alternative emissions limitations (e.g., lb/MMBtu, ppm, grains/dscf) may be requested by the applicant. If alternative emissions limitations are requested, please clearly describe the units in column 2 of Section 5 above.
[1]A list of Hazardous Air Pollutants is contained in Attachment 4.
[2]Other Regulated Pollutants include any Class I or Class II substance subject to a standard adopted pursuant to 42 U.S.C. SS 7671-8671q, inclusive

COMBUSTION EQUIPMENT
APPLICATION FORM
CLASS I-B

9Check here if this is an alternative operating scenario

Section 1 - Equipment Description

a. Type of equipment Internal Combustion Engine

b. Standard Industrial Classification (SIC) Code 4931

c. Manufacturer of equipment Caterpillar

d. Model number G3520C Serial number TBD *Equip. number _____

e. Date equipment manufactured: 2010

f. Please check one: ☐ Temporary (At the same location for less than 12 months)
☒ Stationary (At the same location for more than 12 months)

g. Please check if portable: ☐ Portable (transportable or movable within the confines of the stationary source)

h. UTM Coordinates 4374524 meters N; 274836 meters E; Zone 11
(Please specify NAD 27 ☒ or NAD 83 ☐)

i. Basic equipment dimensions (feet): L 21.17 W 6.58 H 8.08

* The equipment number is the facility's own numbering system for this piece of equipment.

Section 2 - Design Rate/Operating Parameters

a. **Maximum** design horsepower **OUTPUT** (horsepower per hour) 2,233
(Please provide for internal combustion engines only)

b. **Maximum** design heat **INPUT** (million Btu per hour) _____
(Please provide for all combustion units except for internal combustion engines)

c. *Requested operating time: time of day _____ to _____

Hours per day 24 Days per year 365 Hours per year 8,760

*Note: Please complete if other than the maximum hours of operation (24 hours per day, 8760 hours per year), are being requested. The permit will be limited to these values.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 3 - Fuel Usage

Type of Fuel	Amount Used Per Hour	Heat Content (specify in Btu's)	Ash Content (% by weight)	Sulfur Content (% by weight)	Trace Elements (% by weight)
Oil- Specify Type(s)	N/A				
	gallons				
	gallons				
Gasoline	N/A gallons				
Propane	gallons/cubic feet				
Natural Gas	N/A cubic feet				
*Waste Oil	N/A gallons				
Other - Landfill Gas	35,280 cubic feet	17.82 MMBtu/hr	N/A	0.05	N/A

Type of Fuel	Amount Used Per Hour (tons)	Heat Content (specify in Btus)	Ash Content (% by weight)	Sulfur Content (% by weight)	Trace Elements (% by weight)	Percent moisture	Percent volatile matter	Percent fixed carbon
Coal - Specify Type(s)	N/A							

If more than one type of fuel is combusted, under this operating scenario, please specify primary fuel and percentage on a maximum hourly and annual basis. If fuel blending is the primary fuel, identify percentages of each fuel blended. Attach additional information to this form if necessary.

*Firing of waste oil will require multi-metals test to ensure fuel is non-hazardous.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 4 - Pollution Control Equipment/Exhaust Stack Parameters. This section *must* be completed.

-Complete for emissions exhausting through a stack, chimney or vent: (baghouse, wet scrubber, cyclone, low NO_x burner, no control, etc.)

	Control #1	Control #2
Type of Control: (Specify "uncontrolled" if no pollution control device is installed)	Internal Combustion Engine	
Pollutant(s) Controlled	Landfill Gas including NMOCs, VOCs, and HAPs	
Manufacturer	Caterpillar	
Manufacturer's Guarantee (see Note 1)	0.60 g/bhp-hr for NOx and 3.9 g/bhp-hr for CO	
Stack height (feet from ground level)	37 feet 8 inches	
Stack inside diameter (feet)	15.5 inches	
Temperature (°F) at design capacity	898 (exhaust)	
Stack exit velocity (feet per second)	165	
Gas volume flow rate: actual cubic feet per minute	12,476 ±6% (wet) (exhaust) or 4,307 scfm @ 9% oxygen (dry) (exhaust)	
Gas volume flow rate: dry standard cubic feet per minute	588	
Unusual stack characteristics (e.g., raincap, horizontal discharge)	None	

Note 1: Manufacturer's guarantee of control efficiency must be attached to this form if the control efficiency claimed is greater than the control efficiency ratings provided in the Bureau of Air Pollution Control's Emissions Control Technology - Control Efficiency Ratings provided in Attachment 4.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 5 - Identify and Describe Compliance Monitoring Devices or Activities (attach additional pages if necessary)

(Eg., Emissions from this unit will be monitored by CEMS for NO_x and CO. Emissions for all other pollutants will be monitored periodically by annual stack test, daily opacity readings using Method 9 with weekly O&M baghouse checks and daily ΔP readings.)

The LFGTE facility will be equipped with a single device that records flow. Flow can then be calculated, if necessary, to each engine using a ratio based on total flow and the power output to each engine. The IC engine will meet the emission limits of 40 CFR 60 Subpart JJJJ and maintain and operate the engines in a manner consistent with good air pollution control practices and perform an initial performance test to demonstrate compliance.

Section 6 - Identify and Describe Work Practice Standards, Etc. (attach additional pages if necessary

(Eg., 1. At all times, including startup, shutdown and malfunction, the emission unit will be operated in a manner consistent with good air pollution control practices.
2. Water spray nozzles will be checked to verify proper operation and adequate water flow is present.)

The IC engine will be installed, calibrated, maintained and operated in accordance with manufacturer's specifications as well as in a manner consistent with good air pollution control practices.

COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

Section 7 - Requested Emission Limits

Pollutant	Potential to Emit (pounds/hour*)	Potential to Emit (tons/year)	Calculation (including reference) on Which Emissions Information is Based (attach supporting information if necessary)
Total Particulate Matter (PM)	0.49	2.16	See Attached, Table 2
Particulates as PM_{10}	0.49	2.16	See Attached, Table 2
Sulfur Dioxide	2.93	12.85	See Attached, Table 2
Carbon Monoxide	19.20	84.09	See Attached, Table 2
Oxides of Nitrogen	2.95	12.94	See Attached, Table 2
Volatile Organic Compounds	0.85	3.74	See Attached, Table 2
Lead	N/A	N/A	
Hydrogen Sulfide	5.12E-06	4.48E-02	See Attached, Table 2
Hazardous Air Pollutants (Specify Each Pollutant[1])			
1,1,1-Trichloroethane	3.80E-08	3.33E-04	See Attached, Table 2
1,1,2,2 - Tetrachloroethane	3.23E-09	2.83E-05	See Attached, Table 2
1,1-Dichloroethane	8.06E-07	7.06E-03	See Attached, Table 2
1,1-Dichloroethene	7.90E-09	6.92E-05	See Attached, Table 2
1,2-Dichloroethane	1.57E-08	1.38E-04	See Attached, Table 2
Acrylonitrile	8.45E-09	7.40E-05	See Attached, Table 2
Benzene	1.81E-07	1.59E-05	See Attached, Table 2
Carbon Disulfide	1.55E-07	1.36E-03	See Attached, Table 2
Carbon Tetrachloride	3.95E-09	3.46E-05	See Attached, Table 2
Carbonyl Sulfide	7.00E-08	6.13E-04	See Attached, Table 2
Chlorobenzene	3.61E-09	3.16E-05	See Attached, Table 2
Chloroethane	8.11E-08	7.11E-04	See Attached, Table 2
Chloroform	1.19E-08	1.04E-04	See Attached, Table 2
Dichlorobenzene	1.24E-08	1.08E-04	See Attached, Table 2
Dichloromethane	1.85E-06	1.62E-02	See Attached, Table 2
Ethylbenzene	1.07E-06	9.36E-03	See Attached, Table 2
Ethylene Dibromide	3.62E-09	3.17E-05	See Attached, Table 2
Hexane	1.28E-06	1.12E-02	See Attached, Table 2
Mercury	5.51E-09	4.83E-05	See Attached, Table 2
Methyl Ethyl Ketone	4.85E-06	4.52E-02	See Attached, Table 2
Methyl Isobutyl Ketone	4.78E-07	4.19E-03	See Attached, Table 2
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*Note: Alternative emissions limitations (e.g., lb/MMBtu, ppm, grains/dscf) may be requested by the applicant. If alternative emissions limitations are requested, please clearly describe the units in column 2 of Section 5 above.
[1]A list of Hazardous Air Pollutants is contained in Attachment 4.
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COMBUSTION EQUIPMENT
APPLICATION FORM
CLASS I-B

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COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

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COMBUSTION EQUIPMENT
APPLICATION FORM
CONTINUED

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APPLICATION FORM
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[1]A list of Hazardous Air Pollutants is contained in Attachment 4.

[2]Other Regulated Pollutants include any Class I or Class II substance subject to a standard adopted pursuant to 42 U.S.C. SS 7671-8671q, inclusive

Table 2. Potential To Emit Emission Source Estimates for Proposed IC Engines
Lockwood Landfill, Storey County, Nevada

CAS	COMPOUNDS[1]	Molecular Weight	Concentration of Compounds Found In LFG[2]	LFG Flow Rate to IC Engine[3] (Uncontrolled)	IC Engine Destruction Efficiency[4]	Hourly Emissions from IC Engine (Controlled)	Daily Emissions from IC Engine (Controlled)	Annual Emissions from IC Engine	Annual Emissions from Three IC Engines	Annual Emissions from Three IC Engines
		g/mol	ppmv	tons/yr	%	lb/hr	lb/day	tons/yr	lb/hr	tons/yr
	Toxic air Contaminants (TACs)									
71-55-6	1,1,1-Trichloroethane* - HAP	133.42	8.88E-02	4.75E-03	93.0%	3.80E-08	9.12E-07	3.33E-04	1.14E-07	9.98E-04
79-34-5	1,1,2,2-Tetrachloroethane* - HAP/VOC	167.85	6.00E-03	4.04E-04	93.0%	3.23E-09	7.75E-08	2.83E-05	9.69E-09	8.49E-05
75-34-3	1,1-Dichloroethane* - HAP/VOC	98.95	2.54E+00	1.01E-01	93.0%	8.06E-07	1.93E-05	7.06E-03	2.42E-06	2.12E-02
75-35-4	1,1-Dichloroethene* - HAP/VOC	96.94	2.54E-02	9.88E-04	93.0%	7.90E-09	1.90E-07	6.92E-05	2.37E-08	2.08E-04
107-06-2	1,2-Dichloroethane* - HAP/VOC	98.96	4.95E-02	1.97E-03	93.0%	1.57E-08	3.77E-07	1.38E-04	4.71E-08	4.13E-04
540-59-0	t-1,2-Dichloroethene - VOC	96.94	2.80E+00	1.09E-01	93.0%	8.70E-07	2.09E-05	7.63E-03	2.61E-06	2.29E-02
67-63-0	2-Propanol (isopropyl alcohol)	60.11	5.00E+01	1.21E+00	86.1%	1.91E-05	4.59E-04	1.68E-01	5.74E-05	5.03E-01
67-64-1	Acetone	58.08	7.00E+00	1.63E-01	86.1%	2.59E-06	6.21E-05	2.27E-02	7.77E-06	6.80E-02
107-13-1	Acrylonitrile* - HAP/VOC	53.06	2.50E-02	5.32E-04	86.1%	8.45E-09	2.03E-07	7.40E-05	2.53E-08	2.22E-04
71-43-2	Benzene* - HAP/VOC	78.11	3.64E-01	1.14E-02	86.1%	1.81E-07	4.35E-06	1.59E-03	5.43E-07	4.76E-03
75-25-2	Bromodichloromethane - VOC	163.83	3.10E+00	2.04E-01	93.0%	1.63E-06	3.91E-05	1.43E-02	4.89E-06	4.28E-02
106-97-8	Butane - VOC	58.12	5.00E+00	1.17E-01	86.1%	1.85E-06	4.44E-05	1.62E-02	5.55E-06	4.86E-02
75-15-0	Carbon disulfide - HAP/VOC	76.13	3.20E-01	9.78E-03	86.1%	1.55E-07	3.72E-06	1.36E-03	4.65E-07	4.08E-03
56-23-5	Carbon tetrachloride* - HAP/VOC	153.84	8.00E-03	4.94E-04	93.0%	3.95E-09	9.47E-08	3.46E-05	1.18E-08	1.04E-04
46-358-1	Carbonyl sulfide - HAP/VOC	60.07	1.83E-01	4.41E-03	86.1%	7.00E-08	1.68E-06	6.13E-04	2.10E-07	1.84E-03
108-90-7	Chlorobenzene* - HAP/VOC	112.56	1.00E-02	4.52E-04	93.0%	3.61E-09	8.66E-08	3.16E-05	1.08E-08	9.49E-05
75-45-6	Chlorodifluoromethane (Freon 22)	86.47	1.30E+00	4.51E-02	93.0%	3.60E-07	8.65E-06	3.16E-03	1.08E-06	9.47E-03
75-00-3	Chloroethane (ethyl chloride)	64.52	3.92E-01	1.02E-02	93.0%	8.11E-08	1.95E-06	7.11E-04	2.43E-07	2.13E-03
67-66-3	Chloroform* - HAP/VOC	119.39	3.10E-02	1.49E-03	93.0%	1.19E-08	2.85E-07	1.04E-04	3.56E-08	3.12E-04
74-87-3	Chloromethane* - VOC	50.49	2.46E-02	4.98E-04	93.0%	3.98E-09	9.56E-08	3.49E-05	1.19E-08	1.05E-04
106-46-7	Dichlorobenzene* - HAP/VOC	147.00	2.62E-02	1.55E-03	93.0%	1.24E-08	2.96E-07	1.08E-04	3.71E-08	3.25E-04
75-71-8	Dichlorodifluoromethane (Freon 12)	120.91	1.80E+01	7.76E-01	93.0%	6.20E-06	1.49E-04	5.43E-02	1.86E-05	1.63E-01
75-43-4	Dichlorofluoromethane (Freon 21) - VOC	102.92	2.60E+00	1.07E-01	93.0%	8.58E-07	2.06E-05	7.52E-03	2.57E-06	2.26E-02
75-09-2	Dichloromethane (Methylene Chloride)* - HAP	84.94	6.81E+00	2.32E-01	93.0%	1.85E-06	4.45E-05	1.62E-02	5.56E-06	4.87E-02
75-18-3	Dimethyl sulfide - VOC	62.13	7.80E+00	1.94E-01	86.1%	3.09E-06	7.41E-05	2.70E-02	9.26E-06	8.11E-02
100-41-4	Ethylbenzene* - HAP/VOC	106.16	1.58E+00	6.73E-02	86.1%	1.07E-06	2.56E-05	9.36E-03	3.20E-06	2.81E-02
106-93-4	Ethylene dibromide* - HAP/VOC	187.88	6.00E-03	4.52E-04	93.0%	3.62E-09	8.68E-08	3.17E-05	1.08E-08	9.50E-05
64-17-5	Ethanol - VOC	46.08	2.70E+01	4.99E-01	86.1%	7.92E-06	1.90E-04	6.94E-02	2.38E-05	2.08E-01
75-08-1	Ethyl mercaptan - VOC	62.13	2.30E+00	5.73E-02	86.1%	9.10E-07	2.18E-05	7.97E-03	2.73E-06	2.39E-02
75-69-4	Fluorotrichloromethane - VOC	137.40	7.60E-01	4.19E-02	93.0%	3.35E-07	8.04E-06	2.93E-03	1.00E-06	8.80E-03
110-54-3	Hexane - HAP/VOC	86.18	2.32E+00	8.04E-02	86.1%	1.28E-06	3.06E-05	1.12E-02	3.83E-06	3.35E-02
7647-01-0	Hydrochloric acid[6]	36.50	2.03E+01	0.00E+00	--	3.25E-05	7.81E-04	2.85E-01	9.76E-05	8.55E-01
2148-87-8	Hydrogen sulfide	34.08	2.36E+01	3.22E-01	86.1%	5.12E-06	1.23E-04	4.48E-02	1.54E-05	1.34E-01
7439-97-6	Mercury (total)[5] - HAP	200.61	3.00E-04	4.83E-05	-	5.51E-09	1.32E-07	4.83E-05	1.65E-08	1.45E-04
78-93-3	Methyl ethyl ketone - HAP/VOC	72.11	1.06E+01	3.06E-01	86.1%	4.85E-06	1.16E-04	4.25E-02	1.45E-05	1.27E-01
108-10-1	Methyl isobutyl ketone - HAP/VOC	100.16	7.50E-01	3.01E-02	86.1%	4.78E-07	1.15E-05	4.19E-03	1.44E-06	1.26E-02
74-93-1	Methyl mercaptan - VOC	48.10	2.50E+00	4.83E-02	86.1%	7.66E-07	1.84E-05	6.71E-03	2.30E-06	2.01E-02
109-66-0	Pentane - VOC	72.15	3.30E+00	9.56E-02	86.1%	1.52E-06	3.64E-05	1.33E-02	4.55E-06	3.98E-02
74-98-6	Propane - VOC	44.10	1.10E+01	1.95E-01	86.1%	3.09E-06	7.41E-05	2.71E-02	9.27E-06	8.12E-02
74-98-6	Perchloroethylene* - HAP	165.83	6.38E-01	4.25E-02	93.0%	3.39E-07	8.14E-06	2.97E-03	1.02E-06	8.92E-03
108-88-3	Toluene* - HAP/VOC	92.13	1.76E+01	6.51E-01	86.1%	1.03E-05	2.48E-04	9.05E-02	3.10E-05	2.71E-01
79-01-6	Trichloroethylene* - HAP/VOC	131.38	2.48E-01	1.31E-02	93.0%	1.04E-07	2.51E-06	9.15E-04	3.13E-07	2.75E-03
75-01-4	Vinyl chloride* - HAP/VOC	62.50	1.74E-02	4.36E-04	93.0%	3.49E-09	8.37E-08	3.06E-05	1.05E-08	9.17E-05
1330-20-7	Xylenes* - HAP/VOC	106.16	6.61E+00	2.82E-01	86.1%	4.47E-06	1.07E-04	3.91E-02	1.34E-05	1.17E-01
Totals: TACs				6.04E+00		1.15E-04	0.003	1.01E+00	3.45E-04	3.021

Table 2. Potential To Emit Emission Source Estimates for Proposed IC Engines
Lockwood Landfill, Storey County, Nevada

Secondary Emissions

	COMPOUNDS	Molecular Weight	Concentration of Compounds Found in LFG[2]	LFG Flow Rate to IC Engine[3] (Uncontrolled)	IC Engine Destruction Efficiency[4]	Hourly Emission from IC Engine (Controlled)	Daily Emission from IC Engine (Controlled)	Annual Emission from IC Engine	Annual Emission Three IC Engines	Hourly Emission Three IC Engines
		g/mol	ppmv	tons/yr	%	lb/hr	lb/day	tons/yr	tons/yr	lb/hr
	Hydrogen Bromide[9]	80.91	0.20	6.49E-03	0.00%	7.41E-07	1.78E-05	6.49E-03	1.95E-02	2.22E-06
	Hydrogen Chloride[9]	36.50	14.03	2.06E-01	0.00%	4.69E-02	2.06E-01	2.06E-01	6.17E-01	1.41E-01
	Hydrogen Fluoride[9]	20.01	4.49	3.61E-02	0.00%	4.12E-06	9.88E-05	3.61E-02	1.08E-01	1.23E-05

	COMPOUNDS	Emission Factor	IC Engine Destruction Efficiency	Hourly Emission from IC Engine (Controlled)	Daily Emission from IC Engine (Controlled)	Annual Emission from IC Engine	Annual Emission Three IC Engines	Hourly Emission Three IC Engines
		lbs/MM scf of CH_4 burned	%	lb/hr	lb/day	tons/yr	tons/yr	lb/hr
	Formaldehyde[10]	1.30E+01	0.00%	0.23	5.52	1.01	3.02	0.69

Criteria Air Pollutants

COMPOUNDS	Molecular Weight	Max Concentration of Compounds Found in LFG	Emission Factor	Potential To Emit Emissions Single IC Engine			Potential To Emit Emissions Three IC Engines		
	g/mol	ppmv	g/bhp-hr	lb/hr	lb/day	tons/yr	lb/hr	lb/day	tons/yr
Nitrogen Oxides (NO_X)			0.600	2.95	70.89	12.94	8.86	212.67	38.81
Carbon Monoxide (CO)			3.900	19.20	460.79	84.09	57.60	1382.36	252.28
Sulfur Dioxide (SO_2)	64.06	500		2.93	70.44	12.85	8.80	211.31	38.56
Non-Methane Organic Compounds (NMOCs)/Volatile Organic Compounds (VOCs)[7, 8]		120		0.85	20.51	3.74	2.56	61.53	11.23
Particulate Matter <10 microns (PM_{10})/Particulate Matter (PM)			0.100	0.49	11.82	2.16	1.48	35.45	6.47

Table 2. Potential To Emit Emission Source Estimates for Proposed IC Engines
Lockwood Landfill, Storey County, Nevada

Variables:

MODEL INPUT VARIABLES:	POTENTIAL TO EMIT	
Methane Concentration	50.0%	
Genset horsepower	2233	hp
Landfill Gas Collection Rate (single IC Engine)	588	SCFM
Dry Gas Exhaust Flow Rate	4,307	SCFM @ 9% O_2
Engine Fuel Consumption	17.82	MMBTU/hr (HHV)
Landfill Gas Combustion Factor	4.773	SCFM of Dry Exhaust Gas/SCFM of Methane

Criteria pollutant emission factors used for IC Engines

Pollutant	Emission factor	Data Source
NMOCs/ VOCs	120 ppmv as methane; 20 ppmv as hexane (outlet)	BACT/NSPS
CO	3.9 g/bhp-hr	Manufacturer's Guarantee and BACT
NO_x	0.5 g/bhp-hr	Manufacturer's Guarantee and BACT
SO_2	500 ppmv	Expected maximum
PM/PM10	0.1 g/bhp-hr	BACT

Notes:

[1] List of toxic air contaminants (TACs) taken from Title III Clean Air Act Amendments, 1990, and include compounds found in landfill gas, as determined from a list in AP-42 Tables 2.4-1

[2] Average concentration of compounds found in LFG based on site specific data unless otherwise indicated by "*" and taken from "Waste Industry Air Coalition Comparison of Recent Landfill Gas Analyses with Historic AP-42 Values" because source-specific data unavailable.

[3] Based on a maximum flow rate into the IC Engine of 588 scfm @ 50% methane.

[4] Values based on AP-42, Table 2.4-3: 98% for total NMOCs, 93% for halogenated species, and 86.1% for non-halogenated species.

[5] Concentration of Mercury based on EPA AP-42 Section 2.4.

[6] Concentration of HCl based on AP-42 Section 2.4 Table 2.4-1 (11/98)

[7] VOC emissions are considered same as NMOC emissions

[8] Emissions estimated per standard dry gas exhaust flow rate of 4,307 scfm, based on exhaust data provided by the manufacturer (11,038 acfm at 9% oxygen and 898 F)

[9] HCl, HBr, and HF are produced by combustion of halogenated compounds containing chlorine, bromine, and fluorine. Combustion process assumed to convert 100% of inlet halogenated concentration levels into hydrogen bromide, hydrogen chloride, and hydrogen fluoride.

[10] Taken from the formaldehyde emissions factor used in BAAQMD Preliminary Engineering Evaluation for APNs 14265 and 17667 for Ameresco Keller Canyon LLC dated January 31, 2007.

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Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
NAC 445B.2203 *(State Only Requirement)* **Emissions of Particulate Matter - Fuel Burning Equipment** 1. Source may not cause or permit the emission of PM_{10} resulting from the combustion of fuel in fuel-burning equipment in excess of the quantity set forth in the following formulas: a. For input of heat equal to or greater than 4 million Btu's per hour, but less than or equal to 10 million Btu's per hour, the allowable emission is 0.6 of a pound per million Btu's of input of heat. b. For input of heat greater than 10 million Btu's per hour, but less than 4,000 million Btu's per hour, the allowable emissions must be calculated using the following equation: $Y = 1.02X^{-0.231}$ c. For input of heat equal to or greater than 4,000 million Btu's per hour, the emission must be calculated using the following equation: $Y = 17.0X^{-0.568}$ 2. For the purposes of paragraphs b and c of subsection 1: a. "X" means the operating rate in million Btu's per hour. b. "Y" means the allowable rate of emission in pounds per million Btu's.		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	$Y = 1.02\ (17.82)^{-0.231}$ Y = 0.52 lb/MMBtu The emission limitation of 0.52 lb/MMbtu is equivalent to 40.59 tpy of PM. The engine will meet this limitation as emissions per engine are estimated to be 2.16 tpy.
SIP 445.731(1)(a) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** Source shall not cause, suffer, allow or permit the emission of particulate matter resulting from the combustion of fuel in excess of the quantity set forth in the following table: Heat input in millions of — Maximum allowable emission of particulate matter in pounds per hour per million Up to and including 10 ..... 0.600 100 ..... 0.352 1,000 ..... 0.206 10,000 ..... 0.091 100,000 ..... 0.025		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	The engine has a rated capacity of 17.82 MMBtu/hr. Therefore, the limit is 0.352 lb/MMBtu. This is equivalent to 26.7 tpy. The engine will meet this limitation as emissions are estimated to be 2.16 tpy.
SIP 445.731(1)(b) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** For heat inputs greater than 10 but less than 4,000 million Btu's per hour, the allowable emissions shall be calculated by using the following equation: $Y = 1.02X^{-0.231}$ Where "X" = maximum equipment capacity rate in million Btu's per hour. "Y" = allowable rate of emission in pounds per million Btu's.		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	$Y = 1.02\ (17.82)^{-0.231}$ Y = 0.52 lb/MMBtu The emission limitation of 0.52 lb/MMbtu is equivalent to 40.59 tpy of PM. The engine will meet this

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			limitation as emissions per engine are estimated to be 2.16 tpy.
SIP 445.731(1)(c) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** For heat inputs equal to or greater than 4,000 million Btu's per hour, the emissions shall be calculated by using the following equation: $Y = 17.0X^{-0.568}$ where "X" = maximum equipment capacity rate in million Btu's per hour. "Y" = allowable rate of emission in pounds per million Btu's.	Emission unit has a heat input less than 4,000 million Btu/hr; therefore, this rule does not apply.		
SIP 445.731(3) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** Air conditioning equipment or fuel burning equipment having a rating of less than one million kilogram-calories (4 million Btu's) per hour shall be exempted from provisions of this section.	Emission unit has a heat input greater than 4 million Btu/hr; therefore, this rule does not apply.		
NAC 445B.22033, 445B.22027 *(State Only Requirement)* **Emissions of Particulate Matter - Sources Not Otherwise Limited** 1. Owners or operators of stationary sources not otherwise included in NAC 445B.22027 to 445B.22037, inclusive, shall not cause or permit PM_{10} to be discharged from any emission unit into the atmosphere in excess of the allowable emission determined by the use of the formula contained in subsection 2 or 3. 2. When the maximum allowable throughput is less than 30 tons per hour, the maximum allowable weight discharge per hour must be determined by using the following equation: $E = 4.10P^{0.67}$ 3. When the maximum allowable throughput equals or exceeds 30 tons per hour, the maximum allowable weight discharge per hour must be determined by using the following equation: $E = 55P^{0.11} - 40$ 4. For the purposes of subsections 2 and 3: (a) "E" means the maximum rate of emission in pounds per hour. (b) "P" means the maximum allowable throughput in tons per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
SIP 445.732 - *(Federally Enforceable SIP Requirement)*			

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Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
Particulate Matter - Industrial Sources Sources not otherwise included in these regulations (SIP) shall not cause, suffer, allow, or permit particulate matter to be discharged from any single source into the atmosphere in excess of the allowable emission shown in the following table. When the process weight falls between two values in the table, the maximum weight discharged per hour shall be determined by the use of the formulas contained in this section. SIP 445.732(2) - When the process weight rate is less than 30,000 kilograms (60,000 pounds) per hour, the maximum allowable weight discharged per hour will be determined by using the following equation: $E = 0.0193P^{0.67} (4.10P^{0.67})$ "E" = Maximum rate of emission in kilograms (pounds) per hour. "P" = Process weight rate in kilograms (tons) per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
SIP 445.732 (3) - *(Federally Enforceable SIP Requirement)* Particulate Matter - Industrial Sources When the process weight rate equals or exceeds 30,000 kilograms (60,000 pounds) per hour the maximum allowable discharge per hour will be determined by using the following equation: $E = 11.78P^{0.11}-18.14 (55P^{0.11}- 40)$ "E" = Maximum rate of emission in kilograms (pounds) per hour. "P" = Process weight rate in kilograms (tons) per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
NAC 445B.2204, 445B.22043, 445B.22047 *(State Only Requirement)* Sulfur Emissions - Fuel Burning Equipment 1. Source may not cause or permit the emission of compounds of sulfur caused by the combustion of fuel in fuel-burning equipment in excess of the quantity calculated by the use of the formula in subsection 2 or 3. 2. Where an emission unit has a total input of heat of less than 250 million Btu's per hour the allowable emission must be calculated by the use of the following equation: $Y = 0.7X$ 3. Where an emission unit has a total input of heat equal to or greater than 250 million Btu's per hour, the allowable emission of sulfur must be calculated by the use of the following equation: Liquid fuel, $Y = 0.4X$ Solid Fuel, $Y = 0.6X$ Combination, $Y = (L(0.4) - S(0.6))/(L + S)$ 4. For the purposes of subsections 2 and 3: (a) "X" means the operating input of heat in millions of Btu's per hour. (b) "Y" means the allowable rate of emission of sulfur in pounds per hour. 5. For the purposes of subsection 3: (a) "L" means the percentage of total input of heat derived from liquid fuel. (b) "S" means the percentage of total heat derived from solid fuel.		40 CFR 60.8 for engine; there are no additional testing requirements The engine will meet 86.1% destruction efficiency of H2S with an inlet sulfur concentration of 500 ppmv.	Y = 0.7(17.82) Y = 12.5 lb/hr of sulfur The engine will meet this limitation as emissions are estimated to be 2.93 lb/hr for SOx.

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SIP Article 8.1 and 8.2 *(Federally Enforceable SIP Requirement)* Sulfur Emissions - Fuel Burning Equipment 8.2.1.1 - Where a source located on contiguous property has a total heat input of less than 63 million kg-cal (250 million Btu's) per hour the following allowable emission shall be calculated by the use of the following equation: Y = 1.26X (Y = 0.7X) "X" = Operating heat input in millions of kg-cal (Btu's) per hour. "Y" = Allowable rate of sulfur emission in kg (pounds) per hour.		40 CFR 60.8 for engine; there are no additional testing requirements The engine will meet 86.1% destruction efficiency of H2S with an inlet sulfur concentration of 500 ppmv.	Y = 0.7(17.82 MMBtu/hr) Y = 12.1 lb/hr of sulfur The engine will meet this limitation as emissions are estimated to be 2.93 lb/hr for SOx.
SIP Article 8.2.1.2 - Where a source located on contiguous property has a total heat input of equal to or greater than 63 million kg-cal (250 million Btu's) per hour, the allowable sulfur emission shall be calculated by the use of the following equations: Liquid Fuel: Y = 0.7X (Y = 0.4X) Solid Fuels: Y = 1.1X (Y = 0.6X) Combination Fuel: $Y = \frac{L(0.7) + S(1.1)}{L + S}$ "X" = Operating input in millions of kg-cal (Btu's) per hour. "Y" = Allowable rate of sulfur emissions in kg (pounds) per hour. "L" = Percentage of total heat input derived from liquid fuel. "S" = Percentage of total heat input derived from solid fuel. 8.2.2 - For purposes of Article 8, "sulfur emission" means the sulfur portion of the sulfur compounds emitted.	Emission unit has a heat input less than 250 million Btu/hr; therefore, this rule does not apply.		
NAC 445B.2204, 445B.22043, 445B.2205 *(State Only Requirement)* Other Processes Which Emit Sulfur 1. Source may not cause or permit the emission of sulfur compounds where the sulfur originates in the material being processed, excluding hydrogen sulfide and sulfur from all solid, liquid, or gaseous fuel, in excess of the quantity determined by the following equation: $E = 0.292P^{0.904}$ 2. For the purposes of subsection 1: (a) "E" means the allowable sulfur emission in pounds per hour. (b) "P" means the total feed sulfur, excluding hydrogen sulfide, in pounds per hour.	Emissions of sulfur compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
SIP 445.746 - *(Federally Enforceable SIP Requirement)* Other Sulfur Emitting Processes SIP 445.746(1) - Source shall not cause, suffer, allow or permit the emission of sulfur compounds where the sulfur	Emissions of sulfur		

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originates in the material being processed (excluding sulfur from solid, liquid, or gaseous fuel), in excess of the quantity determined by the following equation: $E = 0.271P^{0.904}$ $(0.292P^{0.904})$ When □E□ is equal to or greater than 5 kilograms (10 pounds) per hour. Where: "E" is the allowable sulfur emission in kilograms (pounds) per hour, "P" is the total feed sulfur in kilograms (pounds) per hour. SIP 445.746(1) - When "E" is less than 5 kilograms (10 pounds) per hour, the gas stream concentration shall not exceed 1,000 ppm by volume.	compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
SIP 445.746 - *(Federally Enforceable SIP Requirement)* Other Sulfur Emitting Processes SIP 445.746(3) - When sulfur emissions are due to sulfur contributions from both the fuel and the material being processed, the allowable emissions shall be the sum of those allowed by the provisions of this section.	Emissions of sulfur compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
NAC 445B.22017 *(State Only Requirement)* Maximum Opacity of Emissions 1. Except as otherwise provided in this section and NAC 445B.2202 and 445B.22023, no owner or operator may cause or permit the discharge into the atmosphere from any emission unit which is of an opacity equal to or greater than 20 percent. Opacity must be determined by one of the following methods: (a) If opacity is determined by a visual measurement, it must be determined as set forth in Reference Method 9 in Appendix A. of 40 C.F.R. Part 60. (b) If a source uses a continuous monitoring system for the measurement of opacity, the data must be reduced to 6-minute averages as set forth in 40 C.F.R. §60.13(h). 2. The provisions of this section and NAC 445B.2202 and 445B.22023 do not apply to that part of the opacity that consists of uncombined water. The burden of proof to establish the application of this exemption is upon the person seeking to come within the exemption.		Method 9, Visual inspection	The facility will comply with the maximum opacity standards by visual inspections
SIP 445.721 *(Federally Enforceable SIP Requirement)* Visible Emissions from Stationary Sources These regulations (SIP) shall not apply if the presence of uncombined water is the only reason for the failure of an emission to comply with these regulations. The burden of proof to establish the application of this exemption shall be upon the person seeking to come within this exemption.		Method 9, Visual inspection	The facility will comply with the maximum opacity standards by visual inspections

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Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
NAC 445B.2203 *(State Only Requirement)* **Emissions of Particulate Matter - Fuel Burning Equipment** 1. Source may not cause or permit the emission of PM_{10} resulting from the combustion of fuel in fuel-burning equipment in excess of the quantity set forth in the following formulas: a. For input of heat equal to or greater than 4 million Btu's per hour, but less than or equal to 10 million Btu's per hour, the allowable emission is 0.6 of a pound per million Btu's of input of heat. b. For input of heat greater than 10 million Btu's per hour, but less than 4,000 million Btu's per hour, the allowable emissions must be calculated using the following equation: $Y = 1.02X^{-0.231}$ c. For input of heat equal to or greater than 4,000 million Btu's per hour, the emission must be calculated using the following equation: $Y = 17.0X^{-0.568}$ 2. For the purposes of paragraphs b and c of subsection 1: a. "X" means the operating rate in million Btu's per hour. b. "Y" means the allowable rate of emission in pounds per million Btu's.		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	$Y = 1.02\ (17.82)^{-0.231}$ Y = 0.52 lb/MMBtu The emission limitation of 0.52 lb/MMbtu is equivalent to 40.59 tpy of PM. The engine will meet this limitation as emissions per engine are estimated to be 2.16 tpy.
SIP 445.731(1)(a) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** Source shall not cause, suffer, allow or permit the emission of particulate matter resulting from the combustion of fuel in excess of the quantity set forth in the following table: Heat input in millions of — Maximum allowable emission of particulate matter in pounds per hour per million Up to and including 10 ..... 0.600 100 ..... 0.352 1,000 ..... 0.206 10,000 ..... 0.091 100,000 ..... 0.025		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	The engine has a rated capacity of 17.82 MMBtu/hr. Therefore, the limit is 0.352 lb/MMBtu. This is equivalent to 26.7 tpy. The engine will meet this limitation as emissions are estimated to be 2.16 tpy.
SIP 445.731(1)(b) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** For heat inputs greater than 10 but less than 4,000 million Btu's per hour, the allowable emissions shall be calculated by using the following equation: $Y = 1.02X^{-0.231}$ Where "X" = maximum equipment capacity rate in million Btu's per hour. "Y" = allowable rate of emission in pounds per million Btu's.		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	$Y = 1.02\ (17.82)^{-0.231}$ Y = 0.52 lb/MMBtu The emission limitation of 0.52 lb/MMbtu is equivalent to 40.59 tpy of PM. The engine will meet this

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			limitation as emissions per engine are estimated to be 2.16 tpy.
SIP 445.731(1)(c) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** For heat inputs equal to or greater than 4,000 million Btu's per hour, the emissions shall be calculated by using the following equation: $Y = 17.0X^{-0.566}$ where "X" = maximum equipment capacity rate in million Btu's per hour. "Y" = allowable rate of emission in pounds per million Btu's.	Emission unit has a heat input less than 4,000 million Btu/hr; therefore, this rule does not apply.		
SIP 445.731(3) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** Air conditioning equipment or fuel burning equipment having a rating of less than one million kilogram-calories (4 million Btu's) per hour shall be exempted from provisions of this section.	Emission unit has a heat input greater than 4 million Btu/hr; therefore, this rule does not apply.		
NAC 445B.22033, 445B.22027 *(State Only Requirement)* **Emissions of Particulate Matter - Sources Not Otherwise Limited** 1. Owners or operators of stationary sources not otherwise included in NAC 445B.22027 to 445B.22037, inclusive, shall not cause or permit PM_{10} to be discharged from any emission unit into the atmosphere in excess of the allowable emission determined by the use of the formula contained in subsection 2 or 3. 2. When the maximum allowable throughput is less than 30 tons per hour, the maximum allowable weight discharge per hour must be determined by using the following equation: $E = 4.10P^{0.67}$ 3. When the maximum allowable throughput equals or exceeds 30 tons per hour, the maximum allowable weight discharge per hour must be determined by using the following equation: $E = 55P^{0.11} - 40$ 4. For the purposes of subsections 2 and 3: (a) "E" means the maximum rate of emission in pounds per hour. (b) "P" means the maximum allowable throughput in tons per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
SIP 445.732 - *(Federally Enforceable SIP Requirement)*			

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APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
Particulate Matter - Industrial Sources Sources not otherwise included in these regulations (SIP) shall not cause, suffer, allow, or permit particulate matter to be discharged from any single source into the atmosphere in excess of the allowable emission shown in the following table. When the process weight falls between two values in the table, the maximum weight discharged per hour shall be determined by the use of the formulas contained in this section. SIP 445.732(2) - When the process weight rate is less than 30,000 kilograms (60,000 pounds) per hour, the maximum allowable weight discharged per hour will be determined by using the following equation: $E = 0.0193P^{0.67}$ $(4.10P^{0.67})$ "E" = Maximum rate of emission in kilograms (pounds) per hour. "P" = Process weight rate in kilograms (tons) per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
SIP 445.732 (3) - *(Federally Enforceable SIP Requirement)* Particulate Matter - Industrial Sources When the process weight rate equals or exceeds 30,000 kilograms (60,000 pounds) per hour the maximum allowable discharge per hour will be determined by using the following equation: $E = 11.78P^{0.11}-18.14$ $(55P^{0.11}- 40)$ "E" = Maximum rate of emission in kilograms (pounds) per hour. "P" = Process weight rate in kilograms (tons) per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
NAC 445B.2204, 445B.22043, 445B.22047 *(State Only Requirement)* Sulfur Emissions - Fuel Burning Equipment 1. Source may not cause or permit the emission of compounds of sulfur caused by the combustion of fuel in fuel-burning equipment in excess of the quantity calculated by the use of the formula in subsection 2 or 3. 2. Where an emission unit has a total input of heat of less than 250 million Btu's per hour the allowable emission must be calculated by the use of the following equation: $Y = 0.7X$ 3. Where an emission unit has a total input of heat equal to or greater than 250 million Btu's per hour, the allowable emission of sulfur must be calculated by the use of the following equation: Liquid fuel, $Y = 0.4X$ Solid Fuel, $Y = 0.6X$ Combination, $Y = (L(0.4) - S(0.6))/(L + S)$ 4. For the purposes of subsections 2 and 3: (a) "X" means the operating input of heat in millions of Btu's per hour. (b) "Y" means the allowable rate of emission of sulfur in pounds per hour. 5. For the purposes of subsection 3: (a) "L" means the percentage of total input of heat derived from liquid fuel. (b) "S" means the percentage of total heat derived from solid fuel.		40 CFR 60.8 for engine; there are no additional testing requirements The engine will meet 86.1% destruction efficiency of H2S with an inlet sulfur concentration of 500 ppmv.	Y = 0.7(17.82) Y = 12.5 lb/hr of sulfur The engine will meet this limitation as emissions are estimated to be 2.93 lb/hr for SOx.

SECTION 8
EMISSION UNIT SPECIFIC (IC ENGINE)
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
SIP Article 8.1 and 8.2 *(Federally Enforceable SIP Requirement)* Sulfur Emissions - Fuel Burning Equipment 8.2.1.1 - Where a source located on contiguous property has a total heat input of less than 63 million kg-cal (250 million Btu's) per hour the following allowable emission shall be calculated by the use of the following equation: Y = 1.26X (Y = 0.7X) "X" = Operating heat input in millions of kg-cal (Btu's) per hour. "Y" = Allowable rate of sulfur emission in kg (pounds) per hour.		40 CFR 60.8 for engine; there are no additional testing requirements The engine will meet 86.1% destruction efficiency of H2S with an inlet sulfur concentration of 500 ppmv.	Y = 0.7(17.82 MMBtu/hr) Y = 12.1 lb/hr of sulfur The engine will meet this limitation as emissions are estimated to be 2.93 lb/hr for SOx.
SIP Article 8.2.1.2 - Where a source located on contiguous property has a total heat input of equal to or greater than 63 million kg-cal (250 million Btu's) per hour, the allowable sulfur emission shall be calculated by the use of the following equations: Liquid Fuel: Y = 0.7X (Y = 0.4X) Solid Fuels: Y = 1.1X (Y = 0.6X) Combination Fuel: $Y = \frac{L(0.7) + S(1.1)}{L + S}$ "X" = Operating input in millions of kg-cal (Btu's) per hour. "Y" = Allowable rate of sulfur emissions in kg (pounds) per hour. "L" = Percentage of total heat input derived from liquid fuel. "S" = Percentage of total heat input derived from solid fuel. 8.2.2 - For purposes of Article 8, "sulfur emission" means the sulfur portion of the sulfur compounds emitted.	Emission unit has a heat input less than 250 million Btu/hr; therefore, this rule does not apply.		
NAC 445B.2204, 445B.22043, 445B.2205 *(State Only Requirement)* Other Processes Which Emit Sulfur 1. Source may not cause or permit the emission of sulfur compounds where the sulfur originates in the material being processed, excluding hydrogen sulfide and sulfur from all solid, liquid, or gaseous fuel, in excess of the quantity determined by the following equation: $E = 0.292P^{0.904}$ 2. For the purposes of subsection 1: (a) "E" means the allowable sulfur emission in pounds per hour. (b) "P" means the total feed sulfur, excluding hydrogen sulfide, in pounds per hour.	Emissions of sulfur compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
SIP 445.746 - *(Federally Enforceable SIP Requirement)* Other Sulfur Emitting Processes SIP 445.746(1) - Source shall not cause, suffer, allow or permit the emission of sulfur compounds where the sulfur	Emissions of sulfur		

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EMISSION UNIT SPECIFIC (IC ENGINE)
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
originates in the material being processed (excluding sulfur from solid, liquid, or gaseous fuel), in excess of the quantity determined by the following equation: $E = 0.271P^{0.904}$ $(0.292P^{0.904})$ When □E□ is equal to or greater than 5 kilograms (10 pounds) per hour. Where: "E" is the allowable sulfur emission in kilograms (pounds) per hour, "P" is the total feed sulfur in kilograms (pounds) per hour. SIP 445.746(1) - When "E" is less than 5 kilograms (10 pounds) per hour, the gas stream concentration shall not exceed 1,000 ppm by volume.	compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
SIP 445.746 - *(Federally Enforceable SIP Requirement)* Other Sulfur Emitting Processes SIP 445.746(3) - When sulfur emissions are due to sulfur contributions from both the fuel and the material being processed, the allowable emissions shall be the sum of those allowed by the provisions of this section.	Emissions of sulfur compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
NAC 445B.22017 *(State Only Requirement)* Maximum Opacity of Emissions 1. Except as otherwise provided in this section and NAC 445B.2202 and 445B.22023, no owner or operator may cause or permit the discharge into the atmosphere from any emission unit which is of an opacity equal to or greater than 20 percent. Opacity must be determined by one of the following methods: (a) If opacity is determined by a visual measurement, it must be determined as set forth in Reference Method 9 in Appendix A of 40 C.F.R. Part 60. (b) If a source uses a continuous monitoring system for the measurement of opacity, the data must be reduced to 6-minute averages as set forth in 40 C.F.R. §60.13(h). 2. The provisions of this section and NAC 445B.2202 and 445B.22023 do not apply to that part of the opacity that consists of uncombined water. The burden of proof to establish the application of this exemption is upon the person seeking to come within the exemption.		Method 9, Visual inspection	The facility will comply with the maximum opacity standards by visual inspections
SIP 445.721 *(Federally Enforceable SIP Requirement)* Visible Emissions from Stationary Sources These regulations (SIP) shall not apply if the presence of uncombined water is the only reason for the failure of an emission to comply with these regulations. The burden of proof to establish the application of this exemption shall be upon the person seeking to come within this exemption.		Method 9, Visual inspection	The facility will comply with the maximum opacity standards by visual inspections

SECTION 8
EMISSION UNIT SPECIFIC (IC ENGINE)
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
NAC 445B.2203 *(State Only Requirement)* **Emissions of Particulate Matter - Fuel Burning Equipment** 1. Source may not cause or permit the emission of PM_{10} resulting from the combustion of fuel in fuel-burning equipment in excess of the quantity set forth in the following formulas: a. For input of heat equal to or greater than 4 million Btu's per hour, but less than or equal to 10 million Btu's per hour, the allowable emission is 0.6 of a pound per million Btu's of input of heat. b. For input of heat greater than 10 million Btu's per hour, but less than 4,000 million Btu's per hour, the allowable emissions must be calculated using the following equation: $Y = 1.02X^{-0.231}$ c. For input of heat equal to or greater than 4,000 million Btu's per hour, the emission must be calculated using the following equation: $Y = 17.0X^{-0.358}$ 2. For the purposes of paragraphs b and c of subsection 1: a. "X" means the operating rate in million Btu's per hour. b. "Y" means the allowable rate of emission in pounds per million Btu's.		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	$Y = 1.02\ (17.82)^{-0.231}$ Y = 0.52 lb/MMBtu The emission limitation of 0.52 lb/MMbtu is equivalent to 40.59 tpy of PM. The engine will meet this limitation as emissions per engine are estimated to be 2.16 tpy.
SIP 445.731(1)(a) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** Source shall not cause, suffer, allow or permit the emission of particulate matter resulting from the combustion of fuel in excess of the quantity set forth in the following table: Heat input in millions of — Maximum allowable emission of particulate matter in pounds per hour per million Up to and including 10 ..... 0.600 100 ..... 0.352 1,000 ..... 0.206 10,000 ..... 0.091 100,000 ..... 0.025		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	The engine has a rated capacity of 17.82 MMBtu/hr. Therefore, the limit is 0.352 lb/MMBtu. This is equivalent to 26.7 tpy. The engine will meet this limitation as emissions are estimated to be 2.16 tpy.
SIP 445.731(1)(b) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** For heat inputs greater than 10 but less than 4,000 million Btu's per hour, the allowable emissions shall be calculated by using the following equation: $Y = 1.02X^{-0.231}$ Where "X" = maximum equipment capacity rate in million Btu's per hour. "Y" = allowable rate of emission in pounds per million Btu's.		40 CFR 60.8 The engine must meet 98% destruction efficiency with an emission factor of 0.1 g/bhp-hr for PM	$Y = 1.02\ (17.82)^{-0.231}$ Y = 0.52 lb/MMBtu The emission limitation of 0.52 lb/MMbtu is equivalent to 40.59 tpy of PM. The engine will meet this

SECTION 8
EMISSION UNIT SPECIFIC (IC ENGINE)
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
			limitation as emissions per engine are estimated to be 2.16 tpy.
SIP 445.731(1)(c) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** For heat inputs equal to or greater than 4,000 million Btu's per hour, the emissions shall be calculated by using the following equation: $Y = 17.0X^{-0.566}$ where "X" = maximum equipment capacity rate in million Btu's per hour. "Y" = allowable rate of emission in pounds per million Btu's.	Emission unit has a heat input less than 4,000 million Btu/hr; therefore, this rule does not apply.		
SIP 445.731(3) - *(Federally Enforceable SIP Requirement)* **Particulate Matter - Fuel Burning Equipment** Air conditioning equipment or fuel burning equipment having a rating of less than one million kilogram-calories (4 million Btu's) per hour shall be exempted from provisions of this section.	Emission unit has a heat input greater than 4 million Btu/hr; therefore, this rule does not apply.		
NAC 445B.22033, 445B.22027 *(State Only Requirement)* **Emissions of Particulate Matter - Sources Not Otherwise Limited** 1. Owners or operators of stationary sources not otherwise included in NAC 445B.22027 to 445B.22037, inclusive, shall not cause or permit PM_{10} to be discharged from any emission unit into the atmosphere in excess of the allowable emission determined by the use of the formula contained in subsection 2 or 3. 2. When the maximum allowable throughput is less than 30 tons per hour, the maximum allowable weight discharge per hour must be determined by using the following equation: $E = 4.10P^{0.67}$ 3. When the maximum allowable throughput equals or exceeds 30 tons per hour, the maximum allowable weight discharge per hour must be determined by using the following equation: $E = 55P^{0.11} - 40$ 4. For the purposes of subsections 2 and 3: (a) "E" means the maximum rate of emission in pounds per hour. (b) "P" means the maximum allowable throughput in tons per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
SIP 445.732 - *(Federally Enforceable SIP Requirement)*			

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APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
Particulate Matter - Industrial Sources Sources not otherwise included in these regulations (SIP) shall not cause, suffer, allow, or permit particulate matter to be discharged from any single source into the atmosphere in excess of the allowable emission shown in the following table. When the process weight falls between two values in the table, the maximum weight discharged per hour shall be determined by the use of the formulas contained in this section. SIP 445.732(2) - When the process weight rate is less than 30,000 kilograms (60,000 pounds) per hour, the maximum allowable weight discharged per hour will be determined by using the following equation: $E = 0.0193P^{0.67} (4.10P^{0.67})$ "E" = Maximum rate of emission in kilograms (pounds) per hour. "P" = Process weight rate in kilograms (tons) per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
SIP 445.732 (3) - *(Federally Enforceable SIP Requirement)* Particulate Matter - Industrial Sources When the process weight rate equals or exceeds 30,000 kilograms (60,000 pounds) per hour the maximum allowable discharge per hour will be determined by using the following equation: $E = 11.78P^{0.11}-18.14 (55P^{0.11}- 40)$ "E" = Maximum rate of emission in kilograms (pounds) per hour. "P" = Process weight rate in kilograms (tons) per hour.	Emission unit is not under this category; therefore, this rule does not apply.		
NAC 445B.2204, 445B.22043, 445B.22047 *(State Only Requirement)* Sulfur Emissions - Fuel Burning Equipment 1. Source may not cause or permit the emission of compounds of sulfur caused by the combustion of fuel in fuel-burning equipment in excess of the quantity calculated by the use of the formula in subsection 2 or 3. 2. Where an emission unit has a total input of heat of less than 250 million Btu's per hour the allowable emission must be calculated by the use of the following equation: $Y = 0.7X$ 3. Where an emission unit has a total input of heat equal to or greater than 250 million Btu's per hour, the allowable emission of sulfur must be calculated by the use of the following equation: Liquid fuel, $Y = 0.4X$ Solid Fuel, $Y = 0.6X$ Combination, $Y = (L(0.4) - S(0.6))/(L + S)$ 4. For the purposes of subsections 2 and 3: (a) "X" means the operating input of heat in millions of Btu's per hour. (b) "Y" means the allowable rate of emission of sulfur in pounds per hour. 5. For the purposes of subsection 3: (a) "L" means the percentage of total input of heat derived from liquid fuel. (b) "S" means the percentage of total heat derived from solid fuel.		40 CFR 60.8 for engine; there are no additional testing requirements The engine will meet 86.1% destruction efficiency of H_2S with an inlet sulfur concentration of 500 ppmv.	$Y = 0.7(17.82)$ $Y = 12.5$ lb/hr of sulfur The engine will meet this limitation as emissions are estimated to be 2.93 lb/hr for SOx.

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EMISSION UNIT SPECIFIC (IC ENGINE)
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
SIP Article 8.1 and 8.2 *(Federally Enforceable SIP Requirement)* Sulfur Emissions - Fuel Burning Equipment 8.2.1.1 - Where a source located on contiguous property has a total heat input of less than 63 million kg-cal (250 million Btu's) per hour the following allowable emission shall be calculated by the use of the following equation: Y = 1.26X (Y = 0.7X) "X" = Operating heat input in millions of kg-cal (Btu's) per hour. "Y" = Allowable rate of sulfur emission in kg (pounds) per hour.		40 CFR 60.8 for engine; there are no additional testing requirements The engine will meet 86.1% destruction efficiency of H2S with an inlet sulfur concentration of 500 ppmv.	Y = 0.7(17.82 MMBtu/hr) Y = 12.1 lb/hr of sulfur The engine will meet this limitation as emissions are estimated to be 2.93 lb/hr for SOx.
SIP Article 8.2.1.2 - Where a source located on contiguous property has a total heat input of equal to or greater than 63 million kg-cal (250 million Btu's) per hour, the allowable sulfur emission shall be calculated by the use of the following equations: Liquid Fuel: Y = 0.7X (Y = 0.4X) Solid Fuels: Y = 1.1X (Y = 0.6X) Combination Fuel: $Y = \frac{L(0.7) + S(1.1)}{L + S}$ "X" = Operating input in millions of kg-cal (Btu's) per hour. "Y" = Allowable rate of sulfur emissions in kg (pounds) per hour. "L" = Percentage of total heat input derived from liquid fuel. "S" = Percentage of total heat input derived from solid fuel. 8.2.2 - For purposes of Article 8, "sulfur emission" means the sulfur portion of the sulfur compounds emitted.	Emission unit has a heat input less than 250 million Btu/hr; therefore, this rule does not apply.		
NAC 445B.2204, 445B.22043, 445B.2205 *(State Only Requirement)* Other Processes Which Emit Sulfur 1. Source may not cause or permit the emission of sulfur compounds where the sulfur originates in the material being processed, excluding hydrogen sulfide and sulfur from all solid, liquid, or gaseous fuel, in excess of the quantity determined by the following equation: $E = 0.292P^{0.904}$ 2. For the purposes of subsection 1: (a) "E" means the allowable sulfur emission in pounds per hour. (b) "P" means the total feed sulfur, excluding hydrogen sulfide, in pounds per hour.	Emissions of sulfur compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
SIP 445.746 - *(Federally Enforceable SIP Requirement)* Other Sulfur Emitting Processes SIP 445.746(1) - Source shall not cause, suffer, allow or permit the emission of sulfur compounds where the sulfur	Emissions of sulfur		

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APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
originates in the material being processed (excluding sulfur from solid, liquid, or gaseous fuel), in excess of the quantity determined by the following equation: $E = 0.271P^{0.904}$ $(0.292P^{0.904})$ When □E□ is equal to or greater than 5 kilograms (10 pounds) per hour. Where: "E" is the allowable sulfur emission in kilograms (pounds) per hour, "P" is the total feed sulfur in kilograms (pounds) per hour. SIP 445.746(1) - When "E" is less than 5 kilograms (10 pounds) per hour, the gas stream concentration shall not exceed 1,000 ppm by volume.	compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
SIP 445.746 - *(Federally Enforceable SIP Requirement)* Other Sulfur Emitting Processes SIP 445.746(3) - When sulfur emissions are due to sulfur contributions from both the fuel and the material being processed, the allowable emissions shall be the sum of those allowed by the provisions of this section.	Emissions of sulfur compounds are a byproduct of the decomposition of municipal solid waste. No material containing sulfur is processed; therefore, this rule does not apply.		
NAC 445B.22017 *(State Only Requirement)* Maximum Opacity of Emissions 1. Except as otherwise provided in this section and NAC 445B.2202 and 445B.22023, no owner or operator may cause or permit the discharge into the atmosphere from any emission unit which is of an opacity equal to or greater than 20 percent. Opacity must be determined by one of the following methods: (a) If opacity is determined by a visual measurement, it must be determined as set forth in Reference Method 9 in Appendix A. of 40 C.F.R. Part 60. (b) If a source uses a continuous monitoring system for the measurement of opacity, the data must be reduced to 6-minute averages as set forth in 40 C.F.R. §60.13(h). 2. The provisions of this section and NAC 445B.2202 and 445B.22023 do not apply to that part of the opacity that consists of uncombined water. The burden of proof to establish the application of this exemption is upon the person seeking to come within the exemption.		Method 9, Visual inspection	The facility will comply with the maximum opacity standards by visual inspections
SIP 445.721 *(Federally Enforceable SIP Requirement)* Visible Emissions from Stationary Sources These regulations (SIP) shall not apply if the presence of uncombined water is the only reason for the failure of an emission to comply with these regulations. The burden of proof to establish the application of this exemption shall be upon the person seeking to come within this exemption.		Method 9, Visual inspection	The facility will comply with the maximum opacity standards by visual inspections

SURFACE AREA DISTURBANCE
APPLICATION FORM
CLASS I OPERATING PERMIT

1. Project Name Installation of LFGTE Facility (3 IC Engines)

2. Surface Area Disturbance Location:

   Overall disturbance location description:

   Township 19N ; Range 21E ; Section 22-23, 26-27 ;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

   Township_____; Range _____; Section _____;

3. Indicate the total number of acres to be disturbed for the project <1

4. Nevada Administrative Code 445B.22037 requires fugitive dust to be controlled (regardless of the size or amount of acreage disturbed), and requires an ongoing program, using best practical methods, to prevent particulate matter from becoming airborne. All activities which have the potential to adversely affect the local air quality must implement all appropriate measures to limit controllable emissions. Appropriate measures for dust control may consist of a phased approach to acreage disturbance rather than disturbing the entire area all at once; using wet suppression through such application methods as water trucks or water sprays systems to control wind blown dust; the application of soil binding agents or chemical surfactant to roadways and areas of disturbed soil; as well as the use of wind-break or wind-limiting fencing designed to limit wind erosion of soils.

5. Please include a dust control plan in Appendix 8 if the total number of acres to be disturbed in number 3 above equals or exceeds 20 acres. The dust control measures discussed above should be considered in the preparation of the required dust control plan. Two documents entitled "SAD Dust Control Plan Preparation Guidelines" and "SAD Fugitive Dust Control Plan" can be downloaded at www.ndep.nv.gov/bapc under Downloads. The acceptance of the dust control plan by the Bureau of Air Pollution Controldoes not limit the permit holder's need to control fugitive dust from the disturbance and its related activities, nor from putting into effect an ongoing program for using the best practical methods of dust control.

G3520C

GAS ENGINE TECHNICAL DATA

CATERPILLAR®

ENGINE SPEED:	1200	FUEL:	LOW ENERGY (1.43 CH4:CO2 RATIO)
COMPRESSION RATIO:	11.3:1	FUEL SYSTEM:	CAT LOW PRESSURE WITH AIR FUEL RATIO CONTROL
AFTERCOOLER - STAGE 1 MAX. INLET (°F):	218		
AFTERCOOLER - STAGE 2 MAX. INLET (°F):	130	FUEL PRESS. RANGE (PSIG):	1.5 - 5.0
JACKET WATER - MAX. OUTLET (°F):	230	MIN. METHANE NUMBER:	135
COOLING SYSTEM:	JW+1AC, OC+2AC	RATED ALTITUDE (FT):	1378
IGNITION SYSTEM:	ADEM3	AT AIR TO TURBO. TEMP. (°F):	77
SPARK PLUG TYPE:	J-GAP	NOx EMISSION LEVEL:	0.5 g/bhp-hr
EXHAUST MANIFOLD:	DRY	FUEL LHV (BTU/SCF):	456
COMBUSTION:	LOW EMISSION	APPLICATION:	GENSET

RATING AND EFFICIENCY		NOTES	LOAD	100%	75%	50%
ENGINE POWER	(WITHOUT FAN)	(1)	BHP	2233	1675	1116
GENERATOR POWER	(WITHOUT FAN)	(2)	EKW	1600	1200	800
ENGINE EFFICIENCY	**(ISO 3046/1)**	**(3)**	**%**	**40.1**	**38.6**	**36.1**
ENGINE EFFICIENCY	(NOMINAL)	(3)	%	39.1	37.7	35.2
THERMAL EFFICIENCY	(NOMINAL)	(4)	%	41.3	40.6	42.2
TOTAL EFFICIENCY	(NOMINAL)	(5)	%	80.4	78.3	77.4

ENGINE DATA						
FUEL CONSUMPTION	**(ISO 3046/1)**	**(6)**	**BTU/bhp-hr**	**6354**	**6592**	**7047**
FUEL CONSUMPTION	(NOMINAL)	(6)	BTU/bhp-hr	6509	6753	7219
AIR FLOW (77 °F, 14.7 psi)		(7)	SCFM	4512	3415	2286
AIR FLOW		(7)	lb/hr	20006	15141	10136
COMPRESSOR OUT PRESSURE			in. HG (abs)	105.8	80.8	55.5
COMPRESSOR OUT TEMPERATURE			°F	375	306	220
AFTERCOOLER AIR OUT TEMPERATURE			°F	142	138	135
INLET MAN. PRESSURE		(8)	in. HG (abs)	94.4	71.5	48.9
INLET MAN. TEMPERATURE	(MEASURED IN PLENUM)	(9)	°F	142	138	135
TIMING		(10)	°BTDC	27	27	27
EXHAUST STACK TEMPERATURE		(11)	°F	898	943	984
EXHAUST GAS FLOW (@ stack temp.)		(12)	CFM	12476	9780	6770
EXHAUST MASS FLOW		(12)	lb/hr	22318	16940	11418

EMISSIONS DATA					
NOx (as NO2)	(13)	g/bhp-hr	0.5	0.5	0.5
NTE CO	(14)	g/bhp-hr	4.13	4.25	4.4
NOMINAL CO	(15)	g/bhp-hr	2.5	2.5	2.5
THC (molecular weight of 15.84)	(14)	g/bhp-hr	5.84	6.49	7.51
NMHC (molecular weight of 15.84)	(14)	g/bhp-hr	0.88	0.98	1.13
EXHAUST O2	(16)	% DRY	9.0	8.8	8.6
LAMBDA	(16)		1.71	1.67	1.57

HEAT BALANCE DATA					
LHV INPUT	(17)	BTU/min	242216	188451	134313
HEAT REJECTION TO JACKET	(18)	BTU/min	28738	23806	21929
HEAT REJECTION TO ATMOSPHERE	(19)	BTU/min	7210	6034	4857
HEAT REJECTION TO LUBE OIL	(20)	BTU/min	10108	9524	8917
HEAT REJECTION TO EXHAUST (LHV to 77°F)	(21)	BTU/min	76779	65253	45101
HEAT REJECTION TO EXHAUST (LHV to 350°F)	(21)	BTU/min	57574	47602	34587
HEAT REJECTION TO A/C - STAGE 1	(22)	BTU/min	13823	5157	102
HEAT REJECTION TO A/C - STAGE 2	(23)	BTU/min	8895	5684	4086

CONDITIONS AND DEFINITIONS

ENGINE RATING OBTAINED AND PRESENTED IN ACCORDANCE WITH ISO 3046/1. DATA REPRESENTS CONDITIONS OF 77°F, 29.6 IN HG BAROMETRIC PRESSURE, 30% RELATIVE HUMIDITY, 10 IN H2O AIR FILTER RESTRICTION, AND 20 IN H2O EXHAUST STACK PRESSURE. ENGINE EFFICIENCY AND FUEL CONSUMPTION SPECIFICALLY NOTED AS ISO 3046/1 ARE REPRESENTED WITH 5 IN H2O AIR FILTER RESTRICTION AND 0 IN H2O EXHAUST STACK PRESSURE. CONSULT ALTITUDE CURVES FOR APPLICATIONS ABOVE MAXIMUM RATED ALTITUDE AND/OR TEMPERATURE. NO OVERLOAD PERMITTED AT RATING SHOWN.

EMISSION LEVELS ARE BASED ON THE ENGINE OPERATING AT STEADY STATE CONDITIONS AND ADJUSTED TO THE SPECIFIED NOx LEVEL AT 100% LOAD. EMISSION TOLERANCES SPECIFIED ARE DEPENDENT UPON FUEL QUALITY. METHANE NUMBER CANNOT VARY MORE THAN ± 3. PUBLISHED PART LOAD DATA IS WITH AIR FUEL RATIO CONTROL.

ENGINE RATING IS WITH 2 ENGINE DRIVEN WATER PUMPS. PUMP POWER IS NOT INCLUDED IN HEAT BALANCE DATA.

FOR NOTES INFORMATION CONSULT PAGE THREE.

FUEL USAGE GUIDE

CAT METHANE NUMBER	40	50	60	70	80	90	100	110	120	130	140	150
IGNITION TIMING	-	-	-	-	-	-	-	-	24	26	28	30
DERATION FACTOR	0	0	0	0	0	0	0	0	1.00	1.00	1.00	1.00

ALTITUDE DERATION FACTORS

AIR TO TURBO (°F)	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
130	0.96	0.93	0.89	0.86	0.83	0.79	0.76	0.74	0.71	0.68	0.65	0.63	0.60
120	0.98	0.94	0.91	0.87	0.84	0.81	0.78	0.75	0.72	0.69	0.66	0.64	0.61
110	0.99	0.96	0.92	0.89	0.86	0.82	0.79	0.76	0.73	0.70	0.68	0.65	0.62
100	1.00	0.97	0.94	0.90	0.87	0.84	0.81	0.77	0.74	0.72	0.69	0.66	0.63
90	1.00	0.99	0.96	0.92	0.89	0.85	0.82	0.79	0.76	0.73	0.70	0.67	0.65
80	1.00	1.00	0.97	0.94	0.90	0.87	0.84	0.80	0.77	0.74	0.71	0.68	0.66
70	1.00	1.00	0.99	0.96	0.92	0.89	0.85	0.82	0.79	0.76	0.73	0.70	0.67
60	1.00	1.00	1.00	0.97	0.94	0.90	0.87	0.83	0.80	0.77	0.74	0.71	0.68
50	1.00	1.00	1.00	0.99	0.96	0.92	0.88	0.85	0.82	0.79	0.76	0.73	0.70

ALTITUDE (FEET ABOVE SEA LEVEL)

AFTERCOOLER HEAT REJECTION FACTORS

AIR TO TURBO (°F)	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
130	1.33	1.37	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
120	1.26	1.31	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
110	1.19	1.24	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
100	1.13	1.17	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
90	1.06	1.11	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
80	1.00	1.04	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

ALTITUDE (FEET ABOVE SEA LEVEL)

FREE FIELD MECHANICAL & EXHAUST NOISE

100% Load Data			dB(A)	(dB)							
Free Field Mechanical	DISTANCE FROM THE ENGINE (FEET)	3.2	108.5	51.5	78.7	88.2	92.9	99.9	97.3	93.2	99.2
		22.9	91.6	34.6	59.0	68.1	74.0	83.0	79.4	75.1	85.2
		49.2	85.0	28.0	55.2	64.7	69.4	76.4	73.8	69.7	75.7
Free Field Exhaust	DISTANCE FROM THE ENGINE (FEET)	4.9	106.1	67.5	86.5	96.0	88.5	88.7	90.1	95.6	92.7
		22.9	92.7	54.1	73.1	82.6	75.1	75.3	76.7	82.2	79.3
		49.2	86.1	47.5	66.5	76.0	68.5	68.7	70.1	75.6	72.7
			Overal SPL	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 khz

Octave Band Center Frequency (OBCF)

FUEL USAGE GUIDE:

This table shows the derate factor required for a given fuel. Note that deration occurs as the methane number decreases. Methane number is a scale to measure detonation characteristics of various fuels. The methane number of a fuel is determined by using the Caterpillar Methane Number Calculation program.

ALTITUDE DERATION FACTORS:

This table shows the deration required for various air inlet temperatures and altitudes. Use this information along with the fuel usage guide chart to help determine actual engine power for your site.

INLET AND EXHAUST RESTRICTION CORRECTIONS FOR ALTITUDE CAPABILITY:

To determine the appropriate altitude derate factor to be applied to this engine for inlet or exhaust restrictions differering from the standard conditions listed on page 1, a correction to the site altitude can be made to adjust for this difference. Add 141 feet to the site altitude for each additional inch of H2O of exhaust stack pressure greater than spec sheet conditions. Add 282 feet to the site altitude for each additional inch of H2O of inlet restriction greater than spec sheet conditions. If site inlet restriction or exhaust stack pressure are less than spec sheet conditions, the same trends apply to lower the site altitude.

ACTUAL ENGINE RATING:

It is important to note that the Altitude/Temperature deration and the Fuel Usage Guide deration are not cumulative. They are not to be added together. The same is true for the Low Energy Fuel deration (reference the Caterpillar Methane Number Program) and the Fuel Usage Guide deration. However, the Altitude/Temperature deration and Low Energy Fuel deration are cumulative; and they must be added together in the method shown below. To determine the actual power available, take the lowest rating between 1) and 2).

1) (Altitude/Temperature Deration) + (Low Energy Fuel Deration)
2) Fuel Usage Guide Deration

Note: For NA's always add the Low Energy Fuel deration to the Altitude/Temperature deration. For TA engines only add the Low Energy Fuel deration to the Altitude/Temperature deration whenever the Altitude/Temperature deration is less than 1.0 (100%). This will give the actual rating for the engine at the conditions specified.

AFTERCOOLER HEAT REJECTION FACTORS:

Aftercooler heat rejection is given for standard conditions of 77°F and 500 ft altitude. To maintain a constant air inlet manifold temperature, as the air to turbo temperature goes up, so must the heat rejection. As altitude increases, the turbocharger must work harder to overcome the lower atmospheric pressure. This increases the amount of heat that must be removed from the inlet air by the aftercooler. Use the aftercooler heat rejection factor to adjust for ambient and altitude conditions. Multiply this factor by the standard aftercooler heat rejection. Failure to properly account for these factors could result in detonation and cause the engine to shutdown or fail. For 2 Stage Aftercoolers with separate circuits, the 1st stage will collect 90% of the additional heat.

SOUND DATA:

Data determined by methods similar to ISO Standard DIS-8528-10. Accuracy Grade 3. SPL = Sound Pressure Level.

NOTES

1 ENGINE RATING IS WITH 2 ENGINE DRIVEN WATER PUMPS. TOLERANCE IS ± 3% OF FULL LOAD.

2 GENERATOR POWER DETERMINED WITH AN ASSUMED GENERATOR EFFICIENCY OF 96.1% AND POWER FACTOR OF 0.8 [GENERATOR POWER = ENGINE POWER x GENERATOR EFFICIENCY].

3 ISO 3046/1 ENGINE EFFICIENCY TOLERANCE IS (+)0, (-)5% OF FULL LOAD % EFFICIENCY VALUE. NOMINAL ENGINE EFFICIENCY TOLERANCE IS ± 2.5% OF FULL LOAD % EFFICIENCY VALUE.

4 THERMAL EFFICIENCY: JACKET HEAT + STAGE 1 A/C HEAT + EXH. HEAT TO 350°F.

5 TOTAL EFFICIENCY = ENGINE EFF. + THERMAL EFF. TOLERANCE IS ± 10% OF FULL LOAD DATA.

6 ISO 3046/1 FUEL CONSUMPTION TOLERANCE IS (+)5, (-)0% OF FULL LOAD DATA. NOMINAL FUEL CONSUMPTION TOLERANCE IS ± 2.5 % OF FULL LOAD DATA.

7 UNDRIED AIR. FLOW TOLERANCE IS ± 5 %

8 INLET MANIFOLD PRESSURE TOLERANCE IS ± 5 %

9 INLET MANIFOLD TEMPERATURE TOLERANCE IS ± 9°F.

10 TIMING INDICATED IS FOR USE WITH THE MINIMUM FUEL METHANE NUMBER SPECIFIED. CONSULT THE APPROPRIATE FUEL USAGE GUIDE FOR TIMING AT OTHER METHANE NUMBERS.

11 EXHAUST STACK TEMPERATURE TOLERANCE IS (+)63°F, (-)54°F.

12 WET EXHAUST. FLOW TOLERANCE IS ± 6 %

13 NOX TOLERANCES ARE ± 18 % OF SPECIFIED VALUE.

14 NTE CO, CO2, THC, and NMHC VALUES ARE "NOT TO EXCEED".

15 NOMINAL CO IS A NOMINAL VALUE AND IS REPRESENTATIVE OF A NEW ENGINE DURING THE FIRST 100 HOURS OF ENGINE OPERATION.

16 O2% TOLERANCE IS ± 0.5; LAMBDA TOLERANCE IS ± 0.05. LAMBDA AND O2 LEVEL ARE THE RESULT OF ADJUSTING THE ENGINE TO OPERATE AT THE SPECIFIED NOX LEVEL.

17 LHV RATE TOLERANCE IS ± 2.5%.

18 TOTAL JW HEAT (based on treated water) = JACKET HEAT + STAGE 1 A/C HEAT + 0.90 x (STAGE 1 + STAGE 2) x (ACHRF-1). TOLERANCE IS ± 10 % OF FULL LOAD DATA.

19 RADIATION HEAT RATE BASED ON TREATED WATER. TOLERANCE IS ± 50% OF FULL LOAD DATA.

20 LUBE OIL HEAT RATE BASED ON TREATED WATER. TOLERANCE IS ± 20% OF FULL LOAD DATA.

21 EXHAUST HEAT RATE BASED ON TREATED WATER. TOLERANCE IS ± 10% OF FULL LOAD DATA.

22 STAGE 1 A/C HEAT (based on treated water) = STAGE 1 A/C HEAT + 0.90 x (STAGE 1 + STAGE 2) x (ACHRF-1). TOLERANCE IS ± 5 % OF FULL LOAD DATA.

23 STAGE 2 A/C HEAT (based on treated water) = (STAGE 2 A/C HEAT + (STAGE 1 + STAGE 2) x 0.10 x (ACHRF - 1)) + LUBE OIL HEAT. TOLERANCE IS ± 5 % OF FULL LOAD DATA.

SECTION 3

FACILITY-WIDE APPLICABLE REQUIREMENTS

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
Nevada Revised Statute (NRS) 445B.470 *(State Only Requirement)* Prohibited Acts Source shall not knowingly: 1. Violate any applicable provision, the terms or conditions of any permit or any provision for the filing of information; 2. Fail to pay any fee; 3. Falsify any material statement, representation or certification in any notice or report; or 4. Render inaccurate any monitoring device or method, required pursuant to the provisions of NRS 445B.100 to 445B.450, inclusive, or 445B.470 to 445B.640, inclusive, or any regulation adopted pursuant to those provisions.		No Specific Requirement	In Compliance
NAC 445B.22013 *(State Only Requirement)* Prohibited Discharge Source shall not cause or permit the discharge into the atmosphere from any stationary source of any hazardous air pollutant or toxic regulated air pollutant that threatens the health and safety of the general public, as determined by the director.		No Specific Requirement	In Compliance
NAC 445B.225 *(State Only Requirement)* Prohibited Conduct: Concealment of Emissions Source shall not install, construct, or use any device which conceals any emission without reducing the total release of regulated air pollutants to the atmosphere.		No Specific Requirement	In Compliance
State Implementation Plan (SIP) Article 2.2 *(Federally Enforceable State Implementation Plan (SIP) Requirement)* Circumvention 2.2.1 - Except for the sole purpose of reducing the odor of an emission, Source shall not install, construct, or use any device which conceals any emission without resulting in a reduction in the total release of air contaminants to the atmosphere.		No Specific Requirement	In Compliance
NAC 445B.326.1 (445.7133.1) *Federally Enforceable Part 70 Program* Assertion of Emergency as Affirmative Defense to Action for Noncompliance Source may assert an affirmative defense to an action brought for noncompliance with a technology-based emission limitation contained in the Operating Permit if the holder of the Operating Permit demonstrates through signed, contemporaneous operating logs or other relevant evidence that: a. An emergency occurred as defined in 445B.056 and the holder of the Operating Permit can identify the cause of the emergency; b. The facility was being properly operated at the time of the emergency; c. During the emergency, the holder of the Operating Permit took all reasonable steps to minimize excess emissions; and d. The holder of the Operating Permit submitted notice of the emergency to the director within 2 working days after the emergency. The notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken to restore the normal operation of the		No Specific Requirement	In Compliance

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
facility.			
NAC 445B.315.2.h (445.7112.2.h) *Federally Enforceable Part 70 Program* Source shall provide the Bureau of Air Quality, within a reasonable time, with any information that the Bureau of Air Quality requests in writing to determine whether cause exists for modifying, revoking and reissuing, reopening and revising or terminating this Operating Permit or to determine compliance with the conditions of this Operating Permit.		No Specific Requirement	In Compliance
NAC 445B.315.i (445.7145, 445.7112.2.i) *Federally Enforceable Part 70 Program* Source shall pay fees to the Bureau of Air Quality in accordance with the provisions set forth in NAC 445B.327 and 445B.331.		No Specific Requirement	In Compliance
NAC 445B.315.2.k (445.7112.2.k) *Federally Enforceable Part 70 Program* A responsible official of Source shall certify that, based on information and belief formed after reasonable inquiry, the statements made in any document required to be submitted by any condition of an Operating Permit are true, accurate and complete.		No Specific Requirement	In Compliance
40 CFR 52.21(r)(4) *(Federally Enforceable PSD Program)* At such time that Source becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of 40 CFR Part 52.21 shall apply to the source or modification as though construction had not yet commenced on the source or modification.□		No Specific Requirement	In Compliance
(NAC 445B.252) *(State Only Requirement)* Testing and Sampling 1. To determine compliance with NAC 445B.001 (445.430) to 445B.395 (445.846), inclusive, before the approval or the continuance of an Operating Permit or similar class of permits, the director may either conduct or order the owner of any stationary source to conduct or have conducted such testing and sampling as the director determines necessary. Testing and sampling or either of them must be conducted and the results submitted to the director within 60 days after achieving the maximum rate of production at which the affected facility will be operated, but not later than 180 days after initial startup of the facility and at such times as may be required by the director. 2. Tests of performance must be conducted and data reduced in accordance with the methods and procedures of the test contained in each applicable subsection of this section unless the director: a. Specifies or approves, in specific cases, the use of a method of reference with minor changes in methodology; b. Approves the use of an equivalent method; c. Approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific stationary source is in compliance; or d. Waives the requirement for tests of performance because the owner or operator of a stationary source has demonstrated by other means to the director□s satisfaction that the affected facility is in		Recordkeeping	In Compliance

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
compliance with the standard. 3. Tests of performance must be conducted under such conditions as the director specifies to the operator of the plant based on representative performance of the affected facility. The owner or operator shall make available to the director such records as may be necessary to determine the conditions of the test of performance. Operations during periods of startup, shutdown, and malfunction must not constitute representative conditions of a test of performance unless otherwise specified in the applicable standard. 4. The owner or operator of an affected facility shall give notice to the director 30 days before the test of performance to allow the director to have an observer present. A written testing procedure for the test of performance must be submitted to the director at least 30 days before the test of performance to allow the director to review the proposed testing procedures. 5. Each test of performance must consist of at least three separate runs using the applicable method for that test. Each run must be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the runs apply. In the event of forced shutdown, failure of an irreplaceable portion of the sampling train, extreme meteorological conditions, or other circumstances with less than three valid samples being obtained, compliance may be determined using the arithmetic mean of the results of the other two runs upon the director□s approval. 6. All testing and sampling will be performed in accordance with recognized methods as specified by the director. 7. The cost of all testing and sampling and the cost of all sampling holes, scaffolding, electric power, and other pertinent allied facilities as may be required and specified in writing by the director must be provided and paid for by the owner of the stationary source. 8. All information and analytical results of testing and sampling must be certified as to their truth and accuracy and as to their compliance with all provisions of these regulations, and copies of these results must be provided to the director no later than 60 days after the testing or sampling, or both.			
SIP Article 2.6 *(Federally Enforceable SIP Requirement)* <u>Testing and Sampling</u> 2.6.1 - To determine compliance with these regulations prior to approval of or prior to the continuance of an operating permit or similar class of permits, the Director may either conduct or order the owner of any source to conduct or have conducted such testing and sampling as the Director determines necessary. 2.6.2 - Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Director. 2.6.3 - Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, or (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Director□s satisfaction that the affected facility is in compliance with the standard.		Recordkeeping	In Compliance

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
2.6.4 - Performance tests shall be conducted under such conditions as the Director shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions of performance tests unless otherwise specified in the applicable standard. 2.6.5 - The owner or operator of an affected facility shall provide the Director 30 days prior notice of the performance test to afford the Director the opportunity to have an observer present. 2.6.6 - Each performance test shall consist of at least two separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the runs shall apply. In the event of forced shutdown, failure of an irreplaceable portion of the sampling train, extreme meteorological conditions, or other circumstances with less than two valid samples being obtained, an additional performance test(s) must be conducted. 2.6.7 - All testing and sampling will be performed in accordance with recognized methods as specified by the Director. 2.6.8 - The cost of all testing and sampling and the cost of all sampling holes, scaffolding, electric power, and other pertinent allied facilities as may be required and specified in writing by the Director shall be provided and paid for by the owner of the source. 2.6.9 - All information and analytical results of testing and sampling shall be certified as to their truth and accuracy and as to their compliance with all provisions of these (SIP) regulations and copies of these results shall be provided to both the owner and Director.			
NAC 445B.22067 *(State Only Requirement)* Open Burning The open burning of any combustible refuse, waste, garbage, oil, or for any salvage operations, except as specifically exempted, is prohibited. Specific exemptions from open burning are described in NAC 445B.22067.2.		No Specific Requirement	In Compliance
SIP Article 5.1 *(Federally Enforceable SIP Requirement)* Open Burning The open burning of any combustible refuse, waste, garbage, oil fires, or for any salvage operations, except as specifically exempted, is prohibited. Specific exemptions from open burning are described in SIP Articles 5.2, 5.2.1, 5.2.2, 5.2.3, 5.2.4 and 5.2.5.		No Specific Requirement	In Compliance
NAC 445B.22087 *(State Only Requirement)* Odors Source may not discharge or cause to be discharged, from any stationary source, any material or regulated air		No Specific	In Compliance

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
pollutant which is or tends to be offensive to the senses, injurious or detrimental to health and safety, or which in any way interferes with or prevents comfortable enjoyment of life or property.		Requirement	
SIP Article 10 *(Federally Enforceable SIP Requirement)* Odors 10.1.1 - Source shall not discharge, or cause to be discharged from any source any material or air contaminant which is, or tends to be, offensive to the senses, injurious or detrimental to health and safety, or which in any way interferes with or prevents the comfortable enjoyment of life or property.		No Specific Requirement	In Compliance
NAC 445B.22093 *(State Only Requirement)* Organic Solvents and Other Volatile Compounds 1. Solvents or other volatile compounds such as paints, acids, alkalies, pesticides, fertilizers, and manure must be processed, stored, used, and transported in such a manner and by such means as to minimize the tendency to evaporate, leak, escape, or be otherwise discharged into the ambient air causing or contributing to air pollution. If methods of control are available and feasible effectively to reduce the contribution to air pollution from evaporation, leakage, or discharge, as determined by the director, the installation and use of such methods, devices, or equipment for control is mandatory. 2. Source may not place, store, or hold in any new reservoir, stationary tank or other container with a capacity equal to or greater than 40,000 gallons any gasoline, petroleum distillate, or other volatile organic compound having a vapor pressure of 1.5 lb/square inch absolute or greater under actual storage conditions unless the tank, reservoir, or other container is a pressure tank maintaining working pressure sufficient at all times to prevent loss of vapor or gas to the atmosphere or is equipped with one of the following devices properly installed, in good working order, and in operation: a. A floating roof which consists of a pontoon type or double-deck roof which rests on the surface of the liquid contents and is equipped with a seal to close the space between the roof eave and tank wall or a vapor balloon or a vapor dome designed in accordance with accepted standards of the petroleum industry. This control equipment is not permitted if the gasoline or petroleum distillate has a vapor pressure of 11 lb/square inch absolute or greater under actual conditions. All gauging and sampling devices for tanks must be gas tight except when gauging or sampling is taking place. b. Other equipment proven to be of equal efficiency for preventing discharge of gases and vapors to the atmosphere. 3. Any tank for the storage of any other petroleum or volatile organic compound which is constructed or extensively remodeled on or after November 7, 1975, must be equipped with a submerged fill pipe or the equivalent, as approved by the director, for control of emissions. 4. All facilities for dock loading of products consisting of petroleum or other volatile organic compounds having a vapor pressure of 1.5 lb/square inch absolute or greater at loading pressure must have facilities for submerged filling by submerged fill pipe or an acceptable equivalent, for the control of emissions.		No Specific Requirement	In Compliance
SIP Article 9 *(Federally Enforceable SIP Requirement)* Organic Solvent, other Volatile Compounds 9.1 - Materials such as, but not limited to, solvents or other volatile compounds such as paints, acids, alkalies, pesticides, fertilizers, and manure shall be processed, stored, used, and transported in such a manner and by		No Specific	In Compliance

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
such means as to minimize the tendency to evaporate, leak, escape, or be otherwise discharged into the ambient air causing or contributing to air pollution; and where control methods are available and feasible effectively to reduce the contribution to air pollution from evaporation, leakage, or discharge, as determined by the Director, the installation and use of such control methods, devices, or equipment shall be mandatory.		Requirement	
SIP Article 9.2 *(Federally Enforceable SIP Requirement)* Storage Containers Equal to or Greater than 150 kiloliters (40,000 Gallons) 9.2.1 - Source shall not place, store, or hold in any new reservoir, stationary tank or other container any gasoline, petroleum distillate, or other volatile organic compound having a vapor pressure of 1,055 kilograms per square meter (1.5 lb/square inch absolute) or greater (under actual storage conditions) unless such tank, reservoir, or other container is a pressure tank maintaining working pressure sufficient at all times to prevent vapor or gas loss to the atmosphere or is equipped with one of the following vapor loss control devices (see 9.2.1, 9.2.1.2) properly installed, in good working order, and in operation. 9.2.1.1 - A floating roof which consists of a pontoon type or double-deck roof which rests on the surface of the liquid contents and is equipped with a closure seal to close the space between the roof eave and tank wall; or a vapor balloon or a vapor dome, designed in accordance with accepted standards of the petroleum industry. This control equipment shall not be permitted if the gasoline or petroleum distillate has a vapor pressure of 7,734 kilograms (11 lb/square inch absolute) or greater under actual conditions. All tank gauging and sampling devices shall be gas tight except when gauging or sampling is taking place. 9.2.1.2 - Other equipment proven to be of equal efficiency for preventing discharge of gases and vapors to the atmosphere.	The site does not have any storage containers greater than 40,000 gallons; therefore this regulation does not apply.		
SIP Article 9.2 *(Federally Enforceable SIP Requirement)* Storage Containers Equal to or Greater than 150 kiloliters (40,000 Gallons) (Continued) 9.2.2 - Any other petroleum or volatile organic compound storage tank which is constructed or extensively remodeled, on or after the effective date of these regulations, shall be equipped with submerged fill pipe or equivalent, as approved by the Director for control of emissions.	The site does not have any storage containers greater than 40,000 gallons; therefore this regulation does not apply.		
SIP Article 9.2 *(Federally Enforceable SIP Requirement)* Storage Containers Equal to or Greater than 150 kiloliters (40,000 Gallons) (Continued) 9.2.3 - All facilities for dock loading of petroleum or volatile organic compound products, having a vapor pressure of 1,055 kilograms per square meter (1.5 pounds per square inch absolute) or greater at loading pressure, shall provide for submerged filling by a submerged fill pipe or acceptable equivalent for the control of emissions	The site does not have any storage containers greater than 40,000 gallons; therefore this regulation does not apply.		
NAC 445B.22037 *(State Only Requirement)* Fugitive Dust 1. Source may not cause or permit the handling, transporting, or storing of any material in a manner which allows or may allow controllable particulate matter to become airborne. 2. Except as otherwise provided in subsection 4, Source may not cause or permit the construction, repair,		Site controls fugitive dust in accordance with the dust control plan entitled	In Compliance Site maintains Title V permit for landfill,

TABLE 1
APPLICABLE REQUIREMENTS, TEST METHODS, AND COMPLIANCE STATUS

Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
demolition, or use of unpaved or untreated areas without first putting into effect an ongoing program using the best practical methods to prevent particulate matter from becoming airborne. As used in this subsection, □best practical methods□ includes, but is not limited to, paving, chemical stabilization, watering, phased construction, and revegetation. 3. Except as provided in subsection 4, Source may not disturb or cover 5 acres or more of land or its topsoil until he has obtained an Operating Permit for surface area disturbance to clear, excavate, or level the land or to deposit any foreign material to fill or cover the land. 4. The provisions of subsections 2 and 3 do not apply to: a. Agricultural activities occurring on agricultural land; or b. Surface disturbances authorized by a permit issued pursuant to NRS 519A.180 which occur on land which is not less than 5 acres or more than 20 acres.		"Lockwood Regional Landfill, November 2, 1999, Dust Control Plan" as part of approved Operating Plan by SW Management Authority.	which through applications and basic knowledge of what a landfill is, clearly defines the site as including such disturbance; therefore site has necessary permit noted in this provision.
SIP Article 7.3 *(Federally Enforceable SIP Requirement)* Fugitive Dust 7.3.1 - Source shall not cause or permit the handling, transporting, or storing of any material in a manner which allows, or may allow, controllable particulate matter to become airborne. 7.3.2 - In areas designated by the Director, Source shall not cause or permit the construction, repair, or demolition work, or the use of unpaved or untreated areas without applying all such measures as may be required by the Director to prevent particulate matter from becoming airborne. 7.3.3 - Source may not disturb or cover 8 hectares (20 acres) or more of land or its topsoil, except for agricultural land until Source obtains a registration certificate or operating permit for the purpose of clearing, excavating or leveling such land or any foreign material to fill or cover such land.		Site controls fugitive dust in accordance with the dust control plan entitled "Lockwood Regional Landfill, November 2, 1999, Dust Control Plan"	In Compliance
NAC 445B.227 (445.664) *Federally Enforceable Part 70 Program* Facilities Operation Source may not: 1. Operate a stationary source of air pollution unless the control equipment for air pollution which is required by applicable requirements or conditions of this Operating Permit is installed and operating. 2. Disconnect, alter, modify or remove any of the control equipment for air pollution or modify any procedure required by an applicable requirement or condition of this Operating Permit.		No Specific Requirement	In Compliance
The following provisions are applicable requirements of this Operating Permit: 1. Source will comply with all applicable provisions of; a. 40 CFR Part 60.1 - 60.19 - Standards of Performance for New Stationary Sources - General		Facility will comply with the testing and	In Compliance

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Applicable Requirement Citation and Description	Explanation of A Proposed Exemption	Test Methods and/or Monitoring	Compliance Status
Provisions; b. 40 CFR Part 61.01 - 61.19 - National Emission Standards for Hazardous Air Pollutants - General Provisions; c. 40 CFR Part 61.140 - 61.157 - National Emission Standards for Asbestos; d. 40 CFR Part 63.1 - 63.15 - National Emission Standards for Hazardous Air Pollutants for Source Categories - General Provisions; e. 40 CFR Part 70 - State Operating Permit Program.		monitoring requirements of 40 CFR 60 Subpart WWW and JJJJ.	
Source is subject to 40 CFR Part 68 - Chemical Accident Prevention Provisions. Source shall submit a risk management plan (RMP) by June 21, 1999, or other dates specified in 40 CFR 68.10. Source shall certify compliance with these requirements as part of the annual compliance certification as required by 40 CFR Part 70.	The facility does not store or process the material as defined in the regulation.		
Source will comply with all provisions of 40 CFR Part 82. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156. Equipment used during maintenance, service, repair, or disposal of appliances must meet the standards for recycling and recovery equipment in accordance with 40 CFR 82.158. Persons performing maintenance, service, repair or disposal of appliances must be certified by a certified technician pursuant to 40 CFR 82.161.	Landfill personnel do not need to be certified; therefore 40 CFR 82.161 does not apply.	Recordkeeping and monitoring at the gate.	In Compliance
<u>Chemical Accident Prevention Provisions</u> Source shall: 1. Submit a compliance schedule for meeting the requirements of 40 CFR Part 68.215 by the date provided in 40 CFR Part 68.10(a) or; 2. Submit as part of the compliance certification submitted under 40 CFR Part 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 CFR Part 68.215, including the registration and submission of the risk management plan.	The facility does not store or process the material as defined in the regulation.		
Source is not in compliance with NAC 445B.230 - □Plan for reduction of emissions.□ In order to achieve compliance Source shall submit a plan for reducing or eliminating emissions associated with the stationary source in accordance with the episode stages of alert, warning, and emergency as contained in the applicable State Implementation Plan for the State of Nevada. The plan must be submitted on or before July 1, 1998.	Source will be in compliance		