air pollution control district
SANTA BARBARA COUNTY

PERMIT TO OPERATE 8036-R12

AND

PART 70 OPERATING PERMIT 8036

TEAM OPERATING - SOUTH CAT CANYON STATIONARY SOURCE

CAT CANYON IC ENGINES, CAT CANYON FIELD
6527 DOMINION ROAD
SANTA MARIA, CALIFORNIA 93454

OPERATOR

TEAM OPERATING, LLC.

OWNERSHIP

TEAM OPERATING, LLC.

SANTA BARBARA COUNTY
AIR POLLUTION CONTROL DISTRICT

June 2022

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's *Compilation of Emission Factors*
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
District	Santa Barbara County Air Pollution Control District
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H_2S	hydrogen sulfide
I&M	inspection & maintenance
k	kilo (thousand)
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LPG	liquid petroleum gas
MACT	Maximum Achievable Control Technology
MM	million
MRR	Monitoring, Recordkeeping and Reporting
MW	molecular weight
NSPS	New Source Performance Standards
O_2	oxygen
PM	Particulate Matter
PM_{10}	Particulate Matter 10 microns in diameter or less
$PM_{2.5}$	Particulate Matter 2.5 microns in diameter or less
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
SCAQMD	South Coast Air Quality Management District
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system

1.0 Introduction

1.1 Purpose

1.1.1 General: The Santa Barbara County Air Pollution Control District (District) is responsible for implementing all applicable federal, state and local air pollution requirements that affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the District's Rules and Regulations.

Santa Barbara County is designated as a non-attainment area for the state PM_{10} ambient air quality standard. On July 1, 2020, the County achieved attainment status for the ozone state ambient air quality standards, however in February 2021, the California Air Resources Board took action at a public hearing to change Santa Barbara County's designation from attainment to nonattainment for the State ozone standard. This change was based on data measured at multiple locations in the County for the 3-year period from 2017 to 2019. The California Office of Administrative Law (OAL) finalized the designation change on September 27, 2021.

1.1.2 Permitting: This is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 8036*) as well as the State Operating Permit (*Permit to Operate No. 8036*). The initial Part 70 permit for the ICE Facility was issued November 1, 2000 in accordance with the requirements of the District's Part 70 operating permit program. This permit is the ninth renewal of the Part 70 permit, and may include additional applicable requirements. This permit also incorporates any Part 70 minor modifications since the last renewal and is being issued as a combined Part 70 and District reevaluation permit.

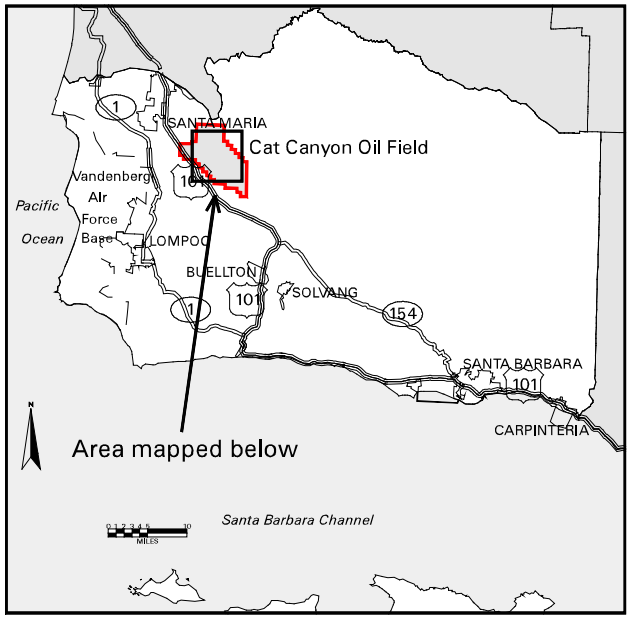
IC Engine Facility (FID 3831) is a part of the South Cat Canyon stationary source (SSID 2658), which is a major source for NO_x and CO. Conditions listed in this permit are based on federal, state or local rules and requirements.

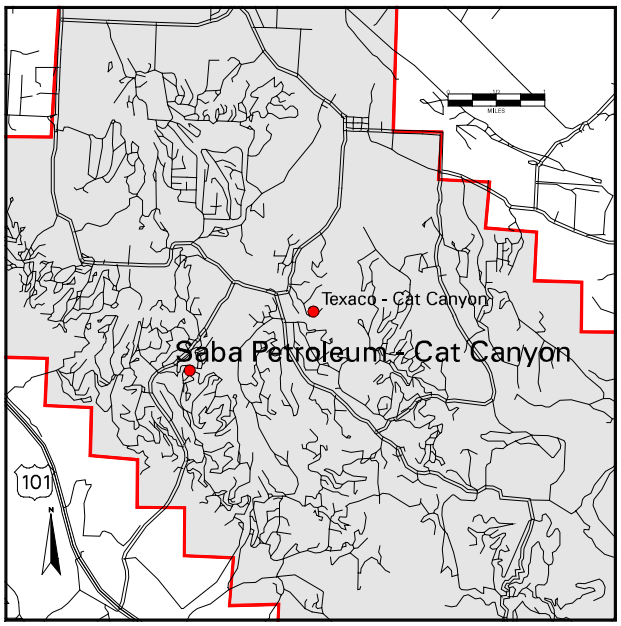
Sections 9.A, 9.B, and 9.C of this permit are enforceable by the District, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B, or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "District-only" enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Second, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance. This reevaluation incorporates greenhouse gas emission calculations for the stationary source *(Tailoring Rule)*. On January 20, 2011, the District revised Rule 1301 to include greenhouse gases (GHGs) that are "subject to regulation" in the definition of

"Regulated Air Pollutants". District Part 70 operating permits are being updated to incorporate the revised definition.

Figure 1. Location Map for South Cat Canyon





1.2 Facility Overview

1.2.1 Facility Overview: Team Operating, LLC. ("Team Operating") is the owner and operator of the Cat Canyon IC Engines Facility (termed hereafter as "IC Engines Facility"), located at 6527 Dominion Road, Santa Maria, California 93454. This facility consists of multiple internal combustion engines operating on multiple leases within the Cat Canyon South Stationary Source. These leases are located in the Cat Canyon Oil Field, approximately two miles south of the Palmer Road and Cat Canyon Road intersection and six miles south-southeast of the city of Santa Maria in Santa Barbara County. For District regulatory purposes, the facility location is in the Northern Zone of Santa Barbara County[1]. Figure 1.1 shows the relative location of the facility within the county.

The IC Engines Facility was operational in September 1979 when its owner/operator Union Oil of California applied to the District for its first operating permit (ATC/PTO 4041). The District issued an operating permit to Union Oil in October 1979. In June, 1993 ownership of the Cat Canyon stationary source including the IC Engines Facility was transferred from Unocal to Saba Petroleum Corporation doing business as D&S Industrial Services. In January 2000, Greka assumed ownership of the facility. In January 2013, the owner and operator of one IC engine from this facility was transferred from Greka to ERG Resources. The 2019 permit renewal included an update to reflect HVI as the owner and operator of the equipment subject to this permit. This was a business name change only; no transfer of ownership or operator occurred. In March 2021 the operator and ownership of this facility was transferred to Team Operating, LLC.

1.2.2 Stationary Source Overview: Prior to August 2002, the South Cat Canyon Stationary Source was a Part 70 source consisting of the Bell, Blochman, Dominion, UCB, Palmer-Stendl and the IC engines facility. In August 2002 Greka purchased nine leases within the Cat Canyon field from Vintage Petroleum which were incorporated into the existing Part 70 Cat Canyon Stationary Source at that time. In November 2008, Greka sold two of the leases within the stationary source; the California Lease and United California Lease. As a result of this sale, the stationary source configuration was reorganized based on the stationary source definition in District Rule 201. The single source was split into the following three sources: the North Cat Canyon Stationary Source consisting of the Goodwin, Harbordt, Lloyd, Mortenson, and Security/Thomas Leases; the Central Cat Canyon Stationary Source consisting of the Porter Lease and the South Cat Canyon Stationary Source consisting of the Bell, Blochman, Dominion, UCB, Palmer-Stendl, and the IC Engines Leases. Following this reorganization, only the South Cat Canyon Stationary Source (SSID 2658) remained a Part 70 source. In January 2013 Greka transferred the UCB Lease, Dominion Lease, and one IC engine from the Cat Canyon IC Engine Facility to ERG Resources.

[1] District Rule 102, Definition: "Northern Zone"

This stationary source now consists of the following facilities:

- Bell Lease (FID 3211)
- Blochman Lease (FID 3306)
- Palmer Stendl Lease (FID 3307)
- Cat Canyon IC Engines (FID 3831)

Oil and gas at the South Cat Canyon stationary source is produced by wells at the Bell, Blochman and Palmer-Stendl Leases and is piped to the central processing facility at the Bell Lease. The crude oil processed at the Bell lease is sent off-site via pipelines or tanker trucks. Gas production from these wells is processed at the Bell Lease and used by the boilers and heater treaters at the Bell Lease, by the field combustion equipment throughout the Cat Canyon leases, or piped to locations offsite.

There are twelve (7) uncontrolled IC engines and one (1) controlled IC engine subject to this permit. These engines comprise the prime mover force for the systems listed below. Operation of these IC engines and their emissions are addressed in this permit.

- Oil & Gas Production well pumps
- One Gas compressor
- Wastewater injection pumps

Since the issuance of the prior permit reevaluation, five engines (District Device Nos. 5316, 3382, 3398, 6454, 3441) are no longer onsite or in the Lakeview Yard or Rig Yardand therefore have been removed from this permit reevaluation. See Section 3.5.1 for additional detail.

1.2.2 Facility Permit History: The following is a recent permit history for this facility. See previous permit reevaluations and the project file for a detailed permit history.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
Trn O/O 8036-03	1/7/2013	Transferred District Device #110036 to ERG Resources Cat Canyon Central.
ATC/PTO 14440	10/28/2014	Depermit two internal combustion engines.
Pt70 PTO 8036-R10	6/10/2016	Permit Reevaluation.
Pt70 PTO 8036-R11	07/01/2019	Permit Reevaluation.
Trn O/O 8036-04	03/01/2021	Transfer of facility ownership and operator to Team Operating Operating, LLC.

1.3 Emission Sources

Air pollution emissions from the IC engines are the result of fuel combustion and fugitive ROC emissions from piping components, such as valves and flanges. Section 4.0 of the permit provides the District's engineering analysis of these emission sources. Section 5.0 of the permit describes the allowable emissions from each permitted emissions unit and the

entire IC engine facility. It also lists the potential emissions from non-permitted emission units. A list of all permitted equipment is provided in Attachment 10.5.

1.4 Emission Control Overview

All 7 uncontrolled IC engines operating at the Cat Canyon stationary source either have nameplate ratings less than 50 bhp or have been derated through the use of orifice plates to less than 50 bhp. Consequently, these engines are not subject to the NO_x, CO, or ROC emission standards of District Rule 333.

There is one controlled IC engine subject to this permit. This engine uses Non-Selective Catalytic Reduction (NSCR) and Air/Fuel Ratio (AFR) controls to reduce NO_x, CO, and ROC emissions. This engine is currently idle.

Other controls include:

- A Fugitive Hydrocarbon Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from piping components at the Compressor Plant only, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 percent.

1.5 Offsets/Emission Reduction Credit Overview

The Team Operating South Cat Canyon Stationary Source triggers the Regulation VIII offset thresholds for NO_x and ROC emissions. However, this source did not become subject to the emission offset requirements of Regulation VIII until adoption of revised Rule 802 in August 2016, therefore emission offsets are not required for the existing emissions associated with this permit. Any future increase in ROC or NO_x emissions will be evaluated for emission offsets.

Emission reduction credits were created by the replacement of older equipment with lower emitting equipment at the Bell Lease facility's Compressor Plant. These ERCs are based on ICE units permitted to operate at the Bell Lease Compressor Plant and must be maintained as described in Section 7.3 of this permit, DOI #006, and modifications to DOI #006.

1.6 Operating Permit Overview

1.6.1 Federally-enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under "applicable requirements". These include all SIP-approved District Rules, all conditions in the District-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. *(See Tables 3.4-1 and 3.4-2 for a list of federally enforceable requirements)*

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section

112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities must be listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units. The only insignificant emissions associated with this facility are solvent and surface coating operations used during maintenance operations.

1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement which was in effect as of August 7, 1980, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. (*See Section 5.4 for the federal PTE for this source)*

1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the District. Permit shields cannot be indiscriminately granted with respect to all federal requirements. Team Operating has not made a request for a permit shield.

1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. Team Operating made no request for permitted alternative operating scenarios.

1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application; and, be re-submitted annually on or before March 1st or on a more frequent schedule specified in the permit. Each certification is signed by a "responsible official" of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (*see Section 1.6.9 below)*

1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.

1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits regulates emission of HAPs from major sources by requiring maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability.

1.6.9 Responsible Official: The designated responsible official and their mailing address is:

King Tomlinson
Vice President
P.O. Box 835
Pinehurst, TX 77362

2.0 Process Description

2.1 Process Summary

2.1.1 Uncontrolled IC Engines: A total of 7 uncontrolled reciprocating IC engines located at the South Cat Canyon stationary source operate at the three associated leases to provide power to pumps and injectors. These engines are fired on gaseous fuel (field gas). All of these engines are rated (or de-rated) to operate below 50 bhp.

2.1.2 Controlled IC Engines: A Caterpillar G-342 controlled IC engine (225 bhp) is used to power a produced gas compressor. This engine is equipped with Non-Selective Catalytic Reduction ("NSCR") and fuel/air ratio control systems to reduce NO_x, ROC, and CO emissions from the engine exhaust. As of this permitting action, the Caterpillar controlled engine is not in use, but will remain on the permit. Complete descriptions of the non-IC engine operating processes at Team Operating South Cat Canyon stationary source are provided in the other Cat Canyon facility Part 70 permits.

2.2 Support Systems

There are no support systems.

2.3 Detailed Process Equipment Listing

Refer to Attachment 10.5 for the Equipment List.

3.0 Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to the IC Engines Facility.

3.1 Rule Exemptions Claimed

District Rule 202 *(Exemptions to Rule 201)*: Team Operating requested the following exemptions under this rule. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule. The following exemptions were approved by the District:

- Rule 202.V.8 for one 500 gallon tank for liquefied propane.
- Rule 202.U for specified solvent use for operations listed in this rule.

- District Rule 333 (*Control of Emissions from Reciprocating Internal Combustion Engines*): The 7 uncontrolled engines subject to this permit either have nameplate ratings less than 50 bhp or have been derated through the use of orifice plates, to less than 50 bhp. Therefore, these engines are currently exempt from Rule 333 provisions

3.2 Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52*{New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration)}:* The IC Engines Facility was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of July, 1979 are subject to District NSR requirements. Compliance with District Regulation VIII (*New Source Review*) ensures that future modifications to the facility will comply with these regulations.

3.2.2 40 CFR Part 60 *{New Source Performance Standards}:* There is no equipment in this permit subject to NSPS.

3.2.3 40 CFR Part 61 *{NESHAP}*: The uncontrolled and controlled engines are not subject to requirements under 40 CFR 61.

3.2.4 40 CFR Part 63 *{MACT}:* This facility is not currently subject to the provisions of this Subpart. On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Pursuant to this promulgation, information was submitted in June 2000 and supporting information in July 2000 indicating that the Bell, Blochman, and Palmer-Stendl Leases were exempt from the requirements of this MACT based on its black oil production. The MACT exemption holds for the South Cat Canyon stationary source, since black oil is produced at each of the leases comprising the source. The South Cat Canyon stationary source is subject to general recordkeeping requirements as defined in condition 9.B.13.

3.2.5 40 CFR Part 63 *{MACT Standards}*: On August 27, 2003, EPA promulgated Subpart EEEE, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Organic Liquids Distribution (Non-Gasoline). The District has determined that none of the permitted facilities within the South Cat Canyon stationary source are subject to this MACT.

3.2.6 40 CFR Part 63 *{Proposed MACT Standards}*: On March 21, 2011, EPA promulgated revisions to Subpart JJJJJJ, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Industrial, Commercial, and Institutional Boilers at Area Sources.

3.2.7 *Subpart ZZZZ {NESHAP - Stationary Internal Combustion Engines}*: The revised National Emission Standard for Hazardous Air Pollutants (NESHAP) for reciprocating internal combustion engines (RICE) was published in the Federal Register on January 18, 2008. An affected source under the NESHAP is any existing, new, or reconstructed stationary RICE located at a major source or area source.

Existing non-emergency non-black start compression ignition RICE rated less than 300 bhp must comply with the applicable emission and operating limits. All uncontrolled engines on this permit are subject to this requirement. The following operating requirements apply:

(1) Change the oil and filter every 1,000 hours of operation or annually, whichever comes first;

(2) Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first;

(3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Existing non-emergency, non-black start, four stroke, rich burn RICE rated less than 500 bhp must comply with the applicable emission and operating limits. The controlled Caterpillar G-942 is subject to the following requirements if it is returned to service:

(1) Change the oil and filter every 1,440 hours of operation or annually, whichever comes first;

(2) Inspect the spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;

(3) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.

3.2.8 40 CFR Part 64 *{Compliance Assurance Monitoring}*: This rule became effective on April 22, 1998 and affects emission units at the source subject to a federally enforceable emission limit or standard that use a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds (currently 100 TPY for any pollutant). Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.

3.2.9 40 CFR Part 70 *{Operating Permits}:* This Subpart is applicable to IC Engines Facility. Table 3.4-1 lists the federally enforceable District promulgated rules that are "generic" and apply to IC Engines Facility. Table 3.4-2 lists the federally enforceable District promulgated rules that are "unit-specific". These tables are based on data available from the District's administrative files and from the Part 70 application for this permit. Table 3.4-4 includes the adoption dates of these rules.

In its Part 70 renewal permit application (Form I), Team Operating certified compliance with all existing District rules and permit conditions. This certification is also required of semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that Team Operating complies with the provisions of all applicable Subparts.

3.3 Compliance with Applicable State Rules and Regulations

3.3.1 Division 26. Air Resources *{California Health & Safety Code}*: The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the District. These provisions are District-enforceable only.

3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at ICE Facility are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are District-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

3.3.3 Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (CCR Title 17, Section 95665 *et. Seq.*): This regulation establishes greenhouse gas emission standards for crude oil, condensate, and produced water separation and storage facilities. Based on the definitions of the regulation, this facility is subject to the requirements of this regulation. This facility is exempt from the leak detection and repair (LDAR) requirements of the CARB regulation per section 95669(b)(1), which exempts components, including components found on tanks, separators, wells and pressure vessels, that are subject to local Air District LDAR requirements prior to January 1, 2018. This facility does not utilize circulation tanks for well stimulation treatments, centrifugal natural gas compressors, natural gas powered pneumatic devices or pumps, natural gas only wells, or well casing vents, and is therefore not subject to the CARB regulation standards and requirements for these equipment and processes. The one reciprocating natural gas compressor at this facility satisfies the requirements of the CARB regulation through the implementation of leak detection and repair (LDAR) on the rod packing/seals pursuant to District Rule 331.

3.4 Compliance with Applicable Local Rules and Regulations

3.4.1 Applicable Tables: Tables 3.4-1, 3.4.-2 and 3.4-3 list the non-federally enforceable District promulgated rules that apply to the ICE facility. Table 3.4-4 lists the adoption date of all rules applicable to this permit at the date of this permit's issuance.

3.4.2 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

The following is a rule-by-rule evaluation of compliance for the ICE Facility:

Rule 201 - Permits Required: This rule applies to any person who builds, erects, alters, replaces, operates or uses any article, machine, equipment, or other contrivance which may cause the issuance of air contaminants. The equipment included in this permit is listed in Attachment 10.5. An Authority to Construct is required to return any de-permitted equipment to service and may be subject to New Source Review.

Rule 210 - Fees: Pursuant to Rule 201.G: District permits are reevaluated every three years. This includes the re-issuance of the underlying permit to operate. Fees for this facility are recovered under the cost reimbursement provisions of this rule.

Rule 301 - Circumvention: This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the District rules and regulations. To the best of the District's knowledge, Team Operating is operating in compliance with this rule.

Rule 302 - Visible Emissions: This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringelmann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringelmann Chart. Emission units subject to this rule include the internal combustion engines within the Team Operating South Cat Canyon stationary source. Compliance will be monitored by implementation of the *ICE Engine I&M Plan* and requiring all combustion equipment to be maintained according to manufacturer maintenance schedules.

Rule 303 - Nuisance: This rule prohibits Team Operating from causing a public nuisance due to the discharge of air contaminants. Based on the lease's location, the potential for public nuisance is small.

Rule 304 - Particulate Matter, Northern Zone: The Team Operating South Cat Canyon stationary source is considered a Northern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of 0.3 gr/scf. Emission units subject to this rule include the internal combustion engines. Compliance will be assured by requiring all combustion equipment to be maintained according to manufacturer maintenance schedules.

Rule 309 - Specific Contaminants: Under Section "A", no source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO_2 (by volume) and 0.3 gr/scf (at 12% CO_2) respectively. Sulfur emissions due to combustion of field gas containing no more than 796 ppmv H_2S will comply with the SO_2 limit. All combustion equipment items have the potential to exceed the combustion contaminant limit if not properly maintained (see discussion on Rule 304 above for compliance).

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H_2S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes or 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, all produced gas used by the ICE facility is sweet. As a result, it is expected that compliance with this rule will be achieved.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted by the ICE Facility to 50 gr/100 scf (calculated as H_2S) {or 796 ppmvd}. A more stringent limit {239 ppmvd} is in effect for gaseous fuel used by the *controlled* IC engine at the Bell Lease

Compressor Plant. Produced gas used by all IC engines is treated for H_2S at the Bell lease and is well below these limits, thus they are expected to comply with the gaseous fuel limit as determined by fuel (field gas) analysis documentation. The *Fuel Gas Sulfur and HHV Monitoring Plan* identifies sampling locations and procedures for combustion units permitted on the Team Operating Cat Canyon stationary source.

Rule 317 - Organic Solvents: This rule sets specific prohibitions against the discharge of emissions of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used on the lease during normal operations for degreasing by wipe cleaning and for use in paints and coatings in maintenance operations. There is the potential to exceed the limits under Section B.2 during significant surface coating activities. Team Operating is required to maintain records to ensure compliance with this rule.

Rule 322 - Metal Surface Coating Thinner and Reducer: This rule prohibits the use of photochemically reactive solvents for use as thinners or reducers in metal surface coatings. Team Operating will be required to maintain records during maintenance operations to ensure compliance with this rule.

Rule 323.1 - Architectural Coatings: This rule sets standards for the application of surface coatings. The primary coating standard that will apply to the lease is for Industrial Maintenance Coatings that have a limit of 250 gram ROC per liter of coating, as applied. Team Operating is required to comply with the administrative requirements under Section F of the Rule for each container on the lease.

Rule 324 - Disposal and Evaporation of Solvents: This rule prohibits any source from disposing more than one and a half gallons of any photochemically reactive solvent per day by means that will allow the evaporation of the solvent into the atmosphere. Team Operating is required to maintain records to ensure compliance with this rule.

Rule 330 - Surface Coating of Metal Parts and Products: This rule sets standards for many types of coatings applied to metal parts and products. In addition to the ROC standards, this rule sets operating standards for application of the coatings, labeling and recordkeeping. Compliance shall be based on site inspections.

Rule 331 - Fugitive Emissions Inspection and Maintenance: This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. Ongoing compliance with the provisions of this rule will be assessed via the District-approved *Fugitive I&M Plan* facility inspection by District personnel using an organic vapor analyzer and analysis of operator records.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels. The Caterpillar G-342 engine, operated in a non-cyclic rich-burn mode, is the only engine subject to the provisions of Section D.1. Rule 333 was revised June 19, 2008, however the applicable emission limits for this ICE did not change. Due to NSR permit

conditions, the Caterpillar G-342 engine is restricted to emission limits that are more stringent than the provisions of Section D.1 of Rule 333. See Section 9.C.1, Table C.1-2 for a summary of these emission limits.

Rule 353 - Adhesives and Sealants: This rule applies to the use of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers or any other primers. Compliance with this rule is met through appropriate recordkeeping of adhesive and sealant materials used in addition to site inspections. Also, exclusive use of adhesive and sealant contained in containers of 16 fluid ounces or less demonstrate compliance with this rule.

Rule 505 - Breakdown Conditions: This rule describes the procedures that Team Operating must follow when a breakdown condition occurs to any emissions unit associated with ICE Facility.

A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;
b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;
c. Is not the result of improper maintenance;
d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;
e. Is not a recurrent breakdown of the same equipment.

Rule 603 - Emergency Episode Plans: Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. A revised plan was submitted and approved by the District in April 2004.

Rule 810 - Federal Prevention of Significant Deterioration: This rule, adopted January 20, 2011 and amended June 20, 2013, incorporates the federal Prevention of Significant Deterioration rule requirements into the District's rules and regulations. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

Table 3.4-1 Generic Federally-Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants
RULE 102: Definitions	All emission units	Emission of pollutants
RULE 103: Severability	All emission units	Emission of pollutants
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Applicable emission units, as listed in form 1302-H of the Part 70 application	Insignificant activities/emissions, per size/rating/function
RULE 203: Transfer	All emission units	Change of ownership
RULE 204: Applications	All emission units	Addition of new equipment of modification to existing equipment.
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants
RULE 206: Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
RULE 207: Denial of Applications	All emission units	Applicability of relevant Rules
RULE 208: Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.
RULE 212: Emission Statements	All emission units	Administrative
RULE 301: Circumvention	All emission units	Any pollutant emission
RULE 302 : Visible Emissions	All emission units	Particulate matter emissions
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.
RULE 304: PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas
RULE 309: Specific Contaminants	All emission units	Combustion contaminants
RULE 311: Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
RULE 322: Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
RULE 323.1: Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
RULE 330: Surface Coating of Metal Parts	Emission units using metal parts coating	Surface coating used in maintenance operations.
RULE 353: Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants used in process operations.
RULE 505.A, B1, D: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded.
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 TPY	South Cat Canyon is a major source.
RULE 810: Federal Prevention of Significant Deterioration	New or modified emission units	South Cat Canyon is a major source.
REGULATION VIII: New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.

Generic Requirements	Affected Emission Units	Basis for Applicability
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	South Cat Canyon is a major source.

Table 3.4-2 Unit-Specific Federally-Enforceable District Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
RULE 331: Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, seals, compressors and pumps) used to handle oil and gas	Components emit fugitive ROCs.
RULE 333: Control of Emissions from Reciprocating Internal Combustion Engines	Caterpillar G-342	All ICE's with bhp greater than 50 hp

Table 3.4-3 Non-Federally-Enforceable District Rules

Requirement	Affected Emission Units	Basis for Applicability
RULE 210: Fees	All emission units	Administrative
RULE 310: Odorous Org. Sulfides	All emission units	Emission of organic sulfides
RULES 501-504: Variance Rules	All emission units	Administrative
RULE 505.B2, B3, C, E, F, G: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULES 506-519: Variance Rules	All emission units	Administrative

Table 3.4-4 Adoption Dates of District Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption/Revision Date
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	August 25, 2016
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	June 18, 2008
Rule 202	Exemptions to Rule 201	August 25, 2016
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	August 25, 2016
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of ATC or PTO	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	June 1981
Rule 304	Particulate Matter Concentration - Northern Zone	October 23, 1978
Rule 309	Specific Contaminants	October 23, 1978
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	June 21, 2012
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323.1	Architectural Coatings	June 19, 2014

Rule No.	Rule Name	Adoption/Revision Date
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 328	Continuous Emissions Monitoring	October 23, 1978
Rule 330	Surface Coating of Metal Parts and Products	June 21, 2012
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating Internal Combustion Engines	June 19, 2008
Rule 353	Adhesives and Sealants	June 21, 2012
Rule 360	Emissions from Oxides of Nitrogen from Large Water Heaters and Small Boilers	March 15, 2018
Rule 361	Small Boilers, Steam Generators and Process Heaters	June 20, 2019
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review – Definitions and General Requirements	August 25, 2016
Rule 802	New Source Review	August 25, 2016
Rule 804	Emission Offsets	August 25, 2016
Rule 805	Air Quality Impact and Modeling	August 25, 2016
Rule 806	Emission Reduction Credits	August 25, 2016
Rule 810	Federal Prevention of Significant Deterioration	June 20, 2013
Rule 901	New Source Performance Standards (NSPS)	September 20, 2010
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	August 25, 2016
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	January 18, 2001
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993
Rule 1305	Enforcement	November 9, 1993

3.5 Compliance History

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the District's Administrative file.

3.5.1 Facility Inspections: Routine facility inspections are conducted on a semi-annual basis at this facility. The inspection reports for the inspections conducted since the previous permit renewal were reviewed as part of the current permit renewal process. During the most recent District inspection, the following engines could not be located at the stationary source, the Lakeview Yard or the Rig Yard and were depermitted; District Device Nos. 5316, 3382, 3398, 6454, 3441. There were no enforcement actions issued as a result of these inspections however, since the previous permit renewal, multiple enforcement actions were issued as a result of District review of the semi-annual compliance reports or from Deviation Report submittals. See Section 3.5.2 below.

3.5.2 Violations: The following enforcement action was issued for the IC Engine Facility since the last permit renewal.

VIOLATION NUMBER	DATE ISSUED	DESCRIPTION
NOV No. 11502	April 4, 2019	Failure to submit permit renewal application within required timeline.
NOV No. 12131	November 19, 2019	Failure to submit 2019 CVR within required timeline.
NOV No. 12454	July 10, 2020	Failure to submit specific information required by the 2019 CVR.
NOV No. 12455	July 10, 2020	Failure to submit specific information required by the 2019 CVR.
NOV No. 12518	September 10, 2020	Failure to submit form ENF-108 within the required timeline.

3.5.3 Variances: No variances issued for this facility since the last permit renewal.

3.5.4 Hearing Board Actions: There are no significant historical Hearing Board actions.

4.0 Engineering Analysis

4.1 General

The engineering analyses performed for this permit were limited to the review of:

- Emission factors and calculation methods for each emissions unit
- Rule applicability for each emissions unit and process
- Emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- Emission source testing, sampling, CEMS, CAM
- Process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the District's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 7/13/98 (ver. 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2 Stationary Combustion Sources

This IC engine facility consists of gas-fired piston internal combustion engines which have been categorized into the following groups for determining emissions:

4.2.1 Uncontrolled IC Engines: This category includes 7 four stroke, lean burn piston-type internal combustion engines which are fired on gaseous fuel (field gas) and provide power to pumps, compressors, and other equipment. Table 5.1-1 and Table 10.2-1 of this permit contains a listing of these engines, the engine specifications, the operating limitations, and the properties of the fuel burned in the engines. All of these engines either have nameplate ratings less than 50 bhp or have been de-rated to less than 50 bhp through the use of orifice plates.

$$ER = [(EF \times BHP \times BSCF \times LCF \times HPP) \div 10^6]$$

Where:

ER =	emission rate (lb/period)
EF =	pollutant specific emission factor (lb/MMBtu)
BHP =	engine rated max brake-horsepower (bhp)
BSFC =	engine brake specific fuel consumption (Btu/bhp-hr)
LCF =	fuel correction factor, LHV to HHV
HPP =	operating hours per time period (hrs/period)

The emission factor is an energy based value using the higher heating value (HHV) of the fuel. As such, energy based BSFC value must also be based on the HHV. Manufacturer BSFC data are typically based on the lower heating value (LHV) data and thus require a conversion (LCF) to the HHV basis. The LCF value is about 1.10. Volume or mass based BSFC data do not need any conversions.

Listed below are the emission factors "EF" used specifically for these IC engines. The references providing the basis for these factors are also listed:

NO_X = 1.905 lb/MMBtu [(a)]
ROC = 0.105 [(a, f)]
CO = 1.60 [(d)]
SO_X = 0.169 * (S) / HHV [(b, e)]
PM = 0.01 [(c)]
$PM_{10/2.5}$ = 0.01 [(c, g)]

Where:

(a) District Hearing Board Action specified factors for gaseous-fired engines, May 2, 1990.
(b) Mass balance; S (*Re: District-70, Section E.2*) = total Sulfur in ppmv = 796 ppmvd
(c) NEDs factor, (8/88)
(d) AP-42, Section 3.2, Tables 3.2-1 and 3.2-4 (Dated 10/92)
(e) HHV = fuel high heating value = 1100 Btu/scf
(f) Non-methane, non-ethane ROC/THC mass fraction per 04/02/97 District memorandum.
(g) $PM/PM_{10/2.5}$ mass ratio assumed to be 1.00.

The BSFC is unique for each make/model engine. The BSFC numbers are based on values used in past reevaluations of this permit.

4.2.2 Controlled IC Engine: The Caterpillar G-342 is a rich-burn, semi-portable, internal combustion engine ("ICE") at the Bell Lease Compressor Plant. This ICE was previously permitted under ATC/PTO 9610 to power various types of oil production equipment. It is equipped with Non-selective Catalytic Reduction ("NSCR"), and fuel/air ratio control systems to reduce the exhaust NO_x, ROC, and CO emissions described in Table 4.2-1. The emissions from this engine are subject, at a minimum, to the emission limitations of District Rule 333, §D.1, and the NO_x, ROC, and CO limitations of the Waukesha F3521GSI unit per ATC/PTO 11003. The NO_x emission factor has been reduced to 0.135 lb/MMBtu and the CO emission factor has been reduced to 0.674 lb/MMBtu, per Table 4.2-2. These emission factors correspond to 36 ppmv NO_x corrected to 15% O_2 and 299 ppmv CO corrected to 15% O_2. The SO_x emission factor is based on a maximum sulfur content of 239 ppmv for fuel gas.

Table 4.2-1 Bell Lease Compressor Plant IC Engine Emission Controls

IC Engine #	NSCR Catalyst[2] Make & Model & Rating	Fuel /Air Ratio Controller[3] Make & Model
# 6466: Caterpillar G-342 225 bhp @ 1,300 RPM	Johnson-Matthey; Model MX-20; Rated to 866 ACFM	Blackhawk Services: Model # BH-201 or Altronic Model # APC-100

The emissions calculation methodology is:

$$ER = [(EF \times BHP \times BSCF \times LCF \times HPP) \div 10^6]$$

Where:

ER = emission rate (lb/period)
EF = pollutant specific emission factor (lb/MMBtu)
BHP = engine rate d max brake-horsepower (bhp)
BSFC = engine brake specific fuel consumption (Btu/bhp-hr)
LCF = fuel correction factor, LHV to HHV = 1.10
HPP = operating hours per time period (hrs/period)

The emission factors are listed below in Table 4.2-2:

Table 4.2-2 Bell Lease Compressor Plant IC Engine Emission Factors

District Device ID #	IC Engine Description	NO_x (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	SO_2 (lb/MMBtu)	PM_{10} (lb/MMBtu)	GHG ($lbCO_2e$/MMBtu)
6466	Caterpillar G-342	0.135	0.080	0.674	0.037	0.009	117.00

[2] NSCR Catalysts: The NSCR is operated with the engine exhaust entering unit at fuel-rich to stoichiometric air/fuel ratios (i.e., oxygen content @ 0.70 to 0.20 %) as maintained by the fuel/air ratio controller.
[3] Fuel/Air Ratio Controllers: Each adjusts the engine's fuel pressure regulator based upon the conditioned signal (i.e., millivolts) received from an exhaust oxygen sensor mounted in the inlet of the NSCR catalyst.

In order to ensure that the catalyst is effectively operating at all times, the use of an air/fuel ratio controller is required for the engine. These calculations will be implemented when the engine is brought back into service *[Re: District ATC/PTO 9610]*

4.3 Fugitive Hydrocarbon Sources

4.3.1 General: Emissions of reactive organic compounds from piping components (e.g., valves and connections), and pressure relief/vacuum valves at the Bell Lease Compressor Plant have been quantified using emission factors pursuant to District P&P 6100.061 (*Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts - Modified for Revised ROC Definition).*

The component leak-path (clp) was counted consistent with P&P 6100.061. This leak-path count is not the same as the "component" count required by District Rule 331. Both gas/light liquid and oil side components are in service at this facility. The calculation methodology for the fugitive emissions is:

$$ER = [(EF \times CLP \div 24) \times (1 - CE) \times (HPP)]$$

Where:

ER = emission rate (lb/period)
EF = ROC emission factor (lb/clp-day)
CLP = component leak-path (clp)
CE = control efficiency
HPP = operating hours per time period (hrs/period)

An emission control efficiency of 80 percent is credited to components subject to the Rule 331 LDAR requirements. Detailed emission calculations for fugitive emissions are shown in Attachments 10.1 and 10.2.

4.4 General Emission Sources

The following is a brief discussion of other emission sources at the ICE Facility:

4.4.1 Surface Coating: Surface coating operations typically include normal touch up activities. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emissions of $PM/PM_{10}/PM_{2.5}$ from paint over-spray are not calculated due to the lack of established calculation techniques.

4.4.2 Abrasive Blasting: Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. Particulate matter is emitted during this process. A general emission factor of 0.01 pound PM per pound of abrasive is used (SCAQMD - Permit Processing Manual, 1989) to estimate emissions of $PM/PM_{10}/PM_{2.5}$ when needed for compliance evaluations. A $PM/PM_{10}/PM_{2.5}$ ratio of 1.0 is assumed.

4.5 BACT/NSPS/NESHAP/MACT

4.5.1 Uncontrolled IC Engines: The IC engines listed in this permit are not subject to any best available control technology (BACT) or NSPS. This equipment is subject to NESHAP Subpart ZZZZ.

4.5.2 Controlled IC Engine: The Caterpillar G-342 engine at the Bell Lease Compressor Plant is not subject to BACT. The engine does not trigger federal NSPS, but is subject to NESHAP Subpart ZZZZ. *[Re: District ATC/PTO 9610]*

4.5.3 MACT - Subpart HH: On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Information was submitted in June 2000 and supporting information in July 2000 indicating the Cat Canyon source was exempt from the requirements of this MACT based on 'black oil' production. The Team Operating South Cat Canyon source, which includes this IC Engine permit, is still exempt from the requirements of this MACT.

4.6 CEMS/Process Monitoring/CAM

4.6.1 Continuous Emissions Monitors (CEMs): There are no CEMs operating at this facility.

4.6.2 Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters, fuel usage meters, water injection mass flow meters, and hydrogen sulfide analyzers. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and maintained in good working order:

- Hour meters (totalizing, non-resettable for the controlled emissions IC engines)
- Fuel flow meters (dedicated the controlled emissions IC engine)
- Electronic Air/Fuel Ratio Controller (for the controlled emissions IC engines)

To implement the above calibration and maintenance requirements the District-approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* addresses manufacturer recommended maintenance and calibration schedules. The plan specifically identifies the acceptable operational set points for the A/F ratio controller which shows the engines' emissions to be in compliance. Where manufacturer guidance is not available, the recommendations of manufacturers of comparable equipment, and good engineering judgment is utilized.

4.6.3 CAM: The Team Operating South Cat Canyon is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit with uncontrolled emissions potential exceeding major source emission thresholds for any pollutant is subject to CAM provisions. Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.

4.7 Source Testing/Sampling

Source testing and sampling are required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit.

4.7.1 Uncontrolled IC Engines: The uncontrolled IC engines are not subject to source testing. However, the fuel used by the engines is required to be sampled and analyzed, as listed below. Duplicate samples are required:

- Fuel Gas: Sample to be taken from the fuel flow inlet line to the engines. Analysis for high heating value (HHV) shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide. [Note: Under a County Land Use permit, Team Operating must keep the gas pipeline fuel sulfur level below 29 ppmvd. Team Operating continuously monitors the fuel line using District-approved methods (Re: District ATC/PTO 9412) to comply with this restriction]. Sampling shall be conducted consistent with the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*.

All sampling and analyses are required to be performed according to District approved procedures and methodologies. Typically, the appropriate ASTM methods are acceptable. It is important that all sampling and analysis be traceable by chain of custody procedures.

4.7.2 Controlled IC Engine: The Caterpillar G-342 is to be source tested annually if it is operated following the submittal of an ATC application. The source test requirements are listed in Table 4.7-1. The fuel used by the engine is required to be sampled and analyzed, as listed below. Duplicate samples are required.

- Fuel Gas: Sample to be taken from the fuel flow inlet line to the engine. Analysis for high heating value (HHV) shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide. [Note: Under a County Land Use permit, Team Operating must keep the gas pipeline fuel sulfur level below 29 ppmvd. Team Operating continuously monitors thefuel line, using District-approved methods (Re: District ATC/PTO 9412) to comply with this restriction]. Sampling shall be conducted consistent with the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*).

Table 4.7-1 Controlled IC Engine Source Test Requirements (Caterpillar G-342)

Emission & Limit Test Points	Pollutants	Parameters[b]	Test Methods[a],[c]	Concentration (in ppmvd @ 15% O_2)
IC Engine Exhaust @ NSCR exit[b]	NO_x	ppmv, lb/hr	EPA Method 7E, ARB 1-100	50, 36
	CO	ppmv, lb/hr	EPA Method 10, ARB 1-100	400, 299
	ROC	ppmv, lb/hr	EPA Method 18	24, 24
	Sampling Point Det.		EPA Method 1	
	Stack Gas Flow Rate		EPA Method 2 or 19	
	O_2	Dry, Mol. Wt	EPA Method 3	
	Moisture Content		EPA Method 4	
Fuel Gas	Fuel Gas Flow Rate		Fuel Gas Meter[f]	
	Higher Heating Value	BTU/scf	ASTM D 1826-88	
	Total Sulfur Content[d]		ASTM D 1072	
Fuel/Air Ratio Controller	O_2 Sensor Control Setpoint		Millivolt setpoint	
	Inlet NSCR Catalyst O_2		EPA Method 3	
IC Engine Setup	Ignition Timing		Setting used during test to be documented	

Site Specific Requirements

(a) Alternative methods may be acceptable on a case-by-case basis.
(b) The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate. Measured NO_x, ROC, and CO ppmvd shall not exceed the limits specified in Condition No. 3 of this PTO.
(c) For NO_x, ROC, CO and O_2 a minimum of three 40-minute runs shall be obtained during each test.
(d) Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling in the field.
(e) Source testing shall be performed for the IC engine in an "as found" condition operating at a representative, District-approved, IC engine load (SCF/hr).
(f) Fuel meter shall meet the calibration and metered volume corrections specified in Rule 333, §G.3.a.

4.8 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant (HAP) emissions for the IC engines are based on various HAP emission factors and the permitted operational limits and maximum facility design throughputs of this permit. HAP emission factors are shown in Table 4.8-1. Facility potential annual HAP emissions, based on the worst-case scenario listed in Section 5.3. Stationary Source potential annual HAP emissions are summarized in Table 5.3-3. These emissions are estimates only and do not constitute emissions limits.

4.8.1 Emission Factors for HAP Potential Emissions:

Gas Fired Internal Combustion Engines: The HAP emission factors for produced gas fired IC engines were obtained from South Coast Air Quality Management District's December 2016 *Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory*, Table B-1, Default EF for Natural Gas Combustion – Stationary and Portable Internal Combustion Engines (ICE) – 4 Stroke-Lean Burn.

Fugitive Emissions: The HAP emission factors for fugitive emissions were obtained from California Air Resources Board. August 1991. *Identification of Volatile Organic Compound Species Profiles.* Profile #757: Oil & Gas Production Fugitives – Gas Service. The emission factors, originally in units of lb/lb-TOC, were converted to lb/lb-ROC using an ROC/TOC fraction of 0.31 from Table 2 of the District's P&P 6100.061. These emission factors are provided in Table 5.7-1.

Solvents/Coatings: The HAP emission factors for solvent usage and coating operations are based on the CARB *VOC Species Profile Number 802* for mineral spirits.

5.0 Emissions

5.1 General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by District Rule 202. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102). Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential-to-emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emission. In order to accurately track the emissions from a facility, the District uses a computer database. Attachment 10.4 contains the District's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the pollutants listed below. Since the previous permit reevaluation, $PM_{2.5}$ has been added as a regulated pollutant, therefore $PM_{2.5}$ emissions have been quantified.

- Nitrogen Oxides (NO_x) [4]
- Reactive Organic Compounds (ROC)
- Carbon Monoxide (CO)
- Sulfur Oxides (SO_x) [5]
- Particulate Matter (PM) [6]
- Particulate Matter smaller than 10 microns (PM_{10})
- Particulate Matter smaller than 10 microns ($PM_{2.5}$)
- Greenhouse Gases (GHG)

Permitted emissions are calculated for both short term (hourly and daily) and long term (quarterly and annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachments 10.1 and 10.2, respectively. Tables 5.1-1 through 5.1-3 provide the basic operating characteristics for each equipment item. Table 5.2-1 shows the specific emission factors for each equipment item. Tables 5.3-1 through 5.3-3 and Tables 5.4-1 through 5.4-3 show the permitted short-term and long-term emissions for each equipment item, respectively. In each table, the last column indicates whether the emission limits are federally enforceable.

5.3 Hazardous Air Pollutant Emissions for the Facility

Hazardous air pollutants (HAP) emission factors, for each type of emissions unit, are listed in Table 5.7-1. Potential HAP emissions, based on the worst-case scenario, are shown in Table 5.7-2. Stationary source wide HAP emissions are shown in Table 5.7-3. HAPs emissions have been revised based on revised HAPs emission factors.

5.4 Permitted Emission Limits - Facility Totals

The total potential-to-emit for all emission units associated with the facility was analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Table 5.5 shows the total permitted emissions for the facility.

Short Term Scenario:

- Internal Combustion Units (uncontrolled)
- Fugitive Components

[4] Calculated and reported as nitrogen dioxide (NO_2)

[5] Calculated and reported as sulfur dioxide (SO_2)

[6] Calculated and reported as all particulate matter smaller than 100 μm

Long Term Scenario:

- Internal Combustion Units (uncontrolled)
- Fugitive Components

5.5 Part 70: Federal Potential to Emit for the Facility

Table 5.6 lists the federal Part 70 potential to emit. For facilities subject to Part 70 Regulation, all emissions, except fugitive emissions, are counted in the federal definition of potential to emit. However, fugitives are counted in the Federal potential to emit if the facility is subject to any applicable NSPS or NESHAP requirement. ICE Facility is subject to NESHAP requirements therefore the Federal Potential to Emit is equal to the Permit Potential to Emit.

5.6 Exempt Emission Sources/Part 70 Insignificant Emissions

Per Rule 202, maintenance activities such as painting and surface coating qualify for a permit exemption, but may contribute to facility emissions.

Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. The following emission units are exempt from permit per Rule 202:

- Solvents/Surface coating operations used during maintenance operations.

Table 5.8 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant.

Table 5.1-1
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Operating Equipment Description - Uncontrolled Engines

Equipment Category	Serial #	APCD De	Device Specifications		Usage Data				Ref.
			BSFC (Btu/bhp-hr)	Capacity (bhp)	hr	day	qtr	year	
M & M (605)	8932	9170	11,000	46.0	1	24	2,190	8,760	
M & M (605)	9837	8862	11,000	46.0	1	24	2,190	8,760	
M & M (605)	10890	3426	11,000	46.0	1	24	2,190	8,760	
M & M (605)	11854	3452	11,000	46.0	1	24	2,190	8,760	
Waukesha (F1197)	12035	6456	9,100	49.5	1	24	2,190	8,760	
Waukesha (140)	110008	6448	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	110009	3390	10,000	49.5	1	24	2,190	8,760	
Total			**73,100.0**	**332.5**					

Table 5.1-2
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	Serial #	APCD ID#	Device Specifications			Usage Data					Ref.
				Fuel	HHV (Btu/scf)	Size (Btu/bhp-hr)	Capacity (MMBtu/hr)	Hour	Day	Qtr	Year	
IC Engines @ Compressor Plant	Caterpillar G-342 NAHCR	12253	6466	BLG	1,100	8,140	1.83	1	24	2,190	8,760	B

Notes
FG = Fuel Gas used by leases
BLG = Fuel Gas used at Bell Lease Compressor Plant

Table 5.1-3
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	ID#	Device Specifications			Usage Data					References
			Control Efficiency	Size	Units	Capacity	Hour	Day	Qtr	Year	
Fugitive Components @ Compressor Plant	Valves & Fittings	100352	80%	7	cmp-leakpath	--	1	24	2190	8760	C
	Flanges/connections	100353	80%	188	cmp-leakpath	--	1	24	2190	8760	
	Compressor Seals	100355	80%	4	cmp-leakpath	--	1	24	2190	8760	
	Pressure Relief	100355	80%	4	cmp-leakpath	--	1	24	2190	8760	

Table 5.3-1
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Short Term Emission Limits - Uncontrolled Engines

Description	APCD ID#	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
M & M (605)	9170	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
M & M (605)	8862	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
M & M (605)	3426	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
M & M (605)	3452	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
Waukesha (F1197)	6456	20.59	1.14	17.30	1.32	0.11	0.11	1264.86	AE
Waukesha (140)	6448	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
Waukesha (145)	3390	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
	Emissions Total:	**158.39**	**8.73**	**133.03**	**10.17**	**0.83**	**0.83**	**9,728.18**	

Table 5.3-2
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines/Compressor Plant ICE

Equipment Category	Description	NOx		ROC		CO		SOx		PM		$PM_{2.5/10}$		GHG		Federal
		lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Enforceability
IC Engines @ Compressor Plant	Caterpillar G-342 NAHCR	0.25	5.92	0.15	3.51	1.23	29.62	0.07	1.61	0.02	0.40	0.02	0.40	214.29	5142.85	FE
	Emissions Total: IC Engine	**0.25**	**5.92**	**0.15**	**3.51**	**1.23**	**29.62**	**0.07**	**1.61**	**0.02**	**0.40**	**0.02**	**0.40**	**214.29**	**5142.85**	

Table 5.3-3
Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines/Compressor Plant ICE's

Equipment Category	Description	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
Fugitive Components @ Compressor Plant	Valves & Fittings	--	0.128	--	--	--	--	FE
	Flanges/connections	--	0.816	--	--	--	--	FE
	Compressor Seals	--	0.531	--	--	--	--	FE
	Pressure Relief	--	1.654	--	--	--	--	FE
	Emissions Total: Fugitive Components	**0.00**	**3.13**	**0.00**	**0.00**	**0.00**	**0.00**	

Table 5.4-1
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Long Term Emission Limits - Uncontrolled Engines

Description	APCD ID#	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG	Federal Enforceability
		TPY	TPY	TPY	TPY	TPY	TPY	TPY	
M & M (605)	9170	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
M & M (605)	8862	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
M & M (605)	3426	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
M & M (605)	3452	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
Waukesha (F1197)	6456	3.76	0.21	3.16	0.24	0.02	0.02	230.84	AE
Waukesha (140)	6448	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
Waukesha (145)	3390	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
Emissions Total:		**28.91**	**1.59**	**24.28**	**1.86**	**0.15**	**0.15**	**1,775.39**	

Table 5.4-2
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Long Term Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	NOx		ROC		CO		SOx		PM		$PM_{2.5/10}$		GHG		Federal Enforceability
		TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	
IC Engines @ Compressor Plant	Caterpillar G-342 NAHCR	0.27	1.08	0.16	0.64	0.27	1.08	0.07	0.29	0.27	1.08	0.27	1.08	234.643	938.57	FE
	Emissions Total: IC Engines	**0.27**	**1.08**	**0.16**	**0.64**	**0.27**	**1.08**	**0.07**	**0.29**	**0.27**	**1.08**	**0.27**	**1.08**	**234.64**	**938.57**	

Table 5.4-3
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Long Term Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	Federal Enforceability
		TPY	TPY	TPY	TPY	TPY	TPY	
Fugitive Components @ Compressor Plant	Valves & Fittings	--	0.023	--	--	--	--	FE
	Flanges/connections	--	0.149	--	--	--	--	FE
	Compressor Seals	--	0.097	--	--	--	--	FE
	Pressure Relief	--	0.302	--	--	--	--	FE
	Emissions Total: Fugitive Components	**0.00**	**0.57**	**0.00**	**0.00**	**0.00**	**0.00**	

Table 5.5
Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Total Permitted Facility Emissions

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Internal Combustion Engines - controlled	0.25	0.15	1.23	0.07	0.02	0.02	214.29
Totals (lb/hr)	**0.25**	**0.15**	**1.23**	**0.07**	**0.02**	**0.02**	**2909.69**

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Internal Combustion Engines - controlled	5.92	3.51	29.62	1.61	0.40	0.40	5142.85
Internal Combustion Engines - uncontrolled	158.39	8.73	133.03	10.17	0.83	0.83	9728.18
Fugitive Components	0.00	3.13	0.00	0.00	0.00	0.00	0.00
Totals (lb/day)	**164.32**	**15.37**	**162.65**	**11.78**	**1.23**	**1.23**	**14,871.03**

C. Quarter

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Internal Combustion Engines - controlled	0.27	0.16	0.27	0.07	0.27	0.27	234.64
Totals (TPQ)	**0.27**	**0.16**	**0.27**	**0.07**	**0.27**	**0.27**	**234.64**

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	GHG
Internal Combustion Engines - controlled	1.08	0.64	1.08	0.29	1.08	1.08	938.57
Internal Combustion Engines - uncontrolled	28.91	1.59	24.28	1.86	0.15	0.15	1775.39
Fugitive Components	0.00	0.57	0.00	0.00	0.00	0.00	0.00
Totals (TPY)	**29.99**	**2.23**	**25.36**	**2.15**	**1.23**	**1.23**	**2,713.96**

Table 5.7-1: HAP Emission Factors

Equipment HAP Emission Factors

Equipment Category	Description	Device ID	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Tetrachloride	Chlorobenzene	Chloroform	1,2-Dichloropropane	1,3-Dichloropropene	Ethyl Benzene	Ethylene Dibromide	Ethylene Dichloride	Formaldehyde	n-Hexane	Methanol	Methylene Chloride	PAHs	Styrene	1,1,2,2-Tetrachloroethane	Toluene	1,1,2-Trichloroethane	2,2,4-Trimethylpentane	Vinyl Chloride	Xylenes	Units	References
Uncontrolled Engines	M & M (605)	9170	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
	M & M (605)	8862	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
	M & M (605)	3426	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
	M & M (605)	3452	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
	Waukesha (F1197)	6456	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
	Waukesha (140)	6448	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
	Waukesha (145)	3390	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
IC Engine @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	6466	8.53E+00	5.24E+00	4.49E-01	2.72E-01	3.74E-02	--	2.91E-02	2.74E-02	2.69E-02	4.05E-02	4.52E-02	2.41E-02	5.39E+01	1.13E+00	2.55E+00	2.04E-02	1.37E-01	2.41E-02	4.08E-02	4.16E-01	3.24E-02	--	1.52E-02	1.88E-01	lb/MMcf	A
Fugitive Components @ Compressor Plant	Valves & Fittings	100352	--	--	3.23E-03	--	--	--	--	--	--	--	--	--	--	1.68E-01	--	--	--	--	--	--	--	1.48E-01	--	--	lb/lb ROC	B
	Flanges/connections	100353	--	--	3.23E-03	--	--	--	--	--	--	--	--	--	--	1.68E-01	--	--	--	--	--	--	--	1.48E-01	--	--	lb/lb ROC	B
	Compressor Seals	100355	--	--	3.23E-03	--	--	--	--	--	--	--	--	--	--	1.68E-01	--	--	--	--	--	--	--	1.48E-01	--	--	lb/lb ROC	B
	Pressure Relief	100355	--	--	3.23E-03	--	--	--	--	--	--	--	--	--	--	1.68E-01	--	--	--	--	--	--	--	1.48E-01	--	--	lb/lb ROC	B
Solvent Usage--Exempt	Maintenance (Wipe Cleaning)	N/A	--	--	--	--	--	2.60E-03	--	--	--	3.50E-03	--	--	--	--	--	--	3.50E-03	--	--	5.00E-03	--	--	--	3.82E-02	lb/lb ROC	C

References:
A - South Coast Air Quality Management District. December 2016. Reporting Procedures for AB2588 Facilities for Reporting their Quadrennial Air Toxics Emissions Inventory. Table B-1: Default EF for Natural Gas Combustion - Stationary and Portable Internal Combustion Engines (ICE). 4 Stroke-Lean Burn.
B1 - California Air Resources Board. August 1991. Identification of Volatile Organic Compound Species Profiles. Profile #757: Oil & Gas Production Fugitives -- Gas Service.
B2 - The emission factors, originally in units of lb/lb-TOC, were converted to lb/lb-ROC using an ROC/TOC fraction of 0.31 from Table 2 of the District's P&P 6100.061.
C - California Air Resources Board. August 1991. Identification of Volatile Organic Compound Species Profiles. Profile #802: Mineral Spirits.

Table 5.7-2: Facility HAP Emissions

Equipment Category	Description	Device ID	HAP Emissions (tpy)																							
			Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Tetrachloride	Chlorobenzene	Chloroform	1,2-Dichloropropane	1,3-Dichloropropene	Ethyl Benzene	Ethylene Dibromide	Ethylene Dichloride	Formaldehyde	n-Hexane	Methanol	Methylene Chloride	PAHs	Styrene	1,1,2,2-Tetrachloroethane	Toluene	1,1,2-Trichloroethane	2,2,4-Trimethylpentane	Vinyl Chloride	Xylenes
Uncontrolled Engines [1]	M & M (605)	9170	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	M & M (605)	8862	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	M & M (605)	3426	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	M & M (605)	3452	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Waukesha (F1197)	6456	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Waukesha (140)	6448	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Waukesha (145)	3390	0.02	0.01	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
IC Engine @ Compressor Plant (controlled) [1]	Caterpillar G-342 NAHCR	6466	0.06	0.04	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
Fugitive Components @ Compressor Plant	Valves & Fittings	100352	--	--	0.00	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--
	Flanges/connections	100353	--	--	0.00	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	0.02	--	--
	Compressor Seals	100355	--	--	0.00	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	0.01	--	--
	Pressure Relief	100355	--	--	0.00	--	--	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	0.04	--	--
Solvent Usage--Exempt	Maintenance (Wipe Cleaning)	N/A	--	--	--	--	--	0.00	--	--	--	0.00	--	--	--	--	--	--	0.00	--	--	0.00	--	--	--	0.01
	SUB- TOTAL HAPS (tpy) =		**0.18**	**0.11**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.14**	**0.12**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.08**	**0.00**	**0.01**
	TOTAL HAPS (tpy) =		**1.74**																							

1 - Emissions calculated assuming an HHV of 1100 Btu/scf.

Table 5.7-3: Stationary Source HAP Emissions

Stationary Source HAP Emission Summary

HAP Emissions (tpy) [1]

Facility	FID	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,3-Butadiene	1,3-Dichloropropene	Acetaldehyde	Acrolein	Arsenic	Barium	Benzene	Beryllium	1,3-Butadiene	Cadmium	Carbon tetrachloride	Chlorobenzene	Chloroform	Chromium	Cobalt	Dichlorobenzene	1,2-Dichloropropane	Ethylbenzene	Ethylene dibromide	Ethylene dichloride	Ethylidene Dichloride	Formaldehyde	Hexane	Manganese	Mercury	Methanol	Methylene chloride	Naphthalene	Nickel	PAHs (total)	Propylene Dichloride	Selenium	Styrene	Toluene	2,2,4-Trimethylpentane	Vinyl chloride	Xylenes	Total HAPS
Bell Lease	3211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.39	0.87
Blockman Lease	3306	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.09
Palmer Stendl Lease	3307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.04
Cat Canyon IC Engines	3831	0.00	0.00	0.01	0.00	0.18	0.11	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.12	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.00	0.01	1.75
Stationary Source Total HAPs (tpy) =		**0.00**	**0.00**	**0.01**	**0.00**	**0.18**	**0.11**	**0.00**	**0.00**	**0.26**	**0.00**	**0.01**	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**1.14**	**0.21**	**0.00**	**0.00**	**0.06**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.16**	**0.08**	**0.00**	**0.42**	**2.75**

1. These are estimates only, and are not intended to represent emission limits.

Table 5.8
'Team Cat Canyon IC Engines Facility - Part 70 PTO 8036-R12
Exempt Emissions

Equipment Category	Description	Exemption Claimed	Usage Data		Reference
			Volume	Unit	
Solvent Usage	Maintenance (Wipe Clean	202.U	55	gal/yr	F

Equipment Category	Description	Emission Factor	Unit	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$
Solvent Usage	Maintenance (Wipe Cleaning)	6.6	lb/gal	--	0.18	--	--	--	--
Totals (TPY):				**0.00**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**

6.0 Air Quality Impact Analyses

6.1 Modeling

Air quality modeling was not required for this stationary source.

6.2 Increments

An air quality increment analysis was not required for this stationary source.

6.3 Monitoring

Air quality monitoring is not required for this stationary source.

6.4 Health Risk Assessment

The Team Operating South Cat Canyon stationary source is subject to the AB 2588 Air Toxics "Hot Spots" Program. In March 2010, the Santa Barbara County Air Pollution Control District conducted an air toxics Health Risk Assessment (HRA) for Team Operating South Cat Canyon Field Oil and Gas Leases, using Hotspots Analysis and Reporting Program (HARP) software, Version 1.4a (Build 23.07.00). In March 2013, the District revised the HRA using HARP Version 1.4f (Build 23.11.01). Cancer risk, and chronic and acute non-cancer Hazard Index (HI) risk values were calculated and compared to significance threshold for cancer, and chronic and acute non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable threshold are as follows (with the significant risks shown in bold):

	Team Operating South Cat Canyon Max Risks	Significance Threshold
Cancer risk	8.33/million	less than or =to 10^6
Chronic non-cancer risk	0.0336	less than or =to 1
Acute non-cancer risk	3.444	less than or =to 1

Based on these results, the operations at Team Operating South Cat Canyon Field Oil and Gas Leases presented a significant risk on a public roadway. For that reason, a Risk Reduction Audit and Plan (RRAP) were required. As a result of the audit, two engines were removed from service and depermitted and two engines were allowed to operate at a restricted number of well sites. These actions were taken to reduce the acute non-cancer risk below the significance threshold and were documented in ATC/PTO 14400. Full implementation of the RRAP resulted in a reduction in the acute non-cancer risk to 0.723.

7.0 CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has not attained the state Ozone and PM_{10} air quality standards. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air

Plans (CAP) and must not interfere with progress toward attainment of federal and state ambient air quality standards. Under District regulations, any modifications at the source that result in an emission increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Increases above offset thresholds will trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 240 lbs/day for all attainment pollutants and precursors (except carbon monoxide and $PM_{2.5}$) and 25 tons/year for all non-attainment pollutants and precursors (except carbon monoxide and $PM_{2.5}$).

7.2 Clean Air Plan

The 2007 Clean Air Plan, adopted by the District Board on August 16, 2007, addressed both federal and state requirements, serving as the maintenance plan for the federal eight-hour ozone standard and as the state triennial update required by the Health and Safety Code to demonstrate how the District will expedite attainment of the state eight-hour ozone standard. The plan was developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

In December 2019 the District Board adopted the 2019 Ozone Plan. The 2019 Plan provides a three-year update to the 2010 Clean Air Plan. The 2019 Clean Air Plan therefore satisfies all state triennial planning requirements.

7.3 Offset Requirements

The Team Operating South Cat Canyon Stationary Source triggers the Regulation VIII offset thresholds for NO_x and ROC emissions. However, this source did not become subject to the emission offset requirements of Regulation VIII until adoption of revised Rule 802 in August 2016, therefore emission offsets are not required for the emissions currently associated with this permit. Any future increase in ROC or NO_x emissions will be evaluated for emission offsets.

7.4 Emission Reduction Credits

Emission reduction credits, granted to Team Operating are detailed in revised DOI 006 issued to Team Operating by the District, in May 2003. The ERC's are based on IC Engine emission reductions at the Bell Lease Compressor Plant.

8.0 Lead Agency Permit Consistency

To the best of the District's knowledge, no other governmental agency's permit requires air quality mitigation for emissions pursuant to this permit issued to the ICE Facility.

9.0 Permit Conditions

This section lists the applicable permit conditions for ICE Facility. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting

specific equipment. Section D lists non-federally enforceable (i.e., District only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or District rule(s), the wording of the rule shall control.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

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9.A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to the ICE Facility:

A.1 **Compliance with Permit Conditions.**

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B, and 9.C.

(b) This permit does not convey property rights or exclusive privilege of any sort.

(c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

(d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(e) A pending permit action or notification of anticipated noncompliance does not stay any permit conditions.

(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:

i. Compliance with the permit, or

ii. Whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. *[Re: 40 CFR Part 70.6.(a)(6), District Rule 1303.D.1]*

A.2 **Emergency Provisions.** The permittee shall comply with the requirements of the District, Rule 505 (Upset/Breakdown rule) and/or District Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the District, in writing, a "notice of emergency" within 2 working days of the emergency. The "notice of emergency" shall contain the information/ documentation listed in Sections (1) through (5) of Rule 1303.F. *[Re: 40 CFR 70.6(g), District Rule 1303.F]*

A.3 **Compliance Plan.**

(a) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term in a timely manner.

(b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. *[Re: District Rule 1302.D.2]*

A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;

(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;

(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. *[Re: District Rule 1303.D.2]*

A.5 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. *[Re: District Rules 103 and 1303.D.1]*

A.6 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the District. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the District rules.

The permittee shall apply for renewal of the Part 70 permit no later than 180 days before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. *[Re: District Rule 1304.D.1]*

A.7 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. *[Re: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]*

A.8 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the District documenting each and every deviation from the requirements of this permit or any applicable federal requirements within seven (7) days after discovery of the violation, but not later than six (6) months after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to District in accordance with Rule 505, Breakdown Conditions, or Rule 1303.F Emergency Provisions. *[District Rule 1303.D.1, 40 CFR 70.6(a) (3)]*

A.9 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on District forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. A paper copy, as well as, a complete PDF electronic copy of these reports shall be submitted by September 1st and March 1st, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in Section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. *[Re: District Rules 1303.D.1, 1302.D.3, 1303.2.c*]

A.10 **Federally Enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the District-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. *[Re: CAAA, §502(b)(6), 40 CFR 70.6(b)]*

A.11 **Recordkeeping Requirements**. The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;

(b) The date(s) analyses were performed;

(c) The company or entity that performed the analyses;

(d) The analytical techniques or methods used;

(e) The results of such analyses;

(f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years

from date of initial entry by the permittee and shall be made available to the District upon request. *[Re: District Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)]*

A.12 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(d) Administrative Procedures: To reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. *[Re: 40 CFR 70.7(f), 40 CFR 70.6(a)]*

A.13 **Credible Evidence.** Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding. *[Re: 40 CFR 52.12(c)]*

9.B. Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or District rule(s), the wording of the rule shall control.

B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of District Rule 303. *[Re: District Rule 301]*

B.2 **Visible Emissions (Rule 302).** Team Operating shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above.

B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at Team Operating shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. *[Re: District Rule 303]*

B.4 **PM Concentration - North Zone (Rule 304).** Team Operating shall not discharge into the atmosphere, from any source, particulate matter in excess of the 0.3 grains per cubic foot of gas at standard conditions. *[Re: District Rule 304]*

B.5 **Specific Contaminants (Rule 309).** Team Operating shall not discharge into the atmosphere from any single source sulfur compounds and combustion contaminants in excess of the applicable standards listed in Sections A and E Rule 309. *[Re: District Rule 309]*

B.6 **Sulfur Content of Fuels (Rule 311).** Team Operating shall not burn fuels with sulfur content in excess of 0.5% (by weight) for liquid fuels and 796 ppmvd or 50 gr/100 scf (calculated as H_2S) for gaseous fuel. Compliance with this condition shall be based on measurements of the H_2S and total sulfur concentrations of the fuel gas. *[District Rule 311]*

B.7 **Organic Solvents (Rule 317).** Team Operating shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Team Operating's compliance with Condition D.12 of this permit and facility inspections. *[Re: District Rule 317]*

B.8 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Team Operating compliance with Condition D.12 of this permit and facility inspections. *[Re: District Rule 322]*

B.9 **Architectural Coatings (Rule 323.1).** Team Operating shall comply with the coating ROC content and handling standards listed in Section D of Rule 323.1 as well as the Administrative requirements listed in Section F of Rule 323.1. Compliance with this condition shall be based on Team Operating's compliance with Condition D.12 of this permit and facility inspections. *[Re: District Rule 323.1]*

B.10 **Disposal and Evaporation of Solvents (Rule 324).** Team Operating shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Team Operating's compliance with Condition D.12 of this permit and facility inspections. *[Re: District Rule 324]*

B.11 **Surface Coating of Metal Parts and Products (Rule 330).** Team Operating shall not apply any coating or specify the use of any coating on any metal part or product subject to the provisions of this Rule which, as applied, emits or may emit reactive organic compounds into the atmosphere in excess of the limits identified in Section D of this rule. *[Re: District Rule 330]*

B.12 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:

(a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately

(b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Re: District Rule 353]*

B.13 **Oil and Natural Gas Production MACT.** Team Operating shall comply with the following General Recordkeeping ((40 CFR 63.10(b)(2)) MACT requirements:

(a) Team Operating shall maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation;

(b) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in Team Operating's startup, shutdown, and malfunction plan (SSMP);

(c) All information necessary to demonstrate conformance with Team Operating's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;

(d) All required measurements needed to demonstrate compliance with a relevant standard, including all records with respect to applicability determination, and black oil documentation per 40 CFR 63.760;

(e) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements under this condition;

(f) Team Operating shall maintain records of SSM events indicating whether or not the SSMP was followed;

(g) Team Operating shall submit a semi-annual startup, shutdown, and malfunction report as specified in 40 CFR 63.10.d.5. The report shall be due by July 30th and January 30th. *[Re: 40 CFR 63, Subpart HH]*

9.C Requirements and Equipment Specific Conditions

This section includes non-generic federally-enforceable conditions, including emissions and operations limits. Monitoring, recordkeeping and reporting conditions are included in this section for each specific equipment group. This section may also contain other non-generic conditions.

C.1 **Permitted IC Engines at Bell Lease Compressor Plant.** The following equipment item listed in Table C.1-1 below is the only engine in this emissions unit category. This engine currently is out of service, therefore the following permit requirements will not go into effect until an ATC application is received by the District to reactivate the engine.

Table C.1-1 Compressor Plant Controlled IC Engines

District Device No.	Name
6466	Caterpillar G-342 Engine (225 bhp, S/N 12253)

(a) Emission Limits. Mass emissions from the engine listed in Table C.1-1 above shall not exceed the limits specified for the engine listed in Table 5.3-2 and 5.4-2. In addition, emissions from this equipment item shall not exceed the emission concentration limits specified in condition 9.C.1.a.1 below. Mass emissions from this engine will not count toward the facility potential to emit until it is brought back into service *[Re: District ATC 9610, 10133, 11003]*

i. *Caterpillar G-342*. Controlled emissions of NO_x, ROC and CO from the Caterpillar engine shall not exceed 0.3 g/bhp-hr (36 ppmvd at 15% O_2), 0.15 g/bhp-hr (24 ppmvd at 15% O_2) and 0.50 g/bhp-hr (299 ppmvd at 15% O_2), respectively. Compliance shall be based on adherence to operation limits, annual source testing according to Table 4.7-1 and quarterly inspections with a portable NO_x/CO analyzer. The compliance procedures outlined in Section E.3 of Rule 333 shall be followed for Team Operating's use of the portable analyzer.

(b) Operational Limits: The following operational limits apply to the IC engine listed in Table C.1-1:

i. *Fuel Gas Sulfur Limit.* The total sulfur content (calculated as H_2S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned at the Compressor Plant shall not exceed 15 grains per 100 cubic feet (239 ppmv);

ii. *Heat Input Limits.* Team Operating shall comply with the following operating limits:

1. The heat input (MMBtu - HHV basis) to the internal combustion engine listed in Table C.1-1 is restricted to the values listed in Table C.1-2.

Table C.1-2 Heat Input Limits for Compressor Plant Controlled IC Engines

IC Engine Make/Model	Serial #	District ID#	Operating Limits		Heat Input Limits	
			(hr/day)	(hr/yr)	(MMBtu/hr)	(MMBtu/yr)
Caterpillar G-342	12253	6466	24	8760	1.83	16,044

iii. *Engine Identification.* The engine shall have its Team Operating identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.

iv. *Reference List.* For the engine's unique Team Operating identification number stamped into the engine block per Condition 9.C.1.(b).iii, Team Operating shall maintain a reference list containing the make, model, serial number, rated maximum HP and the corresponding RPM.

v. *ERCs: Shift in Load.* To ensure that the ERCs created by replacement of the old Clark HRA-8 compressor engine (old engine #1) remain permanent and enforceable, Team Operating shall not shift the load from the Caterpillar 6466 engine to any other IC engine. Notwithstanding any provision of District Rule 202, Team Operating shall not replace engine #6466 without first submitting an ATC application to the District for the replacement engine and an application to modify DOI #006. Any such replacement engine shall meet the criteria of having equivalent or lower potential emissions, stack emission concentrations and air/fuel ratio controllers. Furthermore, all natural gas compression at the South Cat Canyon stationary source shall be performed with engine/compressor units that ensure the emission reductions remain permanent and enforceable for the life of the project.

vi. *Air/Fuel Ratio Controller Set-Points.* The set-points for the Caterpillar G-342 IC engine's Air/Fuel Ratio Controllers shall be maintained throughout the year at the value determined via the annual (or most recent) compliance source test.

vii. *Catalyst Replacement.* Team Operating may replace the catalyst bed of the Caterpillar engine with an identical catalyst bed as needed to maintain the effectiveness of the control efficiencies.

viii. *Oxygen Sensor Replacement.* Team Operating shall replace the oxygen sensor no later than 2,000 hours of engine operation.

ix. The Caterpillar G-342 may not operate at the Bell Lease Compressor Plant unless an Authority to Construct and/or a Permit to Operate is obtained first.

x. *Engine Maintenance (NESHAP ZZZZ).* The Caterpillar G-342 engine shall comply with the following:

1. Change the oil and filter every 1,440 hours of operation or annually, whichever comes first;

2. Inspect the spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;

3. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.

(c) Monitoring: The following source testing and periodic monitoring conditions apply to the Caterpillar G-342 engine:

i. *Fuel Meters.* The Caterpillar IC engine listed in Table C.1-1 shall be equipped with a fuel meter (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. All fuel meters/gauges shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer, but no later than the date of the next required emissions source test.

ii. *Fuel Gas Sulfur Data.* Team Operating shall measure the total sulfur content of the gaseous fuel annually in accordance with ASTM-D1072 and a District approved *Fuel Gas Sulfur Monitoring Plan*. Team Operating shall measure the hydrogen sulfide (H_2S) content of the gaseous fuel monthly via colorimetric gas detection tubes as described in the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*.

iii. *Fuel Gas High Heating Value.* Team Operating shall measure the higher heating value of the fuel gas on a quarterly basis using District approved methods and per the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*.

iv. *Hour Meters.* The Caterpillar IC engine listed in Table C.1-1 of this permit shall be equipped with a totalizing non-resettable hour meter. The hour meter shall be operational at all times the engine is operated.

v. *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* Team Operating shall abide by the procedures identified in the District approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan*.

vi. *Rule 333 Inspection and Maintenance Plan.* Team Operating shall abide by the procedures identified in the District approved *Rule 333 Inspection and Maintenance Plan*.

vii. *Source Testing.* Source testing of the Caterpillar G-342 shall be performed on an annual schedule, using May as the anniversary date. The source testing provisions listed below shall apply.

1. Team Operating shall conduct source testing of air emissions and process parameters listed in Table 4.7-1 of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the District, occur. The engine shall be loaded to the maximum safe load obtainable.

2. Team Operating shall submit a written source test plan to the District for approval at least thirty (30) calendar days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). Team Operating shall obtain written District approval of the source test plan prior to commencement of source testing. The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test.

3. Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall demonstrate compliance with Rule 333, the mass emission rates in Section 5, and applicable permit conditions. Team Operating, as provided for by District Rule 210, shall pay all District costs associated with the review and approval of all plans and reports and the witnessing of tests. The District may, at its discretion, extend the timelines indicated above for good cause, upon receiving a written request from Team Operating at least 3 days in advance of the applicable deadline.

4. A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of

the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the District. Failing to perform or complete the source test of an equipment item on the scheduled test day without a valid reason and without District's prior authorization, except in the case of an emergency, shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.

(d) Recordkeeping: Team Operating shall keep the required logs for this engine which demonstrate compliance with emission limits, operation limits and monitoring requirements for these engines. All records and logs, required under any applicable federal or District requirements for the engines, shall be maintained for a minimum of five calendar years from the date of the information collection and log entry. These shall be readily accessible and be made available to the District upon request. Written information (logs) shall include:

i. *Fuel Gas Use.* The total amount of fuel gas combusted in the engine shall be recorded on a weekly, monthly, quarterly, and annual basis in units of standard cubic feet and million Btus (x.xxx format).

ii. A log shall detail the number of operating hours each day the engine is operated and the cumulative total monthly and annual hours.

iii. *Sulfur Content*. The monthly measured hydrogen sulfide content and the annually measured total sulfur content, both in units of ppmvd, of the gaseous fuel burned on the engine.

iv. *High Heating Value.* The quarterly high heating value and specific gravity of the fuel gas.

v. IC engine calibration and maintenance logs, including quarterly inspection results, consistent with the requirements of Rule 333.H.

vi. Team Operating shall maintain a log of all significant activities involving the catalytic converter and electronic air/fuel ratio controller. This log shall include the following: catalyst replacements, A/F ratio oxygen sensor replacements, A/F ratio controller replacements, and catalyst cleanings.

vii. Team Operating shall maintain records of the air/fuel ratio controller millivolt setpoints recorded during each source test.

viii. *Recordkeeping (NESHAP ZZZZ).* The following records shall be kept for this unit:

1. The date of each engine oil change and the number of hours of operation since the last oil change.

2. The date of each engine spark plug inspection and the number of hours of operation since the last spark plug inspection. Indicate if the spark plugs were replaced as a result of the inspection.

3. The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

(e) Reporting: On a semi-annual basis, a report detailing the previous six months activities shall be provided to the District. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. *[Ref: District ATC 9975, District Rules 333, 1303 and 40 CFR 70.6]*

C.2 **Uncontrolled IC Engines.** The following shall apply to the uncontrolled IC engines listed on Table 5.1-1 of this permit:

(a) Emission Limits. Mass emissions from these engines shall not exceed the limits specified for these engines listed in Table 5.3-1 and 5.4-1.

(b) Operational Limits. The following operational limits shall not be exceeded for the uncontrolled IC engines.

i. Maximum hourly heat input (MMBtu/hour) to the internal combustion engines listed in this permit is restricted to the values listed in the "Hour (MMBtu/hr)" column of Table 10.2-1.

ii. Maximum annual heat input (MMBtu/year) to the internal combustion engines listed in this permit is restricted to the values listed in the "Annual (MMBtu/yr)" column of Table 10.2-1.

iii. Engines shall be fired on gaseous fuels only. A common fuel gas line shall supply fuel to all uncontrolled IC engines listed in Table 10.2-1.

iv. *Gaseous Fuel Sulfur Limit.* The total sulfur content (calculated as H_2S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned by these engines shall not exceed 50 grains per 100 cubic feet (796 ppmvd).

v. *Derated Internal Combustion Engines.* The orifice plate on each derated engine shall not have an orifice greater than the diameter listed in Table 10.2-1. The orifice plate shall be made from 10 gauge mild steel stock with a sharp edge circular orifice. The orifice plate shall be located between the carburetor and the intake manifold. The orifice plate shall be in place at all times the engine operates. Team Operating shall inspect one quarter of the orifice plates every three months and document the results of each inspection. Each orifice plate must be inspected at least once every twelve months and different orifice plates shall be inspected each quarter until all the orifice plates have been inspected. In addition, Team Operating shall assist District personnel in the measurement and/or inspection of an orifice plate upon request. Team Operating shall replace an orifice plate within thirty (30) calendar days after any inspection if it shows corrosion or degradation that enlarges the specified hole diameter, or if there is any other indication the plate is not properly restricting fuel flow to the engine. The District shall be notified in writing each time an orifice plate is replaced.

vi. *Engine Identification*. Each engine shall have its Team Operating identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.

vii. *Engine Maintenance (NESHAP ZZZZ).* The engines shall comply with the following:

1. Change the oil and filter every 1,000 hours of operation or annually, whichever comes first.

2. Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first.

3. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first.

viii. *Engine #110009 (Device ID #3390*): The following shall apply to this engine only:

1. shall operate only at existing wells that have an existing permitted engine.

2. shall not operate at the Blochman Lease.

3. shall only replace an engine of greater or equal size.

4. operation of this engine is limited to the following well locations: Bell #28, #33, #42, #57, #77, #87, #92, #97, #132, #321 and Palmer-Standl #12-H.

(c) Monitoring: The following monitoring conditions apply to the uncontrolled IC engines:

i. *Fuel Meters.* The IC engines listed in Table 10.2-1 shall be equipped with fuel meters (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meters shall be accurate to within five percent (5%) of the full scale reading. The fuel meter/gauge shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer. In lieu of equipping each engine listed in Table 10.2-1 with a fuel meter, Team Operating may propose an alternative fuel metering scheme for District review and approval. Any alternative must be clearly addressed in the *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.*

ii. *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* Team Operating shall abide by the procedures identified in the District approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan)*. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.

iii. *Engine #110009 (Device ID: #3390*): For each relocation of this engine identify:

1. the well location,
2. the date of the relocation,
3. the number of days at the location,
4. the purpose of the engine's operation.

iv. *Fuel Sulfur Monitoring.* Team Operating shall measure the total sulfur content (as H_2S) of the gaseous fuel annually in accordance with ASTM-D1072 or a District approved equivalent method. In addition, monthly colorimetric gas detector tube samples for H_2S ppmv are required. Records shall be kept on site and made available for inspection by the District staff upon request.

(v) *Fuel Heating Value.* Team Operating shall measure the heating value of the gaseous fuel (Btu/scf) on a quarterly basis.

(d) Recordkeeping: For the uncontrolled IC engines listed in Table 10.2-1, the following records (electronic or hard copy) shall be maintained by Team Operating and shall be made available to the District upon request:

i. The volume of fuel burned in the engines. Monthly records shall be generated no later than 90 days after the close of the subject month.

ii. Written engine operation log consistent with the requirements of Rule 333.H.

iii. Written documentation of the gaseous fuel sulfur.

iv. Written documentation of the heating value of the fuel.

v. If an operators tag number is used in lieu of an engine identification plate, written documentation which references the operators unique engine ID number to a list containing the make, model, rated maximum horsepower and the corresponding RPM.

vi. *Recordkeeping (NESHAP ZZZZ).* The following records shall be kept for each engine subject to Subpart ZZZZ:

1. The date of each engine oil change and the number of hours of operation since the last oil change.

2. The date of each air filter inspection.

3. The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

(vii) *Engine #110009 (Device ID #3390*): For each relocation of this engine record the following:

1. the well location,
2. the date of the relocation,
3. the number of days at the location,
4. the purpose of the engine's operation

(e) Reporting: On a semi-annual basis, a report detailing the previous six months activities shall be provided to the District. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below.

C.3 **Fugitive Hydrocarbon Emission Components.** The following equipment are included in this emissions unit category:

Table C.3-1 Fugitive Hydrocarbon Emission Components

ID #	Name
	Gas/Light Liquid Service Components
100352	Valves - Bellows Seal
100352	Valves - Accessible/Inaccessible
100352	Valves – Unsafe
100352	Valves - LEV Accessible/Inaccessible
100352	Valves - LEV Unsafe
100353	Flanges/Connections - Accessible/Inaccessible
100353	Flanges/Connections – Unsafe
100355	Compressor Seals - To Atm
100354	Compressor Seals - To VRU
100355	Relief Valves - To Atm
100355	Relief Valves - To VRU
100355	Pump Seals – Tandem
100355	Pump Seals – Single
100355	Exempt

(a) Emission Limits: Mass emissions from the gas/light liquid service components listed above in Table C.3-1 shall not exceed the limits listed in Tables 5.3-3 and 5.4-3. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping, and reporting (MRR) conditions listed in this permit.

(b) Operational Limits: Operation of the equipment listed in Table C.3-1 above and the gas gathering system shall conform to the requirements listed in District Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting (MRR) conditions listed in this permit. In addition Team Operating shall meet the following:

i. *Rule 331 I&M Program.* The District-approved *Fugitive Hydrocarbon I&M Plan* for the IC Engine Facility in the Team Operating Cat Canyon Stationary Source shall be implemented for the life of the project.

ii. *Rule 331 Exemption Request.* If Team Operating wishes to maintain or obtain the Rule 331 B.2.c exemption from the MRR requirements of Rule 331, then Team Operating shall submit an exemption request to the District which shall include a current inventory of all 1/2″ or smaller stainless steel tube fittings and a written statement certifying under penalty of perjury that all one-half inch and smaller stainless steel tube fittings have been inspected in accordance with the requirements of Rule 331 Section H.1 and found to be leak-free.

iii. *Leak-Path Count.* The total leak-path component count listed in Team Operating's most recent I&M component leak-path inventory shall not

exceed the total leak- path line item sub-totals listed in this permit by more than five percent. This five percent range is to allow for minor differences due to component counting methods and does not constitute allowable emissions growth due to the addition of new equipment.

iv. *Venting.* All routine venting of hydrocarbons shall be routed to either the sales compressor, flare header, injection well or other District-approved control device.

(c) Monitoring: The equipment listed in this section are subject to all the monitoring requirements listed in District Rule 331.F. The test methods in Rule 331.H shall be used, when applicable.

(d) Recordkeeping: All inspection and repair records shall be retained at the source for a minimum of five years. The equipment listed in this section is subject to all the recordkeeping requirements listed in District Rule 331.G. In addition, Team Operating shall:

i. *I&M Log* - Record in a log the following:
1. A record of leaking components found (including name, location, type of component);
2. Date of leak detection;
3. The ppmv reading;
4. Date of repair attempt;
5. Method of detection;
6. Date of re-inspection;
7. The ppmv reading after leak is repaired;
8. A record of the total components inspected and the total number and percentage found leaking by component type;
9. A record of leaks from critical components;
10. A record of leaks from components that incur five repair actions within a continuous 12-month period;
11. A record of component repair actions including dates of component re-inspections.

(e) Reporting: The equipment listed in this section are subject to all the reporting requirements listed in District Rule 331.G. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. *[Re: District ATC 9975, District Rule 331, 1303, 40 CFR 70.6]*

C.4 **Recordkeeping.** All records and logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection or log entry at the lease. These records or logs shall be readily accessible and be made available to District upon request. *[Re: District Rule 1303, 40 CFR 70.6]*

C.5 **Semi-Annual Monitoring/Compliance Verification Reports.** Twice a year, Team Operating shall submit a compliance verification report to the District. A paper copy, as well as, a complete PDF electronic copy of these reports shall be submitted. Each report shall document compliance with all permit, rule or other statutory requirements during the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and shall be submitted no later than September 1. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit (if applicable for that quarter). These reports shall be in a format approved by the District. Compliance with all limitations shall be documented in the submittals. All logs and other basic source data not included in the report shall be made available to the District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *District Annual Emissions Inventory* questionnaire. Team Operating may use the *Compliance Verification Report* in lieu of the *Emissions Inventory* questionnaire if the format of the CVR is acceptable to the District's Emissions Inventory Group and if Team Operating submits a statement signed by a responsible official stating that the information and calculations of emissions presented in the CVR are accurate and complete to best knowledge of the individual certifying the statement. The report shall include the following information:

(a) *Controlled ICEs.*

i. The monthly measured sulfur concentration of the fuel gas calculated as H_2S.

ii. The annually measured total sulfur content of fuel gas consumed at each combustion unit (*each annual data will suffice for both reports)*.

iii. The quarterly high heating value (Btu/scf).

iv. The total volume of gaseous fuel combusted in each combustion unit, on a daily, monthly, quarterly, and annual basis in units of standard cubic feet and million BTUs.

v. The number of hours the Caterpillar IC engine operated each month.

vi. The Caterpillar IC engine calibration and maintenance logs, including quarterly inspection results, consistent with the requirements of Rule 333.F.

vii. The following Subpart ZZZZ requirements shall be reported:

1. The date of each engine oil change, the number of hours of operation since the last oil change, and the date and results of each oil analysis.

2. The date of each engine spark plug inspection and the number of hours of operation since the last spark plug inspection. Indicate if the spark plugs were replaced as a result of the inspection.

3. The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

(b) *Uncontrolled ICEs.*

i. The monthly measured sulfur concentration of the fuel gas calculated as H_2S.

ii. The annually measured total sulfur content of fuel gas consumed at each combustion unit (*each annual data will suffice for both reports)*.

iii. The quarterly high heating value (Btu/scf).

iv. The total volume of gaseous fuel combusted in each combustion unit, on a daily, monthly, quarterly, and annual basis in units of standard cubic feet and million BTUs.

v. The number of hours the uncontrolled IC engines operated each month.

vi. Quarterly orifice plate inspection results and dates of orifice plate replacement.

vii. The following Subpart ZZZZ requirements shall be reported:

1. The date of each engine oil change, the number of hours of operation since the last oil change, and the date and results of each oil analysis.

2. The date of each air filter inspection.

3. The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

viii. *Engine #110009 (Device ID #3390*): For each relocation of this engine record the following:

1. the well location,

2. the date of the relocation,

3. the number of days at the location,

4. the purpose of the engine's operation

(c) *Fugitive Hydrocarbon Emission Components*

i. A summary of the total components inspected.

ii. A summary of the total number and percentage found leaking by component type.

iii. A record of leaks from critical components.

iv. A record of leaks from components that incur five repair actions within a continuous 12-month period.

v. A record of component repair actions including dates of component re-inspections.

vi. An updated FHC I&M inventory due to change in component lists or diagrams.

vii. A list of components installed as BACT under District Rule 331 as approved by the District.

(d) *General Reporting Requirements*:

i. A summary of each and every occurrence of non-compliance with the provisions of this permit, District rules, and any other applicable air quality requirement.

ii. On an annual basis, the ROC and/or NO_x emissions from all District permit exempt activities.

C.6 **Fuel Gas Sulfur and HHV Monitoring Plan**. Team Operating shall abide by the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*. The plan includes the following elements:

(a) Unit Description: A brief description of the combustion units permitted to operate using fuel gas in the Team Operating Cat Canyon stationary source, including the District ID #, and the purpose for operation in the source.

(b) Fuel Monitoring Devices: A description of the fuel gas sulfur and HHV monitoring devices in place on each permitted unit. A diagram identifying the fuel gas lines by lease with the sampling location for each permitted combustion unit.

(c) Fuel Sampling Procedures: A description of the procedures in place for collecting fuel gas samples for total reduced sulfur (TRS) and H_2S concentration, and the High Heating Value (HHV) of the fuel.

(d) Recordkeeping: Monthly and annual records shall be kept onsite for a minimum of five (5) years and will be made available to the District upon request. The monthly records of fuel gas sulfur content and HHV will be submitted in the semi-annual and annual compliance verification report (CVR). The CVR will include the results of total reduced sulfur concentration as measured and recorded annually, the results of HHV as measured as recorded quarterly and the results of H_2S concentration as measured and recorded monthly for each permitted combustion unit.

Team Operating may submit a revision to the *Fuel Gas Sulfur and HHV Monitoring Plan* at any time to address sampling locations. Revisions to this plan must be approved by the District prior to implementing any modifications to sampling frequency, location, or sampling methodology.

C.7 **Temporary Engine Replacements.** Any reciprocating internal combustion engine subject to this permit may be replaced temporarily only if the requirements (a-f) listed herein are satisfied.

(a) The permitted engine that is being temporarily replaced is in need of routine repair or maintenance.

(b) The permitted engine does not have a cracked block, unless the block will be replaced under manufacturer's warranty.

(c) Replacement parts are available for the permitted engine.

(d) The permitted engine is returned to its original service within 180 days of installation of the temporary engine.

(e) The temporary replacement engine has the same or lower manufacturer rated horsepower and same or lower potential to emit of each pollutant as the permitted engine. At the written request of the permittee, the District may approve a replacement engine with a larger rated horsepower if the proposed temporary engine has manufacturer guaranteed emissions (for a brand new engine) or source test data (for a previously used engine) less than or equal to the permitted engine.

(f) The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine.

(g) For each permitted engine to be temporarily replaced, the permittee shall submit a completed *Temporary IC Engine Replacement Notification* form (Form ENF-94) within 14 days of the temporary engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

(h) Within 14 days of returning the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine in temporary replacement service shall be immediately shut down if the District determines that the requirements of this condition have not been met. If the requirements of this condition are not met, the permittee must obtain an ATC before installing or operating a temporary replacement engine

C.8 **Permanent Engine Replacements.** The permittee may install a new engine in place of a permitted E/S engine, firewater pump engine or engine used for an essential public service that breaks down and cannot be repaired, without first obtaining an ATC permit only if the requirements (a)–(f) listed below are satisfied.

(a) The permitted stationary diesel IC engine is an E/S engine, a firewater pump engine or an engine used for an essential public service (as defined by the District).

(b) The engine breaks down, cannot be repaired and needs to be replaced by a new engine.

(c) The facility provides "good cause" (in writing) for the immediate need to install a permanent replacement engine prior to the time period before an ATC permit can be obtained for a new engine.

(d) The new permanent engine must comply with the requirements of the ATCM for new engines. A temporary replacement engine may be used while the new permanent engine is being procured only if it meets the requirements of the *Temporary Engine Replacements - DICE ATCM* permit condition.

(e) An Authority to Construct application for the new permanent engine is submitted to the District within 15 days of the existing engine being replaced and the District permit for the new engine is obtained no later than 180 days from the date of engine replacement (these timelines include the use of a temporary engine).

(f) For each new permanent engine installed pursuant to this condition, the permittee shall submit a completed *Permanent IC Engine Replacement Notification* form (Form ENF-96) within 14 days of the new engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine installed (either temporally or permanently) pursuant to this permit condition shall be immediately shut down if the District determines that the requirements of this condition have not been met

C.9 **Documents Incorporated by Reference.** The documents listed below, including any District-approved updates thereof, are incorporated herein and shall have the full force and effect of a permit condition. These documents shall be implemented for the life of the project:

- *Rule 333 Engine ICE Inspection and Maintenance Plan (November 2009)*
- *Fugitive Hydrocarbon Inspection and Maintenance Plan (August 2012)*
- *Fuel Use Monitoring and Process Monitor Calibration/Maintenance Plan (April 2004)*
- *Fuel Gas Sulfur and HHV Monitoring Plan (April 2004)*

C.10 **Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities.** The equipment permitted herein shall be operated in compliance with the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation (CCR Title 17, Section 95665 *et. Seq*.).

C.11 **CARB GHG Regulation Recordkeeping.** The permittee shall maintain at least 5 years of records that document the following:

(a) The number of crude oil or natural gas wells at the facility.

(b) A list identifying all pressure vessels, tanks, separators, sumps, and ponds at the facility, including the size of each tank and separator in units of barrels.

(c) The annual crude oil, natural gas, and produced water throughput of the facility.

(d) A list identifying all reciprocating and centrifugal natural gas compressors at the facility.

(e) A count of all natural gas powered pneumatic devices and pumps at the facility.

A copy of the *Best Practices Management Plan* designed to limit methane emissions from circulation tanks, if applicable.

C.12 **CARB GHG Regulation Reporting.** All throughput data and any updates to the information recorded pursuant to the *CARB GHG Regulation Recordkeeping* Condition above using District Annual Report Form ENF-108.

9.D District-Only Conditions

The following section lists permit conditions that are not federally enforceable (i.e., not enforceable by the USEPA or the public). However, these conditions are enforceable by the District and the State of California. These conditions have been determined as being necessary to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any of these conditions shall be a violation of District Rule 206, this permit, as well as any applicable section of the California Health & Safety Code.

D.1 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit.

D.2 **Equipment Maintenance.** All equipment permitted herein shall be properly maintained and kept in good working condition in accordance with the equipment manufacturer specifications at all times.

D.3 **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state, or federal rules, regulations, air quality standards or increments.

D.4 **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.

D.5 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

D.6 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq*.

D.7 **Odorous Organic Sulfides (Rule 310).** Team Operating shall not discharge into the atmosphere H_2S and organic sulfides that result in a ground level impact beyond the Team Operating property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over one hour. *[Re: District Rule 310].*

D.8 **Mass Emission Limitations.** Mass emissions for each equipment item associated with the ICE facility shall not exceed the values listed in Tables 5.3-1 through Table 5.3-3 and Tables 5.4-1 through Table 5.4-3. Emissions for the entire facility shall not exceed the emissions limits, as listed in Table 5.5. *[Re: District PTO 9036, ATC's 9610, 10133, 10421, and 11003]*

D.9 **Process Monitoring Systems - Operation and Maintenance.** All facility process monitoring devices listed in Section 4.6.2 of this permit shall be properly operated and maintained according to manufacturer recommended specifications. Team Operating shall abide by the procedures identified in the District approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* and the *Rule 333 Inspection and Maintenance Plan*. These Plans detail the manufacturer recommended maintenance and calibration schedules for fuel meters and IC engines. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment will be used. Copies of such recommended schedules shall be kept on site.

D.10 **Process Stream Sampling and Analysis.** Team Operating shall sample analyze the process streams listed in Section 4.9.2 of this permit according to the methods and frequency detailed in that Section. All process stream samples shall be taken according to District approved ASTM methods and must follow traceable chain of custody procedures. Compliance with this condition shall be assessed through compliance with the monitoring, recordkeeping and reporting (MRR) conditions listed in this permit.

D.11 **External Combustion Units - Permits Required.**

(a) An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr.

(b) An ATC permit shall be obtained prior to installation, replacement, or modification of any existing Rule 361 applicable boiler or water heater rated over 2.000 MMBtu/hr.

(c) An ATC shall be obtained for any size boiler or water heater if the unit is not fired on natural gas or propane.

D.12 **Solvent Usage.** Use of solvents for wipe cleaning maintenance and laboratory use shall conform to the requirements of District Rules 202, 317, and 324. On an annual basis, Team Operating shall monitor the following for each solvent used:

(a) Emission Limits: Mass emissions for solvent usage associated with the ICE facility shall not exceed the values listed in Table 5.5-1 of this permit. Compliance shall be based on the recordkeeping and reporting requirements of this permit. For short-term emissions, compliance shall be based on monthly averages.

(b) Operational Limits: Use of solvents for cleaning/degreasing shall conform to the requirements of District Rules 317, 322, 323.1 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections. In addition, Team Operating shall comply with the following:

i. *Containers.* Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.

ii. *Materials.* All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.

iii. *Solvent Leaks.* Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernable continuous flow of solvent.

iv. *Reclamation Plan.* Team Operating may submit a Plan to the District for the disposal of any reclaimed solvent. If the Plan is approved by the District, all solvent disposed of pursuant to the Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. Team Operating shall obtain District approval of the procedures used for such a disposal Plan. The Plan shall detail all procedures used for collecting, storing and transporting the reclaimed solvent. Further, the ultimate fate of these reclaimed solvents must be stated in the Plan.

(c) Monitoring: The monitoring shall meet the requirements of Rule 202.U.3 and be adequate to demonstrate compliance with Rule 202.N threshold.

(d) Recordkeeping: Team Operating shall record in a log the following on a monthly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed for District-approved disposal; whether the solvent is photochemically reactive; and, the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a manner readily accessible to District inspection.

(e) Reporting: On an annual basis, a report detailing the previous twelve month's activities shall be provided to the District. The report shall list all the data required by the Annual Compliance Report condition.

D.13 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and District Rule 201.E.2. *[Re: District Rule 201]*

D.14 **Annual Compliance Reporting.** In addition to its federally required semi-annual reporting, Team Operating shall also submit an annual report to the District, by March 1st of the following year containing the information listed below. A paper copy, as well as, a complete PDF electronic copy of these reports shall be submitted. These reports shall be in a format approved by the District. All logs and other basic source data not included in the report shall be available to the District upon request. Except where noted, the annual compliance report shall include monthly summaries of the following information:

(a) *Uncontrolled and Controlled IC Engines.*

i. The volume of fuel used in units of standard cubic feet (scf) and million Btu (MMBtu) totaled for each month, quarter, and year.

ii. The gross heating value (HHV) of the gaseous fuel (Btu/scf) measured quarterly.

iii. Total sulfur content (as H_2S) of the gaseous fuel measured annually.

(b) *Solvent Usage.*

i. The volume (in gallons) of each non-photo-chemically reactive solvent used each month;

ii. The density of each such solvent and the percentage of ROC by weight in each solvent;

iii. The total weight (in pounds) of all "photo-chemically reactive" (per District Rule 102.FF) solvents used each month, and the number of days each month these were used;

iv. The volume (in gallons) of surface coating used each month;

v. The percentage of ROC by weight of the surface coating used.

(c) *Adhesives and Sealants.*

i. All records of adhesives and sealants used in the facility including their ROC content, unless all such adhesives or sealants were contained in containers less than 16 ounces in size or all such materials were exempt from Rule 353 requirements pursuant to Rule 353.B.1.

(d) *Mass Emissions.*

i. The annual emissions (TPY) from each permitted emissions unit for each criteria pollutant

ii. The annual emissions (TPY) from each exempt emissions unit for each criteria pollutant

iii. The annual emissions (TPY) totaled for each criteria pollutant.

(e) *General Reporting Requirements.*

i. A brief summary of breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.

ii. A summary of each use of CARB Certified equipment used at the facility. List the type of equipment used, CARB Registration Number, first date of use and duration of use and an estimate of the emissions generated.

iii. A copy of the Rule 202 De Minimis Log for the stationary source.

_____

Air Pollution Control Officer

_____

Date

NOTES:

(a) Permit Reevaluation due date: February 2025
(b) This permit supersedes Pt70 PTO 8036-R11 and Trn O/O 8036-04

10.0 Attachments

10.1 Emission Calculation Documentation
10.2 Emission Calculation Spreadsheets
10.3 Fee Calculations
10.4 IDS Database Emission Tables
10.5 Equipment List

10.1 Emission Calculation Documentation

Cat Canyon IC Engines

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. The letters A-D refer to Tables 5.2-1, 5.2-2, and 5.2-3.

Reference A – Uncontrolled Internal Combustion Engines

See Attachment 10.2 for equipment operating characteristics of the uncontrolled ICE's.

Reference B – Controlled Internal Combustion Engine (Caterpillar G-342)

- The maximum operating schedule is in units of hours
- The fuel default characteristics are:
    - HHV = 1100 Btu/scf, for the NSCR-controlled Compressor Plant IC engine
    - Fuel Sulfur = 239 ppmvd for all equipment
- BSFC = 8,140 Btu/hp-hr (based on HHV)
- Emission factor units (lb/MMBtu) are based on HHV
- Emission factors were obtained from the IC engine manufacturers; these are listed in ATC 9610 and 10133, also in Section 4 and 9.C of this permit

The manufacturers provided the emission factors in units of g/hp-hr. The conversion of these numbers to the units of lb/MMBtu or ppmvd are performed, as follows:

Assumptions:

- @ 15% exhaust oxygen (dry basis)
- Standard conditions (1.0 atm, 60˚ F)

Equation 1: g/bhp-hr to ppmv

$$ppmv_i = SCF_i / MMSCF_{exhaust}$$

$$ppmv_i = (g/bhp-hr) * (BSFC^{-1}) * (lb_i/454g) * (Fuel\text{"}F\text{"}\ factor @ 0\%O_2)^{-1}$$
$$* (10^6\ Btu/MMBtu) * (MW_i^{-1}) * (379 SCF_i/lb-mole) * (10^6/MM) * (XSA)$$

Where:

$BSFC^{-1}$ = [bhp-hr/Btu]
{Fuel "F" factor @ 0% O_2}$^{-1}$ [MMBtu/$Scf_{exhaust}$]
XSA = [20.9-15.0]/[20.9-0.0]
MW_i^{-1} = [lb-mole/lb_i]

Equation 2: g/bhp-hr to ppmv (K_{Fg})

$$ppmv_i = (g/bhp-hr) * BSFC^{-1} * K_{Fg}$$

$$K_{Fg} = (lb_i/454g) * (Fuel"F" factor @ 0\%O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379 SCF_i/lb-mole) * (10^6/MM) * (XSA)$$

Equation 3: lb/MMBTU to ppmv

$$ppmv_i = SCF_i/MMSCF_{exhaust}$$

$$ppmv_i = (lb_i/MMBtu) * (Fuel"F" factor @ 0\%O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379 SCF_i/lb-mole) * (10^6/MM) * (XSA)$$

Equation 4: lb/MMBTU to ppmv (K_{Flb})

$$ppmv_i = (lb_i/MMBtu) * BSFC^{-1} * K_{Flb}$$

$$K_{Flb} = (Fuel"F" factor @ 0\%O_2)^{-1} * (MW_i^{-1}) * (379 SCF_i/lb-mole) * (10^6/MM) * (XSA)$$

Acronym Description and Reference used in Equations 1 through 4:

- F = 40 CFR,§60.45.(4), 8608 scf/MMBtu @ 0% excess exhaust oxygen, dry basis; corrected to 60 ˚F from 68 ˚F.
- MW = Average molecular weight of exhaust pollutant specie(s), lb_i/lb-mole
- BSFC =ICE's brake specific fuel consumption, fuel HHV basis.
- XSA= Excess air correction factor from O% to 15% exhaust oxygen {dimensionless constant @ 0.282}.

The following default data were used in the conversion calculation process:

Table 10.1-1: Average Exhaust Pollutant Molecular Weights

Pollutant	Molecular Weight (Lb_i/lb-mole)
NO_x as NO_2	46.01
CO	28.01
ROC	41.31

CARB Profile # 719 for Natural Gas fired IC engines

Table 10.1-2: Calculated K_{nglb} & K_{ngg}

	NO_x	ROC	CO
K_{nglb}	269.9	300.6	443.4
K_{ngg}	594,400	662,200	976,599

SO_2 emission limits (factors) are based on mass balance equation, based on fuel sulfur. Thus, for gas-fired IC engines:

Equation 5 SO_2 Emission Limits Mass Balance Equation

$$SO_2(lb/MMBtu) = (0.169 lbSO_2/scfH_2S) * (1/HHV) * (ppmvdS \inf uel)$$

PM emission limits are based on USEPA, AP-42, Table 3.2.4 (gas-fired ICE). Thus, for gas-fired ICEs:

$$PM(lb/MMBtu) = (0.009 lb/MMBtu)$$

PM_{10}: PM ratio = 1.00 (gas-fired); based on CARB data (Re: *Particulate Matter Non-attainment Plan Submittal, ARB Guidance, 1991*)

GHG Emission Factors:
GHG emissions from combustion sources are calculated using emission factors found in Tables C-1 and C-2 of 40 CFR Part 98 and global warming potentials found in Table A-1 of 40 CFR Part 98. CO2 equivalent emission factors are calculated for CO2, CH4, and N2O individually, then summed to calculate a total CO2e emission factor. Annual CO2e emission totals are presented in short tons.

For natural gas combustion the emission factor is:

(53.02 kg CO2/MMBtu) (2.2046 lb/kg) = 116.89 lb CO2/MMBtu
(0.001 kg CH4/MMBtu) (2.2046 lb/kg)(21 lb CO2e/lb CH4) = 0.046 lb CO2e/MMBtu
(0.0001 kg N2O/MMBtu) (2.2046 lb/kg)(310 lb CO2e/lb N2O) = 0.068 lb CO2e/MMBtu
Total CO2e/MMBtu = 116.89 + 0.046 + 0.068 = 117.00 lb CO2e/MMBtu

Reference C - Fugitive Components (*Valves, fittings, etc. at the wellheads*)

- The maximum operating schedule is in units of hours;
- All safe to monitor components are credited an 80 percent control efficiency. Unsafe to monitor components (as defined in Rule 331) are considered uncontrolled.
- The component leak path definition differs from the Rule 331 definition of a component. A typical leak path count for a valve would be equal to 4 (one valve stem, a bonnet connection and two flanges).
- Leak path counts are provided by the applicant. The total count has been verified to be accurate within 5 percent of the District's count based on site checks and process/instrumentation diagram review.
- Emissions from piping components such as valves, flanges and connections are based on emission factors pursuant to District P&P 6100.061 *(Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts - Modified for Revised ROC Definition*). The component leakpath (clp) counts were made consistent with P&P 6100.061. (see Attachment 10.2).

Table 10.1-3 Fugitive Emission Factors for Oil and Gas Facilities Using the CLP Method

Component Type (Gas Service)	Production Field	
	THC EF (lb/day leak path)	ROC/THC Ratio
Valve	0.295	0.31
Connection	0.070	0.31
Compressor Seal	2.143	0.31
Pump Seal	1.123	0.31
Pressure Relief	6.670	0.31

Reference D - Solvents

- All solvents not used to thin surface coatings are included in this equipment category.
- Exempt solvent emissions (per Rule 202.U.3) are assumed to be based on 55 gallons of solvent use (maximum expected) at the facility with 6.6 lb. of ROC per gallon of solvent.
- Emissions from exempt solvent use, per Rule 202.N shall not exceed 10 tons per year.

10.2 Equipment Calculation Spreadsheets

Table 10.2-1
HVI South Cat Canyon IC Engines Facility -- Part 70 PTO 8036-R12
Operating Equipment Description

Equipment Category	Serial #	APCD ID#	Location	Device Specifications				Operating Limitations			References
				Max RPM	BSFC (Btu/bhp-hr)	Capacity (bhp)	Capacity Limits	Hours Online (hr/yr)	Hour (MMBtu/hr)	Annual (MMBtu/yr)	
M & M (605)	8932	9170	Bell #111 - NO	1,000	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	9837	8862	Bell #166	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	10890	3426	Bell #41	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (605)	11854	3452	Palmer Stendl #12	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (F1197)	12035	6456	Bell #42	800	9,100	49.5	Orifice Plate @ 0.98"	8,760	0.45	3,946	
Waukesha (140)	110008	6448	Blockman #320-H	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
Waukesha (145)	110009	3390	Blockman Injection #14	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	

FUGITIVE HYDROCARBON EMISSION CALCULATIONS - CLP METHOD (Ver. 3.0)

Attachment: 10.2-2
Permit Number: PTO 8036-R12
Facility: Cat Cayon So. Stationary Source ICEs

Facility Information

Facility Type (Enter X Where Appropriate)
Production Field **X** Gas Processing Plant ____ Refinery ____ Offshore Platform ____

Gas/Condensate Service Component

Component Type	*Component Count*	*THC Emission Factor (lb/day-clp)* [a]	*ROC/THC Ratio*	*Uncontrolled ROC Emission (lb/day)*	*Control Efficiency* [b,c]	*Controlled ROC Emission (lb/hr)*	*Controlled ROC Emission (lb/day)*	*Controlled ROC Emission (Tons/Qtr)*	*Controlled ROC Emission (Tons/Yr)*
Valves - Accessible/Inaccessible	7	0.295	0.31	0.64	0.80	0.01	0.13	0.01	0.02
Valves - Unsafe	0	0.295	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Valves - Bellows	0	0.295	0.31	0.00	0.90	0.00	0.00	0.00	0.00
Valves - Bellows / Background ppmv	0	0.295	0.31	0.00	1.00	0.00	0.00	0.00	0.00
Valves - Category A	0	0.295	0.31	0.00	0.84	0.00	0.00	0.00	0.00
Valves - Category B	0	0.295	0.31	0.00	0.85	0.00	0.00	0.00	0.00
Valves - Category C	0	0.295	0.31	0.00	0.87	0.00	0.00	0.00	0.00
Valves - Category D	0	0.295	0.31	0.00	0.87	0.00	0.00	0.00	0.00
Valves - Category E	0	0.295	0.31	0.00	0.88	0.00	0.00	0.00	0.00
Valves - Category F	0	0.295	0.31	0.00	0.90	0.00	0.00	0.00	0.00
Valves - Category G	0	0.295	0.31	0.00	0.92	0.00	0.00	0.00	0.00
Flanges/Connections - Accessible/Inaccessible	188	0.070	0.31	4.08	0.80	0.03	0.82	0.04	0.15
Flanges/Connections - Unsafe	0	0.070	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Flanges/Connections - Category A	0	0.070	0.31	0.00	0.84	0.00	0.00	0.00	0.00
Flanges/Connections - Category B	0	0.070	0.31	0.00	0.85	0.00	0.00	0.00	0.00
Flanges/Connections - Category C	0	0.070	0.31	0.00	0.87	0.00	0.00	0.00	0.00
Flanges/Connections - Category D	0	0.070	0.31	0.00	0.87	0.00	0.00	0.00	0.00
Flanges/Connections - Category E	0	0.070	0.31	0.00	0.88	0.00	0.00	0.00	0.00
Flanges/Connections - Category F	0	0.070	0.31	0.00	0.90	0.00	0.00	0.00	0.00
Flanges/Connections - Category G	0	0.070	0.31	0.00	0.92	0.00	0.00	0.00	0.00
Compressor Seals - To Atm	4	2.143	0.31	2.66	0.80	0.02	0.53	0.02	0.10
Compressor Seals - To VRS	0	2.143	0.31	0.00	1.00	0.00	0.00	0.00	0.00
PSV - To Atm/Flare	4	6.670	0.31	8.27	0.80	0.07	1.65	0.08	0.30
PSV - To VRS	0	6.670	0.31	0.00	1.00	0.00	0.00	0.00	0.00
Pump Seals - Single	0	1.123	0.31	0.00	0.80	0.00	0.00	0.00	0.00
Pump Seals - Dual/Tandem	0	1.123	0.31	0.00	1.00	0.00	0.00	0.00	0.00
Gas Condensate Subtotals	**203**			**15.65**		**0.13**	**3.13**	**0.14**	**0.57**

Oil Service Components

Component Type	*Component Count*	*THC Emission Factor (lb/day-clp)* [a]	*ROC/THC Ratio*	*Uncontrolled ROC Emission (lb/day)*	*Control Efficiency* [b,c]	*Controlled ROC Emission (lb/hr)*	*Controlled ROC Emission (lb/day)*	*Controlled ROC Emission (Tons/Qtr)*	*Controlled ROC Emission (Tons/Yr)*
Valves - Accessible/Inaccessible	0	0.004	0.56	0.00	0.80	0.00	0.00	0.00	0.00
Valves - Unsafe	0	0.004	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Valves - Bellows	0	0.004	0.56	0.00	0.90	0.00	0.00	0.00	0.00
Valves - Bellows / Background ppmv	0	0.004	0.56	0.00	1.00	0.00	0.00	0.00	0.00
Valves - Category A	0	0.004	0.56	0.00	0.84	0.00	0.00	0.00	0.00
Valves - Category B	0	0.004	0.56	0.00	0.85	0.00	0.00	0.00	0.00
Valves - Category C	0	0.004	0.56	0.00	0.87	0.00	0.00	0.00	0.00
Valves - Category D	0	0.004	0.56	0.00	0.87	0.00	0.00	0.00	0.00
Valves - Category E	0	0.004	0.56	0.00	0.88	0.00	0.00	0.00	0.00
Valves - Category F	0	0.004	0.56	0.00	0.90	0.00	0.00	0.00	0.00
Valves - Category G	0	0.004	0.56	0.00	0.92	0.00	0.00	0.00	0.00
Flanges/Connections - Accessible/Inaccessible	0	0.002	0.56	0.00	0.80	0.00	0.00	0.00	0.00
Flanges/Connections - Unsafe	0	0.002	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Flanges/Connections - Category A	0	0.002	0.56	0.00	0.84	0.00	0.00	0.00	0.00
Flanges/Connections - Category B	0	0.002	0.56	0.00	0.85	0.00	0.00	0.00	0.00
Flanges/Connections - Category C	0	0.002	0.56	0.00	0.87	0.00	0.00	0.00	0.00
Flanges/Connections - Category D	0	0.002	0.56	0.00	0.87	0.00	0.00	0.00	0.00
Flanges/Connections - Category E	0	0.002	0.56	0.00	0.88	0.00	0.00	0.00	0.00
Flanges/Connections - Category F	0	0.002	0.56	0.00	0.90	0.00	0.00	0.00	0.00
Flanges/Connections - Category G	0	0.002	0.56	0.00	0.92	0.00	0.00	0.00	0.00
PSV - To Atm/Flare	0	0.267	0.56	0.00	0.80	0.00	0.00	0.00	0.00
PSV - To VRS	0	0.267	0.56	0.00	1.00	0.00	0.00	0.00	0.00
Pump Seals - Single	0	0.004	0.56	0.00	0.80	0.00	0.00	0.00	0.00
Pump Seals - Dual/Tandem	0	0.004	0.56	0.00	1.00	0.00	0.00	0.00	0.00
Oil Subtotals	0			0.00		0.00	0.00	0.00	0.00

Total	**203**			**15.65**		**0.13**	**3.13**	**0.14**	**0.57**

Notes:

a. District Policy and Procedure 6100.061.1998.

b. A 80% efficiency is assigned to fugitive components Rule 331 implementation.

c. Emission control efficiencies for each component type are identified in FHC Control Factors (Ver. 2.0).

Processed By: JJM

Date: 12/10/2021

10.3 Fee Calculations

Permit fees for the ICE facility are based on equipment rating, pursuant to District Rule 210.I.B.2 and Schedule A. See Attachment 10.5 for a list of fee-permitted equipment at this facility.

NOTE: However, all work performed with respect to implementing the requirements of the Part 70 Operating Permit program, including federal permit processing and federal permit compliance monitoring are assessed on a cost reimbursement basis pursuant to District Rule 210.I.C.

air pollution control district
SANTA BARBARA COUNTY

FEE STATEMENT

PT-70/Reeval No. 08036 - R12
FID: 03831 Cat Canyon IC Engines / SSID: 02658

evice Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
006466	Controlled IC Engine	A3	1.830	566.34	Per 1 million Btu input	No	1	1.000	1,036.40	0.00	0.00	1,036.40
003390	Uncontrolled IC Engine: #110009	A3	0.500	566.34	Per 1 million Btu input	No	1	1.000	283.17	0.00	0.00	283.17
003426	Uncontrolled IC Engine: #10890	A3	0.510	566.34	Per 1 million Btu input	No	1	1.000	288.83	0.00	0.00	288.83
003452	Uncontrolled IC Engine: #11854	A3	0.510	566.34	Per 1 million Btu input	No	1	1.000	288.83	0.00	0.00	288.83
006448	Uncontrolled IC Engine: #110008	A3	0.500	566.34	Per 1 million Btu input	No	1	1.000	283.17	0.00	0.00	283.17
006456	Uncontrolled IC Engine: #12035	A3	0.450	566.34	Per 1 million Btu input	No	1	1.000	254.85	0.00	0.00	254.85
008862	Uncontrolled IC Engine: #9837	A3	0.510	566.34	Per 1 million Btu input	No	1	1.000	288.83	0.00	0.00	288.83
009170	Uncontrolled IC Engine:	A3	0.510	566.34	Per 1 million Btu input	No	1	1.000	288.83	0.00	0.00	288.83
	Device Fee Sub-Totals =								**$3,012.93**	**$0.00**	**$0.00**	
	Device Fee Total =											**$3,012.93**

Fee Statement Grand Total = $3,012

Notes:

(1) Fee Schedule Items are listed in District Rule 210, Fee Schedule "A".
(2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

10.4 IDS Database Emission Tables

PERMIT POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day	277.47	21.61	257.69	19.05	1.82	1.82	1.82
lb/hr							
TPQ							
TPY	50.64	3.37	42.70	3.48	1.34	1.34	1.34

FACILITY POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day	277.47	21.61	257.69	19.05	1.82	1.82	1.82
lb/hr							
TPQ							
TPY	50.64	3.37	42.70	3.48	1.34	1.34	1.34

STATIONARY SOURCE POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day	298.11	400.32	291.64	90.70	3.39	3.39	3.39
lb/hr							
TPQ							
TPY	54.40	72.28	48.90	16.56	1.63	1.63	1.63

Notes:
(1) Emissions in these tables are from IDS.
(2) Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.

10.5 *Equipment List*

A PERMITTED EQUIPMENT

1 Controlled IC Engine

Device ID #	**006466**	***Device Name***	**Controlled IC Engine**
Rated Heat Input	1.830 MMBtu/Hour	*Physical Size*	225.00 Brake Horsepower
Manufacturer	Caterpillar	*Operator ID*	
Model	G-342	*Serial Number*	12253
Location Note			
Device Description	Controlled IC Engine:NSCR		

2 Uncontrolled IC Engine: #110009

Device ID #	**003390**	***Device Name***	**Uncontrolled IC Engine: #110009**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	145	*Serial Number*	110009
Location Note	Well location is limited by permit		
Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

3 Uncontrolled IC Engine: #10890

Device ID #	**003426**	***Device Name***	**Uncontrolled IC Engine: #10890**
Rated Heat Input		*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	
Model	605	*Serial Number*	10890
Location Note	Bell #41		
Device Description	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

4 Uncontrolled IC Engine: #11854

Device ID #	**003452**	***Device Name***	**Uncontrolled IC Engine: #11854**
Rated Heat Input		*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	
Model	605	*Serial Number*	11854
Location Note	Palmer Stendl #12		
Device Description	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

5 Uncontrolled IC Engine: #110008

Device ID #	**006448**	***Device Name***	**Uncontrolled IC Engine: #110008**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	140	*Serial Number*	110008
Location Note	Blockman #320-H		
Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

6 Uncontrolled IC Engine: #12035

Device ID #	**006456**	***Device Name***	**Uncontrolled IC Engine: #12035**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	F1197	*Serial Number*	12035
Location Note	Bell #42		
Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: F1197, maximum heat input rating: 0.45 MMBtu/hr, horsepower: 49.5 bhp @ 800 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: BTU/bhp-hr; on line: 8,760 hr/yr		

7 Uncontrolled IC Engine: #9837

Device ID #	**008862**	***Device Name***	**Uncontrolled IC Engine: #9837**
Rated Heat Input		*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	
Model	605	*Serial Number*	9837
Location Note	Bell #166		
Device Description	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

8 Uncontrolled IC Engine:

Device ID #	**009170**	***Device Name***	**Uncontrolled IC Engine:**
Rated Heat Input		*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	
Model	605	*Serial Number*	8932
Location Note	Bell #111 - NO		
Device Description	Uncontrolled ICE, maximum heat input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; capacity limits: Nameplate; on line: 8,760 hr/yr		

9 Fugitive Hydrocarbons - Gas Condensate Service - CLP

9.1 Flanges - Acc/Inacc

Device ID #	**100353**	***Device Name***	**Flanges - Acc/Inacc**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

9.2 Valves - Acc/Inacc

Device ID #	**100352**	***Device Name***	**Valves - Acc/Inacc**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

9.3 Compressor Seals - To Atm

Device ID #	**100354**	***Device Name***	**Compressor Seals - To Atm**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

9.4 PSV - To Atm

Device ID #	**100355**	***Device Name***	**PSV - To Atm**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

E DE-PERMITTED EQUIPMENT

1 Uncontrolled IC Engine: #11696

Device ID #	**003382**	***Device Name***	**Uncontrolled IC Engine: #11696**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	817	*Serial Number*	11696
Depermitted Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 817, maximum heat input rating: MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr	*Facility Transfer*	

2 Uncontrolled IC Engine: #11711

Device ID #	**003398**	***Device Name***	**Uncontrolled IC Engine: #11711**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	145	*Serial Number*	11711
Depermitted Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr	*Facility Transfer*	

3 Uncontrolled IC Engine: #110015

Device ID #	**003441**	***Device Name***	**Uncontrolled IC Engine: #110015**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	140	*Serial Number*	110015
Depermitted		*Facility Transfer*	
Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140 , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

4 Uncontrolled IC Engine: #11508

Device ID #	**005316**	***Device Name***	**Uncontrolled IC Engine: #11508**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	145	*Serial Number*	11508
Depermitted		*Facility Transfer*	
Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

5 Uncontrolled IC Engine: #11706

Device ID #	**006454**	***Device Name***	**Uncontrolled IC Engine: #11706**
Rated Heat Input		*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	
Model	140	*Serial Number*	11706
Depermitted		*Facility Transfer*	
Device Description	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		