



FEB 2 2 2017

Gregory Pritchett Chevron USA, Inc. PO Box 1392 Bakersfield, CA 93302

Re: **Notice of Preliminary Decision – Emission Reduction Credits**

Facility Number: S-55

Project Number: S-1154368

Dear Mr. Pritchett:

Enclosed for your review and comment is the District's analysis of Chevron USA, Inc.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown of two IC engines, near Lost Hills, CA. The quantity of ERCs proposed for banking is 284 lb-NOx/yr, 1,295 lb-PM10/yr and 3,744 lb-CO/yr.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30day public notice comment period, the District intends to the issue the ERCs. Please submit your written comments on this project within the 30-day public comment period. as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. David Torii of Permit Services at (661) 392-5620.

Sincerely,

Arhaud Marjollet

Director of Permit Services

AM:dbt

Enclosures

Tung Le, CARB (w/enclosure) via email CC:

Gerardo C. Rios, EPA (w/enclosure) via email CC:

Seved Sadredin

Executive Director/Air Pollution Control Officer

San Joaquin Valley Air Pollution Control District **ERC Banking Application Review**

Facility Name: Chevron USA, Inc.

Date: 1/17/17

Mailing Address: PO Box 1392

Engineer: David Torii

Bakersfield, CA 93302

Lead Engineer: Rich Karrs

Contact Person: Lance Ericksen

Telephone: (661) 654-7145

Project #: S-1154368

Received: 12/22/15

Deemed Complete: 1/20/16

ERC #s: S-4659-2, '3 and '4

1. Summary

Chevron USA, Inc. (CUSA) shutdown natural gas-fired internal combustion engines (S-55-13 and '14) in December 2015. Subsequently, the facility submitted this application to bank actual emission reductions (AER) resulting from shutdown of the engines. See the Permits to Operate (PTOs) in Appendix B.

The following emission reductions have been found to qualify for ERC banking:

	NO _x [lb/qtr.]	PM ₁₀ [lb/qtr.]	CO [lb/qtr.]
1st Quarter	72	328	949
2nd Quarter	68	306	885
3rd Quarter	74	337	975
4th Quarter	72	324	935
Total	286	1,295	3,744

II. Applicable Rules

Rule 2301 Emission Reduction Credit Banking (1/19/12)

III. Location of Reduction

The equipment was located at the Lost Hills Gas Processing facility in the Section 3. Township 27S, Range 21E in Kern County.

IV. Method of Generating Reductions

The emission reductions are generated by the permanent shutdown of two 1680 bhp Waukeshia model 7044GSI rich burn natural gas-fired IC engines S-55-13 and '14 powering gas compressors. The engines' workload has been taken over by the facility's electric compression operation (S-55-9).

Equipment Description

S-55-13: GAS COMPRESSION OPERATION INCLUDING ONE 1680 HP WAUKESHA

MODEL 7044GSI NATURAL GAS-FIRED IC ENGINE WITH DCL

INDUSTRIES MODEL 2-DC76-14 3-WAY CATALYST, AND A AIR/FUEL RATIO CONTROLLER DRIVING A THREE-STAGE GAS COMPRESSOR

S-55-14: GAS COMPRESSION OPERATION INCLUDING ONE 1680 HP WAUKESHA

MODEL 7044GSI NATURAL GAS-FIRED IC ENGINE WITH DCL

INDUSTRIES MODEL 2-DC76-14 3-WAY CATALYST, AND AN AIR/FUEL RATIO CONTROLLER DRIVING A THREE-STAGE GAS COMPRESSOR

V. Calculations

A. Assumptions and Emission Factors

Assumptions

- Two-year baseline period selected for calculation of AER is 12/1/2011 through 11/30/2013
- Annual emissions will be rounded to the nearest pound in accordance with District Policy APR-1105 (dated 7/16/1992).
- The engines were fired on public utility commission (PUC) quality natural gas per PTOs.
- Natural Gas Heating Value is 1,020 Btu/scf (typical for PUC gas)

Emission Factors (EF)

PM10 Emissions Factor

No PM10 source tests were performed for the engines; therefore, the PTO's PM10 emission limit/factor was used.

Emissions factors for NOx, and CO were calculated based of the engines' source test data summarized below (see Appendix D for source test data).

		ppmv @)15% O2
	Source Test Date	NOx	CO
S-55-13	12/15/10	0.16	6.0
S-55-13	10/11/13	<u>-</u>	6.0
S-55-13	12/31/14	2.0	44.0
S-55-14	12/15/10	0.01	11.1
S-55-14	1/10/13	0.22	1.3
S-55-14	1/11/13	-	8.0
Total		2.39	76.4
Ave		0.60	12.7
	lb/MMBtu	0.0022	0.0289

The emission factor derivation calculations are shown below:

NOx Emissions Factor

Equation:

NOx (lb. /MMBtu) = ppm x 1/molar volume x MW x Fd x 20.9/ (20.9 - %O2)

Where:

ppm = 0.60 ppm @15%O2 engine source test average

molar volume = 379.5 dscf/lbmol @ 14.696 psia, 70 deg. F

MW = molecular weight, lb. /lb-mol

Fd = 8710 dscf/MMBtu for natural gas @ 70 deg F

Therefore:

NOx (lb./MMBtu) = $0.60 \text{ E}-06 \text{ ft3} \times 1/379.5 \text{ dscf/lb-mol} \times 46 \text{ lb./lb-mol} \times 8710 \text{ dscf/MMBtu} \times 20.9/(20.9 - 15.0)$

NOx (lb. /MMBtu) = 0.0022

CO Emissions Factor

Equation:

CO (lb. /MMBtu) = ppm x 1/molar volume x MW x Fd x 20.9/ (20.9 - %O2)

Where:

ppm = 12.7 ppm @ 15% O2 engine source test average

molar volume = 379.5 dscf/lb. mol @ 14.7 psia, 70 deg. F

MW = molecular weight, lb. /lb-mol

Fd = 8710 dscf/MMBtu for 1020 Btu/scf Natural Gas @ 70 deg F

Therefore,

CO (lb. /MMBtu) = $12.7 \text{ E}-06 \times 1/379.5 \text{ dscf/lb-mol } \times 28 \text{ lb./lb-mol } \times 8710 \text{ dscf/MMBtu} \times 20.9/(20.9 - 15.0)$

CO (lb. /MMBtu) = 0.0289

The emissions factors are summarized below:

Natural Gas Emission Factors				
Pollutant	Emissions Factors (lb/MMBtu)	Source		
NOx	0.0022	Engine source tests		
PM10	0.01	PTOs		
CO	0.0289	Engine source tests		

B. Baseline Period Determination

Pursuant to Rule 2301, Section 3.6, the Baseline Period is the same as defined in Rule 2201, which is:

The two consecutive years of operation immediately prior to the submission date of the complete application; or at least two consecutive years within the five years immediately prior to the submission date of the complete application if determined by the APCO as more representative of normal source operation.

The baseline period from 12/1/2011 to 11/30/2013 was determined to be more representative of normal source operation than the two years immediately prior to submission of the banking application. The baseline period was calculated by determining the normal source operation (NSO) average fuel use for the last nine years; comparing the fuel use for the last five years, and establishing the two year period within the last five years closest to the NSO nine year average as the baseline period. See fuel use and NSO data in Appendix C.

C. Baseline Data

The baseline natural gas-use is taken from the annual fuel-use records that have been supplied by the applicant, as posted in the following table.

Fuel Usage (MMBtu)						
	Year					
Month/Year	Quarter	2011	2012	2013	Total Quarterly Fuel Use	Average Fuel Used for 2012 and 2013
Jan	1st		12,852	12,925		
Feb	1 st		11,586	10,857	72,985	36,493
Mar	1 st		11,003	13,762		
Apr	2 nd		9,568	12,291		
May	2 nd		13,250	12,844	68,056	34,028
Jun	2 nd		13,406	6,697		
Jul	3 rd		13,977	6,029		
Aug	3 rd		14,010	12,457	74,936	37,468
Sep	3 rd		14,745	13,718		
Oct	4 th		14,425	13,352		
Nov	4 th		12,758	13,687	71,906	35,953
Dec	4 th	10,512	7,172			

D. Historical Actual Emissions (HAE)

The HAE from the fuel use is determined by multiplying the average quarterly fueluse by the emission factor presented above.

Criteria Emissions During Baseline Period (lb./qtr.) (HAE)					
	NO _x PM10 CO				
1st Quarter	80	365	1,055		
2nd Quarter	75	340	983		
3rd Quarter	82	375	1,083		
4th Quarter	79	360	1,039		

The Air Quality Improvement Deduction (AQID) is 10% of the AER per Rule 2201, Sections 3.6 and 4.12.1, and is summarized as follows:

Air Quality Improvement Deduction (AQID) lb./qtr. (AQID = AER x 10%)					
NOx PM10 CO					
1st Quarter	8	36	105		
2nd Quarter 7 34 9					
3rd Quarter	8	37	108		
4th Quarter	8	36	104		

E. Post Project Potential to Emit (PE2)

As discussed above, the subject equipment has been permanently shut down and its PTOs surrendered. Therefore the PE2s for NOx, PM10, and CO are zero.

F. Emission Reductions Eligible for Banking

The emission reductions eligible for banking are the difference between the historical actual emissions and the potential to emit after the project minus the air quality improvement deduction.

Criteria Emissions Eligible for Banking (lb. /qtr.)					
	NOx	PM10	CO		
1st Quarter	72	328	949		
2nd Quarter	68	306	885		
3rd Quarter	74	337	975		
4th Quarter	72	324	935		

VI. Compliance

Rule 2301 - Emissions Reduction Credit Banking

To comply with the definition of Actual Emissions Reductions (Rule 2201, Section 3.2.1), the reductions must be real, enforceable, quantifiable, permanent, and surplus.

A. Real

The emission reductions were generated by the shutdown of two natural gas-fired internal combustion engines powering natural gas compressors. The engines' workload has been taken over by the facility's electric compression operation (S-55-9). Emission reductions have been calculated based on actual heat input to the engines and certified source test results and recognized emission factors for the baseline period. Therefore, the reductions are real.

B. Enforceable

The PTOs for the natural gas-fired internal combustion engines have been surrendered. Operation of the equipment without a valid permit would subject the Permittee to enforcement actions. Therefore, the reductions are enforceable.

C. Quantifiable

The reductions are quantifiable since they were calculated from historic fuel use data, source testing data, established and accepted emission factors, permitted limits, and methods according to District Rule 2201. Therefore, the reductions are quantifiable.

D. Permanent

The natural gas-fired internal combustion engines have been shut down and the PTOs surrendered. The gas formerly compressed by the IC engines is currently compressed by electric motor-powered compressors.

E. Surplus

To be considered surplus, Actual Emission Reductions shall be in excess, at the time the application for an Emission Reduction Credit or an Authority to Construct authorizing such reductions is deemed complete, of any emissions reduction which:

- Is required or encumbered by any laws, rules, regulations, agreements, orders, or
- Is attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, or
- Is proposed in the APCO's adopted air quality plan pursuant to the California Clean Air Act.

At the time of the shutdown and subsequent permit surrender, the units involved were in compliance with current and any known future requirements of all applicable rules and regulations. Therefore, the reductions are surplus.

F. Not used for the Approval of an Authority to Construct or as Offsets

The emission reduction credits generated by the shutdown of natural gas-fired internal combustion engine will not be used for the approval of any Authority to Construct or used as mitigating offsets for approval of other equipment. See section VI.A, above.

G. Timely Submittal

Section 4.2.3 of Rule 2301 – Emissions Reduction Credit Banking (1/19/12) states that ERC certificate applications for reductions shall be submitted within 180 days after the emission reduction occurs. The ERC application was received on 12/22/15. The engines ceased operation in December of 2015. Therefore, the application was submitted in a timely fashion.

VII. Recommendation

Issue the ERC Certificates in the amount posted in the table below and on the Draft ERC Certificates in Appendix A.

Summary of ERC Amounts (lb)					
	NO _X	PM ₁₀	CO		
ERC Number	S-4659-2	S-4659-4	S-4659-3		
1 st Quarter	72	328	949		
2 nd Quarter	68	306	885		
3 rd Quarter	74	337	975		
4 th Quarter	72	324	935		
Total Per Year	286	1,295	3,744		

List of Appendixes

- A. Draft Emission Reduction Credit Certificates
- B. Surrendered PTO
- C. NSO and Historical Fuel Use Data
- D. Engine Source Test Results

Appendix A Draft ERC Certificates

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate

ISSUED TO:

CHEVRON USA INC LOST HILLS GP

ISSUED DATE:

<DRAFT>

LOCATION OF

LOST HILLS GAS PLANT

REDUCTION:

LOST HILLS, CA

For NOx Reductions In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
72 lbs	68 lbs	74 lbs	72 lbs

Method Of Reduction

[] Shutdown of Entire Stationary Source

[X] Shutdown of Emissions Units

[] Other

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director APCO

Arnaud Marjollet, Director of Permit Services

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate

ISSUED TO:

CHEVRON USA INC LOST HILLS GP

ISSUED DATE:

<DRAFT>

LOCATION OF

LOST HILLS GAS PLANT

REDUCTION:

LOST HILLS, CA

For CO Reductions In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
949 lbs	885 lbs	975 lbs	935 lbs

Method Of Reduction

[] Shutdown of Entire Stationary Source

[X] Shutdown of Emissions Units

[] Other

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director/APCO

Arnaud Marjollet, Director of Permit Services

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate

ISSUED TO:

CHEVRON USA INC LOST HILLS GP

ISSUED DATE:

<DRAFT>

LOCATION OF

LOST HILLS GAS PLANT

REDUCTION:

LOST HILLS, CA

For PM10 Reductions In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
328 lbs	306 lbs	337 lbs	324 lbs

Portion of above PM10 Reductions that is PM2.5:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
100.0%	100.0%	100.0%	100.0%
328 lbs	306 lbs	337 lbs	324 lbs

Method Of Reduction

[] Shutdown of Entire Stationary Source

[X] Shutdown of Emissions Units

[] Other

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director/APCO

Arnaud Marjollet, Director of Permit Services

Appendix B
Surrendered PTOs

PERMIT UNIT: S-55-13-11

EXPIRATION DATE: 08/31/2016

SECTION: SW03 TOWNSHIP: 27S RANGE: 21E

EQUIPMENT DESCRIPTION:

GAS COMPRESSION OPERATION INCLUDING ONE 1680 HP WAUKESHA MODEL 7044GSI NATURAL GAS-FIRED IC ENGINE WITH DCL INDUSTRIES MODEL 2-DC76-14 3-WAY CATALYST, AND A AIR/FUEL RATIO CONTROLLER DRIVING A THREE-STAGE GAS COMPRESSOR:

PERMIT UNIT REQUIREMENTS

- 1. This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
- 2. The engine shall be equipped with a turbocharger and with an intercooler, [District Rule 2201]
- 3. This IC engine shall be fired on Public Utility Commission (PUC) quality natural gas with a sulfur content not exceeding 1.0 grains/100 scf. [District Rules 2201, 4801]
- 4. Compressor shall be reciprocating type only and shall be in wet gas service only. [District Rules 2201, 4001]
- 5. This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
- 6. VOC emissions from fugitive components associated with this engine/compressor shall not exceed 2.0 lb VOC per day. [District Rule 2201]
- 7. VOC emission rate from all compression operations shall not exceed 0.66 lb/hr from fugitive sources. [District NSR Rule]
- 8. Emissions from the IC engine when operating under load shall not exceed any of the following limits: 11 ppmv-NOx @ 15% O2, 30 ppmv-VOC @ 15% O2, 270 ppmv-CO @ 15% O2, 0.00285 lb-SOx/MMBtu, or 10 lb-PM10/MMscf. [District Rules 2201, 4702]
- 9. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Source testing emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NOx. [District Rules 4702]
- 10. Compliance demonstration (source testing) shall be by District witnessed or authorized by District personnel. [District Rule 1081]
- 11. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- 12. The results of each source test shall be submitted to the District within 60 days thereafter, [District Rule 1081]
- 13. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- 14. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: CHEVRON USA INC LOST HILLS GP Location: LOST HILLS GAS PLANT, LOST HILLS, CA 8-55-13-11; Feb 24 2016 1:09PM - TORID

- 15. The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, and O2 at least once every calendar month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
- 16. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the permitted emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1-hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4702]
- 17. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702]
- 18. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
- 19. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified in the Inspection and Maintenance (I & M) plan submitted to the District. [District Rule 4702]
- 20. The permittee shall update the I & M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I & M plan and must submit an updated I & M plan to the APCO no later than 14 days after the change for approval. The date and time of the change to the I & M plan shall be recorded in the engine's operating log. For modifications, the revised I & M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I & M plan at any time. [District Rule 4702]
- 21. The permittee shall maintain, and make available for District inspection, all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 4702]
- 22. The following test methods shall be used: NOx (ppmv) EPA Method 7E or ARB Method 100, CO (ppmv) EPA Method 10 or ARB Method 100, stack gas oxygen EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) EPA Method 25 or EPA Method 18 referenced as methane, fuel gas sulfur content ASTM D 3246 or double GC for total sulfur content, and EPA Method 21 for fugitive components. [District Rule 1081]
- Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801]
- 24. Sulfur content of the natural gas being fired in the engine shall be determined using ASTM method D 1072, D 3031, D 4084, D 3246, or double GC for H2S and mercaptans. [District Rule 1081]
- 25. Sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201]

- 26. Permittee shall maintain an engine operating log, on a monthly basis, which includes the following information; total hours of operation, type and quantity of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with Rule 4702. [District Rules 1070]
- 27. All records required by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 4702]

PERMIT UNIT: S-55-14-11

EXPIRATION DATE: 08/31/2016

SECTION: SW03 TOWNSHIP: 27S RANGE: 21E

EQUIPMENT DESCRIPTION:

GAS COMPRESSION OPERATION INCLUDING ONE 1680 HP WAUKESHA MODEL 7044GSI NATURAL GAS-FIRED IC ENGINE WITH DCL INDUSTRIES MODEL 2-DC76-14 3-WAY CATALYST, AND AN AIR/FUEL RATIO CONTROLLER DRIVING A THREE-STAGE GAS COMPRESSOR:

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- 1. This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
- 2. The engine shall be equipped with a turbocharger and with an intercooler. [District Rule 2201]
- 3. This IC engine shall be fired on Public Utility Commission (PUC) quality natural gas with a sulfur content not exceeding 1.0 grains/100 scf. [District Rules 2201, 4801]
- 4. Compressor shall be reciprocating type only and shall be in wet gas service only. [District Rules 2201, 4001]
- 5. This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
- 6. VOC emissions from fugitive components associated with this engine/compressor shall not exceed 2.0 lb VOC per day. [District Rule 2201]
- 7. VOC emission rate from all compression operations shall not exceed 0.66 lb/hr from fugitive sources. [District 2201 Rule]
- 8. Emissions from the IC engine when operating under load shall not exceed any of the following limits: 11 ppmv-NOx @ 15% O2, 30 ppmv-VOC @ 15% O2, 270 ppmv-CO @ 15% O2, 0.00285 lb-SOx/MMBtu, or 10 lb- PM10/MMscf. [District Rules 2201, 4702]
- 9. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Source testing emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NOx. [District Rule 4702]
- 10. Compliance demonstration (source testing) shall be by District witnessed or authorized by District personnel. [District Rule 1081]
- 11. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- 12. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
- 13. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
- 14. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: CHEVRON USA INC LOST HILLS GP Location: LOST HILLS GAS PLANT, LOST HILLS, CA 9-55-14-11 Feb 24 2018 1.09PM TORIO

- 15. The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, and O2 at least once every calendar month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
- 16. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the permitted emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1-hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4702]
- 17. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4702]
- 18. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
- 19. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified in the Inspection and Maintenance (I & M) plan submitted to the District. [District Rule 4702]
- 20. The permittee shall update the I & M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I & M plan and must submit an updated I & M plan to the APCO no later than 14 days after the change for approval. The date and time of the change to the I & M plan shall be recorded in the engine's operating log. For modifications, the revised I & M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I & M plan at any time. [District Rule 4702]
- 21. The permittee shall maintain, and make available for District inspection, all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 4702]
- 22. The following test methods shall be used: NOx (ppmv) EPA Method 7E or ARB Method 100, CO (ppmv) EPA Method 10 or ARB Method 100, stack gas oxygen EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) EPA Method 25 or EPA Method 18 referenced as methane, fuel gas sulfur content ASTM D 3246 or double GC for total sulfur content, and EPA Method 21 for fugitive components. [District Rule 1081]
- 23. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801]
- 24. Sulfur content of the natural gas being fired in the engine shall be determined using ASTM method D 1072, D 3031, D 4084, D 3246, or double GC for H2S and mercaptans. [District Rule 1081]
- 25. Sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201]

- 26. Permittee shall maintain an engine operating log, on a monthly basis, which includes the following information; total hours of operation, type and quantity of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with Rule 4702. [District Rule 1070]
- 27. All records required by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 4702]

Appendix C NSO and Historical Fuel Use Data

Normal Source Operation K5 and K6

Dec-05 Jan-06 Jan-07 Jan-08 Jan-07 Jan-08 Jan-09 Jan-10 Jan-09 Jan-10 Jan-09 Jan-09 Jan-10	Month			Total
Jan-06		MSCF	Btu/scf	
Jan-06	Dec-05		4.000	
Feb-06		11 745		11.000
Mar-06 11,988 1,020 12,228 Apr-06 11,125 1,020 11,348 May-06 12,052 1,020 12,293 Jun-06 11,015 1,020 8,838 Aug-06 12,746 1,020 13,001 Sep-06 12,559 1,020 12,840 Nov-06 13,391 1,020 13,659 Dec-06 10,509 1,020 10,719 Jan-07 11,658 1,020 11,891 Feb-07 11,745 1,020 11,980 Mar-07 12,173 1,020 11,980 Mar-07 10,055 1,020 10,256 May-07 1,761 1,020 10,256 May-07 10,055 1,020 10,485 Jul-07 10,279 1,020 10,485 Jul-07 12,445 1,020 12,694 Aug-07 13,108 1,020 12,649 Aug-07 13,108 1,020 12,447				
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10100				
Feb-10 11,893 1,020 12,131		•		
Mar-10 13,100 1,020 13,362				
Apr-10 12,705 1,020 12,959				
May-10 13,453 1,020 13,722	•			
Jun-10 12,646 1,020 12,899				
Jul-10 12,647 1,020 12,900		12,647		
Aug-10 12,864 1,020 13,121		·		
Sep-10 12,980 1,020 13,240				(3)
Oct-10 12,737 1,020 12,992				
Nov-10 12,448 1,020 12,697 Dec-10 13,208 1,020 13,472				12,697
Dec-10 13,208 1,020 13,472	DBC-10	13,208	1,020	13,472

Jan-11	13,515	1,020	13,785
Feb-11	12,264	1,020	12,509
Mar-11	13,177	1,020	13,441
Apr-11	12,707	1,020	12,961
May-11	12,951	1,020	13,210
Jun-11	13,042	1,020	13,303
Jul-11	12,888	1,020	13,146
Aug-11	10,732	1,020	10,947
Sep-11	11,013	1,020	11,233
Oct-11	11,017	1,020	11,237
Nov-11	7,372	1,020	7,519
Dec-11	10,306	1,020	10,512
Jan-12	12,600	1,020	12,852
Feb-12	11,359	1,020	11,586
Mar-12	10,787	1,020	11,003
Apr-12	9,380	1,020	9,568
May-12	12,990	1,020	13,250
Jun-12	13,143	1,020	13,406
Jul-12	13,703	1,020	13,977
Aug-12	13,735	1,020	14,010
Sep-12	14,456	1,020	14,745
Oct-12	14,142	1,020	14,425
Nov-12	12,508	1,020	12,758
Dec-12	7,031	1,020	7,172
Jan-13	12,672	1,020	12,925
Feb-13	10,644	1,020	10,857
Mar-13	13,492	1,020	13,762
Apr-13	12,050	1,020	12,291
May-13	12,592	1,020	12,844
Jun-13	6,566	1,020	6,697
Jul-13	5,911	1,020	6,029
Aug-13	12,213	1,020	12,457
Sep-13	13,449	1,020	13,718
Oct-13	13,090	1,620	13,352
Nov-13	13,418	1,020	13,687
Dec-13	13,534	1,020	13,805
Jan-14	14,060	1,020	14,341
Feb-14	12,737	1,020	12,991
Mar-14	13,736	1,020	14,011
Apr-14	13,256	1,020	13,521
May-14	4,516	1,020	4,606
Jun-14 Jul-14	7,179	1,020	7,322
	11,343	1,020	11,570
Aug-14 Sep-14	13,345	1,020	13,612
Oct-14	12,074	1,020	10,203
Nov-14	13,907 12,651	1,020	14,185
Dec-14	11,456	1,020	12,904
Jan-15	7,509	1,020	11,685
Feb-15	0	1,020 1,020	7,659
Mar-15	0	1,020	0
Apr-15	12,539	1,020	10.700
May-15	15,162	1,020	12,790 15,465
Jun-15	13,236	1,020	13,501
Jul-15	11,301	1,020	11,527
Aug-15	10,666	1,020	10,879
Sep-15	12,611	1,020	12,863
Oct-15	11,565	1,020	11,796
Nov-15	10,506	1,020	10,717
Dec-15	. 3,000	1,020	10,717
		.,023	1

Historical Actual Emissions (HAE)

Month			Total	24 Month Block Differences vs NSO	36 Month Block Differences ve NSD	48 Month Block Differences ve NSO
	MSCF	Blu/scl	MMBtu	10.1100	101100	1 1130
Dec-10	13,208	1,020	40.475	1		
Jan-11	13,515	1,020	13,472	1		
Feb-11	12,264	1,020	13,785 12,509	1		
Mar-11	19,177	1,020	13,441	1		
Apr-11	12,707	1,020	12,981	L		
May-11	12,951	1,020	13,210	£		
Jun-11	13,042	1,020	13,303			
Jul-11	12,888	1,020	13,146	1		
Aug-11	10,732	1,020	10,947			
Sep-11	11,013	1,020	11,233	1		
Oct-11	11,017	1,020	11,237			
Nov-11	7,372	1,020	7,519	1		
Dec-11.	10,306	1,020	10,512			
Jan-12	12,600	1,020	12,852			
Feb-12	11,359	1,020	11,586			
Mar-12	10,787	1,020	11,003			
Apr-12	9,380	1,020	9,588			
May-12	12,990	1,020	13,250			
Jun-12	19,149	1,020	13,406			
Jul-12	13,703	1,020	13,977			
Aug-12	13,735	1,020	14,010	1		
Sep-12	14,458	1,020	14,745	1		
Oct-12	14,142	1,020	14,425			
Nov-12	12,508	1,020	12,750	452		
Dec-12 Jan-13	7,031	1,020	7,172	190		
Feb-13	12,672	1,020	12,925	154		
Mar-13	10,844	1,020	10,857	85		
Apr-13	13,492	1,020	13,762	99	3. 2	
May-13	12,050 12,592	1,020	12,291	71	,	1.
Jun-13	6,566	1,020	12,844	55		
Jul-13	5,911	1,020 1,020	6,697	220		
Aug-13	12,213	1,020	6,029	516		
Sep-13	13,449	1,020	12,457 13,718	454		
Oct-13	13,090	1,020	13,352	950 262	36	
Nov-13	13,418	1,020	13,697		74	ř.
Dec-13	13,534	1,020	13,805	132	74 83	
јал-14	14,080	1,020	14,341	184	98	
eb-14	12,737	1,020	12,991	253	112	
vlar-14	13,736	1,020	14,011	378	127	
Apr-14	13,256	1,020	13,521	543	143	
/ay-14	4,516	1,020	4,006	183	96	
lun-14	7,179	1,020	7,322	71	262	
Jul-14	11,343	1,020	11,570	171	308	
Aug-14	13,345	1,020	13,612	189	232	
Sep-14	12,974	1,020	13,233	251	176	
Oct-14	13,907	1,020	14,185	261	94	
Nov-14 Dec-14	12,651	1,020	12,904	258	55	59
	11,456	1,020	11,685	66	88	9
Jan-15 Peb-15	7,509	1,020	7,659	286	57	36
/en-15 //er-15	0	1,020	0	738	378	83
Apr-15	12.520	1,020	0	1,312	884	D9
1ay-15	12,539	1,020	12,790	1,261	595	62
lun-15	15,162 13,236	1,020	15,485		533	66
Jul-15	11,301	1,020	13,501	898	530	327
ug-15	10,666	1,020 1,020	11,527	669	588	607
ep-15	12,611	1,020	10,87B 12,863	735	885	810
CI-15	11,565	1,020	11,798	770 835	738 011	503
ov-15	10,506	1,020	10,717	959		559
			10//1/	909	887	593

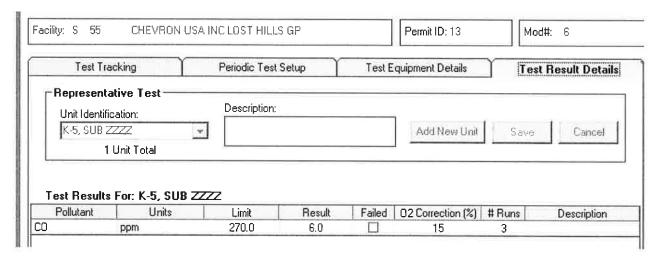
Appendix D

Engine Source Test Results

12/15/10

Test T	racking	Periodic Test	Periodic Test Setup Test Equipment Details		Tes	t Result Details	
Represen Unit Identi		Description:					400
CAHN GF	K-5 <u>~</u> 1 Unit Total				Add New Unit	Save	Cancel
	11.251.11.251.11.						
Test Result	s For: CAHN GP K- Units	5 Limit	Result	Failed	02 Correction (%)	# Runs	Description
Pollutant	s For: CAHN GP K-		Result 6.0	Failed	02 Correction (%)	#Runs	Description
Pollutant CD	s For: CAHN GP K- Units	Limit		Failed			Description
	s For: CAHN GP K- Units	Limit 70.0	6.0	Failed		3	Description

10/11/13



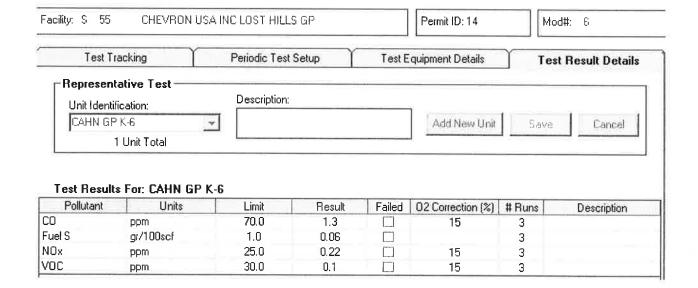
12/31/14

	ility: S 55 CHEVRON USA INC						
Test T	Test Tracking Periodic Test Setup		Test E	Test Equipment Details		t Result Details	
Represen	tative Test						
Unit Identi	fication:	Description:					
CAHN GF		7			Add New Unit	Save	Cancel
					and the second s	1	77.77
	1 Unit Total						-
	s For: CAHN GP		Result	Failed	02 Correction (%)	#Runs	Description
Test Result	s For: CAHN GP	K-5 Limit 70.0	Result	Failed	02 Correction (%)	#Runs	Description
Test Result Pollutant	s For: CAHN GP	Limit		Failed			Description
Test Result Pollutant	s For: CAHN GP Units	Limit 70.0	44.0	Failed		3	Description
Test Result	s For: CAHN GP Units ppm gr/100scf	Limit 70.0 1.0	44.0 0.06	Failed	15	3	Description

12/15/10

0. 954				120 174		~	
Test T	racking	Periodic Test	Setup	Test E	quipment Details	Tes	t Result Details
Unit Identi	tative Test fication:	Description:			Add New Unit	Save	Cancel
	1 Unit Total						
	1 Unit Total s For: CAHN GP K-	6				•	
l		6 Limit	Result	Failed	02 Correction (%)	# Runs	Description
Test Result	s For: CAHN GP K-		Result	Failed	02 Correction (%)	#Runs	Description
Test Result Pollutant	s For: CAHN GP K- Units	Limit		Failed		# Runs 3	Description
Test Result	s For: CAHN GP K- Units	Limit 70.0	11.1	Failed		# Runs 3 3 3 3	Description

1/10/13



1/11/13

	. Y	SERVICE OF THE STORE		56B A30	S 14 S/145 S 16	~	
Test Trac	king	Periodic Test 9	Setup	Test E	quipment Details	Tes	t Result Details
Representat	ive Test						
Unit Identifica	ation:	Description:					
K-6, SUB ZZ		7			Add New Unit	Save	Cancel
					700 NOXY 0111	3976	Garica.
1 (Init Total						
Test Results i	or: K-6, SUB Z	<i>777</i>					
Test Results I	For: K-6, SUB Z	ZZZ Limit	Result	Failed	02 Correction (%)	# Runs	Description