



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

JUL 9 2015

Ref: 8P-AR

Mr. Jeremy Nichols
Director Climate and Energy Program
1536 Wynkoop St
Suite 302
Denver Colorado 80202

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Nichols:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

Enclosed is a copy of the public notice, which will publish in the Farmington Daily Times on Monday July 13, 2015. The public notice contains details on the procedure for public review of the documents. Electronic copies of the draft permit, and Statement of Basis, application and other supporting information may also be viewed online at: <http://www2.epa.gov/region8/air-permit-public-comment-opportunities>.

In accordance with 40 CFR 71.11(d)(2), EPA Region 8 is providing a 30-day period from July 13, 2015 to August 12, 2015 for public comment on the draft permit. If a public hearing is held regarding this permit, you will be sent a copy of the public hearing notice at least 30 days in advance of the hearing date. Comments must be received by August 12, 2015 to be considered in the issuance of the final permit. Should EPA not accept any or all of these recommendations, you will be notified in writing and will be provided with the reasons for not accepting them.



A copy of the draft permit and Statement of Basis may be obtained by contacting the Part 71 permit contact. Please submit any written recommendations you may have concerning the terms and conditions of this permit to:

Noreen Okubo
Part 71 Permit Contact
Air Program, 8P-AR
U.S. EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202
303-312-6646
Okubo.noreen@epa.gov

Sincerely,



Noreen Okubo
Air Permit Engineer
Air Program

Enclosure (1)

1. Public Notice





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1595 Wynkoop Street
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JUL 9 2015

Ref: 8P-AR

Mr. Cordell TeCube
Program Director
Environmental Protection Office
Jicarilla Apache Tribe
PO Box 507
Dulce New Mexico 87528

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. TeCube:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Sincerely,



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Air Permit Engineer
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JUL 9 2015

Ref: 8P-AR

Mr. Michael King
Air Quality Control Program
Navaho Nation
Environmental Protection Office
PO Box 529
Fort Defiance Arizona 86504

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. King:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Sincerely,



Noreen Okubo
Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. Mark Hutson
Air Quality Program Manager
Southern Ute Indian Tribe
PO Box 737 MS#84
Ignacio Colorado 81137

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Hutson:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Sincerely,



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Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. Eric C. Massey
Director Air Quality Division
Arizona Department of Environmental Quality
Central Office
1110 W. Washington Street
Phoenix, Arizona 85007

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Massey:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Sincerely,



Noreen Okubo
Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. William Allison
Director Air Pollution Control Division
Colorado Department of Human Health and Environment
4300 Cherry Creek Drive South
Denver CO 80246

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Allison:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Air Program, 8P-AR
U.S. EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202
303-312-6646
Okubo.noreen@epa.gov

Sincerely,

Noreen Okubo

Noreen Okubo
Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. Jeff Sorkin
U.S. Department of Agriculture
Forest Service
Air Quality Manager Rocky Mountain Region
Renewable Resources
740 Simms Street
Golden, Colorado 80401

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Sorkin:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Sincerely,

Noreen Okubo

Noreen Okubo
Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. Don Shepherd
Policy Planning and Permit Review
National Park Service
Air Resources Division
12795 W. Alameda Parkway
Lakewood, Colorado 80228

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Shepherd:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Air Program, 8P-AR
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Okubo.noreen@epa.gov

Sincerely,



Noreen Okubo
Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. Richard Goodyear
Program Manager
Air Quality Bureau
New Mexico Environmental Department
525 Camino de los Marquez Suite #1
Santa Fe, New Mexico 87505

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Goodyear:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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Sincerely,



Noreen Okubo
Air Permit Engineer
Air Program

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JUL 9 2015

Ref: 8P-AR

Mr. Bryce Bird
Director Air Quality Division
Utah Department of Environmental Quality
P.O Box 144820
Salt Lake City UT 84114

Re: Notice of Draft Title V Operating Permit for Operations on the Ute Mountain Indian Reservation

Dear Mr. Bird:

In accordance with 40 CFR 71.8 and 71.11 (d)(2), the EPA Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Title V federal operating permit for Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station located on the Ute Mountain Indian Reservation.

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U.S. EPA Region 8
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Okubo.noreen@epa.gov

Sincerely,

Noreen Okubo

Noreen Okubo
Air Permit Engineer
Air Program

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JUL 7 2015

Ref: 8P-AR

Ms. Debbie Holmes
San Juan County Clerk
P.O. Box 550
100 South Oliver Drive
Aztec NM 87410

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Ms. Holmes:

The U.S. Environmental Protection Agency (EPA), Region 8, will be issuing a public notice in the Farmington Daily Times on July 13, 2015 regarding the draft Clean Air Act Title V Permit to Operate (40 CFR Part 71) for the following source:

Castleton Commodities Incorporated San Juan, LLC-Barker Creek Compressor Station

The public comment period for this notice will end on August 12, 2015. Please make the enclosed draft permit, Statement of Basis, and permit application available for public inspection until the end of the public comment period.

Thank you for your assistance in this matter. Should you have any questions regarding our request you may contact me at (303) 312-6646.

Sincerely,

A handwritten signature in cursive script that reads "Noreen Okubo".

Noreen Okubo, Air Permit Engineer
Air Program

Enclosures





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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JUL 7 2015

Ref: 8P-AR

Scott Clow, Environmental Director
Ute Mountain Ute Indian Tribe
Environmental Programs Office
P.O. Box 448
Towaoc, CO 81334

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Re: Transmittal of Draft Title V Permit to Operate on
Ute Mountain Indian Reservation

Dear Mr. Clow:

In accordance with 40 CFR 71.8 and 71.11(d)(2), the U.S. Environmental Protection Agency Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Clean Air Act Title V Permit to Operate for the following source located on the Ute Mountain Indian Reservation.

Castleton Commodities Incorporated San Juan, LLC - Barker Creek Compressor Station

Region 8 is providing a 30-day period, from July 13, 2015 to August 12, 2015 for comment. Please make the enclosed draft permit, Statement of Basis, permit application, and additional supporting information available for public inspection until the end of the public comment period.

Electronic copies of the draft permit and Statement of Basis may also be viewed online at:
<http://www2.epa.gov/region8/air-permit-public-comment-opportunities>.

In addition to maintaining the docket in your office, please submit any written recommendations you may have concerning the terms and conditions of the draft permit to me at the following address:

Noreen Okubo
US EPA Region 8
Air Program, 8P-AR
1595 Wynkoop Street
Denver, CO 80202
(303)-312-6646



Should EPA not accept any or all of these recommendations, you will be notified in writing and will be provided with the reasons for not accepting them. Comments must be received by August 12, 2015, to be considered in the issuance of the final renewal permit for this facility. If a public hearing is held regarding this permit, you will be sent a copy of the public hearing notice at least 30 days in advance of the hearing date.

Sincerely,

Noreen Okubo

Noreen Okubo, Air Permit Engineer
Air Program

Enclosures



Notice of Intent to Issue Clean Air Act
Title V Federal Operating Permit
United States Environmental Protection Agency
Region 8, Air Program

Take notice that the United States Environmental Protection Agency (U.S. EPA) has received an application to issue an operating permit that regulates air pollution emissions from the following source located within the exterior boundaries of the Ute Mountain Ute Indian Reservation in San Juan County, New Mexico:

Castleton Commodities Incorporated San Juan LLC
Barker Creek Compressor Station

This source is required to obtain a Clean Air Act title V Permit to Operate in accordance with Part 71 of Title 40 of the Code of Federal Regulations. The permit contains all the Clean Air Act requirements that apply to the source and will require that the source conduct monitoring sufficient to enable U.S. EPA and the public to determine whether the source is complying with the air quality requirements that apply to it. This proceeding is subject to the administrative requirements of 40 CFR 71.11.

Members of the public may review copies of the draft permit prepared by U.S. EPA, the Statement of Basis for the draft permit, the application, and all supporting materials submitted by the source, at the San Juan County Clerk's Office in Aztec New Mexico, the Ute Mountain Ute Indian Tribe's Environmental Programs Office (124 Mike Walsh Road) Towaoc, Colorado, and at the U.S. EPA Region 8 office in Denver, Colorado. All documents will be available for review at the U.S. EPA Region 8 office Monday through Friday from 8:00 a.m. to 5:00 p.m. (excluding Federal holidays). Electronic copies of the draft permit and Statement of Basis may also be viewed at: <http://www2.epa.gov/region8/air-permit-public-comment-opportunities>.

If you have comments on the draft permit, you have 30 calendar days from the date of this notice to submit them. You have the right to request a public hearing on the draft permit. Requests for a public hearing must be made by the close of the 30-day public comment period, must include the issues proposed to be raised at the hearing, and must contain your reasons for requesting a hearing. If a public hearing is granted, the comment period will be extended through the date of the public hearing. All comments and public hearing requests should be addressed to Noreen Okubo, U.S. EPA, Region 8, Air Program (8P-AR), 1595 Wynkoop Street, Denver, CO 80202. All comments received on or before August 12, 2015 will be considered in arriving at a final decision on the permit. The final permit is a public record that can be obtained upon request. A statement of reasons for changes made to the draft permit and responses to comments received will be sent to persons who commented on the draft permit.

If you believe any conditions of the draft permit are inappropriate, you must raise all reasonably ascertainable issues and submit all reasonably ascertainable arguments supporting your position by the end of the comment period. Any supporting materials that you submit must be included in full and may not be incorporated by reference, unless they are already part of the administrative record for this permit proceeding or consist of tribal, or federal statutes and regulations, U.S. EPA documents of general availability, or other generally available referenced materials.

If you would like to be added to our mailing list to be informed of future actions on these or other Clean Air Act permits issued in Indian country, please send your name and address to Part 71 Lead, U.S. EPA Region 8, Air Program (8P-AR), 1595 Wynkoop Street, Denver, CO 80202-1129.

CCI San Juan, LLC - Barker Creek Compressor Station
 TV Operating Permit #V-UM-0001-09.00
 Summary of Requested Emission Rates

Unit No.	Unit Description	NOx		CO		VOC		PM-10		lb/hr	tpy	HAPs		HCOH		GHG Calcs			Total CO2e metric sho
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy			lb/hr	tpy	lb/hr	tpy	CO2 tpy	N2O tpy	CH4 tpy	
C-1101	Natural Gas Compressor Engine	44.1	193.1	33.5	146.5	1.4	6.0	0.1	0.44	0.01	0.03	0.15	0.67	0.15	0.67	4907.0	2.3	2.8	
FUG	Fugitive Emissions					0.05	0.20												
	Total	44.1	193.1	33.5	146.49	1.4	6.2	0.1	0.4	0.0	0.0	0.2	0.7	0.2	0.7				4912.0

NOTES

- 1 Emissions calcs are based on emission rates permitted by permit application dated December 2008
- 2 Emission rates are uncontrolled, operation of catalytic converter not enforceable (per current Title V Permit conditions).
- 3 Total HAPs = Largest single HAP, Formaldehyde (HCOH)
- 4 Total emission rates same as currently permitted rates

rt tpy

Compressor Engine

Emission Unit Data

Source Description Natural Gas Compressor Engine
 Manufacturer Waukesha
 Model L5794 GSI
 Serial No. C-14422/1
 Emission Unit No. C-1101
 Install Date 8/26/2003 Permit application

Regulatory Applicability NSPS JJJJ Exempt Unit (Constructed prior to June 12 2006 trigger date); MACT ZZZZ Applicable, remote unit

Engine Data

Engine horsepower 1380 hp mfg data, max nameplate
 Engine speed 1200 rpm mfg data, max nameplate

Fuel Data

Fuel type Natural Gas
 Fuel consumption 7650 BTU/hp-hr 2008 Application, supplier data
 10.557 MMBtu/hr BTU/hp-hr * hp / (100000 Btu/MMBtu)
 1000 BTU/scf Nominal
 10557 scf/hr BTU/hp-hr / scf/BTU
 10.557 Mscf/hr scf/hr * 1Mscf/1000 scf
 Annual fuel usage 92.5 MMscf/yr Based on 8760 hrs/yr usage

Emission Calculations

	NOx	CO	VOC	PM	SOx	HCOH	CO2	CH4	N2O		
Uncontrolled Emission Rates	14.5	11.0	0.45			0.05					g/hp-hr Mfg. Data (previous application)
				9.50E-03	5.88E-04						lb/MMBtu
	20010	15180	621			69					g/hr g/hp-hr * hp
							53.06	1.00E-03	1.00E-04		kg/MMBtu
							1	25	298		GWP
	44.1	33.5	1.37	0.10	0.006	0.15					lb/hr g/hr / (453.6 g/lb) or lb/MMBtu * MMBtu/hr
	193.2	146.58	5.996	0.44	0.027	0.67					tpy based on 8760 hrs of operation
							560.2	0.3	0.3		CO2e, kg/hr
							4907.0	2.3	2.8		CO2e, short ton/yr
Actual Emission Rates	86.2	72.7									% Catalyst Control Efficiency
	6.1	9.1	1.4	0.1	0.006	0.2					
	26.7	40.0	6.0	0.4	0.027	0.7	4912.0				CO2 calculated as CO2e

- Emission rates for NOx CO, VOCs, THC and HCOH based on data provided in the initial permit application, from manufacturers' and stack test data. where,

$$\text{lb/hr} = \text{g/hp-hr} * \text{hp} / (453.6 \text{ g/lb})$$
- Catalyst efficiencies based on data provided in Title V Permit application. Operation of Catalytic Converter is not enforceable.
- GWP = Global Warming Potential factors, from Table A-1 of 40 CFR 98, represents the CO2e multiplier for the amount of CO2 equivalent for each pollutant.
- CO2 emission factor from Table C-1 of Subpart C, 40 CFR 98, CO2 emission factors and high heat values for various types of fuel.
- CH4 and N2O emission factor from Table C-2 of Subpart C, 40 CFR 98, Default CH4 and N2O emission factors and high heat values for various types of fuel.
- CO2e emissions calculated by multiplying hourly heat rate (MMBtu/hr) by emission factor and by GWP

$$53.06 \text{ kg CO}_2/\text{mmBTU} * 10.557 \text{ mmBTU/hr} * 1 (\text{GWP}) = 1232.34 \text{ kg/hr CO}_2\text{e}$$
- CO2e Metric short ton/yr calculated by multiplying kg/hr * hours/yr operation and dividing by 1000 (kg/metric short ton)

$$(560.15 \text{ kg/hr} * 8760 \text{ hr/yr}) / (1000 \text{ kg/MST}) = 4906 \text{ short ton/yr}$$
- Total CO2e calculated by adding CO2e from CO2 + N2O+ CH4 together

$$4907+2.3+2.8 = 4912 \text{ short tons CO}_2\text{e}$$

CCI San Juan, LLC

Barker Creek Compressor Station

Fugitive Emissions

Emission Unit Data

Source Description Fugitive Emissions

Emission Unit Number FUG

Gas Analysis 15.09 wt% VOC (non C1, C2) Initial Permit application

Emission Calculations

Emission Source	Emission Factor (lb/day/source)	Number of Sources	Emission Rate	
			lb/hr	tpy
Gas Valves	0.238099	10	0.015	0.066
Light Liquor	0.132000	14	0.012	0.051
Relief Valve	0.465616	3	0.009	0.038
Liquid Flange	0.005832	40	0.001	0.006
Open End	0.105822	2	0.001	0.006
Compressor	0.465616	1	0.003	0.013
Pump Seal	0.126986	1	0.001	0.003
Gas Flange	0.020635	32	0.004	0.018
			0.046	0.202

NOTES

1 Emission factors taken from previous permit application (API Average Emission Factors for Oil and Gas Production Operations) Where

Emission Rate (lb/hr) = wt% VOC * Factor (lb/day/source) * # sources /24 (hrs/day)

Emission rate (tpy) = lb/hr * (8760 hrs/yr) / (2000 lb/ton)

From: (505) 837-6536
Deonna Hernandez
WESTON SOLUTIONS
3840 Commons Ave., NE

Origin ID: ABQA



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Albuquerque, NM 87109

Ship Date: 01OCT14
ActWgt: 1.0 LB
CAD: 3379826/INET3550

Delivery Address Bar Code



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Scoh Clow Envir. Director
Ute Mtn Ute Tribe
520 Sunset Blvd.

TOWAOC, CO 81334

Ref #
Invoice #
PO #
Dept #

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PRIORITY OVERNIGHT

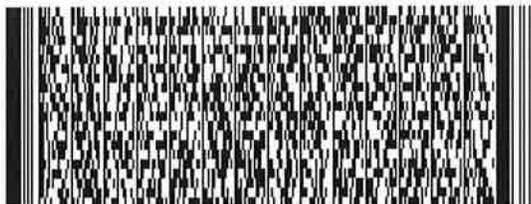
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U.S. EPA
Air Program, 8P-AR
1595 Wynkoop Street

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DENVER, CO 80202

Ref #
 Invoice #
 PO #
 Dept #

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 STANDARD OVERNIGHT

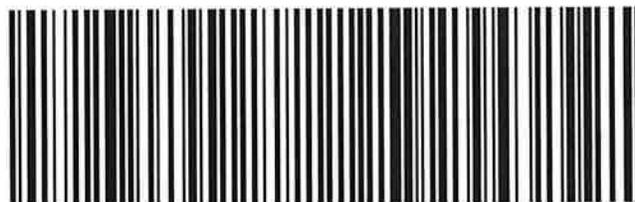
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Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87123
(505) 837-6550 (office)
(505) 837-6595 (Fax)

1 October 2014

Part 71 Permit Contact
Air Program, 8P-AR
U.S. Environmental Protection Agency
1595 Wynkoop Street
Denver, CO 80202-1129

**RE: Part 71 Permit Renewal Application
Barker Creek Compressor Station, Title V Operating Permit #V-UM-0001-09.00**

Dear Permit Contact,

On behalf of Castleton Commodities Incorporated (CCI) San Juan LLC, Weston Solutions Inc. are submitting this application for renewal of a Part 71 federal operating permit for the Barker Creek Compressor Station located in San Juan County, NM. The compressor station is located on Ute Mountain Indian Reservation, and currently operates under federal part 71 operating permit V-UM-0001-09.00.

Note that the plant was owned and operated by Western Gas Resources (WGR) until May 31, 2014 when it was purchased by CCI San Juan LLC. Notification of the change of ownership was submitted to EPA Region 8 in May, 2014.

Please find the following documents enclosed with this submittal:

- A description of the application and activities taking place at the facility; and
- Part 71 Operating Permit Renewal Forms, including a signed certification form.

A copy of this submittal is also being sent to the Environmental Director of the Ute Mountain Ute Tribe. CCI San Juan LLC are investigating revising this permit to synthetic minor status, and will submit a separate application if they elect to do so.

Please contact Leann Plagens at (281) 378-1257 (Leann.Plagens@cci.com), or me at (505) 837-6579 (jane.cudney-black@westonsolutions.com) if you have any questions or need additional information.

Very truly yours,
WESTON SOLUTIONS, INC.

A handwritten signature in black ink, appearing to read "Jane Cudney-Black". The signature is written in a cursive style with a large, prominent "J" and "C".

Jane Cudney-Black
Senior Project Manager

Cc: Scott Clow, Environmental Director, Ute Mountain Ute Tribe
CCI San Juan LLC

**40 CODE OF FEDERAL REGULATION PART 71
FEDERAL OPERATING PERMIT
RENEWAL APPLICATION**

**BARKER CREEK COMPRESSOR STATION
Permit #V-UM-0001-09.00**

**CCI San Juan LLC
811 Main Street, Suite 3500
Houston, TX 77002**



INITIAL PERMIT ISSUE DATE: MARCH 25 2010
EFFECTIVE DATE: APRIL 4, 2010
EXPIRATION DATE: APRIL 4, 2015

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1 PURPOSE AND SCOPE

This is a renewal application for a Part 71 permit issued to CCI San Juan LLC for the Barker Creek Compressor Station located within the exterior boundaries of the Ute Mountain Indian Reservation, in San Juan County, New Mexico. The location of the facility is within Indian country, as defined at Section 18 of US Code (USC) §1151, accordingly, this application is submitted to US EPA Region 8 (the issuing agency for the initial permit).

The effective date of this permit commenced April 4, 2010; the effective expiration date for this permit is April 4, 2015. This application is being submitted 6 months prior to the expiration date in accordance with §40 CFR 71.7(a)(1)(iii).

This application is submitted in satisfaction of the requirements outlined in §40 CFR 71.7, *Permit Issuance, renewal, reopenings, and revisions*. Forms that are submitted with this application are listed in Table 1.1 below.

Form Name	Description
GIS	General Information and Summary
EUD-1,	Emissions Unit Description for Fuel Combustion Sources (Unit C-1101)
IE	Insignificant Emissions (Unit FUG)
EMISS	Emissions Calculations
PTE	Potential to Emit Summary
CTAC	Certification of Truth, Accuracy, and Completeness

1.1 Site Description

The facility consists of the following sources:

- One Waukesha L5794 GSI 180 hp natural gas compressor engine (Unit C-1101)
- Fugitive emissions associated with a natural gas compressor station (FUG)

The facility is a natural gas compressor station, natural gas and liquids enters the facility, liquids are routed offsite and natural gas is compressed and sent to the sales pipeline.

1.2 Regulatory Applicability

The facility has uncontrolled Potential To Emit (PTE) emissions greater than 100 tpy and is categorized as a major source under Title V. The compressor unit normally operates with a catalytic converter, but the use of this control device is not required by regulation and thus does not count toward a reduction in the facility's PTE emission summary. Potential applicability to the most commonly applicable federal regulations is discussed below:

-
- **NESHAPs (MACT):** The facility is an area source of HAPs, and is not a major source of Hazardous Air Pollutants (HAPs). The facility is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) Maximum Achievable Control Technology (MACT) ZZZZ. Revisions to MACT ZZZZ have become effective since the permit was initially issued, our review of MACT ZZZZ indicates that the unit is now subject to MACT ZZZZ. However the facility meets the criteria for “Remote stationary RICE” under 40 CFR 63.6675, and is subject to the requirements accordingly.
 - **NSPS:** The engine was constructed prior to the promulgation of New Source Performance Standards (NSPS) JJJJ, this regulation does not apply. There are currently no NSPS which apply to units at the facility.
 - **CAM:** An emission unit is potentially subject to the Compliance Assurance Monitoring (CAM) rule if it has specific emission standards or limitations described in the rule, or uses a control device to achieve compliance with limits or standards. The facility has no emission units subject to emission standards or limitations, and does not take credit for use of the control device on the compressor. CAM does not apply.
 - **Chemical Accident Prevention Program** – the facility does not process, use, manufacture, store or otherwise handle substances regulated by this rule, and is not subject to the requirement to submit a Risk Management Plan (RMP).
 - **Stratospheric Ozone and Climate Protection** – The facility does not include air conditioning units subject to §40 CFR 82 Subpart F, and does not include any halon fire extinguishers subject to §40 CFR 82 Subpart H. These regulations do not apply.

2 PART 71 APPLICATION FORMS

The following is a discussion of the forms included in this application, and a summary of the information provided in each form. There have been no changes to emission units at the facility since the initial permit was issued, no renovations or demolition activities have occurred at the facility.

The initial permit was issued to Western Gas Resources. The facility was acquired by CCI San Juan LLC and an administrative revision to the permit updating the change in ownership was filed with EPA Region 8 at the end of May, 2014. This renewal application also reflects this change.

Form GIS

Data provided on form GIS is updated to include information from the new owners and plant contacts of the facility, CCI San Juan LLC. Location information is unchanged.

Facility-wide PTE and applicable requirements are unchanged from the facility’s existing Operating Permit, no new regulations apply to the facility at this time. Emission calculations and other data for each emission unit are also unchanged at this time. Facility-wide emission rates are rounded to the nearest 0.1 TPY.

Form EUD-1

The facility includes one 1380hp Waukesha 5794 GSI natural gas compressor engine. Information provided on form EUD-1 regarding this emission unit is unchanged from the existing permit and the previous permit application. No changes have occurred to any fuel combustion sources at the facility. Supporting data for this unit is copied from the previous application, and attached with this renewal application for review.

Form IE

The facility includes fugitive emissions from activities at this compressor station. The emissions of fugitives are insignificant (less than 2 TPY). Emissions from fugitives from this facility are calculated for the EMISS and PTE forms, calculations are provided with this application. The facility does not include any other emission sources or activities that are exempted from otherwise applicable requirements.

Form EMISS

Actual emissions for unit C-1101 are calculated assuming operation of a catalytic convertor, calculations for each emission unit are provided in the attachments, and are unchanged from the initial permit application.

PTE Calculations for unit C-1101 are shown here identical to the existing permit application, no changes have occurred to the facility. A calculation is provided as an attachment, along with the supporting data provided with the previous permit application.

PTE and Actual calculations for unit FUG are copied forward from the previous permit application, no changes are made to these assumptions.

Note that the emission rates on this form are rounded to the nearest tenth of a pound and nearest tenth of a ton on these forms.

Form PTE

Total PTE emissions are calculated here, using the same assumptions and emission factors as provided in the initial permit application. Emission rates shown here are the same as those shown in forms EMISS, EUD-1, and IE.

Note that emission rates on this form are rounded to the nearest 0.1 TPY. Emission unit C-1101 is identified as a major emitting unit for two pollutants (NO_x and CO). While this unit operates normally with a catalytic converter which controls NO_x and CO, the use of this device is not enforceable and credit for reduced emissions are not taken in this application. Additionally, Emission unit FUG, while insignificant, is included in the emission totals for the facility.

Supporting data from the previous permit application is copied here in support of these calculations.

Form CTAC

As this facility has recently changed ownership, this form is signed and certified by the new Responsible Official. The contact details for the current RO are updated by this form.

2.1 - Form GIS

Federal Operating Permit Program (40 CFR Part 71)

GENERAL INFORMATION AND SUMMARY (GIS)

A. Mailing Address and Contact Information

Facility name Barker Creek Compressor Station

Mailing address: Street or P.O. Box 811 Main Street, Suite 3500

City Houston State TX ZIP 77002 - _____

Contact person: Ryan Kelly Title Safety Specialist

Telephone (505) 598 - 5601 Ext. _____

Facsimile (505) 598 - 6210

B. Facility Location

Temporary source? Yes No Plant site location NW ¼ Section 2, T32N, R14 W, San Juan
County, New Mexico

City Kirtland State NM County San Juan EPA Region 8

Is the facility located within:

Indian lands? YES NO OCS waters? YES NO

Non-attainment area? YES NO If yes, for what air pollutants? _____

Within 50 miles of affected State? YES NO If yes, What State(s)? CO, AZ, UT

C. Owner

Name CCI San Juan LLC Street/P.O. Box 811 Main Street, Suite 3500

City Houston State TX ZIP 77002 - _____

Telephone (281) 378 - 1100 Ext _____

D. Operator

Name CCI San Juan LLC Street/P.O. Box 99 County Road 6500

City Kirtland State NM ZIP 87417 - _____

Telephone (505) 598 - 5601 Ext _____

E. Application Type

Mark only one permit application type and answer the supplementary question appropriate for the type marked.

Initial Permit Renewal Significant Mod Minor Permit Mod(MPM)

Group Processing, MPM Administrative Amendment

For initial permits, when did operations commence? ____ / ____ / ____

For permit renewal, what is the expiration date of current permit? 04 / 04 / 2015

F. Applicable Requirement Summary

Mark all types of applicable requirements that apply.

SIP FIP/TIP PSD Non-attainment NSR

Minor source NSR Section 111 Phase I acid rain Phase II acid rain

Stratospheric ozone OCS regulations NESHAP Sec. 112(d) MACT

Sec. 112(g) MACT Early reduction of HAP Sec 112(j) MACT RMP [Sec.112(r)]

Tank Vessel requirements, sec. 183(f)) Section 129 Standards/Requirement

Consumer / comm.. products, ' 183(e) NAAQS, increments or visibility (temp. sources)

Has a risk management plan been registered? YES NO Regulatory agency _____

Phase II acid rain application submitted? YES NO If yes, Permitting authority _____

G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

Must submit an annual emissions inventory and calculate an annual fee(40 CFR §71.9(h)(1) and (2))

Must pay annual fee by April 1 each year (40 CFR §71.9(h) and 40 CFR §71.6(a)(7))

Recordkeeping requirements (40 CFR §71.6(a)(3)(ii))

General Reporting Requirements (40 CFR §71.6(a)(3)(iii)), Alternative Operating Scenarios (40 CFR §71.6(a)(9))

Permit Shield (40 CFR §71.6(f)(3))

J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

NOx <u>193.1</u> tons/yr	VOC <u>6.2</u> tons/yr	SO2 <u>0.0</u> tons/yr
PM-10 <u>0.0</u> tons/yr	CO <u>146.5</u> tons/yr	Lead <u>0.0</u> tons/yr
Total HAP <u>0.7</u> tons/yr		
Single HAP emitted in the greatest amount <u>Formaldehyde (HCHO)</u>		PTE <u>0.7</u> tons/yr
Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE <u>346.5</u> tons/yr		

K. Existing Federally-Enforceable Permits

Permit number(s) <u>V-UM-0001-09.00</u>	Permit type <u>Operating</u>	Permitting authority <u>US EPA</u>
Permit number(s) _____	Permit type _____	Permitting authority _____

L. Emission Unit(s) Covered by General Permits

Emission unit(s) subject to general permit <u>N/A</u>
Check one: <input type="checkbox"/> Application made <input type="checkbox"/> Coverage granted
General permit identifier _____ Expiration Date <u> </u> / <u> </u> / <u> </u>

M. Cross-referenced Information

Does this application cross-reference information? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If yes, see instructions)

INSTRUCTIONS FOLLOW

2.2 - Form EUD-1

Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID C-1101 Description Waukesha L5794GSI 1380 hp Compressor Engine
SIC Code (4-digit) 1311 SCC Code 20200253

B. Emissions Unit Description

Primary use Natural Gas Compression Temporary Source Yes No
Manufacturer Waukesha Model No. L5794GSI
Serial Number C-14422/1 Installation Date 08 / 26 / 2003
Boiler Type: Industrial boiler Process burner Electric utility boiler
Other (describe) Natural Gas Compressor Engine
Boiler horsepower rating _____ Boiler steam flow (lb/hr) _____
Type of Fuel-Burning Equipment (coal burning only):
 Hand fired Spreader stoker Underfeed stoker Overfeed stoker
 Traveling grate Shaking grate Pulverized, wet bed Pulverized, dry bed
Actual Heat Input 3.0 MM BTU/hr Max. Design Heat Input 3.51 MM BTU/hr

C. Fuel Data

Primary fuel type(s) Natural Gas Standby fuel type(s) N/A

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1034.5 Btu/scf

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Natural Gas	N/A	10.5 MMBtu/hr	92.5 MMBtu/hr

E. Associated Air Pollution Control Equipment

Emissions unit ID <u>C-1011</u> Device type <u>Catalytic Converter</u>
Air pollutant(s) Controlled <u>NOx, CO</u> Manufacturer <u>Miratech</u>
Model No. <u>EQY1251-14-C1</u> Serial No. <u>EQY1011</u>
Installation date <u>08 / 26 / 2003</u> Control efficiency (%) <u>NOx: 86.2%; CO: 72.7%</u>
Efficiency estimation method <u>Manufacturer's Data</u>

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common). **N/A**

Stack height (ft) _____.	_____	Inside stack diameter (ft) _____.	_____
Stack temp(°F) _____.	_____	Design stack flow rate (ACFM) _____.	_____
Actual stack flow rate (ACFM) _____.	_____	Velocity (ft/sec) _____.	_____

2.3 - Form IE

2.4 - Form EMISS

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID C-1101

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
<u>NOx</u>	<u>26.7</u>	44.1	193.2	N/A
<u>CO</u>	<u>40</u>	33.5	146.6	N/A
<u>VOC</u>	<u>6.0</u>	1.4	6.0	N/A
<u>SO2</u>	<u>0</u>	0	0	N/A
<u>PM10</u>	<u>0.4</u>	0.1	0.4	N/A
<u>Formaldehyde</u>	<u>0.7</u>	0.2	0.7	50000

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID FUG

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
<u>VOC</u>	<u>0.2</u>	0.05	0.2	N/A

2.5 - Form PTE

Federal Operating Permit Program (40 CFR Part 71)

POTENTIAL TO EMIT (PTE)

For each unit with emissions that count towards applicability, list the emissions unit ID and the PTE for the air pollutants listed below and sum them up to show totals for the facility. You may find it helpful to complete form **EMISS** before completing this form. Show other pollutants not listed that are present in major amounts at the facility on attachment in a similar fashion. You may round values to the nearest tenth of a ton. Also report facility totals in section **J** of form **GIS**.

Emissions Unit ID	Regulated Air Pollutants and Pollutants for which the Source is Major (tons/yr)						
	NOx	VOC	SO2	PM10	CO	Lead	HAP
C-1101	193.1 MU	6.0	0.0	0.4	146.5 MU	-	0.7
FUG	-	0.2	-	-	-	-	-
Facility Totals	193.1	6.2	0.0	0.4	146.5	-	0.7

2.6 - Form CTAC



Federal Operating Permit Program (40 CFR Part 71)
CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

A. Responsible Official
Name: (Last) Burmaster (First) Brad (MI)
Title Vice President / General Manager
Street or P.O. Box 811 Main Street, Suite 3500
City Houston State TX ZIP 77002
Telephone (281) 378 - 1100 Ext. Facsimile
B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)
I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.
Name (signed) [Signature]
Name (typed) Brad Burmaster Date: 09 / 23 / 2014

3 SUPPORT DATA

Data in this section is copied forward from the initial permit application, and includes emission calculations and manufacturer's information supplied with the initial application.

CCI San Juan, LLC - Barker Creek Compressor Station

TV Operating Permit #V-UM-0001-09.00

Summary of Requested Emission Rates

Unit No.	Unit Description	NOx		CO		VOC		PM-10		SO ₂		HAPs		HCOH	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
C-1101	Natural Gas Compressor Engine	44.1	193.1	33.5	146.5	1.4	6.0	0.1	0.44	0.01	0.03	0.15	0.67	0.15	0.67
FUG	Fugitive Emissions					0.05	0.20								
	Total	44.1	193.1	33.5	146.49	1.4	6.2	0.1	0.4	0.0	0.0	0.2	0.7	0.2	0.7

NOTES

- 1 Emissions calcs are based on emission rates permitted by permit application dated December 2008
- 2 Emission rates are uncontrolled, operation of catalytic converter not enforceable (per current Title V Permit conditions).
- 3 Total HAPs = Largest single HAP, Formaldehyde (HCOH)
- 4 Total emission rates same as currently permitted rates

Compressor Engine

Emission Unit Data

Source Description **Natural Gas Compressor Engine**
 Manufacturer **Waukesha**
 Model **L5794 GSI**
 Serial No. **C-14422/1**
 Emission Unit No. **C-1101**
 Install Date **8/26/2003** Permit application

Regulatory Applicability **RICE MACT and NSPS JJJJ Exempt Unit (Constructed prior to June 12 2006 trigger date)**

Engine Data

Engine horsepower **1380 hp** mfg data, max nameplate
 Engine speed **1200 rpm** mfg data, max nameplate

Fuel Data

Fuel type **Natural Gas**
 Fuel consumption **7650 BTU/hp-hr** 2008 Application, supplier data
10.557 MMBtu/hr BTU/hp-hr * hp / (100000 Btu/MMBtu)
1000 BTU/scf Nominal
10557 scf/hr BTU/hp-hr / scf/BTU
10.557 Mscf/hr scf/hr * 1Mscf/1000 scf
 Annual fuel usage **92.5 MMBtu/yr** Based on 8760 hrs/yr usage

Emission Calculations

	NOx	CO	VOC	PM	SOx	HCOH		
<i>Uncontrolled Emission Rates</i>	14.5	11.0	0.45			0.05	g/hp-hr	Mfg. Data (previous application)
				9.50E-03	5.88E-04		lb/MMBtu	AP-42 Section 3.3
	20010	15180	621			69	g/hr	g/hp-hr * hp
	44.1	33.5	1.37	0.10	0.006	0.15	lb/hr	g/hr / (453.6 g/lb) or lb/MMBtu * MMBtu/hr
	193.2	146.58	5.996	0.44	0.027	0.67	tpy	based on 8760 hrs of operation
<i>Actual Emission Rates</i>	86.2	72.7						%
	6.1	9.1	1.4	0.1	0.006	0.2		
	26.7	40.0	6.0	0.4	0.027	0.7		

1 Emission rates for NOx CO, VOCs, THC and HCOH based on data provided in the initial permit application, from manufacturers' and stack test data. where,

$$\text{lb/hr} = \text{g/hp-hr} * \text{hp} / (453.6 \text{ g/lb})$$

2 Catalyst efficiencies based on data provided in Title V Permit application. Operation of Catalytic Converter is not enforceable.

Fugitive Emissions

Emission Unit Data

Source Descriptor [Fugitive Emissions](#)

Emission Unit No. [FUG](#)

Gas Analysis 15.09 wt% VOC (non C1, C2) Initial Permit application

Emission Calculations

Emission Source	Emission Factor (lb/day/source)	Number of Sources	Emission Rate	
			lb/hr	tpy
Gas Valves	0.238099	10	0.015	0.066
Light Liquid Valves	0.132000	14	0.012	0.051
Relief Valves	0.465616	3	0.009	0.038
Liquid Flanges / Connections	0.005832	40	0.001	0.006
Open Ended Lines	0.105822	2	0.001	0.006
Compressor Seals	0.465616	1	0.003	0.013
Pump Seals	0.126986	1	0.001	0.003
Gas Flanges / Connections	0.020635	32	0.004	0.018
			0.046	0.202

NOTES

- Emission factors taken from previous permit application (API Average Emission Factors for Oil and Gas Production Operations)

Where

Emission Rate (lb/hr) = wt% VOC * Factor (lb/day/source) * # sources /24 (hrs/day)

Emission rate (tpy) = lb/hr * (8760 hrs/yr) / (2000 lb/ton)

Site Fugitive Emissions for Barker Creek Compressor Station

0.34 (NON - C1) TONS/Yr

0.20 (NON - C1,C2) TONS/Yr

0.00 (H2S) TONS/Yr

VOC CONTENT IN INLET GAS (WT %) = (NON - C1) 25.48 (NON - C1,C2) 15.09 H2S 0

FUGITIVE EMISSION SOURCES	STREAM COMPOSITION INLET	EMIS. FACTOR * (LB/DAY/SOURCE)	NUM. OF SOURCES	CONTROL METHOD	EFF.	CONTROLLED EMISSIONS					
						(LB/HR) (NON - C1)	(T/Y)	(LB/HR) (NON - C1,C2)	(T/Y)	(LB/HR) (H2S)	(T/Y)
GAS VALVES		0.238099	10	A	0	0.025	0.111	0.015	0.066	0.000	0.000
LIGHT LIQUID VALVES		0.132	14	A	0	0.077	0.086	0.012	0.051	0.000	0.000
RELIEF VALVES		0.465616	3	A	0	0.015	0.065	0.009	0.038	0.000	0.000
LIQUID FLANGES/CONNECTIONS		0.005932	40	A	0	0.010	0.011	0.001	0.006	0.000	0.000
OPEN-ENDED LINES		0.105822	2	A	0	0.009	0.010	0.001	0.006	0.000	0.000
COMPRESSOR SEALS		0.465616	1	A	0	0.005	0.022	0.003	0.013	0.000	0.000
PUMP SEALS		0.126986	1	A	0	0.005	0.006	0.001	0.003	0.000	0.000
GAS FLANGES/CONNECTIONS		0.020635	32	A	0	0.007	0.031	0.004	0.018	0.000	0.000
TOTAL OF FUGITIVE EMISSIONS (IN T/Y) =						0.341		0.046054037	0.202	0	0.000

* (TAKEN FROM API Average Emission factors for Oil and Gas Production Operations)

CONTROL METHOD EXPLANATION

- | | |
|--|---|
| A = NO CONTROL | B = QUARTERLY LEAK DETECTION AND REPAIR PROGRAM, 75% REDUCTION ON CHECKED ITEMS |
| C = OPEN ENDED VALVES CAPPED OR BLINDED, 100 % REDUCTION | D = RELIEF VALVES CONNECTED TO FLARE SYSTEM, 100 % REDUCTION |
| E = COMPRESSOR SEAL LEAKS CONTAINED AND RECYCLED TO PROCESS, 100 % REDUCTION | F = CLOSED SAMPLING LOOPS, 100 % REDUCTION |
| G = FLANGE INSPECTION AND REPAIR QUARTERLY, 30% REDUCTION | |

Fuel Gas Composition (mol %)

	MW	WT %	WT %	HYDROCARBON WT % COMPOSITION	HYDROCARBON COMPOSITION LHV	LHV
N2	28	26.102	1.357			
CO2	44	23.861	1.240			
C1	16	1383.605	71.925	71.93	909.4	786.406
C2	30	199.776	10.385	10.39	1618.7	107.792
C3	44	132.224	6.874	6.87	2314.9	69.565
IC4	58	30.195	1.570	1.57	3000.4	15.620
NC4	58	51.446	2.674	2.67	3010.8	26.706
IC5	72	21.845	1.136	1.14	3699.37	11.224
NC5	72	17.597	0.915	0.91	3706	9.057
C6	86	37.014	1.924	1.92	4403.8	18.954
C7+	100	0.000	0.000	0.00	5100	0.000
H2S	34	0	0	0.00		
	100.00	1923.66	98.64	97.40		1045.33

VOC PERCENTAGE = (NON - C1) 25.48 (NON - C1,C2) 15.09 NON C2 RATIO 0.59

Engine Emissions

for

Barker Creek Compressor Station

11/20/08

Engine Information:

Engine Information:

Unit #: C-1011
Model NO. #: 5794GSI

Emission Point: C-1011 UNCONTROLLED PTE EMISSIONS
Manufacturer: Waukesha
Manufacturer Operating Range
Horse Power 1380 hp
Speed (RPM) 1200 rpm
BSFC 7650 BTUhp-hr

Emission Data:

	lbs/hr	tons/yr
NOx	44.084	193.0965
CO	33.443	146.4870
VOC	1.368	5.9927
HCHO	0.152	0.6659
SO2	0.006	0.0272
PM10	0.100	0.4393

Full Load Emissions Data:

NOx	14.5000 gm/hp-hr	Man. Data
CO	11.0000 gm/hp-hr	Man. Data
VOC (C3+)	0.4500 gm/hp-hr	Man. Data
THC	2.9000 gm/hp-hr	Man. Data
HCHO	0.0500 gm/hp-hr	Man. Data
SO2	5.88E-04 lb/MMBtu	Based on AP-42
PM10	9.50E-03 lb/MMBtu	Based on AP-42

Engine Information:

Unit #: C-1011
Model NO. #: 5794GSI

Emission Point: C-1011 2007 ACTUAL EMISSIONS
Manufacturer: Waukesha
Manufacturer Operating Range
Horse Power 1380 hp
Speed (RPM) 1200 rpm
BSFC 7650 BTUhp-hr
Runtime 8135 hrs

Emission Data:

	lbs/hr	tons/yr
NOx	2.993	13.1089
CO	2.965	12.9852
VOC	1.271	5.5651
HCHO	0.141	0.6183
SO2	0.006	0.0252
PM10	0.100	0.4079

Full Load Emissions Data:

NOx	1.0600 gm/hp-hr	Stack Test data
CO	1.0500 gm/hp-hr	Stack Test data
VOC (C3+)	0.4500 gm/hp-hr	Man. Data
THC	2.9000 gm/hp-hr	Man. Data
HCHO	0.0500 gm/hp-hr	Man. Data
SO2	5.88E-04 lb/MMBtu	Based on AP-42
PM10	9.50E-03 lb/MMBtu	Based on AP-42

C-1011
5794GSI

Emission Point: C-1011 2003 ACTUAL EMISSIONS
Manufacturer: Waukesha
Manufacturer Operating Range
Horse Power 1380 hp
Speed (RPM) 1200 rpm
BSFC 7650 BTUhp-hr
Runtime 2985 hrs

Emission Data:

	lbs/hr	tons/yr
NOx	0.901	3.9479
CO	1.264	5.5361
VOC	0.466	2.0420
HCHO	0.052	0.2269
SO2	0.006	0.0093
PM10	0.100	0.1497

0.8700 gm/hp-hr	Catalytic Converter installed
1.2200 gm/hp-hr	Catalytic Converter installed
0.4500 gm/hp-hr	Man. Data
2.9000 gm/hp-hr	Man. Data
0.0500 gm/hp-hr	Man. Data
5.88E-04 lb/MMBtu	Based on AP-42
9.50E-03 lb/MMBtu	Based on AP-42

**Barker Creek Compressor Station
11/20/08**

UNCONTROLLED PTE EMISSIONS

	NOx	CO	SO2	PM10	HCHO	VOC
C-1011	193.097	146.487	0.027	0.439	0.666	5.993
FUG	0.000	0.000	0.000	0.000	0.000	0.202
Total	193.097	146.487	0.027	0.439	0.666	6.194

2007 ACTUAL EMISSIONS

	NOx	CO	SO2	PM10	HCHO	VOC
C-1011	13.109	12.985	0.025	0.408	0.618	5.565
FUG	0.000	0.000	0.000	0.000	0.000	0.202
Total	13.109	12.985	0.025	0.408	0.618	5.767

2008 Fees 19.3088775 tpy
\$43.40 per ton

\$824.60

2006 ACTUAL EMISSIONS

	NOx	CO	SO2	PM10	HCHO	VOC
C-1011	11.386	15.967	0.027	0.432	0.654	5.889
FUG	0.000	0.000	0.000	0.000	0.000	0.202
Total	11.386	15.967	0.027	0.432	0.654	6.091

2007 Fees 17.936043 tpy
\$42.43 per ton

\$763.74

2005 ACTUAL EMISSIONS

	NOx	CO	SO2	PM10	HCHO	VOC
C-1011	11.344	15.907	0.027	0.430	0.652	5.867
FUG	0.000	0.000	0.000	0.000	0.000	0.202
Total	11.344	15.907	0.027	0.430	0.652	6.069

2006 Fees 17.8696569 tpy
\$40.84 per ton

\$735.12

2004 ACTUAL EMISSIONS

	NOx	CO	SO2	PM10	HCHO	VOC
C-1011	11.368	15.941	0.027	0.431	0.653	5.880
FUG	0.000	0.000	0.000	0.000	0.000	0.202
Total	11.368	15.941	0.027	0.431	0.653	6.081

2005 Fees 17.9067355 tpy
\$39.61 per ton

\$712.98

2003 ACTUAL EMISSIONS

	NOx	CO	SO2	PM10	HCHO	VOC
C-1011	3.948	5.536	0.009	0.150	0.227	2.042
FUG	0.000	0.000	0.000	0.000	0.000	0.069
Total	3.948	5.536	0.009	0.150	0.227	2.111

2004 Fees 6.21759906 tpy
\$38.72 per ton

\$232.32

Total Fees Due **\$3,268.76**

HEAT REJECTION 3

HEAT REJECTION AND OPERATING DATA — MODEL L5794GSI 130° F AUX. WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE

	BMEP (PSI)	ENGINE SPEED — RPM					
		700	800	900	1000	1100	1200
POWER (BHP)	173	—	1010	1135	1265	1390	1515
	158	805	920	1035	1150	1265	1380
	140	716	819	921	1023	1125	1228
	120	614	702	789	877	965	1052
	100	512	585	658	731	804	877
	80	409	468	526	585	643	702
BRAKE SPEC FUEL CONSUMPTION (BTU/BHP-HR)	173	—	7287	7346	7406	7474	7531
	158	7350	7402	7460	7521	7592	7650
	140	7515	7563	7620	7682	7756	7817
	120	7764	7807	7861	7925	8004	8070
	100	8112	8147	8199	8265	8351	8423
	80	8635	8658	8705	8775	8871	8952
FUEL CONSUMPTION (BTU/HR X 1000)	173	—	7360	8345	9350	10380	11410
	158	5915	6810	7720	8650	9605	10560
	140	5380	6190	7015	7860	8730	9600
	120	4765	5475	6205	6950	7720	8490
	100	4150	4765	5390	6040	6715	7385
	80	3535	4050	4580	5130	5705	6280
HEAT TO JACKET WATER (BTU/HR X 1000)	173	—	2240	2510	2785	3065	3345
	158	1855	2105	2360	2615	2880	3140
	140	1725	1955	2190	2425	2665	2910
	120	1575	1785	1995	2205	2425	2645
	100	1428	1610	1795	1985	2185	2380
	80	1280	1438	1600	1765	1940	2115
HEAT TO LUBE OIL (BTU/HR X 1000)	173	—	304	355	407	460	512
	158	240	289	339	388	439	490
	140	226	273	320	367	416	465
	120	209	253	298	343	390	436
	100	193	234	276	319	363	407
	80	176	215	255	295	337	378
HEAT TO INTERCOOLER (BTU/HR X 1000)	173	—	47.5	75.5	106	142	178
	158	8.5	31.5	57	85	119	152
	140	-5.5	14	36	61.5	92.5	123
	120	-22	-6	12.5	34.5	61.5	89
	100	-37.5	-26	-11.5	7	31	55
	80	-53.5	-46	-34.5	-20	—	20.5
HEAT TO RADIATION (BTU/HR X 1000)	173	—	536	571	606	637	669
	158	487	522	557	591	622	653
	140	470	506	540	573	603	634
	120	450	484	517	550	580	609
	100	427	460	493	524	553	583
	80	403	435	466	496	525	553



HEAT REJECTION AND OPERATING DATA MODEL L5794GSI 130° F AUX. WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE	EN: 124175 DATE: 11/01	Ref. S 6124-70
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HEAT REJECTION 3

HEAT REJECTION AND OPERATING DATA — MODEL L5794GSI 130° F AUX. WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE

	BMEP (PSI)	ENGINE SPEED — RPM					
		700	800	900	1000	1100	1200
TOTAL ENERGY IN EXHAUST (BTU/HR X 1000)	173	—	1830	2135	2455	2790	3140
	158	1398	1665	1945	2240	2545	2865
	140	1244	1483	1735	2000	2275	2565
	120	1073	1279	1497	1730	1970	2220
	100	908	1082	1269	1466	1675	1890
	80	751	896	1050	1215	1389	1570
EXHAUST TEMP AFTER TURBINE (± 50° F)	173	—	1034	1067	1097	1123	1149
	158	983	1019	1052	1083	1109	1135
	140	964	1000	1034	1065	1092	1118
	120	938	975	1010	1041	1068	1095
	100	910	947	982	1014	1041	1068
	80	878	916	951	983	1011	1039
INDUCTION AIR FLOW (SCFM)	173	—	1325	1500	1680	1865	2050
	158	1065	1225	1390	1555	1725	1900
	140	970	1115	1260	1415	1570	1725
	120	855	985	1115	1250	1390	1525
	100	745	855	970	1085	1205	1330
	80	635	730	825	920	1025	1130
EXHAUST GAS FLOW (LBS/HR)	173	—	6170	6995	7835	8700	9560
	158	4960	5710	6470	7250	8050	8850
	140	4510	5190	5880	6585	7315	8045
	120	3995	4590	5200	5825	6470	7115
	100	3480	3990	4520	5060	5625	6190
	80	2960	3395	3840	4300	4780	5265
NO _x EMISSION (G/BHP-HR)	173	—	12.6	12.8	13.1	13.3	13.5
	158	12.6	12.9	13.1	13.4	13.6	13.9
	140	12.8	13.1	13.4	13.7	14.0	14.3
	120	13.1	13.4	13.8	14.1	14.4	14.7
	100	13.4	13.7	14.1	14.5	14.8	15.2
	80	13.6	14.0	14.4	14.8	15.2	15.6
CO EMISSION (G/BHP-HR)	173	—	8.1	8.7	8.9	8.8	8.6
	158	7.1	8.0	8.6	8.9	8.8	8.7
	140	7.1	8.0	8.7	9.1	9.0	9.0
	120	7.1	8.1	8.9	9.3	9.4	9.4
	100	7.3	8.4	9.2	9.8	9.9	10.0
	80	7.7	8.8	9.7	10.3	10.5	10.7
NMHC EMISSION (G/BHP-HR)	173	—	0.34	0.31	0.29	0.28	0.28
	158	0.39	0.34	0.30	0.28	0.28	0.27
	140	0.40	0.35	0.31	0.29	0.28	0.28
	120	0.43	0.37	0.34	0.31	0.30	0.30
	100	0.47	0.42	0.38	0.35	0.34	0.33
	80	0.53	0.48	0.44	0.41	0.40	0.39



HEAT REJECTION AND OPERATING DATA MODEL L5794GSI 130° F AUX. WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE	EN: 124175 DATE: 11/01	Ref. S 6124-70
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HEAT REJECTION 3

HEAT REJECTION AND OPERATING DATA — MODEL L5794GSI 130° F AUX. WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE

	BMEP (PSI)	ENGINE SPEED — RPM					
		700	800	900	1000	1100	1200
THC EMISSION (G/BHP-HR)	173	—	2.30	2.06	1.91	1.89	1.87
	158	2.60	2.27	2.03	1.87	1.84	1.81
	140	2.66	2.33	2.07	1.91	1.87	1.83
	120	2.85	2.50	2.24	2.06	2.01	1.97
	100	3.14	2.79	2.52	2.33	2.27	2.22
	80	3.56	3.19	2.91	2.72	2.65	2.58

NOTES:

1. All data are based on ISO standard conditions of 29.54 inches Hg. barometric pressure, 77° F ambient and induction air temperature, 30% relative humidity (0.3 inches Hg. water vapor pressure), 180° F engine jacket water outlet temperature, and standard ignition timing.
2. All data are average values at the standard conditions and will vary for individual engines and with operating and ambient conditions and with changes to ignition timing or air/fuel ratio. An adequate reserve should be used for cooling system or heat recovery calculations. See also Cooling System Guidelines, S-6699-7, latest version.
3. ISO Standard (continuous) power ratings conform to ISO 3046/1, latest version, with a mechanical efficiency of 90% and auxiliary water temperature, T_{cra}, of 130° F limited to ± 10° F.
1. Fuel standard: dry natural gas, 900 BTU/scf saturated lower heating value (SLHV), with a minimum Waukesha Knock Index™ of 91. Refer to S-7884-7, latest version, for the full fuel specification.
5. 8.25:1 compression ratio.
6. The maximum Series Four® engine jacket water temperature is 180° F.
7. Total Exhaust Energy includes both recoverable and non-recoverable heat. For a procedure to calculate recoverable heat refer to S-8117-2, latest version.
8. Exhaust carbon monoxide (CO) concentration set to 0.38% (with exhaust oxygen concentration of 0.30%) for stoichiometric operation at rated speed and load at standard 24° BTDC ignition timing. This CO level is measured at the port located in the exhaust manifold upstream of the turbocharger.
9. Reference Engine Ratings and Fuel Consumption Curve Sheet C-268-9.
10. Exhaust flow at nominal 29.54 inches Hg. atmospheric pressure:

$$\text{Flow rate: ACFM} = \frac{(\text{Exh. Flow, lb/hr}) \times (\text{Exh. Temp. } ^\circ\text{F} + 460^\circ)}{2250}$$



HEAT REJECTION AND OPERATING DATA MODEL L5794GSI 130° F AUX. WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE	EN: 124175 DATE: 11/01	Ref. S 6124-70
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ENVIRONMENTAL 9

AT-GL EMISSION LEVELS ‡

MODEL	CARBURETOR SETTING	GRAMS/BHP-HR				% OBSERVED DRY		MASS AFR ⁽²⁾	VOLUME AFR ⁽²⁾	EXCESS AIR RATIO
		NOx ⁽¹⁾	CO	NMHC ⁽⁴⁾	THC	CO	O ₂			
AT25GL	Standard	1.0	2.25	1.0	8.0	0.06	9.8	28.0:1	16.8:1	1.74
AT27GL	Standard	1.5	1.7	0.5	5.0	0.06	9.8	28.0:1	16.8:1	1.74
	Ultra Lean	1.25	1.5	0.4	3.5	0.05	11.2	32.0:1	19.2:1	2.00

‡ The AT-GL emission levels are based on 900 – 1000 rpm operation. For information at all other speeds contact Waukesha's Sales Engineering Department.

VHP EMISSION LEVELS

MODEL	CARBURETOR SETTING	GRAMS/BHP-HR				% OBSERVED DRY		MASS AFR ⁽²⁾	VOLUME AFR ⁽²⁾	EXCESS AIR RATIO
		NOx ⁽¹⁾	CO	NMHC ⁽⁴⁾	THC	CO	O ₂			
G, GSI	Lowest Manifold (Best Power)	8.5	32.0	0.35	2.3	1.15	0.30	15.5:1	9.3:1	0.97
	Equal NOx & CO	12.0	12.0	0.35	2.3	0.45	0.30	15.9:1	9.6:1	0.99
	Catalytic Conv. Input (3-way ⁽³⁾)	13.0	9.0	0.30	2.0	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	22.0	1.5	0.25	1.5	0.02	1.35	17.0:1	10.2:1	1.06
F3524GSI, L7044GSI	Equal NOx & CO	14.0	14.0	0.25	1.1	0.45	0.30	15.85:1	9.5:1	0.99
	Catalytic Conv. Input (3-way ⁽³⁾)	15.0	13.0	0.20	1.0	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	23.0	2.0	0.20	0.8	0.02	1.35	17.0:1	10.2:1	1.06
L5794GSI	Equal NOx & CO	13.5	13.5	0.45	3.0	0.45	0.30	15.85:1	9.5:1	0.99
	Catalytic Conv. Input (3-way ⁽³⁾)	14.5	11.0	0.45	2.9	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	22.0	3.0	0.35	2.4	0.02	1.35	17.0:1	10.2:1	1.06
GL	Standard	1.5	2.65	1.0	5.5	0.06	9.8	28.0:1	16.8:1	1.74
L5774LT [#]	Standard	2.6	2.0	0.60	4.0	0.04	8.0	24.7:1	14.8:1	1.54
L5794LT [#]	Standard	2.6	2.0	0.60	4.0	0.04	7.8	24.5:1	14.7:1	1.52

[#] L5774LT and L5794LT emission levels are based on 1000 – 1200 rpm operation. For information at all other speeds contact Waukesha's Sales Engineering Department.

NOTE: The above tables indicate emission levels that are valid for new engines for the duration of the standard warranty period and are attainable by an engine in good operating condition running on commercial quality natural gas of 900 BTU/ft³ (35.38 MJ/m³ [25, V(0; 101.325)]) SLHV, Waukesha Knock IndexTM of 91 or higher, 93% methane content by volume, and at ISO standard conditions. Emissions are based on standard engine timing at 91 WKITM with an absolute humidity of 42 grains/lb. Refer to engine specific WKITM Power & Timing curves for standard timing. Unless otherwise noted these emission levels can be achieved across the continuous duty speed range and from 75% to 110% of the ISO Standard Power (continuous duty) rating. **Contact your local Waukesha representative or Waukesha's Sales Engineering Department for emission values which can be obtained on a case-by-case basis for specific ratings, fuels, and site conditions.**



GAS ENGINE EXHAUST EMISSION LEVELS	EN: 125515 DATE: 4/01	Ref. <u>S</u> 8483-4
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ENVIRONMENTAL 9

FORMALDEHYDE EMISSION LEVELS

The following table provides formaldehyde (CH₂O) levels that are valid for new engines for the duration of the standard warranty period and are attainable by an engine in good operating condition running on commercial quality natural gas of 900 BTU/ft³ (35.38 MJ/m³ [25, V(0; 101.325)]) SLHV, Waukesha Knock Index™ of 91 or higher, 93% methane content by volume, and at ISO standard conditions. Values are based on standard engine timing at 91 WKI™ with an absolute humidity of 42 grains/lb. Refer to engine specific WKI™ Power & Timing curves for standard timing. Unless otherwise noted, these emission levels can be achieved across the continuous duty speed range at the load levels tabulated. **Contact your local Waukesha representative or Waukesha's Sales Engineering Department for emission values which can be obtained on a case-by-case basis for specific ratings, fuels, and site conditions.**

MODEL	CARB. SETTING	CH ₂ O GRAMS/ BHP-HR		% OBSERVED DRY		MASS AFR ²	VOLUME AFR ²	EXCESS AIR RATIO
		PERCENT LOAD		CO	O ₂			
		100%	75%					
AT25GL	Lean Burn	0.18	0.20	0.06	9.8	28.0:1	16.8:1	1.74
AT27GL	Lean Burn	0.18	0.20	0.06	9.8	28.0:1	16.8:1	1.74
	Ultra Lean	0.18	0.20	0.05	11.2	32.0:1	19.2:1	2.00
VHP G, GSI	Rich Burn	0.05	0.05	0.02 – 1.15	0.30 – 1.35	15.5:1 – 17.0:1	9.3:1 – 10.2:1	0.97 – 1.06
VHP Series 4 GSI	Rich Burn	0.05	0.05	0.02 – 0.45	0.30 – 1.35	15.85:1 – 17.0:1	9.5:1 – 10.2:1	0.99 – 1.06
L5774LT L5794LT	Lean Burn	0.22	0.25	0.04	7.8 – 8.0	24.5:1 – 24.7:1	14.7:1 – 14.8:1	1.52 – 1.54
VHP GL	Lean Burn	0.29	0.34	0.06	9.8	28.0:1	16.8:1	1.74
VGf G, GSID	Rich Burn	0.05	0.05	0.20 – 1.1	0.18 – 2.4	15.5:1 – 18.0:1	9.3:1 – 10.8:1	0.97 – 1.12
VGf GL, GLD, GLD/2	Lean Burn	0.19	0.22	0.03 – 0.04	7.8 – 9.0	21.5:1 – 25.4:1	13.9:1 – 15.2:1	1.53 – 1.65
VSG G, GSI, GSID	Rich Burn	0.05	0.05	0.02 – 1.15	0.29 – 2.10	15.5:1 – 17.7:1	9.3:1 – 10.6:1	0.97 – 1.10
F1197G	Rich Burn	0.05	0.05	0.04 – 1.35	0.30 – 1.35	15.5:1 – 17.0:1	9.3:1 – 10.2:1	0.97 – 1.06
F817G	Rich Burn	0.05	0.05	0.04 – 1.30	0.30 – 1.35	15.5:1 – 17.0:1	9.3:1 – 10.2:1	0.97 – 1.06



GAS ENGINE EXHAUST EMISSION LEVELS	EN: 125515 DATE: 4/01	Ref. <u>S</u> 8483-4
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EXTERRAN™

3/6/2008

For:

Western Gas Resources

Location:

Barker Creek

SJ/NM

Engine:

Wuakesha L7042GL *59946SI*

Unit #

1

S/N

C-14422/1

Test Technician:

Charles Blassingame

Customer: Western Gas Resources
 Unit: 1
 Engine: Waukesha L7042GL 5794 GSI
 S/N: C-14422/1
 Permit #: 0
 Analyzer: Ecom AC

Site: Barker Creek
 Location: SJ/NM
 Compressor: Ariel
 S/N: 0
 Converter: 0
 S/N: 0

Manufactures Rated HP	1318			
Fuel BSFC (btu/hp-hr)	11000	0	0	0

Date	3/6/2008			
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Engine Data:				
Engine RPM	1045			
Engine Hours				
Engine Oil Pressure (psi)	47			
Engine Water Temperature (°F)	180			
Engine Manifold Pressure/Vacuum	3psi	0	0	0
Engine Manifold Temperature (°F)	120			
Ignition Timing (° BTDC)	24			
Engine Load %	60%	#VALUE!	#VALUE!	#VALUE!
HP In Use	791			
Fuel Pressure	25			
Fuel Volume (mascf/hr)	8.86			
Exhaust Temperature (°F)				

Compressor Data:				
Compressor Volume (MMCFD)				
Suction Pressure (psia)	35			
Discharge Pressure (psia)	112/360			
First Stage Temperatures (°F)				

Engine Emission Data: Post-Converter Post Converter Catalyst Information				
Temperature (°F)				
Safety Kill (°F)				
Back Pressure ("H ₂ O)				
CO Information				
Parts Per Million	322.9			
Grams/Bhp/Hr	1.05	#VALUE!	#VALUE!	#VALUE!
Pounds Per Hour	1.93	#VALUE!	#VALUE!	0.00
Tons Per Year	8.02	#VALUE!	#VALUE!	0.00
NOx Information				
Parts Per Million	198.5			
Grams/Bhp/Hr	1.06	#VALUE!	#VALUE!	#VALUE!
Pounds Per Hour	1.85	#VALUE!	#VALUE!	0.00
Tons Per Year	8.10	#VALUE!	#VALUE!	0.00
Oxygen (% O ₂)	0.6			0

Post Test Span Values				
CO	947	0	0	0
NO	777	0	0	0
NO ₂	70	0	0	0

Engine Emission Data: Pre-Converter Pre Converter Catalyst Information				
Temperature (°F)				
Safety Kill (°F)				
Back Pressure ("H ₂ O)				
CO Parts Per Million				
NOx Parts Per Million				
Oxygen (% O ₂)	0	0	0	0
Catalyst Efficiency (% Reduction CO)	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Catalyst Efficiency (% Reduction NOx)	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Pre Test Span Values				
CO	944	0	0	0
NO	774	0	0	0
NO ₂	71	0	0	0

Test Results				
Carbon Monoxide gr/hp-hr	PASS	#VALUE!	#VALUE!	#VALUE!
Carbon Monoxide lbs/hr	PASS	#VALUE!	#VALUE!	PASS
Carbon Monoxide tpy	PASS	#VALUE!	#VALUE!	PASS

Oxides of Nitrogen gr/hp-hr	PASS	#VALUE!	#VALUE!	#VALUE!
Oxides of Nitrogen lbs/hr	PASS	#VALUE!	#VALUE!	PASS
Oxides of Nitrogen tpy	PASS	#VALUE!	#VALUE!	PASS

Permit Limits	gr/hp-hr	lbs/hr	tpy
Carbon Monoxide	3	na	na
Oxides of Nitrogen	3	na	na

Low Span Gas	Value/PPM	Certification #	Accuracy % +/-	Expiration Date
CO	944	08-56693	2	39418
NO	773	08-56693	2	39418
NO ₂	71.9	08-48864	2	39202

High Span Gas	Value/PPM	Certification #	Accuracy % +/-	Expiration Date
CO	12000	08-56693	2	39418
NO	3490	08-56693	2	39418

Emission Technician: Charles Blassingame

PERIODIC MONITORING REPORT

Company:	Western Gas Resources	Facility:	BARKER-CREEK
Source Tested	UNIT-1	Date:	03/04/04
Source Manufacturer/Model #:	Waukesha 5794GSI		
Site-rated Horsepower:	1500	Source Serial #:	C-14422/1
Type of Emission Control	Air Fuel / Catalyst		
Analyst:	David Zimbelman	Analyzer Serial #:	3E001146
Analyzer Manufacturer/Model#:	ENERAC 3000E		

Source for Horsepower Data:

Site Rating

Calculated from operating parameters

Calculated from GPSA Formula

Fuel Consumption:

Obtained from individual fuel meter

Determined from manufacturer's data

Determined using default of 9400 btu/hp-hr

Test Summary	NOX Tested:	2.87	lbs/hr
	NOX Limit:	NA	lbs/hr
	CO Tested:	4.02	lbs/hr
	CO Limit:	NA	lbs/hr

F FACTOR CALCULATION SPREADSHEET

From a fuel gas analysis
Enter the mole % of each component of the fuel gas:

	mole %	CARBON	HYDROGEN	OXYGEN	NITROGEN
CO2:	0.492	0.06	0.00	0.16	0.00
Nitrogen:	1.151	0.00	0.00	0.00	0.32
Methane:	93.817	11.27	3.78	0.00	0.00
Ethane:	2.760	0.66	0.17	0.00	0.00
Propane:	0.906	0.33	0.07	0.00	0.00
Iso-Butane:	0.260	0.12	0.03	0.00	0.00
n-Butane:	0.330	0.16	0.03	0.00	0.00
Iso-Pentane:	0.120	0.07	0.01	0.00	0.00
n-Pentane:	0.102	0.06	0.01	0.00	0.00
n-Hexane:	0.042	0.03	0.01	0.00	0.00
Heptane:	0.020	0.02	0.00	0.00	0.00
Total	100.00	12.78	4.12	0.16	0.32
Percentage		73.54%	23.70%	0.91%	1.86%

Calculated Molecular Weight of Fuel Gas: 17.38 lb/lb-mole

Calculated heating value (Hv) = 1,034.49 Btu / scf

On a mass basis this is: 22,947.74 Btu / lb

Calculated F Factor (Fd) = 8,655.16 dscf / MMBtu

Notes:

The gross calorific value of the fuel gas (Hv) is calculated @ 68 deg. F. and 14.696 psia
Gross heating values are from the GPSA data book (fig. 23-2).
Gross heating values were corrected from 60 to 68 deg. F by multiplying
each heating value by 520 deg. R / 528 deg. R

Calibration Error Check Data Sheet

Company: **Western Gas Resources** Facility: **BARKER-CREEK**
 Source Tested: **UNIT-1** Date: **03/04/04**
 Analyst: **David Zimbelman** Analyzer Serial #: **3E001146**
 Analyzer Manufacturer/Model #: **ENERAC 3000E**

Span Gases: NO= **495.5** NO2= **158** CO= **1528** O2= **20.9**

PRETEST CALIBRATION ERROR CHECK								
		Pump Flow Rate (l/m)	A	B	A-B	A-B /SG*100	Calibration	Response
			Analyzer Reading	Cal Gas Concentration	Absolute Difference	% of Span	Valid (Yes or No)	Time (minutes)
NO	zero	0.7	0	0	0	0.00	yes	3
	span	0.7	495.5	495.5	4.5	0.91	yes	3
NO2	zero	0.7	0	0	0	0.00	yes	5
	span	0.7	158	158	2	1.27	yes	5
CO	zero	0.7	0	0	0	0.00	yes	3
	span	0.7	1528	1528	7	0.46	yes	3
O2	zero	0.7	0	0	0	0.00	yes	1
	span	0.7	20.9	20.9	0	0.00	yes	1

Pretest Calibration NO Cell Temperature (F):

SG=Span Gas

POST TEST CALIBRATION ERROR CHECK									Interference Check	
		Pump Flow Rate (l/m)	A	B	A-B	A-B /SG*100	Calibration	Average of Pre & Post Readings (ppm)	NO Monitor Response (ppm)	CO Monitor Response (ppm)
			Analyzer Reading	Cal Gas Concentration	Absolute Difference	% of Span	Valid (Yes or No)			
NO	zero	0.7	0	0	0.00	0.00	yes	0		
	span	0.7	489	495.5	6.50	1.31	yes	490		0
NO2	zero	0.7	0	0	0.00	0.00	yes	0		
	span	0.7	158	158	5.00	3.16	yes	154.5	0	0
CO	zero	0.7	0	0	0.00	0.00	yes	0		
	span	0.7	1528	1528	12.00	0.79	yes	1537.5		
O2	zero	0.7	0	0	0.00	0.00	yes	0		
	span	0.7	20.9	20.9	0.00	0.00	yes	20.9		

Post Test Calibration NO Cell Temperature (F): NA

CO Interference Response (Ico,%): **0.00** NO Interference Response (Ino,%): **0.00**

SG=Span Gas

**Form D-1
Reciprocation Engine Test Results**

Company: **Western Gas Resources** Facility: **BARKER-CREEK**
 Source Tested: **UNIT-1** Date: **03/04/04**
 Source Manufacturer/Model #: **Waukesha 5794GSI**

Site-rated Horsepower: **1500** Source Serial #: **C-14422/1**
 Type of Emission Control: **Air Fuel / Catalyst**

Analyst: **David Zimbelman** Analyzer Serial #: **3E001146**
 Analyzer Manufacturer/Model#: **ENERAC 3000E**

Operating Conditions

Source operating at 90 percent or greater site-rated horsepower during testing? **yes** no

Suction/ Discharge Pressures	Engine RPM	Engine Gas throughput	Engine Fuel Consumption	Fuel Heat Content Btu/cf	Engine Specific Fuel Consumption (Btu/hp-hr) *	Engine Tested Horsepower
23/27.5	935			1,034.49	9,400	1500

* As reported by the Manufacturer

Test Results

Test Start Time: **1:35 AM** NO Cell Temperature (F) after 1/3 of the test:
 Test End Time: **2:00 PM** NO Cell Temperature (F) after 2/3 of the test:

NOx (NO + NO2)								
Average Tested NO ppm	NOcorrected ppm	Average Tested NO2 ppm	NO2corrected ppm	NOXcorrected ppm	NOX Tested gm/hp-hr	NOX Tested lb/hr	NOX Allowable gm/hp-hr	NOX Allowable lb/hr
145.25	197.45	0.00	0.00	197.45	0.87	2.87	NA	NA

O2							
Avg. Tested O2 %	O2 corrected %	Avg. Tested CO ppm	CO corrected ppm	CO Tested gm/hp-hr	CO Tested lb/hr	CO Allowable gm/hp-hr	CO Allowable lb/hr
0.00	0.00	455.66	452.83	1.22	4.02	NA	NA

I certify to the best of my knowledge the tests results are accurate and representative of the emissions from this source.

David Zimbelman
 Print Name

David Zimbelman
 Signature

