UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www2.epa.gov/aboutepa/epa-region-8-mountains-and-plains

Ref: 8P-AR

AUG 25 2014

Mr. Brad Rogers
Samson Resources
370 17th Street, Suite 3000
Denver, Colorado 80202

Re: Samson Resources Company, Jaques Compressor Station, Permit # SMNSR-SU-000043-2011.001 Proposed Synthetic Minor New Source Review Permit

Dear Mr. Rogers:

The U.S. Environmental Protection Agency Region 8 has completed its review of the Samson Resources Company's application requesting a synthetic minor new source review permit pursuant to the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (MNSR) for the Jaques Compressor Station, located on the Southern Ute Indian Reservation.

Enclosed are the proposed permit and the corresponding technical support document. The regulations at 40 CFR 49.157 require that the affected community and the general public have the opportunity to submit written comments on any proposed MNSR permit. All written comments submitted within thirty (30) calendar days after the public notice is published will be considered by the EPA in making its final permit decision. Enclosed is a copy of the public notice which will be published on the EPA's website located at: http://www.epa.gov/region8/air/permitting/pubcomment.html, on September 2, 2014. The public comment period will end at 5 p.m. on October 2, 2014.

The conditions contained in the proposed permit will become effective and enforceable by the EPA if the permit is issued final. If you are unable to accept any term or condition of the draft permit, please submit your written comments, along with the reason(s) for non-acceptance to:

Federal Minor NSR Permit Coordinator
U.S. EPA, Region 8
1595 Wynkoop Street, 8P-AR
Denver, Colorado 80202

or

R8AirPermitting@epa.gov

If you have any questions concerning the enclosed proposed permit or technical support document, please contact Claudia Smith of my staff at (303) 312-6520.

Sincerely,

Callie A. Videtich
Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosures

cc: Brenda Jarrell, Air Quality Program Manager, Southern Ute Indian Tribe Environmental Program

United States Environmental Protection Agency
Region 8 Air Program
Air Pollution Control Synthetic Minor Permit to Construct
Technical Support Document for
Proposed Permit #SMNSR-SU-000043-2011.001

Samson Resources Company
Jaques Compressor Station
Southern Ute Indian Reservation
La Plata County, Colorado

In accordance with the requirements of the Tribal Minor New Source Review (MNSR) Permit Program at 40 CFR Part 49, this Federal permit to construct is being issued under authority of the Clean Air Act (CAA). The EPA has prepared this technical support document describing the conditions of this MNSR permit and presents information that is germane to this MNSR permit action.

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I. Introduction

On November 9, 2011, the EPA (we) received an application from Samson Resources Company (Samson) requesting a synthetic minor permit for the Jaques Compressor Station in accordance the requirements of the MNSR permit program.

This permit action would apply to an existing facility operating on the Southern Ute Indian Reservation in Colorado.

This permit does not authorize the construction of any new emission sources, or emission increases from existing units, nor does it otherwise authorize any other physical modifications to the facility or its operations. This permit is intended only to incorporate required and requested emission limits and provisions from a March 5, 2009, operating permit we issued to Samson for the Jaques Compressor Station in accordance with the Title V Operating Permit Program at 40 CFR Part 71 (Part 71). Some of the limits were originally established in a significantly modified Part 71 Permit issued in July of 2008.

This permit reflects the incorporation of requirements created in the Part 71 permits we issued at the request of Samson. Samson requested these requirements in order to establish the Jaques Compressor Station as a synthetic minor source for the purpose of avoiding major source requirements for hazardous air pollutants (HAP) in accordance with the National Emissions Standards for Hazardous Air Pollutants for Source Categories at 40 CFR Part 63 (also known as Maximum Achievable Control Technology (MACT)). The March 5, 2009, Part 71 permit contains conditions to limit facility-wide total HAP and formaldehyde (CH_2O) emissions and benzene emissions from two (2) tri-ethylene glycol (TEG) dehydration units operating at the facility. In addition to the total HAP, CH_2O, and benzene emission limits, testing, monitoring, recordkeeping, and reporting requirements were established in order to ensure that the limits were legally and practically enforceable.

The creation of the legally and practically enforceable limits in a Part 71 operating permit was a temporary, gap-filling measure for those sources operating in Indian country that did not have the ability to obtain these limits through other programs, such as exists in state jurisdictions. Section 49.153(a)(3)(iv) of the MNSR rule provides the EPA with the authority to require at their discretion existing sources whose limits were established through mechanisms such as a consent decree to apply for a permit under the MNSR Permit Program to transfer the limits to a MNSR permit, effectively creating legally and practically enforceable requirements without the use of the emission limits in the Part 71 operating permit. The MNSR regulations at §§49.158(c)(2)(ii) and (iii) also provide the EPA with the discretion to require any additional requirements, including control technology requirements, based on the specific circumstances of the source.

Upon compliance with this MNSR permit, the legally and practically enforceable reductions in potential emissions can be used when determining the applicability of other CAA requirements, such as the Prevention of Significant Deterioration (PSD) permit program at 40 CFR Part 52 and the Part 71 operating permit program.

II. Facility Description

The Jaques Compressor Station, owned and operated by Samson, is comprised of equipment that dehydrates and compresses coalbed methane gas from several wells to transmission pipeline specifications. Gas entering the facility from the field is first fed to an inlet separator that gravimetrically removes water that may have formed or condensed during transportation from the

supplying gas wells. Separator overhead gas is fed from a common suction header to one of six (6) natural gas-fired 4-stroke lean-burn (4SLB) reciprocating internal combustion engines used for gas compression. The compressors discharge gas to a common discharge heater that feeds to scrubbers. The scrubbers separate and collect liquids that may have formed during compression. The compressed gas is fed to two (2) TEG dehydration units. TEG is circulated counter-currently and absorbs water from the saturated gas. Rich TEG is circulated to a reboiler, where moisture is driven to the atmosphere by heating the TEG. Dry gas exits the contactors and is directed to the sales line, where it is metered and exits the facility. The gas processing capacity of the facility is approximately 48 million standard cubic feet per day (MMscfd) with the six (6) compressor engines operating.

The emission units identified in Table 1 are currently installed and/or operating at the facility. The information provided in this table is for informational purposes only and is not intended to be viewed as enforceable restrictions or open for public comment. The units and/or control requirements identified here either existed prior to the promulgation of the MNSR permitting program or have been approved through the alternative methods as identified, below. Table 2 lists the facility-wide potential emissions of NSR-regulated pollutants accounting for all legally and practically enforceable control requirements that currently apply to the facility.

Table 1. Existing Emission Units

Unit/Emissions Description	Controls	Original Preconstruction Approval Date & Permit Number
Two (2) - Natural gas-fired, 4SLB compressor engines with a maximum site rating of 1,400 hp	None	No pre-construction approval requirements for the installation of the engines. Installed prior to the promulgation of the MNSR permitting program.
Four (4) - Natural gas-fired, 4SLB compressor engines with a maximum site rating of 1,400 hp	Oxidation Catalyst	No pre-construction approval required for the installation of the engines. Installed prior to the promulgation of the MNSR permitting program. Control requirements established in the July 2008 Part 71 Permit # V-SU-0043-06.01, and the March 5, 2009 Part 71 Permit # V-SU-0043-06.02.
TEG dehydration system with a maximum natural gas processing capacity of 18 MMscfd & 0.6 million British thermal units per hour (MMBtu/hr) TEG reboiler	Enclosed Combustion Device	No pre-construction approval required for the installation of the TEG dehydration system. Installed prior to the promulgation of the MNSR permitting program. Initial control requirements established in the July 2008 Part 71 Permit # V-SU-0043-06.01. Revised control requirements established in the March 5, 2009 Part 71 Permit #V-SU-0043-06.02.
TEG dehydration system with a maximum natural gas processing capacity of 30 MMscfd & 0.6 MMBtu/hr TEG reboiler	Enclosed Combustion Device	Pre-construction approval and initial control requirements established in the July 2008 Part 71 Permit # V-SU-0043-06.01. Revised control requirements established in the March 5, 2009 Part 71 Permit #V-SU-0043-06.02.
Facility Fugitive Emissions	None	No pre-construction approval required for installation of emission units contributing to fugitive emissions. Installed prior to promulgation of the MNSR permitting program.
Compressor Cylinder Rod Packing Vent Emissions	None	No pre-construction approval required for installation of the compressor cylinder rod packing and vent. Installed prior to promulgation of the MNSR permitting program.

Unit/Emissions Description	Controls	Original Preconstruction Approval Date & Permit Number
Miscellaneous organic liquid storage tanks	None	No pre-construction approval required for the installation of the organic liquid storage tanks. Installed prior to the promulgation of the MNSR permitting program.
Miscellaneous natural gas-fired tank heaters, slug catcher burners and a production unit burner	None	No pre-construction approval required for the installation of the heaters and burners. Installed prior to the promulgation of the MNSR permitting program.
Miscellaneous small pump engines	None	No pre-construction approval required for the installation of the pump engines. Installed prior to the promulgation of the MNSR permitting program.

Table 2. Facility-Wide Emissions

Pollutant	**Controlled Potential Emissions (tons per year)**
PM	0.0
PM_{10}	0.0
$PM_{2.5}$	0.0
SO_2	0.0
NO_x	208.2
CO	150.7
VOC	92.8
Greenhouse Gases	
CO_2 (mass basis)	33,681.8
CH_4 (mass basis)	700.4
N_2O (mass basis)	0.06
HFCs (mass basis)	NA
PFCs (mass basis)	NA
SF_6 (mass basis)	NA
GHG_{total} (mass basis)	34,382.3
CO_2e (Total)	48,409.72
Hazardous Air Pollutants (HAPs)	
Acetaldehyde	NA
Acrolein	NA
Benzene	1.8
Ethyl-Benzene	NA
Toluene	NA
n-Hexane	NA
Xylene	NA
Formaldehyde	9.5
Total HAPs	**23.0***

PM – Particulate Matter
PM_{10} – Particulate Matter less than 10 microns in size
$PM_{2.5}$ – Particulate Matter less than 2.5 microns in size
SO_2 – Sulfur Dioxide
NO_x – Nitrogen Oxides
CO – Carbon Monoxide
VOC – Volatile Organic Compounds
CO_2 – Carbon dioxide
CH_4 – Methane
N_2O – Nitrous oxide
HFCs – Hydrofluorocarbons
PFCs – Perfluorocarbons
SF_6 – Sulfur hexafluoride
CO_2e – Equivalent CO_2. A measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP)
NA – Not Available, not provided in application

HFCs, PFCs, and SF_6 emissions are not created during oil and gas production operations.

*Total is represented as the current and proposed allowable emission limit and is inclusive of, but not limited to the individual HAPs listed above.

III. Proposed Synthetic Minor MNSR Permit Action

A. Engine Controls

The natural gas industry uses engines to compress natural gas as it is processed and prior to further pipeline distribution. Samson uses six (6) natural gas-fired, 1,400 hp, 4SLB compressor engines. Lean-burn engines produce NO_X, CO, VOC and HAP emissions. The HAP emissions consist primarily of CH_2O.

The primary form of emission control for these types of engines is oxidation catalyst. The oxidation catalyst is effective for CO, VOC (including HAPs that are VOCs), and CH_2O. These catalysts do not typically control NO_X emissions. However, lean-burn engines are designed to operate with more dilute natural gas streams (a higher air-to-fuel ratio). Because they operate on more dilute natural gas streams, lean-burn engines also operate at lower combustion temperatures producing less NO_x emissions.

We are proposing the use of oxidation catalyst on four (4) of the six (6) compressor engines at the facility. In addition, we are proposing a 0.21 pound per hour (lb/hr) CH_2O emissions limits on each of the four (4) controlled engines. The CH_2O limits are based on a manufacturer-specified 60.0 % reduction using the oxidation catalyst as required by conditions previously established in the Part 71 permit for the facility.

We are incorporating the engine requirements from the Part 71 permit, and the synthetic minor MNSR permit application into this MNSR permit. We made several changes to the transferred Part 71 permit requirements, including, but not limited to the following:

1. **Increased the frequency of monitoring engine exhaust temperature at the inlet to the catalyst control system from once per day to continuous.** Catalyst operating efficiency is greatly affected by the temperature of the engine exhaust to be controlled. As such, the Part 71 permit has the requirement to maintain the optimal temperature range at all times, but the frequency of monitoring is only once per day. Thus to ensure compliance with the acceptable temperature range in the MNSR permit, the monitoring requirement has been changed from daily to continuous.

2. **Added a series of actions to be taken in the event of a deviation from the required temperature range of the engine exhaust to the catalyst bed or in the event of a deviation from the required pressure drop range of the engine exhaust across the catalyst bed for the four (4) controlled engines.** The actions are to ensure that there is not a complete failure of the catalytic control system due to plugging, fouling, destruction, poisoning, etc. In either case, the required actions begin with equipment inspections and end with the possible removal and cleaning of the catalyst or catalyst replacement.

3. **Added a maximum 200-hour period for which each overhauled and replaced engine can operate without the catalytic control system, accompanied by a recordkeeping provision to track break-in periods.** This provision takes into account the time needed for engine "break-in" before putting it into full-time, continuous operation. Engine "break-in" can damage the catalyst.

4. **Enhanced performance testing requirements.** Added a provision prohibiting the Permittee from engine tuning or making any adjustments to engine settings, catalytic control system settings, processes, or operational parameters the day of or during the engine testing. Added a provision prohibiting aborting a performance test that demonstrates non-compliance with permitted engine-specific emission limits. Added a requirement to shut down any engine that demonstrates non-compliance with permitted emission limits after completion of a valid test, take corrective action as necessary, and not return the engine to routine service until compliance is demonstrated through testing. These changes are intended to improve enforceability of permitted emission limits.

B. TEG Dehydration Systems

The natural gas industry commonly uses the glycol absorption process to remove naturally occurring water from raw natural gas. Most commonly, the glycol absorbent used is TEG. The TEG dehydration process produces VOC and HAP emissions from pressure reduction of rich glycol (immediately post absorption and prior to stripping and regeneration) and from the stripping of the rich glycol to regenerate lean glycol to be reused in the process. The HAP emissions consist primarily of benzene, toluene, ethlybenzene, and xylenes. The primary form of emission control is to capture and route the emissions through a closed-vent system to an enclosed combustion device, flare, or other combustion device to destroy the hydrocarbon content of the vapors.

Samson's TEG Dehydration Process at the Jaques Compressor Station is capable of processing 48 MMscf of natural gas per day using two (2) TEG dehydrators. The following are the dehydrators currently operating at the Jaques Compressor Station:

1. One (1), 18 MMscfd dehydration unit with a 0.6 MMBtu/hr natural gas fired TEG reboiler and flash tank and equipped with an enclosed combustion device to control HAP emissions; and

2. One (1), 30 MMscfd dehydration unit with a 0.6 MMBtu/hr natural gas fired TEG reboiler and flash tank and equipped with an enclosed combustion device to control HAP emissions.

We are proposing 0.9 tons per year (tpy) benzene emission limits for each TEG dehydration system. We are also proposing requirements for each TEG dehydration system to be controlled using an enclosed combustion device capable of reducing HAP emissions from the still vent by at least 98.0% by weight. These limits are based on the manufacturer-specified HAP destruction efficiencies of the enclosed combustion devices, as required by conditions previously established in the Part 71 permit for the facility

We are incorporating the TEG dehydration system requirements from the Part 71 permit, and the synthetic minor MNSR permit application into this MNSR permit. We made several changes to the transferred Part 71 permit requirements, including, but not limited to the following:

Significantly enhanced the control and operational requirements and the monitoring requirements to include specific requirements for the closed vent system routing emissions to the enclosed combustion device, and specific requirements to ensure the enclosed

combustion device is operated properly to ensure compliance with the specified HAP destruction efficiency. The closed vent system routing emissions to the enclosed combustion device must be designed and maintained to operate in a leak-free condition to ensure that all of the emissions from each dehydration system are routed to the respective enclosed combustion device and the specified HAP destruction efficiency of the enclosed combustion device will allow Samson to meet the requested benzene and total HAP emission limits. Enclosed combustion device operating efficiency is greatly affected by the temperature and presence of the source of combustion (continuous burning pilot flame or automatic igniter). As such, the Part 71 permit only contained monitoring requirements to calculate HAP emissions from the TEG dehydration systems using GRI GlyCalc, the most recent inlet gas analyses, and assumed control specifications, but contained no requirements to monitor operation of the control systems. Thus to ensure compliance with the requested emission limits in the MNSR permit, we are proposing additional control, operational, and monitoring requirements for the closed vent systems and enclosed combustion devices.

We are also proposing facility-wide total HAP and CH_2O emission limits of 23.0 tpy and 9.5 tpy, respectively, at Samson's request, to maintain the facility's status as an area source of HAP emissions for the purposes of applicability to MACT requirements. The total HAP and CH_2O facility-wide limits are based on limits previously established in the Part 71 permit for the facility at Samson's request.

IV. Air Quality Review

The MNSR Regulations at 40 CFR 49.154(d) require that an Air Quality Impact Assessment (AQIA) modeling analysis be performed if there is reason to be concerned that new construction would cause or contribute to a National Ambient Air Quality Standard (NAAQS) or PSD increment violation. If an AQIA reveals that the proposed construction could cause or contribute to a NAAQS or PSD increment violation, such impacts must be addressed before a pre-construction permit can be issued.

The emissions at this existing facility will not be increasing due to this permit action and the emissions will continue to be well controlled at all times. This permit action does not authorize the construction of any new emission sources, or emission increases from existing units, nor does it otherwise authorize any other physical modifications to the facility or its operations and the substantive requirements of the Part 71 permit (emission controls and reductions) have already been fulfilled at this facility. In short, this action will have no adverse air quality impacts; therefore, we have determined that an AQIA modeling analysis is not required for this permit.

V. Tribal Consultations and Communications

We offer Tribal Government Leaders an opportunity to consult on each proposed MNSR permit action. The Tribal Government Leaders are asked to respond to the EPA's offer to consult within 30 days. The Chairman of the Southern Ute Tribe was offered an opportunity to consult on this permit action via letter dated September 25, 2012. To date, we have not received a response to our offer to consult on this MNSR permit action.

All minor source applications (synthetic minor, modification to an existing facility, new true minor or general permit) are submitted to both the EPA and the Tribe per the application instructions (see http://www2.epa.gov/region8/tribal-minor-new-source-review-permitting). The Tribe has 10 business days from the receipt of the application to respond to us with questions and comments on the

application. In the event an AQIA is triggered, a copy of that document is emailed to the Tribe within 5 business days from the date we receive it.

Additionally, the Tribe is notified of the public comment period for the proposed permit and provided copies of the notice of public comment opportunity to post in various locations of their choosing on the Reservation. The Tribe is also notified of the issuance of the final permit.

VI. Environmental Justice

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order calls on each federal agency to make environmental justice a part of its mission by "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations."

The EPA defines "Environmental Justice" to include meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The EPA's goal is to address the needs of overburdened populations or communities to participate in the permitting process. *Overburdened* is used to describe the minority, low-income, tribal and indigenous populations or communities in the United States that potentially experience disproportionate environmental harms and risks due to exposures or cumulative impacts or greater vulnerability to environmental hazards.

This discussion describes our efforts to identify overburdened communities and assess potential effects in connection with issuing this permit in La Plata County, Colorado within the exterior boundaries of the Southern Ute Indian Reservation.

A. Environmental Impacts to Potentially Overburdened Communities

This permit action does not authorize the construction of any new air emission sources, or air emission increases from existing units, nor does it otherwise authorize any other physical modifications to the associated facility or its operations. The air emissions at the existing facility will not increase due to the associated action and the emissions will continue to be well controlled at all times. This action will have no adverse air quality impacts.

Furthermore, the permit contains a provision stating, "*The permitted source must not cause or contribute to a National Ambient Air Quality Standard violation or a PSD increment violation.*" Noncompliance with this permit provision is a violation of the permit and is grounds for enforcement action and for permit termination or revocation. As a result, we conclude that issuance of this permit will not have disproportionately high or adverse human health effects on communities in the vicinity of the Southern Ute Indian Reservation.

B. Enhanced Public Participation

Given the presence of potentially overburdened communities in the vicinity of the facility, we are providing an enhanced public participation process for this permit.

1. Interested parties can subscribe to an EPA listserve that notifies them of public comment opportunities on the Southern Ute Indian Reservation for draft air pollution control permits via email at http://www2.epa.gov/region8/air-permit-public-comment-opportunities.

2. All minor source permit applications (synthetic minor, modification to an existing facility, new true minor or general permit) are submitted to both the Tribe and EPA per the application instructions (see http://www2.epa.gov/region8/tribal-minor-new-source-review-permitting).

3. The Tribe has 10 business days to respond to EPA with questions and comments on the application.

4. In the event an AQIA is triggered, we email a copy of that document to the Tribe within 5 business days from the date we receive it.

5. We notify the Tribe of the public comment period for the proposed permit and provide copies of the notice of public comment opportunity to post in various locations on the Reservation that they deem fit. We also notify the Tribe of the issuance of the final permit.

6. We offer the Tribal Government Leaders an opportunity to consult on each proposed permit action. The Tribal Government Leaders are asked to respond to our offer to consult within 30 days.

VII. Authority

Requirements under 40 CFR 49.151 to obtain a MNSR permit apply to new and modified minor stationary sources, and minor modifications at existing major stationary sources ("major" as defined in 40 CFR 52.21). In addition, the MNSR program provides a mechanism for an otherwise major stationary source to voluntarily accept restrictions on its potential to emit to become a synthetic minor source. The EPA is charged with direct implementation of these provisions where there is no approved Tribal implementation plan for implementation of the MNSR regulations. Pursuant to §301(d)(4) of the CAA (42 USC 7601(d)), the EPA is authorized to implement the MNSR regulations at 40 CFR 49.151 in Indian country. The Samson Jaques Compressor Station is located within the exterior boundaries of the Southern Ute Indian Reservation in the southwestern part of the State of Colorado. The exact location is Latitude 37.077944N, Longitude -107.691W, in La Plata County, Colorado.

VIII. Public Notice and Comment, Hearing, and Appeals

A. Public Comment Period

In accordance with 40 CFR 49.157, the EPA must provide public notice and a 30-day public comment period to ensure that the affected community and the general public have reasonable access to the application and proposed permit information. The application, the proposed permit, this technical support document, and all supporting materials for the proposed permit are available at:

Southern Ute Indian Tribe
Environmental Programs Division
Air Quality Program
71 Mike Frost Way
Ignacio, Colorado 81137
Attn: Brenda Jarrell, Air Quality Program Manager

and

U.S. EPA
Region 8 Air Program Office
1595 Wynkoop Street (8P-AR)
Denver, Colorado 80202-1129

All documents are available for review at our office Monday through Friday from 8:00 a.m. to 4:00 p.m. (excluding Federal holidays). Additionally, the proposed permit and technical support document can be reviewed on our website at http://www2.epa.gov/region8/air-permit-public-comment-opportunities.

Any person may submit written comments on the proposed permit and may request a public hearing during the public comment period. These comments must raise any reasonably ascertainable issue with supporting arguments by the close of the public comment period (including any public hearing). Comments may be sent to the EPA address above, or sent via an email to r8airpermitting@epa.gov, with the topic "Comments on MNSR Permit for Samson Jaques Compressor Station".

B. Public Hearing

A request for a public hearing must be in writing and must state the nature of the issues proposed to be raised at the hearing. The EPA will hold a hearing whenever there is, on the basis of requests, a significant degree of public interest in a proposed permit. The EPA may also hold a public hearing at its discretion, whenever, for instance, such a hearing might clarify one or more issues involved in this permit decision.

C. Final MNSR Permit Action

In accordance with 40 CFR 49.159, a final MNSR permit becomes effective 30 days after permit issuance, unless: (1) a later effective date is specified in the permit; (2) appeal of the final permit is made as detailed in the next section; or (3) the EPA may make the permit effective immediately upon issuance if no comments resulted in a change in the proposed permit or a denial of the permit. The EPA will send notice of the final permit action to any individual who commented on the proposed permit during the public comment period. In addition, the source will be added to a list of final MNSR permit actions which is posted on the Region 8 website at: http://www2.epa.gov/region8/nsr-and-psd-permits-issued-region-8. Anyone may request a copy of the final permit at any time by contacting the EPA Tribal Air Permit Program at (800) 227–8917 or sending an email to r8airpermitting@epa.gov.

D. Appeals to the Environmental Appeals Board

In accordance with Section 49.159, within 30 days after a final MNSR permit decision has been issued, any person who filed comments on the proposed permit or participated in the public hearing may petition the Environmental Appeals Board (EAB) to review any condition of the permit decision. The 30-day period within which a person may request review under this section begins when the Region has fulfilled the notice requirements for the final permit decision. Motions to reconsider a final order by the EAB must be filed within 10 days after service of the final order. A petition to the EAB is under §307(b) of the CAA, a prerequisite to seeking judicial review of the final agency action. For purposes of judicial review, final agency action occurs when a final permit is issued or denied by the EPA and agency review procedures are exhausted.

United States Environmental Protection Agency
Region 8 Air Program
1595 Wynkoop Street
Denver, CO 80202

Air Pollution Control
Synthetic Minor Source Permit to Construct

40 CFR 49.151

 # SMNSR-SU-000043-2011.001

Permit to Construct to establish legally and practically enforceable limitations and requirements on sources at an existing facility

Permittee:

Samson Resources Company

Permitted Facility:

Jaques Compressor Station
Southern Ute Indian Reservation
La Plata County, Colorado

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I. Conditional Permit to Construct

A. General Information

Facility:	Samson Resources Company, Jacques Compressor Station
Permit Number:	SMNSR-SU-000043-2011.001
SIC Code and SIC Description:	1311- Crude Petroleum and Natural Gas

Site Location:	Corporate Office Location
Jaques Compressor Station	Samson Resources Company
NW ¼, Sec 26 T33N R8W	Samson Plaza
Southern Ute Indian Reservation	Two West Second Street
La Plata County, CO	Tulsa, Oklahoma 74103-3103

The equipment listed in this permit may only be operated by the Samson Resources Company (Samson) at the following location:

Latitude 37.077944N, Longitude -107.691W

B. Background

On July 1, 2011, the EPA promulgated the Tribal Minor New Source Review (MNSR) Permit Program at 40 CFR Part 49. The rule became effective on August 30, 2011. The purpose of the rule is to establish a preconstruction permitting program for new and modified minor sources and minor modifications at existing major sources. In addition, the rule provides a mechanism to create legally and practically enforceable restrictions upon request to recognize emission controls, limits in hours of operation, limits on throughputs, etc. creating synthetic minor sources. In other words, an otherwise major stationary source may receive restrictions on its total potential to emit to become a synthetic minor source for purposes of the Prevention of Significant Deterioration Permit Program at 40 CFR Part 52 (PSD) and/or the Title V Operating Permit Program at 40 CFR Part 71 (Part 71). This mechanism is voluntary and may also be used to establish an otherwise major source of hazardous air pollutants (HAP) as a synthetically minor source of HAP.

40 CFR 49.153(a)(3)(iv) of the MNSR rule provides the EPA with the authority to require at their discretion existing sources whose limits were established through mechanisms such as a consent decree are required to apply for a permit under the MNSR Permit Program to transfer the limits to a MNSR permit.

C. Proposal

Through this permit action, the EPA is incorporating legally and practically enforceable emission limits that were established in Part 71 permits issued by the EPA in July of 2008 and March of 2009. The EPA had established legally and practically enforceable requirements to control benzene, formaldehyde (CH_2O), and total HAP emissions from existing emission units at the facility. Facility-wide CH_2O and total HAP emission limits were established in the Part 71 permits, as well as emission unit-specific benzene emission limits, to create a synthetic minor source of HAP emissions. Two (2) tri-ethylene glycol (TEG) dehydration units at the facility are equipped with flares that combust HAP emissions from the TEG dehydration process to meet the emission unit-specific benzene emission limits and contribute to meeting the facility-wide HAP emission limits. In addition to the controls on the TEG dehydration units, four (4) natural gas-fired 1,400 horsepower (hp) 4-stroke lean-burn reciprocating internal combustion

engines for natural gas compression are equipped with catalytic control systems to contribute to meeting the facility-wide CH_2O and total HAP emission limits. These Part 71 permits did not approve any new construction.

D. Applicability

1. This permit is being issued under authority of the MNSR permit program.

2. The requirements in this permit have been created, at the Permittee's request to establish legally and practically enforceable restrictions for limiting TEG dehydration unit benzene emissions and facility-wide CH_2O and total HAP emissions.

3. Any conditions established for this facility or any specific units at this facility pursuant to any permit issued under the authority of the PSD Permit Program or the MNSR Permit Program shall continue to apply.

4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

E. Facility-Wide Requirements

1. Emission Limits

   (a) Facility-wide emissions of CH_2O shall not exceed 9.5 tons during any consecutive 12 months.

   (b) Facility-wide emissions of total HAP shall not exceed 23.0 tons during any consecutive 12 months.

   (c) Emission limits shall apply at all times.

2. CH_2O Monitoring Requirements

   (a) Facility-wide actual CH_2O emissions shall be calculated by the Permittee, in tons, and recorded at the end of each month, beginning with the first calendar month that this permit is effective.

   (b) Prior to 12 full months of facility-wide emissions calculations, the Permittee shall, at the end of each calendar month, add the emissions for that month to the calculated emissions for all previous calendar months and record the total. Thereafter, the Permittee shall, at the end of each calendar month, add the facility-wide emissions for that month to the calculated facility-wide emissions for the preceding 11 months and record a new 12 month total.

   (c) The Permittee shall include emissions from all controlled and uncontrolled emission sources at the facility in the calculations, including but not limited to insignificant emission units, as defined in 40 CFR 71.5(c)(11)(ii).

   (d) The facility-wide emissions of CH_2O shall be calculated as follows:

(i) Emission units with control devices:

(A) For engines equipped with catalytic control systems, CH_2O emissions for the month shall be calculated by multiplying the most recent performance test results for CH_2O for each engine in lb/hr, by the number of operating hours for the engine for that month. If data on operating hours are not available for that unit for that month, full-time operation of the unit (24 hours per day, 7 days per week) for that month shall be assumed.

(B) Monthly emissions for any engine break-in period, as specified in this permit, where the engine was operated without the catalyst control system installed, shall be calculated by multiplying the manufacturer-specified CH_2O emission factors for an uncontrolled engine by the hours the engine operated without the emission control system installed for that month.

(C) The calculated CH_2O emissions for each engine with catalytic control systems shall be added together to calculate the total CH_2O emissions for controlled engines for that month.

(ii) Emission units without control devices. For remaining emission units at the facility, emissions for the month for each unit shall be calculated by multiplying the CH_2O emission factor for that unit, in pounds per hour, by the number of operating hours for that unit for that month. If data on operating hours are not available for a unit for that month, full-time operation of that unit shall be assumed.

3. Total HAP Monitoring Requirements

(a) Facility-wide actual HAP emissions shall be calculated by the Permittee, in tons, and recorded at the end of each month, beginning with the first full calendar month after operations at the facility commenced.

(b) Prior to 12 full months of facility-wide emissions calculations, the Permittee shall, at the end of each calendar month, add the emissions for that month to the calculated emissions for all previous calendar months and record the total. Thereafter, the Permittee shall, at the end of each calendar month, add the facility-wide emissions for that month to the calculated facility-wide emissions for the preceding 11 months and record a new 12 month total.

(c) The Permittee shall include emissions from all controlled and uncontrolled emission sources at the facility in the calculations, including but not limited to insignificant emission units, as defined in 40 CFR 71.5(c)(11)(ii).

(d) The facility-wide emissions of total HAPs shall be calculated as follows:

(i) TEG Dehydration systems. Total HAP emissions from each TEG dehydration system shall be calculated according to the requirements for determining total HAPs from each dehydration system still vent in this permit;

(ii) CH_2O Emissions. CH_2O emissions shall be calculated according to the requirements for determining facility-wide CH_2O emissions in this permit;

(iii) All other HAP emissions. For remaining emission units at the facility, emissions for the month for each unit shall be calculated by multiplying the HAP emission factors for that unit, in lb/hr, by the number of operating hours for that unit for that

month. If data on operating hours are not available for a unit for that month, full-time operation of that unit shall be assumed. The Permittee shall provide the basis for the HAP emission calculations with the next annual emissions report required by this permit.

4. Recordkeeping Requirements

The Permittee shall maintain the following records:

(a) The actual monthly and rolling 12-month facility-wide CH_2O and HAP emissions, in tpy;

(b) All input parameters and calculations used to determine the monthly emissions from all controlled and uncontrolled emission sources at the facility; and

(c) All deviations from the requirements of this permit.

F. Requirements for Engines

1. Construction and Operational Limits:

(a) The Permittee may install and operate no more than six (6) reciprocating internal combustion engines used for compression, each meeting the following specifications:

(i) Operated as a 4-stroke lean-burn engine;
(ii) Fired with natural gas; and
(iii) Limited to a maximum site rating of 1,400 horsepower (hp).

(b) The Permittee shall install, operate, and maintain a catalytic control system, as specified in this permit, on at least four (4) of the six (6) engines.

(c) Only the natural gas-fired engines that are operated and controlled as specified in this permit are approved for installation under this permit.

2. Emission Limits:

(a) Emissions from each of the four (4) engines equipped with catalytic control systems, shall not exceed 0.21 lb/hr of CH_2O.

(b) Emission limits shall apply at all times, unless otherwise specified in this permit.

3. Control and Operational Requirements

(a) The Permittee shall ensure that the catalytic control system on each of the four (4) controlled engines is capable of reducing uncontrolled emissions of CH_2O to meet the emission limits specified in this permit.

(b) The Permittee shall install, operate, and maintain temperature sensing devices (e.g., thermocouple or resistance temperature detectors) before the inlet to the catalyst bed on each of the four (4) engines equipped with catalytic control systems in order to continuously monitor the engine exhaust temperature at the inlet to the catalyst bed. Each

temperature sensing device shall be calibrated and operated by the Permittee according to manufacturer specifications or equivalent specifications developed by the Permittee or vendor.

(c) Except during startups, which shall not exceed 30 minutes, the engine exhaust temperature at the inlet to the catalyst bed on each of the four (4) engines equipped with catalytic control systems shall be maintained at all times the engines operate with an inlet temperature of at least 450 ºF and no more than 1,350 ºF.

(d) During operation, the pressure drop across the catalyst bed on each engine shall be maintained to within ±2 inches of water from the baseline pressure drop measured during the most recent performance test. The baseline pressure drop for the catalyst bed shall be determined at 100% ± 10% of the engine load measured during the most recent performance test.

(e) The Permittee shall only fire the six (6) 1,400 hp engines with natural gas. The natural gas shall be pipeline-quality in all respects except that the CO_2 concentration in the gas shall not be required to be within pipeline-quality.

(f) The Permittee shall follow, for each engine and any respective catalytic control system, the manufacturer's recommended maintenance schedule and procedures, or equivalent procedures developed by the Permittee or vendor, to ensure optimum performance of each engine and its respective catalyst control system, as appropriate.

(g) The Permittee may rebuild an existing permitted engine or replace an existing permitted engine with an engine of the same horsepower rating, and configured to operate in the same manner as the engine being rebuilt or replaced. Any emission limits, requirements, control technologies, testing or other provisions that apply to the permitted engines that are rebuilt or replaced shall also apply to the rebuilt or replaced engines.

(h) The Permittee may resume operation without the catalytic control system during an engine break-in period, which shall not exceed 200 operating hours, for rebuilt and replaced engines.

4. Performance Testing Requirements

(a) Performance tests shall be conducted on all six (6) 1,400 hp engines at the facility for measuring CH_2O emissions to demonstrate compliance with the facility-wide emission limits specified in this permit. The performance tests shall be conducted in accordance with appropriate reference methods specified in 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, or an appropriate EPA-approved American Society for Testing and Materials (ASTM) methods. The Permittee may submit to the EPA a written request for approval of an alternate test method, but shall only use that alternate test method after obtaining approval from the EPA.

(i) The initial performance tests shall be conducted within 90 calendar days of startup of a new engine.

(ii) Subsequent performance tests for each of the four (4) engines at the facility that are equipped with catalytic control systems shall be performed within 90 calendar days

of the most recent performance test to demonstrate compliance with the lb/hr CH_2O emission limits specified in this permit.

(iii) Performance tests shall be conducted within 90 calendar days of startup of all rebuilt engines and replaced engines.

(iv) Performance tests shall be conducted within 90 calendar days of each catalyst replacement on each of the four (4) engines at the facility that are equipped with catalytic control systems.

(v) For any one (1) of the four (4) engines equipped with catalytic control systems: If the results of two (2) consecutive subsequent quarterly performance tests demonstrate compliance with CH_2O emission limit, required testing frequency for CH_2O may change from quarterly to semi-annually.

(vi) For any one (1) of the four (4) engines equipped with catalytic control systems: If the results of any subsequent semi-annual performance tests demonstrate non-compliance with the CH_2O emission limits, required monitoring frequency for CH_2O shall revert back to quarterly.

(b) The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, processes, or operational parameters the day of or during the engine testing. Any such tuning or adjustments may result in a determination by the EPA that the test is invalid. Artificially increasing an engine load to meet testing requirements is not considered engine tuning or adjustments.

(c) The Permittee shall not abort any engine tests that demonstrate non-compliance with the CH_2O emission limits.

(d) Performance tests for CH_2O emissions shall meet the following requirements:

(i) For each of the four (4) engines at the facility that are equipped with catalytic control systems, the pressure drop across the catalyst bed and the inlet temperature to each catalyst bed shall be measured and recorded at least once per test during all performance tests.

(ii) All tests shall be performed at a maximum operating rate (90% to 110% of the maximum achievable load available at the time of the test). The Permittee may submit to the EPA a written request for approval of an alternate load level for testing, but shall only test at that alternate load level after obtaining written approval from the EPA.

(iii) During each test run, data shall be collected on all parameters necessary to document how emissions were measured or calculated (such as test run length, minimum sample volume, volumetric flow rate, moisture and oxygen corrections, etc.).

(iv) Each test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average of all valid test runs and shall be in terms of the emission limits.

(v) Performance test plans shall be submitted to the EPA for approval 60 calendar days prior to the date the test is planned.

(vi) Performance test plans that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new test plans unless the EPA requires the submittal and approval of new test plans. The Permittee may submit new test plans for EPA approval at any time.

(vii) The test plans shall include and address the following elements:

(A) Purpose of the test;
(B) Engines and any respective catalytic control systems to be tested;
(C) Expected engine operating rate(s) during the test;
(D) Sampling and analysis procedures (sampling locations, test methods, laboratory identification);
(E) Quality assurance plan (calibration procedures and frequency, sample recovery and field documentation, chain of custody procedures); and
(F) Data processing and reporting (description of data handling and quality control procedures, report content).

(e) The Permittee shall notify the EPA at least 30 calendar days prior to scheduled performance testing. The Permittee shall notify the EPA at least 1 week prior to scheduled performance testing if the testing cannot be performed.

(f) If the results of a complete and valid performance test of the emissions from any of the four (4) engines equipped with catalytic control systems demonstrate noncompliance with the emission limits in this permit, the engine shall be shut down as soon as safely possible, and appropriate corrective action shall be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The Permittee shall notify the EPA in writing within 24 hours of each such shut down. The engine must be retested within 7 days of being restarted and the emissions must meet the applicable limits in this permit. If the retest shows that the emissions continue to exceed the limits in this permit, the engine shall again be shut down as soon as safely possible, and the engine may not operate, except for purposes of startup and testing, until the Permittee demonstrates through testing that the emissions do not exceed the emission limits in this permit.

(g) If a permitted engine is not operating, the Permittee does not need to start up the engine solely to conduct a performance test. The Permittee may conduct the performance test when the engine is started up again.

5. Monitoring Requirements

(a) The Permittee shall continuously measure the engine exhaust temperature at the inlet to the catalyst bed on each of the four (4) engines equipped with catalytic control systems.

(b) Except during startups, which shall not exceed 30 minutes, if the engine exhaust temperature at the inlet to the catalyst bed deviates from the acceptable ranges specified in this permit then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit.

(i) Within 24 hours of determining a deviation of the engine exhaust temperature at the inlet to the catalyst bed, the Permittee shall investigate. The investigation shall include testing the temperature sensing device, inspecting the engine for performance problems and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and fouled, destroyed or poisoned catalyst).

(ii) If the engine exhaust temperature at the inlet to the catalyst bed can be corrected by following the engine manufacturer recommended procedures, or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the engine exhaust temperature at the inlet to the catalyst bed within 24 hours of inspecting the engine and catalytic control system.

(iii) If the engine exhaust temperature at the inlet to the catalyst bed cannot be corrected using the engine manufacturer recommended procedures, or equivalent procedures developed by the Permittee or vendor, or the catalytic control system has been damaged, then the affected engine shall cease operating immediately and shall not be returned to routine service until the following has been met:

(A) The engine exhaust temperature at the inlet to the catalyst bed is measured and found to be within the acceptable temperature range for that engine; and
(B) The catalytic control system has been repaired or replaced, if necessary.

(c) The Permittee shall monitor the pressure drop across the catalyst bed of each of the four (4) engines equipped with catalytic control systems once every calendar week using pressure sensing devices before and after the catalyst bed to obtain a direct reading of the pressure drop (also referred to as the differential pressure). *[Note to Permittee: Differential pressure measurements, in general, are used to show the pressure across the filter elements. This information will determine when the elements in the catalyst bed are fouling, blocked or blown out and thus require cleaning or replacement.]*

(d) The Permittee shall perform the first measurement of the pressure drop across each catalyst bed no more than 7 days from the date of the initial performance test. Thereafter, the Permittee shall measure the pressure drop across the catalyst bed, at a minimum every 7 days. Subsequent performance tests, as required in this permit, can be used to meet the periodic pressure drop monitoring requirement provided it occurs within the 7-day window. The pressure drop reading can be a one-time measurement on that day, the average of performance test runs conducted on that day, or an average of all the measurements taken on that day if continuous readings are taken.

(e) If the pressure drop reading exceeds ± 2 inches of water from the baseline pressure drop reading taken during the most recent performance test, then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit:

(i) Within 24 hours of determining a deviation of the pressure drop across the catalyst bed, the Permittee shall investigate. The investigation shall include testing the pressure transducers and assessing the catalytic control system for possible damage

that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and plugged, fouled, destroyed or poisoned catalyst).

(ii) If the pressure drop across the catalyst bed can be corrected by following the catalytic control system manufacturer recommended procedures, or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the problem within 24 hours of inspecting the catalytic control system.

(iii) If the pressure drop across the catalyst bed cannot be corrected using the catalytic control system manufacturer recommended procedures, or equivalent procedures developed by the Permittee or vendor, or the catalytic control system is damaged, then the Permittee shall do one of the following:

(A) Conduct a performance test as specified in this permit to ensure that the CH_2O emission limits are being met and to re-establish the pressure drop across the catalyst bed; or

(B) Cease operating the affected engine immediately. The engine shall not be returned to routine service until the pressure drop is measured and found to be within the acceptable pressure range for that engine as determined from the most recent performance test. Corrective action may include removal and cleaning of the catalyst or replacement of the catalyst.

(iv) The Permittee is not required to conduct parametric monitoring of exhaust temperature and catalyst differential pressure on engines that have not operated during the monitoring period. The Permittee shall certify that the engine(s) did not operate during the monitoring period in the annual report specified in this permit.

6. Recordkeeping Requirements

(a) Records shall be kept of manufacturer specifications and maintenance requirements developed by the manufacturer, vendor, or Permittee for each engine, and each catalytic control system, temperature-sensing device, and pressure-measuring device required in this permit.

(b) Records shall be kept of all calibration and maintenance conducted for each engine, and each catalytic control system, temperature-sensing device, and pressure-measuring device required in this permit.

(c) Records shall be kept that are sufficient to demonstrate that the fuel used for each engine is pipeline quality natural gas in all respects, with the exception of CO_2 concentrations.

(d) Records shall be kept of all temperature measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit.

(e) Records shall be kept of all pressure drop measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit.

(f) Records shall be kept of all required testing and monitoring in this permit. The records shall include the following:

(i) The date, place, and time of sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The company or entity that performed the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

(g) Records shall be kept of all catalyst replacements or repairs, engine rebuilds, and engine replacements.

(h) Records shall be kept of each rebuilt or replaced engine break-in period for the four (4) engines equipped with catalytic control systems, pursuant to the requirements of this permit, where an existing engine that has been rebuilt or replaced resumes operation without the catalyst control system, for a period not to exceed 200 hours.

(i) Records shall be kept of each time any of the four (4) engines equipped with catalytic control systems is shut-down due to a deviation in the inlet temperature to the catalyst bed or pressure drop across a catalyst bed. The Permittee shall include in the record the cause of the problem, the corrective action taken, and the timeframe for bringing the pressure drop and inlet temperature range into compliance.

G. Requirements for TEG Dehydration Systems

1. Construction and Operational Limits

(a) The Permittee shall install and operate emission controls as specified in this permit on following TEG dehydration units:

(i) One (1) unit limited to a maximum natural gas processing capacity of 18 million standard cubic feet per day (MMscfd), equipped with a 0.6 million British thermal units per hour (MMBtu/hr) natural gas fired TEG reboiler; and
(ii) One (1) unit limited to a maximum natural gas processing capacity of 30 MMscfd, equipped with a 0.6 MMBtu/hr natural gas fired TEG reboiler.

(b) Only the TEG dehydration units that are operated and controlled as specified in this permit are approved for installation and operation under this permit.

2. Emission Limits:

(a) Emissions of benzene from each of the TEG dehydration systems shall not exceed 0.9 tons in any consecutive 12 months.

(b) The emission limits shall apply at all times.

3. Control and Operational Requirements

(a) *TEG Dehydration Units.* The Permittee shall meet the following requirements for the TEG dehydration unit:

(i) Each TEG dehydration unit must be equipped with flash gas separators that route the flash gas back into the sales line, condensers, or an enclosed combustor capable of 98.0% benzene emission destruction efficiency.

(ii) All emissions from each TEG dehydration unit shall be routed through a closed-vent system to an emissions control system as specified in this permit.

(iii) The Permittee shall follow, for each TEG dehydration unit and respective emission control system, the manufacturer's recommended maintenance schedule and procedures to ensure optimum performance.

(b) *Closed-Vent Systems.* The Permittee shall meet the following requirements for the closed-vent systems:

(i) Each closed-vent system shall route all hydrocarbon emissions from the dehydration units to the control system required by this permit.

(ii) All vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain and collect gases, vapors, and fumes and transport them to control equipment shall be maintained and operated during any time the control equipment is operating.

(iii) Each closed-vent system shall be designed to operate with no detectable emissions.

(iv) If any closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control devices, the Permittee shall meet the one of following requirements for each bypass device:

(A) At the inlet to the bypass device that could divert the stream away from the control device and into the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device and into the atmosphere;

(B) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration;

(C) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements applicable to bypass devices.

(v) The Permittee shall minimize leaks of hydrocarbon emissions from all vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain, collect, and transport gases, vapors, and fumes to the control device.

(c) *Enclosed Combustion Devices.* The Permittee shall meet the following requirements for each enclosed combustion device:

(i) For each enclosed combustion device, the Permittee shall follow the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions.

(ii) The Permittee shall ensure that each enclosed combustion device has sufficient capacity to achieve at least a 98.0% benzene emission destruction efficiency for the minimum and maximum hydrocarbon volumetric flow rate and BTU content routed to the device.

(iii) The Permittee must ensure that each enclosed combustion device is:

(A) A model demonstrated by a manufacturer to the meet the benzene destruction efficiency requirements of this permit using the procedures specified in 40 CFR 60.5413(d) for VOC emissions by the due date of the first annual report as specified in 40 CFR 49.147(b); or
(B) Demonstrated by the Permittee to meet the benzene destruction efficiency requirements of this permit by using the EPA approved performance test methods specified in 40 CFR 63.772 (e)(i) – (iii) for hazardous air pollutants, by the due date of the first annual report.

(iv) The Permittee must ensure that each enclosed combustion device is:

(A) Operated properly at all times that natural gas is routed to it;
(B) Operated with a liquid knock-out system to collect any condensable vapors (to prevent liquids from going through the control device);
(C) Equipped with a flash-back flame arrestor;
(D) Equipped with one of the following:

I. A continuous burning pilot flame, a thermocouple, and a malfunction alarm and notification system if the pilot flame fails; or
II. An electronically controlled auto-ignition system with a malfunction alarm and notification system if the pilot flame fails while produced natural gas or natural gas emissions are flowing to the enclosed combustor;

(E) Maintained in a leak-free condition; and
(F) Operated with no visible smoke emissions.

(d) The Permittee shall follow, for each TEG dehydration unit and respective emission control system, the manufacturer's recommended maintenance schedule and procedures to ensure optimum performance.

4. Testing Requirements

The Permittee shall obtain extended wet gas analyses of the inlet wet gas stream to each TEG dehydration system at least once per calendar month. The analysis shall include the inlet gas temperature and pressure at which the sample was taken.

5. Monitoring Requirements

(a) The Permittee shall monitor each closed vent system for leaks of hydrocarbon emissions from all vent lines, connections, fittings, valves, relief valves, or any other appurtenance

employed to contain, collect, and transport gases, vapors, and fumes to the enclosed combustion devices as follows:

(i) Visit the facility on a quarterly basis to inspect all closed vent systems for defects that could result in hydrocarbon emissions and document each inspection. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; or broken or missing caps or other closure devices. If a quarterly visit is not feasible due to sudden, infrequent, and unavoidable events (i.e. weather, road conditions), the Permittee shall notify the EPA in writing within 24 hours of cancelling the visit and every effort shall be made to visit the facility as close to the quarterly timeframe as possible;

(ii) The inspections shall be based on audio, visual, and olfactory procedures at a minimum; and

(iii) Any leaks detected in any closed vent system shall be addressed immediately unless the repair requires resources not currently available. If the resources are not available, the leak shall be repaired no later than 15 days after initial detection of the leak.

(b) The Permittee shall monitor each enclosed combustion device to confirm proper operation as follows:

(i) Continuously monitor the proper functioning of each enclosed combustion device's combustion source using a thermocouple or other or other heat sensing monitoring device and a recording device that indicates the continuous ignition of the flame while gas is flowing to it;

(ii) Visually inspect the combustion source (continuous burning pilot flame or automatic igniter) to ensure proper operation whenever an operator is on site, at a minimum, quarterly; and

(iii) Visually confirm that no smoke is present during operation of each smokeless enclosed combustion device whenever an operator is on site, at a minimum, quarterly.

(c) Benzene and total HAP emissions from each of the TEG dehydration systems shall be determined monthly using the most recent version of the GRI GlyCalc model and the following input parameters:

(i) The inlet wet gas stream properties for the current month;

(ii) Temperature and pressure of the gas provided in the inlet wet gas analysis;

(iii) The emissions control device efficiency, unless the closed-vent system or control device was bypassed or down or a malfunction alarm was triggered. In such cases, the emission control device efficiency used in the calculation shall be 0.0%; and

(iv) The maximum gas throughput and glycol pump recirculation rate for each TEG dehydration system as follows:

TEG Dehydration Unit Description	Maximum Glycol Pump Recirculation Rate
18 MMscfd maximum gas throughput	8 gallons per minute
30 MMscfd maximum gas throughput	13 gallons per minute

(d) Benzene and total HAP emissions from each TEG dehydration system shall be calculated and recorded at the end of each month, beginning with the first full calendar month after operations commenced. Prior to 12 full months of operation, the Permittee shall, at the end of each month, add the emissions for that month to the calculated emissions for all previous months since operations commenced, where applicable, and record the total. Thereafter, the Permittee shall, at the end of each month, add the emissions for that month to the calculated emissions for the preceding 11 months and record a new 12 month total.

6. Recordkeeping Requirements

The Permittee shall keep records of the following:

(a) The monthly benzene, total HAP emissions, GRI GlyCalc model input parameters and GRI GlyCalc model reports for each TEG dehydration system;

(b) Written, site-specific designs, operating instructions, operating procedures, and maintenance schedules;

(c) All required monitoring of the control device operations;

(d) The exceedances of the operating parameters specified in manufacturer or vendor guarantees or engineering specifications with regard to the TEG dehydration units, closed-vent systems and control devices. The records shall include each TEG dehydration unit, closed-vent system, enclosed combustion device total operating times during the calendar month in which the exceedance occurred, the date, time and duration that the parameters were exceeded, and the corrective actions taken and any preventative measures adopted to operate the facility within that operating parameter;

(e) Any instances in which any closed-vent system or control device was bypassed or down in each calendar month, the date, time, duration, and the reason for each incident, and the corrective actions taken and any preventative measures adopted to avoid such bypasses or downtimes;

(f) Any instances in which the pilot flame is not present in the combustor or the auto ignition system was not operating, the date, time, and duration of each observation and the corrective actions taken and any preventative measures adopted to limit the malfunctions;

(g) Any instances in which the thermocouple (or other heat sensing monitoring device) installed to detect the presence of a flame in the combustor is not operational, the date,

time, and duration during which it was not operational, and the corrective actions taken and any preventative measures adopted to limit the malfunctions;

(h) Any time periods in which the recording device installed to record data from the thermocouple is not operational;

(i) Any time periods in which visible emissions are observed emanating from a control system;

(j) The emissions calculations included in the consecutive 12-month facility-wide total;

(k) Each leak detection inspection. All leak detection inspection records must include, at a minimum, the following information:

(i) A description of the methods used for the inspection;
(ii) The date of the inspection;
(iii) The findings of the inspection;
(iv) Any corrective action taken and the date of the corrective action;
(v) Reason for any delays to corrective actions; and
(vi) The inspector's name and signature.

(l) All input parameters and calculations used to determine the monthly emissions.

H. Requirements for Records Retention

1. The Permittee shall retain all records required by this permit for a period of at least five (5) years from the date the record was created.

2. Records shall be kept in the vicinity of the facility, such as at the facility, the location that has day-to-day operational control over the facility, or the location that has day-to-day responsibility for compliance of the facility.

I. Requirements for Reporting

1. Annual Emission Reports

(a) The Permittee shall submit a written annual report of the actual annual emissions from all emission units at the facility each year no later than April 1st. The annual report shall cover the period for the previous calendar year. All reports must be certified to truth and accuracy by the person primarily responsible for Clean Air Act compliance for the Permittee.

(b) The report shall include total HAP, CH_2O, and benzene emissions.

(c) The report shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR

1595 Wynkoop Street
Denver, Colorado 80202

The report may be submitted via electronic mail to r8AirPermitting@epa.gov.

2. All other documents required to be submitted under this permit, with the exception of the Annual Emission Reports, shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Documents may be submitted electronically to r8airreportenforcement@epa.gov.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of permit requirements, a description of the probable cause of such deviations and any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to **r8airreportenforcement@epa.gov** as follows:

(a) Within 30 days from the discovery of any deviation of the emission limits or operational limits that are left un-corrected for more than 5 days after discovering the deviation; and

(b) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee's ability to meet the emission limits.

4. The Permittee shall submit a written report for any required performance tests to the EPA within 60 days after completing the tests.

5. The Permittee shall submit any record or report required by this permit upon EPA request.

II. General Provisions

A. Conditional Approval:

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants this permit. This authorization is expressly conditioned as follows:

1. *Document Retention and Availability:* This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.

2. *Permit Application:* The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified 10 days in advance of any significant deviation from this permit application as well as any plans, specifications or supporting data furnished.

3. *Permit Deviations:* The issuance of this permit may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.

4. *Compliance with Permit:* The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted facility/source. Noncompliance with any permit term or condition is a violation of this permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.

5. *Fugitive Emissions:* The Permittee shall take all reasonable precautions to prevent and/or minimize fugitive emissions during the construction period.

6. *National Ambient Air Quality Standard and PSD Increment:* The permitted source shall not cause or contribute to a National Ambient Air Quality Standard violation or a PSD increment violation.

7. *Compliance with Federal and Tribal Rules, Regulations, and Orders:* Issuance of this permit does not relieve the Permittee of the responsibility to comply fully with all other applicable federal and tribal rules, regulations, and orders now or hereafter in effect.

8. *Enforcement:* It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. *Modifications to Existing Permitted Emissions Units/Limits:* For proposed modifications, as defined at 40 CFR 49.152(d), that would increase an emissions unit allowable emissions of pollutants above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a permit modification pursuant to the MNSR regulations approving the increase. For a proposed modification that is not otherwise subject to review under the PSD or MNSR regulations, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at 40 CFR 49.159(f).

10. *Relaxation of Legally and Practically Enforceable Limits:* At such time that a new or modified source within this permitted facility/source or modification of this permitted facility/source becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility/source to otherwise emit a pollutant, such as a restriction on hours of operation, then the requirements of the PSD regulations shall apply to the source or modification as though construction had not yet commenced on the source or modification.

11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen this permit for a cause on its own initiative, e.g., if this permit contains a material mistake or the Permittee fails to assure compliance with the applicable requirements.

12. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

13. *Property Rights:* This permit does not convey any property rights of any sort or any exclusive privilege.

14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating this permit or to determine compliance with this permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with 40 CFR Part 2, Subpart B.

15. *Inspection and Entry:* The EPA or its authorized representatives may inspect this permitted facility/source during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:

    (a) Enter upon the premises where this permitted facility/source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of this permit;

    (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;

    (c) Inspect, during normal business hours or while this permitted facility/source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

    (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements; and

    (e) Record any inspection by use of written, electronic, magnetic and photographic media.

16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the proposed permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within 30 days of receipt of this permit and should include the reason or reasons for rejection.

17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

    U.S. Environmental Protection Agency, Region 8
    Office of Partnerships and Regulatory Assistance
    Tribal Air Permitting Program, 8P-AR
    1595 Wynkoop Street
    Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of this permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project. The Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.

19. *Notification of Start-Up:* The Permittee shall submit a notification of the anticipated date of initial start-up of this permitted source to the EPA within 60 days of such date, unless this permitted source is an existing source.

B. Authorization:

Authorized by the United States Environmental Protection Agency, Region 8

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Callie A. Videtich Date
Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance