



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Ave., S.E.  
Washington, DC 20590

**FEB 20 2009**

Mr. Stephan Pott, PE  
Chief, Gas Pipeline Safety  
State of Colorado Public Utilities Commission  
1560 Broadway, Suite 250  
Denver, CO 80202

**Ref. No.: PI-08-0010**

Dear Mr. Pott:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) reviewed your December 11, 2008, letter transmitting an October 22, 2008, petition received by the Colorado Public Utilities Commission (CO-PUC) from DCP Midstream for a finding that the endpoint of the gathering designation for an intrastate gas pipeline should be extended beyond a gas processing plant. Specifically, DCP Midstream requested a finding that the gathering designation for a rural section of the ANGI intrastate pipeline be extended an additional 7.8 miles from the DCP Midstream Greeley Plant to the DCP Midstream Mewbourn Gas Plant, both of which are located in Weld County, Colorado.

Per 49 CFR § 192.8 (a)(2) and Section 2.2 (a)(1)(A) of API RP 80, DCP Midstream included documentation they feel demonstrates that extending the gathering designation an additional 7.8 miles from the Greeley Plant to the Mewbourn Plant was justified based on sound engineering principles.

Additional correspondence with DCP Midstream determined the following:

- The Greeley Plant separates the methane out and sells it there; the liquids are placed in tanks at the facility and eventually transported to the intended destination via truck.
- The remainder of the gas, including 90% ethane, 5% methane, and 2% CO<sub>2</sub> is then transported to the Mewbourn Plant for additional processing.
- The normal operating pressure of the line is approximately 300 psig, down to approximately 150 psig when delivered to the downstream plant

Based on the information provided in DCP Midstream's petition, the additional correspondence, and your recommendation, PHMSA finds that extending the endpoint of the gathering designation for the ANGI gas pipeline an additional 7.8 miles to the Mewborne Plant is warranted as long as the current operating parameters and operating pressures remain the same. Accordingly, to the extent this condition is met, PHMSA grants the petition. If DCP Midstream

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Mr. Stephan Pott, PE

State of Colorado Public Utilities Commission -- ANGI Intrastate Pipeline  
**Ref. No.: PI-08-0010**

makes any significant changes to the operation of this line, such as increasing the pressure to where the ethane might be in a liquid super critical phase, DCP Midstream will be required to contact the CO-PUC and/or PHMSA's Western Region to make a new determination.

Sincerely,

A handwritten signature in black ink, appearing to read "John A. Gale", written over a circular stamp or seal.

John A. Gale  
Director, Office of Regulations

12/15 Assigned to MAX Kieba by

# STATE OF COLORADO

## PUBLIC UTILITIES COMMISSION

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James K. Tarpey, Commissioner  
Matt Baker, Commissioner  
Doug Dean, Director

Department of Regulatory Agencies  
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Executive Director



Bill Ritter, Jr.  
Governor

December 9, 2008

Mr. Jeffrey D. Wiese  
Associate Administrator for Pipeline Safety  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration, PHP-1  
East Building, 2nd Floor  
1200 New Jersey Ave., SE  
Washington, DC 20590

DEC 11 2008

RE: Petition for Review-DCP Midstream  
ANGI Pipeline

On October 22, 2008 DCP Midstream, a gathering and processing company operating in several producing gas field in Colorado has, under § 190.9, petitioned the Public Utilities Commission (PUC), for a review of extending the endpoint of gathering beyond a processing plant. This request for review involves a rural 7.8 mile long pipeline system between the DCP Midstream Greeley and the Mewbourn Gas Plants located in Weld County, Colorado.

Although § 190.9 was not adopted by the Public Utilities Commission, Pipeline Safety staff has reviewed the petition from DCP Midstream (attached) under the alternative PUC rule 4904, 4 Code of Colorado Regulations (CCR) 723-4 Rules Regulating Gas Utilities and Pipeline Operators.

This review does not address applicability of §40-1-103, C.R.S. or whether it is a Henshaw pipeline, and pertains only to pipeline safety regulations found under 4 Code of Colorado Regulations (CCR) 723-4 Rules Regulating Gas Utilities and Pipeline Operators.

The endpoint of gathering, under § 192.8(a)(2) and API Recommended Practice (RP) 80, may not extend beyond the first downstream natural gas processing plant, unless the operator can demonstrate, using sound engineering principles, that gathering extends to a further downstream plant.

This system was reviewed using guidelines found in API RP 80, a field review, and as required under § 192.8(a)(2) an analysis by the DCP Midstream engineering Department.

1560 Broadway, Suite 250, Denver, Colorado 80202, 303-894-2000

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Mr. Jeffrey D. Wiese

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December 9, 2009

Under Rule 4904 the Chief of the PUC Gas Pipeline Safety section, has reviewed and agrees with the following facts:

- DCP Midstream is aware of PUC rule 4952(c) as it applies to the ANGI pipeline.
- The ANGI pipeline is a 7.8 mile long rural (Class 1 as defined under § 192.5) gathering line connecting the Greeley and Mewbourn Gas Plants.
- The ANGI system's method of construction and materials used has been reviewed by the DCP Midstream Director of Asset Integrity and maximum allowable operating pressure determined in compliance with § 192.619.
- The request is consistent with the "gathering function" as described in RP-80 2.4.2.
- The dethanizer residue gas stream components from the Greeley Gas Plant to the Mewbourn Gas Plant is 98.68% ethane, propane, and carbon dioxide.
- The gross dry heating value of the dethanizer residue gas stream from the Greeley Gas Plant at 14.65 psia is 1764.3 BTU.
- The Mewbourn Gas Plant is not a production treatment facility but is designed to treat, dehydrate, and process gas.
- The Mewbourn Gas Plant is a defined and recognized gathering endpoint.
- Raw, untreated gas from local producing natural gas wells flows directly into the ANGI pipeline, commingled, and final treatment, dehydration, and processing take place at the Mewbourn Plant. Final treated residue gas is sold to an intrastate and interstate pipeline.
- Pipeline markers are located and maintained at each public road and railroad crossing in compliance with § 192.707(d) and PUC Rule 4952(c).

Based on these factors I recommend that the request to designate the 7.8 mile ANGI pipeline system as a gathering pipeline as it applies to § 192.8(a)(2) be approved.

Yours truly,



Stephan Pott, PE  
Chief, Gas Pipeline Safety

Cc: Mr. Chris Hoidal, Regional Director  
PHMSA Western Region



2008 OCT 23 PM 3:21

October 22, 2008

VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
Tracking Number 91 7108 2133 3932 9094 2642

Steve Pott, Chief  
Colorado Public Utilities Commission  
1560 Broadway, Suite 250  
Denver, CO 80202

**Re: Classifying Gathering Line under 192.8(a)(2)  
DCP Midstream  
Weld County Gathering System  
Weld County, Colorado**

Dear Mr. Pott:

DCP Midstream (DCP) is petitioning the Colorado Public Utilities Commission (PUC) for a review for approval under §190.9 for extending the endpoint of gathering beyond the first processing plant as defined under §192.8(a)(2).

The following information has been attached to this letter in order to support this petition:

- 1) Schematic illustrating 6" line between Greeley Plant and Mewbourn Plant (Figure 1)
- 2) Gas Analysis of the ethane stream (showing CO<sub>2</sub>)
- 3) Analysis to identify regulated onshore gathering lines §192.8(b)(1) (DCP Form 45)

DCP has evaluated this onshore gathering line using 49 CFR Part 192 and API RP 80 to determine if the specified line would qualify as an onshore gathering line in accordance with 49 CFR 192.8(a)(2). The enclosed information supports DCP's request to classify the 6-inch pipeline between the Greeley and Mewbourn plants as gathering.

Figure 1 schematic describes the justification for two plants to complete the processing. DCP plans to take the ethane stream off of the Greeley plant process and transport the gas stream via the 6-inch pipeline to the inlet of the Mewbourn plant. This ethane stream will be commingled with the other gas gathered from the area and treated, dehydrated, and processed at the Mewbourn Plant as a combined stream. It is necessary to recombine the ethane stream with the other unprocessed gas because the stream contains approximately 2.5 mole percent CO<sub>2</sub>. DCP believes this is adequate engineering justification to classify the 6-inch pipeline as gathering and move the endpoint of gathering to the Mewbourn Plant.

DCP is documenting the line and its current regulatory status as follows and on the attached documentation (Form 45).

The usage of the line meets the criteria as defined in DOT §192.8 (a)(2):

*The endpoint of gathering, under section 2.2(a)(1)(A) of API RP 80, may not extend beyond the first downstream natural gas processing plant, unless the operator can demonstrate, using sound engineering principles, that gathering extends to a further downstream plant.*

The line is a 6" diameter steel pipeline, 0.188 w.t., grade X42 with a MAOP of 1,440 psi. The pipeline operates between 60% SMYS and is Class 1.

DCP respectfully requests that the PUC review this packet as cited in DOT §190.9(a) to determine if this meets "sound engineering principles" to justify the further downstream plant as the endpoint of gathering:

*In circumstances where a rule contained in parts 192, 193 and 195 of this chapter authorizes the Administrator to make a finding or approval, an operator may petition the Administrator for such a finding or approval*

In addition, the PUC rule §4904 provides for this same interpretation process under the state rule.

*(a) An operator may request a regulatory interpretation of any of these rules by submitting a written request to the Chief. The requestor shall include his or her return address and the specific application and rule reference with the request.*

If you have any questions regarding the regulatory justification for line, please do not hesitate to contact me at (303) 605-1979. Please direct your written response to

DCP Midstream  
Jeannette Jones  
370 17<sup>th</sup> Street, Suite 2500  
Denver, CO 80202

Sincerely,



Jeannette Jones  
Director – Asset Integrity  
DCP Midstream

Attachments:

DCP Midstream Onshore Gas Gathering Line Evaluation Forms  
Schematic of line (Figure 1)  
Gas Analysis of Ethane Stream (Greeley Plant)

Cc: J. Kuchinski (DCP), T. Olin (DCP), C. Smith (DCP)

# DCP Form 45



## Gas Pipeline Maximum Allowable Operating Pressure and % of SMYS Calculations

Record Retention: Completed MAOP Calculation Forms are kept on file with the asset for the life of the pipeline and made available, upon request, for inspection.

Cells requiring user entry; Used to automatically calculate MAOP - Blue  
Cells with automatic calculations based on info provided - Yellow


### SECTION 1 - PIPE SEGMENT INFORMATION

PODS Pipeline Segment Name BI  
Pipeline System ANGI Operating Asset Weld County  
PODS Station Begin: 104° 43' 47.78" W 40° 21' 49.10" N End: 104° 44' 8.03" W 40° 16' 3.21" N  
Date Constructed (mm/dd/yyyy) 10/12/1987  
Actual class location (using DOT §192.5):  Class 1  Class 2  Class 3  Class 4

### SECTION 2 - CALCULATION LINE TYPE (Function using DOT Part 192 definitions, API RP-80 and §192.8 limitations)

Gas Transmission Line (Complete Sections 3 and 5)  
 All transmission lines are regulated by DOT regardless of class location  
Designated Start and End Points for regulated segments must be either latitude/longitude coordinates, or stationing addresses.  
Regulated Start Point: \_\_\_\_\_ Regulated End Point: \_\_\_\_\_

Onshore Gas Gathering (Complete Sections 3, 4, and 5)  
 Offshore Gas Gathering (Complete Sections 3 and 5)

### SECTION 3 - MAOP CALCULATION

Pipe Material:  Steel (Complete Section 3A)  
 Plastic (Complete Sections 3B)

#### Section 3A: Calculations for Steel Pipelines:

Outside Diameter of Pipe: D = 6.625 (in.)  
Nominal Wall Thickness of Pipe: t = 0.188 (in.)  
Specified Minimum Yield Strength (SMYS) for Steel: S = 42,000 (psi)  
S = 24,000 Grade Unknown      S = 42,000 Grade X42  
S = 30,000 Grade A              S = 46,000 Grade X46  
S = 35,000 Grade B              S = 52,000 Grade X52

Design Factor Override - check to override current class location and default to class 3 design factor

Design Factor Used for Steel based on Class Location: F = 0.72  
F = 0.72 for Class 1 Locations      F = 0.50 for Class 3 Locations  
F = 0.60 for Class 2 Locations      F = 0.40 for Class 4 Locations

Longitudinal Joint Factor (Using §192.113): E = 1.0  
E = 1.0 for Seamless, ERW, or DSAW  
E = 0.8 for other pipe manufacturing specification and pipe > 4 inches  
E = 0.6 for furnace butt-weld  
E = 0.6 for other pipe manufacturing process and pipe 4 inches or less

Temperature Derating Factor (Using §192.115): T = 1.000  
T = 1.000 for 250 °F or less      T = 0.900 for 400 °F  
T = 0.967 for 300 °F              T = 0.867 for 450 °F  
T = 0.933 for 350 °F

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MAOP CALCULATION  
FILED

# DCP Form 45

## Gas Pipeline Maximum Allowable Operating Pressure and % of SMYS Calculations



### Compare 1 – 5 to define lowest MAOP:

1. Design MAOP =  $\frac{2 St}{D} \times F \times E \times T$  =  (psig)

2. Test MAOP =  $\frac{\text{Hydrotest pressure}}{HTF}$  =  (psig)

Hydrotest Pressure\*  (psig)

\* Corrected test pressure at maximum elevation (lowest pressure) in test section.

Where HTF= hydrotest factor determined under §192.619(a)(2) HTF

(Use §192.619(a)(2)) summarized below for HTF:

Class Location	Segment Installed before (Nov 12, 1970)	Segment Installed after (Nov 12, 1970)	Converted under §192.15
1	1.10	1.10	1.25
2	1.25	1.25	1.25
3	1.40	1.50	1.50
4	1.40	1.50	1.50

3. Operating Limited MAOP = MAOP limited by pipeline / system, fitting, or equipment.

Item Flange Rating Pressure Rating  (psig)

4. MAOP of Pipeline = Lowest of 1, 2, and 3: MAOP =  (psig)

5. If no test records exist, use grandfathered MAOP (§192.619(a)(3)) based on 5 year previous operating pressure:

Month/Day/Year: \_\_\_\_\_ Highest Operating Pressure:  (psig)

MAOP for Steel Pipeline based on lowest of 1 to 5:  (psig)

6. Pressure at 100% Hoop Stress:  $P_{100\%} = \frac{2 St}{D}$  =  (psig)

Where:  $P_{100\%}$  = Pressure that creates 100% hoop stress

S = Tensile strength of the pipe

D = Outside Diameter

t = wall thickness

7. Hoop Stress as a Percentage of SMYS =  $\frac{MAOP}{P_{100\%}} \times 100$  =  % SMYS

Based on #7:  MAOP produces a hoop stress  $\geq$  20% of SMYS

MAOP produces a hoop stress  $<$ 20%

### Section 3B: Calculations for Plastic Pipelines:

Outside Diameter of Pipe:

D =  (in.)

Nominal Wall Thickness of Pipe:

t =  (in.)

Soil Temperature (for PE3408 pipe only, for all other pipe, enter 100)

T =  Degrees Fahrenheit

Standard Dimension Ratio:

SDR =

Long Term Hydrostatic Strength:

S =  (psi)

Design Service Factor:  F = 0.32 for Dry Gas Service

F = 0.25 for Wet Gas Service

1. Design MAOP =  $\frac{2 St}{(D - t)} \times F$  =  (psig)

2. Alternate method for determining design pressure using SDR of plastic pipe.

Design MAOP =  $\frac{2 S}{(SDR - 1)} \times F$  =  (psig)

# DCP Form 45

## Gas Pipeline Maximum Allowable Operating Pressure and % of SMYS Calculations



3. Test MAOP =  $\frac{\text{Hydrotest pressure}}{\text{HTF}}$  =  (psig)  
 Hydrotest Pressure\*  (psig)

\* Corrected test pressure at maximum elevation (lowest pressure) in test section.  
 Where HTF= Hydrotest factor determined under §192.619(a)(2)(i)  
 (Use §192.619(a)(2)(i) HTF =1.5 for all plastic pipelines regardless of class location.

4. Operating Limited MAOP = MAOP limited by pipeline / system, fitting, or equipment.  
 Item \_\_\_\_\_ Pressure Rating  (psig)

5. MAOP of Pipeline = Lowest of 1, 2, 3, and 4: MAOP =  (psig)

6. If no test records exist, use grandfathered MAOP (§192.619(a)(3)) based on highest operating pressure the 5 years prior to July, 1 1970 for transmission pipelines or the 5 years prior March 15, 2006 for gathering pipelines.  
 Month/Day/Year: \_\_\_\_\_ Highest Operating Pressure:  (psig)

MAOP for Plastic Pipeline based on lowest of 1 to 6:  (psig)

- MAOP is >= 125 psig
- MAOP is <125 psig

### SECTION 4 - ONSHORE GATHERING - REGULATED TYPE A OR B DETERMINATION

Determine if Pipeline is Regulated Type A or Type B based on MAOP or Percent SMYS and class location  
 Designated Start and End Points for regulated segments must be either latitude/longitude coordinates, or stationing addresses.

- N/A; Onshore vacuum line operating <0 psig; Exempt from DOT Part 192
- N/A; Onshore gathering line in Class 1 location; not regulated
- Regulated Type A steel & produces hoop stress >= 20% SMYS or Plastic & MAOP >= 125 psig; Class 2, 3, or 4  
 Regulated Start Point: \_\_\_\_\_ Regulated End Point: \_\_\_\_\_
- Regulated Type B steel & produces hoop stress < 20% SMYS or Plastic & MAOP < 125 psig; Area 1 (Class 3 or 4)  
 Regulated Start Point: \_\_\_\_\_ Regulated End Point: \_\_\_\_\_
- Regulated Class 2 Type B steel & produces hoop stress < 20% SMYS or Plastic & MAOP < 125 psig; Area 2
  - Area 2 (a) Method = 220 yd by 1 mile; 11 to 45 houses (Traditional Class 2 Calculation)
  - Area 2 (b) Method = 150 ft by 1 mile; 11 to 45  Area 2 (c) Method = 150 ft by 1000 feet 5+ houses
  - Regulated Start Point: \_\_\_\_\_ Regulated End Point: \_\_\_\_\_
- Not Regulated Class 2 Type B; Area 2 Method used; Insufficient house count
  - Area 2 Method = 150 ft by 1 mile; 10 or fewer houses  Area 2 Method = 150 ft by 1000 feet; <5 houses

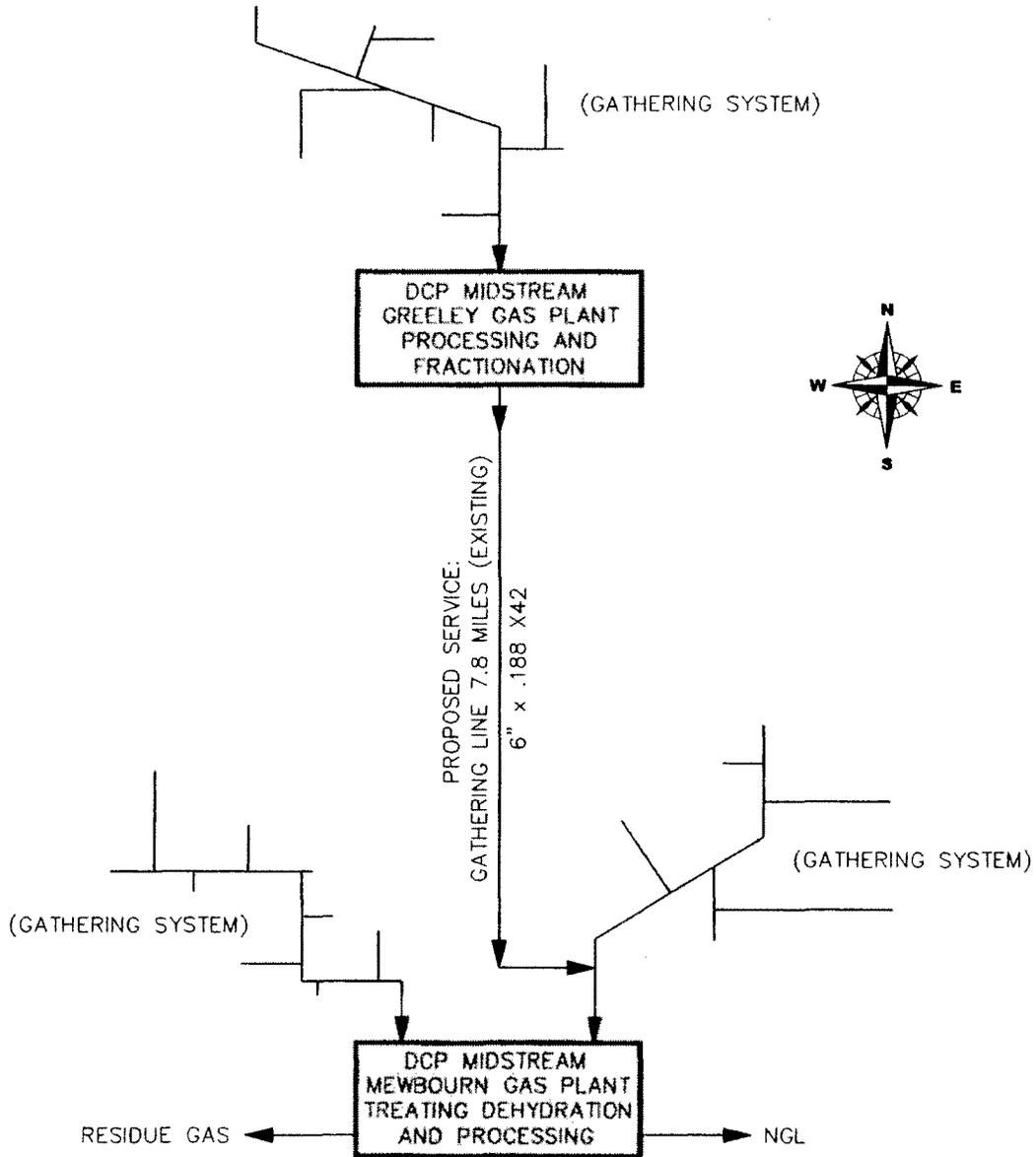
### SECTION 5 - EVALUATION

Person Conducting the Evaluation: <u>Jeannette Jones for Larry Colvin</u> Title: <u>Compliance Coordinator - Weld County</u>	Date: <u>10/22/08</u>
<b>NOTE:</b> Form must be submitted to the GIS group for PODS Update.	

2008 OCT 23 PM 3:21

# FIGURE 1

## EXTEND GATHERING TO MEWBOURN GAS PLANT UNDER DOT 192.8 (a)(2)



J.R.E. / 10-22-08

### SCHEMATIC



**MEWBOURN GAS PLANT ADDITON  
WELD GATHERING SYSTEM**

**Weld County  
COLORADO**

DWG NO. \data\Drawings\Standards\J...Jones\MewbournSchematic

2008 OCT 23 PM 3:21



NATURAL GAS ANALYSIS

PROJECT NO. : 200810091 ANALYSIS NO. : 01  
 COMPANY NAME : DCP MIDSTREAM - LP ANALYSIS DATE : OCTOBER 16, 2008  
 ACCOUNT NO. : SAMPLE DATE : OCTOBER 15, 2008  
 PRODUCER : GREELEY PLANT TO:  
 LEASE NO. : CYLINDER NO. : D-8  
 NAME/DESCRIP : DETHANIZER OVERHEAD

\*\*\*FIELD DATA\*\*\*

SAMPLED BY : D.S. AMBIENT TEMP.:  
 SAMPLE PRES. : 278 GRAVITY :  
 SAMPLE TEMP. : 67 VAPOR PRES. :  
 COMMENTS : SPOT

COMPONENTS	NORM MOLE%	GPM @ 14.65	GPM @ 14.73
HELIUM	0.00	-	-
HYDROGEN	0.00	-	-
OXYGEN/ARGON	0.00	-	-
NITROGEN	0.01	-	-
CO2	2.50	-	-
METHANE	1.31	-	-
ETHANE	90.90	24.180	24.312
PROPANE	5.28	1.447	1.455
ISOBUTANE	0.00	0.000	0.000
N-BUTANE	0.00	0.000	0.000
ISOPENTANE	0.00	0.000	0.000
N-PENTANE	0.00	0.000	0.000
HEXANES+	0.00	0.000	0.000
TOTAL	100.00	25.627	25.767

BTU @ 60 DEG F 14.65 14.73  
 GROSS DRY REAL = 1764.3 1774.0  
 GROSS WET REAL = 1733.5 1743.1

RELATIVE DENSITY ( AIR=1 @14.696 PSIA 60F) : 1.0783

COMPRESSIBILITY FACTOR : 0.99145

NOTE: REFERENCE GPA 2261(ASTM D1945), 2145, & 2172 CURRENT PUBLICATIONS

