



EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY: **05-045-19135** NAME/DESCRIP : **SGV FEDERAL #8-12A (8D)**
 LEASE #: **300115266, COC-58670** **BRAIDEN HEAD**
 FIELD/AREA: **PARACHUTE - #67350**

PROJECT NO. : **202405084** ANALYSIS NO. : **02**
 COMPANY NAME : **CAERUS OIL & GAS LLC** ANALYSIS DATE: **MAY 20, 2024 14:48**
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **MAY 9, 2024 9:00**
 CUSTOMER REF: TO:
 PRODUCER : **CAERUS PICEANCE LLC** EFFECTIVE DATE:

*****FIELD DATA*****

SAMPLE CYCLE: SAMPLE TYPE: **SPOT**
 SAMPLE PRES. : 130 psig PROBE : **NO**
 FLOW PRES. : psig CYLINDER NO. : **ECA-736**
 LAB PRES: psig SAMPLED BY : **ALEX GALLEGOS**
 SAMPLE TEMP. : 50 °f SAMPLING COMPANY: **CAERUS OIL & GAS LLC**
 AMBIENT TEMP.: °f H2S BY STAIN TUBE: **-** ppm mol
 H2O BY STAIN TUBE: **-** #/mmcf CO2 BY STAIN TUBE: **-** Mol %
 FIELD COMMENTS:
 LAB COMMENTS:

<u>COMPONENT</u>	<u>MOLE %</u>	<u>MASS %</u>	<u>GPM @ 14.65</u>	<u>GPM @ 14.73</u>
HELIUM	0.01	0.00	---	---
HYDROGEN	0.10	0.01	---	---
OXYGEN/ARGON	0.00	0.00	---	---
NITROGEN	0.17	0.27	---	---
CARBON DIOXIDE	0.02	0.05	---	---
METHANE	91.4019	81.8341	---	---
ETHANE	5.4288	9.1102	1.4471	1.4550
PROPANE	1.7109	4.2105	0.4697	0.4723
I-BUTANE	0.3310	1.0736	0.1079	0.1085
N-BUTANE	0.3390	1.0996	0.1069	0.1075
I-PENTANE	0.1424	0.5728	0.0510	0.0512
N-PENTANE	0.0865	0.3483	0.0310	0.0311
HEXANES PLUS	0.2595	1.4209	0.0990	0.0993
TOTALS	100.00000	100.00000	2.3126	2.3249

<u>BTEX COMPONENTS</u>	<u>MOLE%</u>	<u>WT%</u>
BENZENE	0.0003	0.0013
TOLUENE	0.0003	0.0016
ETHYLBENZENE	0.0007	0.0041
XYLENES	0.0009	0.0054
TOTAL BTEX	0.0022	0.0124

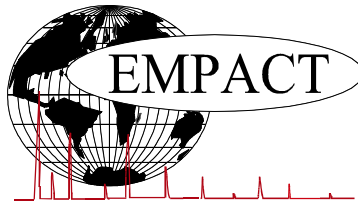
	<u>CALCULATED VALUES**</u>	
	<u>14.65</u>	<u>14.73</u>
BTU @		
LHV NET DRY REAL :	998.7 /scf	1004.1 /scf
NET WET REAL :	981.2 /scf	986.6 /scf
HHV GROSS DRY REAL :	1105.8 /scf	1111.8 /scf
GROSS WET REAL :	1086.5 /scf	1092.5 /scf
NET HEATING VALUE (60 °F ideal reaction):	21189.4 Btu/lbm	21189.4 Btu/lbm
GROSS HEATING VALUE (60°F ideal reaction):	23457.1 Btu/lbm	23457.1 Btu/lbm
RELATIVE DENSITY (AIR=1):	0.6171	0.6171
DENSITY	0.04721 lbm/scf	0.04721 lbm/scf
COMPRESSIBILITY FACTOR :	0.9975	0.9975
REGULAR WOBBE INDEX	1408.6	1408.6

*(DETAILED HYDROCARBON ANALYSIS/NJ 1993)

Mod ASTM D6730, GPA 2261 & GPA 2286.

** (CALC: GPA 2172, GPA 2145 & TP-17 @14.696 & 60 F)

The data presented herein has been acquired by means of current analytical techniques and represents the judicious conclusion EMPACT Analytical Systems, Inc. Results of the analysis can be affected by the sampling conditions, therefore, are only warranted through proper lab protocol. EMPACT assumes no responsibility for interpretation or any consequences from application of the reported information and is the sole liability of the user. The reproduction in any media of this reported information may not be made, in portion or as a whole, without the written permission of EMPACT Analytical Systems, Inc.



**EXTENDED NATURAL GAS ANALYSIS (*DHA)
GLYCALC INFORMATION**

PROJECT NO. :	202405084	ANALYSIS NO. :	02
COMPANY NAME :	CAERUS OIL & GAS LLC	ANALYSIS DATE :	MAY 20, 2024 14:48
ACCOUNT NO. :		SAMPLE DATE :	MAY 9, 2024 9:00
PRODUCER :	CAERUS PICEANCE LLC	CYLINDER NO. :	ECA-736
LEASE NO. :	300115266, COC-58670	SAMPLED BY :	ALEX GALLEGOS
NAME/DESCRIP :	SGV FEDERAL #8-12A (8D) BRAIDEN HEAD		

FIELD DATA		SAMPLE TEMP. :	50
SAMPLE PRES. :	130	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	—		
COMMENTS :	<i>SPOT</i> <i>ppm mol</i> <i>NO PROBE</i>		

<u>Componet</u>	<u>Mole %</u>	<u>Wt %</u>
Helium	0.01	0.00
Hydrogen	0.10	0.01
Carbon Dioxide	0.02	0.05
Nitrogen	0.17	0.27
Methane	91.4019	81.8341
Ethane	5.4288	9.1102
Propane	1.7109	4.2105
Isobutane	0.3310	1.0736
n-Butane	0.3390	1.0996
Isopentane	0.1379	0.5552
n-Pentane	0.0865	0.3483
Cyclopentane	0.0045	0.0176
n-Hexane	0.0291	0.1400
Cyclohexane	0.0168	0.0789
Other Hexanes	0.0752	0.3596
Heptanes	0.0462	0.2569
Methylcyclohexane	0.0329	0.1803
2,2,4 Trimethylpentane	0.0001	0.0006
Benzene	0.0003	0.0013
Toluene	0.0003	0.0016
Ethylbenzene	0.0007	0.0041
Xylenes	0.0009	0.0054
C8+ Heavies	0.0570	0.3922
<u>Subtotal</u>	<u>100.00000</u>	<u>100.00000</u>
<u>Oxygen/Argon</u>	<u>0.00</u>	<u>0.00</u>
Total	100.00000	100.00000

	Total	C6+	C8+	C10+
Calculated Values BTU @	Sample	Fraction	Fraction	Fraction
LHV Net Dry Real:	998.7	4974.6	6181.8	7478.2 Btu/scf
Net Wet Real:	981.2	4887.6	6073.7	7347.5 Btu/scf
HHV Gross Dry Real:	1105.8	5358.2	6659.1	8091.5 Btu/scf
Gross Wet Real:	1086.5	5264.5	6542.7	7950.1 Btu/scf
Other Calculated Values				
Regualr Wobbe Index*	1408.6	2897.8	3231.8	3578.6 Btu/scf
Net Heating Value (60 °F ideal reaction):	21189.4	19413.6	19624.9	19010.3 Btu/lbm
Gross Heating Value (60°F ideal reaction):	23457.1	20910.3	21142.3	20560.6 Btu/lbm
Molar Mass (MW):	17.91809	98.22	123.32	148.906 g/mol
Relative Density (AIR=1):	0.6171	3.3922	4.2566	5.1414 SG
Density:	0.04721	0.25884	0.32493	0.39240 lbm/scf
Compressibility Factor:	0.9975	0.9929	0.9981	0.9997 Z
Liquid Volume real gas @:	14.65	17.7463	0.0987	0.0189 gal/1000 scf

* The Wobbe pressure base in the number considered is based upon the given Pb of the HHV above.
 #DIV/0 or 0 (zero) will appear in the Calculated Value Section when there is no C6+, C8+ or C10+ in the sample to calculate these factors.
 BDL - Below Detection Limit. The H2S LOS has a detection limit of 0.25 ppm. A _ (an underscore) indicates there was no tube pulled for H2S.

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EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PRIMARY DB KEY:	05-045-19135	NAME/DESCRIP :	SGV FEDERAL #8-12A (8D)
LEASE #:	300115266, COC-58670		BRAIDEN HEAD
FIELD/AREA:	PARACHUTE - #67350		
PROJECT NO. :	202405084	ANALYSIS NO. :	02
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OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	MAY 9, 2024 9:00
CUSTOMER REF:		TO:	
PRODUCER :	CAERUS PICEANCE LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	130 psig	PROBE :	NO
FLOW PRES. :	psig	CYLINDER NO. :	ECA-736
LAB PRES:	psig	SAMPLED BY :	ALEX GALLEGOS
SAMPLE TEMP. :	50 °f	SAMPLING COMPANY:	CAERUS OIL & GAS LLC
AMBIENT TEMP.:	°f	H2S BY STAIN TUBE:	- ppm mol
H2O BY STAIN TUBE:	- #/mmcf	CO2 BY STAIN TUBE:	- Mol %
FIELD COMMENTS:			
LAB COMMENTS:			

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.65	GPM @ 14.73
Helium	---	0.01	0.00	---	---
Hydrogen	---	0.10	0.01	---	---
Oxygen/Argon	---	0.00	0.00	---	---
Nitrogen	---	0.17	0.27	---	---
Carbon Dioxide	---	0.02	0.05	---	---
Methane	P1	91.4019	81.8341	---	---
Ethane	P2	5.4288	9.1102	1.447	1.455
Propane	P3	1.7109	4.2105	0.470	0.472
i-Butane	I4	0.3310	1.0736	0.108	0.109
n-Butane	P4	0.3390	1.0996	0.107	0.108
2,2-Dimethylpropane	I5	0.0037	0.0149	0.001	0.001
i-Pentane	I5	0.1342	0.5403	0.049	0.049
n-Pentane	P5	0.0865	0.3483	0.031	0.031
2,2-Dimethylbutane	I6	0.0041	0.0197	0.002	0.002
Cyclopentane	N5	0.0045	0.0176	0.001	0.001
2,3-Dimethylbutane	I6	0.0076	0.0366	0.003	0.003
2-Methylpentane	I6	0.0283	0.1361	0.012	0.012
3-Methylpentane	I6	0.0169	0.0813	0.007	0.007
n-Hexane	P6	0.0291	0.1400	0.012	0.012
2,2-Dimethylpentane	I7	0.0010	0.0056	0.000	0.000
Methylcyclopentane	N6	0.0183	0.0859	0.006	0.006
2,4-Dimethylpentane	I7	0.0020	0.0112	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0005	0.0028	0.000	0.000
Benzene	A6	0.0003	0.0013	0.000	0.000
3,3-Dimethylpentane	I7	0.0006	0.0033	0.000	0.000
Cyclohexane	N6	0.0168	0.0789	0.006	0.006
2-Methylhexane	I7	0.0076	0.0425	0.004	0.004
2,3-Dimethylpentane	I7	0.0024	0.0134	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0019	0.0104	0.001	0.001

3-Methylhexane	I7	0.0067	0.0374	0.003	0.003
1c,3-Dimethylcyclopentane	N7	0.0031	0.0170	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0028	0.0153	0.001	0.001
3-Ethylpentane	I7	0.0005	0.0028	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0041	0.0225	0.002	0.002
2,2,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
n-Heptane	P7	0.0113	0.0632	0.005	0.005
1c,2-Dimethylcyclopentane	N7	0.0004	0.0022	0.000	0.000
Methylcyclohexane	N7	0.0329	0.1803	0.013	0.013
2,2-Dimethylhexane	I8	0.0010	0.0064	0.000	0.000
1,1,3-Trimethylcyclopentane	N7	0.0002	0.0012	0.000	0.000
Ethylcyclopentane	N7	0.0010	0.0055	0.000	0.000
2,5-Dimethylhexane	I8	0.0009	0.0057	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0009	0.0057	0.000	0.000
2,4-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0007	0.0044	0.000	0.000
3,3-Dimethylhexane	I8	0.0002	0.0013	0.000	0.000
2,3,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
2,3,3-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0003	0.0016	0.000	0.000
2,3-Dimethylhexane	I8	0.0008	0.0051	0.000	0.000
2-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
1,1,2-Trimethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0031	0.0198	0.002	0.002
4-Methylheptane	I8	0.0012	0.0076	0.001	0.001
3-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
3,4-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
1c,2c,4-Trimethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
3-Methylheptane	I8	0.0023	0.0147	0.001	0.001
1c,2t,3-Trimethylcyclopentane	N8	0.0053	0.0332	0.003	0.003
3-Ethylhexane	I8	0.0005	0.0032	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0023	0.0144	0.001	0.001
1,1-Dimethylcyclohexane	N8	0.0007	0.0044	0.000	0.000
2,2,5-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
3c-Ethylmethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
3t-Ethylmethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
2t-Ethylmethylcyclopentane	N8	0.0003	0.0019	0.000	0.000
2,2,4-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0019	0.0119	0.001	0.001
1t,3-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
UnknownC7s	U7	0.0001	0.0006	0.000	0.000
n-Octane	P8	0.0042	0.0268	0.002	0.002
1c,4-Dimethylcyclohexane	N8	0.0012	0.0075	0.001	0.001
i-Propylcyclopentane	I8	0.0001	0.0006	0.000	0.000
2,3,5-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
2,2,3,4-Tetramethylpentane	I9	0.0001	0.0007	0.000	0.000
2,3,4-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
1c,2-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
2,2-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0017	0.0120	0.001	0.001
2,2,3-Trimethylhexane	I9	0.0003	0.0021	0.000	0.000
2,4-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
Ethylcyclohexane	N8	0.0012	0.0075	0.001	0.001
n-Propylcyclopentane	N8	0.0006	0.0037	0.000	0.000
1c,3c,5-Trimethylcyclohexane	N9	0.0002	0.0014	0.000	0.000
2,5-Dimethylheptane	I9	0.0009	0.0064	0.001	0.001
3,3-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
3,5-Dimethylheptane	I9	0.0002	0.0014	0.000	0.000
2,6-Dimethylheptane	I9	0.0001	0.0007	0.000	0.000
1,1,3-Trimethylcyclohexane	N9	0.0001	0.0007	0.000	0.000
Ethylbenzene	I8	0.0007	0.0041	0.000	0.000

1,3-Dimethylbenzene (m-Xylene)	A8	0.0005	0.0030	0.000	0.000
1,4-Dimethylbenzene (p-Xylene)	A8	0.0002	0.0012	0.000	0.000
3,4-Dimethylheptane (2)	I9	0.0001	0.0007	0.000	0.000
4-Ethylheptane	I9	0.0001	0.0007	0.000	0.000
4-Methyloctane	I9	0.0008	0.0057	0.000	0.000
3-Ethylheptane	I9	0.0002	0.0014	0.000	0.000
3-Methyloctane	I9	0.0002	0.0014	0.000	0.000
1c,2t,4c-Trimethylcyclohexane	I9	0.0011	0.0078	0.001	0.001
1,1,2-Trimethylcyclohexane	N9	0.0001	0.0007	0.000	0.000
3,3-Diethylpentane	I9	0.0001	0.0007	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0002	0.0012	0.000	0.000
i-Butylcyclopentane	N9	0.0008	0.0056	0.000	0.000
n-Nonane	P9	0.0020	0.0143	0.001	0.001
1,1-Methylethylcyclohexane	N9	0.0004	0.0028	0.000	0.000
i-Propylbenzene	A9	0.0003	0.0020	0.000	0.000
i-Propylcyclohexane	N9	0.0003	0.0021	0.000	0.000
2,2-Dimethyloctane	I10	0.0001	0.0008	0.000	0.000
2,4-Dimethyloctane	I10	0.0002	0.0016	0.000	0.000
2,6-Dimethyloctane	I10	0.0001	0.0008	0.000	0.000
2,5-Dimethyloctane	I10	0.0002	0.0016	0.000	0.000
n-Butylcyclopentane	N9	0.0006	0.0042	0.000	0.000
3,3-Dimethyloctane	I10	0.0003	0.0024	0.000	0.000
n-Propylbenzene	A9	0.0006	0.0040	0.000	0.000
3,6-Dimethyloctane	I10	0.0002	0.0016	0.000	0.000
3-Methyl-5-ethylheptane	I10	0.0002	0.0016	0.000	0.000
1,3-Methylethylbenzene	A9	0.0002	0.0013	0.000	0.000
1,4-Methylethylbenzene	A9	0.0001	0.0007	0.000	0.000
1,3,5-Trimethylbenzene	A9	0.0002	0.0013	0.000	0.000
2,3-Dimethyloctane	I10	0.0001	0.0008	0.000	0.000
5-Methylnonane	I10	0.0003	0.0024	0.000	0.000
1,2-Methylethylbenzene	A9	0.0001	0.0007	0.000	0.000
2-Methylnonane	I10	0.0003	0.0024	0.000	0.000
3-Ethylloctane	I10	0.0002	0.0016	0.000	0.000
3-Methylnonane	I10	0.0003	0.0024	0.000	0.000
t-Butylbenzene	A10	0.0005	0.0037	0.000	0.000
i-Butylcyclohexane	N10	0.0002	0.0016	0.000	0.000
1t-Methyl-2-n-propylcyclohexane	I10	0.0001	0.0008	0.000	0.000
UnknownC9s	U9	0.0024	0.0172	0.001	0.001
n-Decane	P10	0.0008	0.0064	0.000	0.000
1,4-Methyl-i-propylbenzene	A10	0.0001	0.0007	0.000	0.000
1,2-Methyl-i-propylbenzene	A10	0.0001	0.0007	0.000	0.000
3-Ethylnonane	I10	0.0001	0.0009	0.000	0.000
1,3-Methyl-n-propylbenzene	A10	0.0001	0.0007	0.000	0.000
n-Butylbenzene	A10	0.0001	0.0007	0.000	0.000
1,3-Dimethyl-5-ethylbenzene	A10	0.0001	0.0007	0.000	0.000
1,2-Methyl-n-propylbenzene	A10	0.0001	0.0007	0.000	0.000
1,3-Dimethyl-4-ethylbenzene	A10	0.0001	0.0007	0.000	0.000
1,3-Dimethyl-2-ethylbenzene	A10	0.0001	0.0007	0.000	0.000
1,2-Dimethyl-3-ethylbenzene	A10	0.0001	0.0007	0.000	0.000
1,2-Ethyl-i-propylbenzene	A10	0.0001	0.0008	0.000	0.000
1,4-Methyl-t-butylbenzene	A11	0.0001	0.0008	0.000	0.000
UnknownC10s	U10	0.0018	0.0143	0.001	0.001
n-Undecane	P11	0.0006	0.0052	0.000	0.000
1,4-Ethyl-i-propylbenzene	A11	0.0001	0.0008	0.000	0.000
1,2-Methyl-n-butylbenzene	A11	0.0001	0.0008	0.000	0.000
1,2-Ethyl-n-propylbenzene	A11	0.0001	0.0008	0.000	0.000

n-Pentylbenzene	A11	0.0001	0.0008	0.000	0.000
1,2-Di-n-propylbenzene	A11	0.0001	0.0009	0.000	0.000
1,4-Di-i-propylbenzene	A11	0.0001	0.0009	0.000	0.000
Tetrahydronaphthalene	A10	0.0001	0.0007	0.000	0.000
Naphthalene	A10	0.0001	0.0007	0.000	0.000
1-t-Butyl-3,5-dimethylbenzene	A12	0.0001	0.0009	0.000	0.000
1,4-Ethyl-t-butylbenzene	A11	0.0001	0.0009	0.000	0.000
UnknownC11s	U11	0.0007	0.0061	0.000	0.000
n-Dodecane	P12	0.0003	0.0028	0.000	0.000
1,3,5-Triethylbenzene	A12	0.0001	0.0009	0.000	0.000
1,4-Methyl-n-pentylbenzene	A12	0.0001	0.0009	0.000	0.000
2-Methylnaphthalene	A11	0.0001	0.0008	0.000	0.000
UnknownC12s	U12	0.0005	0.0043	0.000	0.000
n-Tridecane	P13	0.0002	0.0021	0.000	0.000
UnknownC13s	U13	0.0001	0.0010	0.000	0.000
n-Tetradecane	P14	0.0001	0.0011	0.000	0.000
UnknownC14s	U14	0.0001	0.0011	0.000	0.000
UnknownC15s	U15	0.0002	0.0023	0.000	0.000
TOTAL		100.00000	100.00000	2.3126	2.3249

CALCULATED VALUES**

BTEX COMPONENTS	MOLE%	WT%	BTU @	14.65	14.73
BENZENE	0.0003	0.0013	LHV NET DRY REAL :	998.7 /scf	1004.1 /scf
TOLUENE	0.0003	0.0016	NET WET REAL :	981.2 /scf	986.6 /scf
ETHYLBENZENE	0.0007	0.0041	HHV GROSS DRY REAL :	1105.8 /scf	1111.8 /scf
XYLENES	0.0009	0.0054	GROSS WET REAL :	1086.5 /scf	1092.5 /scf
TOTAL BTEX	0.0022	0.0124	NET HEATING VALUE (60 °F ideal reaction):		21189.4 Btu/lbm
			GROSS HEATING VALUE (60°F ideal reaction):		23457.1 Btu/lbm
			RELATIVE DENSITY (AIR=1):		0.6171
			DENSITY		0.04721 lb/scf
			COMPRESSIBILITY FACTOR :		0.9975
			REGULAR WOBBE INDEX		1408.6

*(DETAILED HYDROCARBON ANALYSIS/NJ 1993)
Mod ASTM D6730, GPA 2261 & GPA 2286.

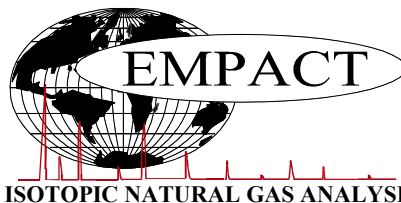
** (CALC: GPA 2172, GPA 2145 & TP-17 @14.696 & 60 F)

C6+ Fraction of DHA Gas Analysis @60°F, 14.696 psia

Net Dry Ideal BTU	4955 /scf	Relative Density - SG (Air=1)	3.3922	C6+ factors
Gross Dry Ideal BTU	5337.1 /scf	Z Compressibility Factor	0.99294	0.99173
Net Dry Ideal BTU	19413.6 /lb	Density Factor	258.836 lbm/1000 ft3	
Gross Dry Ideal BTU	20910.3 /lb	Molar Mass or MW	98.22 g/mol	
		Volume Liquid Ideal gas	0.099 scf/gal	22.5

This hexanes plus fraction may be applied in place of published C6+ factors. The Z & GPM need additional calc for C6+ factors.
#DIV/0 or 0 (zero) will appear in this section when there is no hexanes plus in the sample to calculate C6+ factors.

The data presented herein has been acquired by means of current analytical techniques and represents the judicious conclusion EMPACT Analytical Systems, Inc. Results of the analysis can be affected by the sampling conditions, therefore, are only warranted through proper lab protocol. EMPACT assumes no responsibility for interpretation or any consequences from application of the reported information and is the sole liability of the user. The reproduction in any media of this reported information may not be made, in portion or as a whole, without the written permission of EMPACT Analytical Systems, Inc.



ISOTOPIC NATURAL GAS ANALYSIS

PRIMARY DB KEY: **05-045-19135** NAME/DESCRIP : **SGV FEDERAL #8-12A (8D)**
 LEASE #: **300115266, COC-58670** **BRAIDEN HEAD**
 FIELD/AREA: **PARACHUTE - #67350**

PROJECT NO. : **202405084** ANALYSIS NO. : **02**
 COMPANY NAME : **CAERUS OIL & GAS LLC** ANALYSIS DATE: **MAY 28, 2024 16:12**
 OFFICE / BRANCH: **PARACHUTE, CO** SAMPLE DATE : **MAY 9, 2024 9:00**
 CUSTOMER REF: **TO:**
 PRODUCER : **CAERUS PICEANCE LLC** EFFECTIVE DATE:

*****FIELD DATA*****

SAMPLE CYCLE: SAMPLE TYPE: **SPOT**
 SAMPLE PRES. : 130 psig PROBE : **NO**
 FLOW PRES. : psig CYLINDER NO. : **ECA-736**
 LAB PRES: psig SAMPLED BY : **ALEX GALLEGOS**
 SAMPLE TEMP. : 50 °f SAMPLING COMPANY: **CAERUS OIL & GAS LLC**
 AMBIENT TEMP.: °f H2S BY STAIN TUBE: **-** ppm mol
 H2O BY STAIN TUBE: **-** #/mmcf CO2 BY STAIN TUBE: **-** Mol %
 FIELD COMMENTS:
 LAB COMMENTS:

COMPONENTS	NORM. MOLE%	GPM @ 14.65	d13C % VPDB	dD % VSMOW
HELIUM	0.01	-	-	-
HYDROGEN	0.10	-	-	-
OXYGEN/ARGON	0.00	-	-	-
NITROGEN	0.17	-	-	-
CO2	0.02	-	0.0	-
METHANE	91.40	-	-38.6	-184
ETHANE	5.43	1.4471	-27.6	-
PROPANE	1.71	0.4697	-25.4	-
ISOBUTANE	0.33	0.1079	-25.8	-
N-BUTANE	0.34	0.1069	-24.6	-
ISOPENTANE	0.14	0.0510	-25.3	-
N-PENTANE	0.09	0.0330	-24.1	-
HEXANES+	0.26	0.0949	-	-
TOTAL	100.00	2.3105		

BTU @ 60 DEG F

14.65
 GROSS DRY REAL = 1104.5 /scf
 GROSS SATURATED REAL = 1085.2 /scf

RELATIVE DENSITY (AIR=1 @14.696 PSIA 60F) 0.6171
 GRAVITY (LB/SCF) 0.04710
 COMPRESSIBILITY FACTOR : 0.99750

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

Reference: Per GPA 2172-14 sec 9 **The C6+ is derived from the following ratios of C6, C7 & C8+ respectively: 60% 30% 10%**

The NG Composition File #: **202405084-02-A-146**
 The Isotopic Data File #: **DIG-035591**

Note: Stable isotope results based on multi-point laboratory calibration

Precision δ¹³C < 0.5 ‰ Precision δD < 5.0 ‰

Values in red represent low peak heights. Interpret with caution.

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