EXTENDED NATURAL GAS ANALYSIS (*DHA)

MAIN PAGE

PRIMARY DB KEY:	**05-045-09022**	NAME/DESCRIP :	**GG3 CHEVRON 33-7D CASING**
LEASE #:	**110170021**		
FIELD/AREA:	**GRAND VALLEY - #31290**		

PROJECT NO. :	**202405125**	ANALYSIS NO. :	**01**
COMPANY NAME :	**CAERUS OIL & GAS LLC**	ANALYSIS DATE:	MAY 30, 2024 12:40
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	MAY 23, 2024 7:30
CUSTOMER REF:		TO:	
PRODUCER :	CAERUS PICEANCE LLC	EFFECTIVE DATE:	

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

SAMPLE CYCLE:			SAMPLE TYPE:	SPOT
SAMPLE PRES. :	339	psig	PROBE :	NO
FLOW PRES. :		psig	CYLINDER NO. :	ECA-822
LAB PRES:		psig	SAMPLED BY :	ALEX GALLEGOS
SAMPLE TEMP. :	43	ºf	SAMPLING COMPANY:	CAERUS OIL & GAS LLC
AMBIENT TEMP.:		ºf	H2S BY STAIN TUBE:	ppm mol
H2O BY STAIN TUBE:		#/mmcf	CO2 BY STAIN TUBE:	Mol %

FIELD COMMENTS:

LAB COMMENTS: ***Possible moisture observed.***

COMPONENT	MOLE %	MASS %	GPM @ 14.65	GPM @ 14.73
ALCOHOLS	0.0063	0.0110	0.0010	0.0010
HELIUM	0.00	0.00	---	---
HYDROGEN	0.06	0.01	---	---
OXYGEN/ARGON	0.00	0.00	---	---
NITROGEN	0.08	0.12	---	---
CARBON DIOXIDE	2.15	5.02	---	---
METHANE	87.2770	74.2959	---	---
ETHANE	7.1851	11.4642	1.9161	1.9266
PROPANE	1.9815	4.6364	0.5447	0.5477
I-BUTANE	0.4687	1.4455	0.1529	0.1538
N-BUTANE	0.3430	1.0579	0.1079	0.1085
I-PENTANE	0.1723	0.6592	0.0630	0.0633
N-PENTANE	0.0858	0.3285	0.0310	0.0312
HEXANES PLUS	0.1903	0.9514	0.0770	0.0772
TOTALS	100.00000	100.00000	2.8936	2.9093

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0028	0.0116
TOLUENE	0.0014	0.0068
ETHYLBENZENE	0.0001	0.0006
XYLENES	0.0004	0.0023
TOTAL BTEX	0.0047	0.0213

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

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

CALCULATED VALUES**

	BTU @	14.65		14.73	
LHV	NET DRY REAL :	998.3	**/scf**	1003.8	**/scf**
	NET WET REAL :	980.8	**/scf**	986.3	**/scf**
HHV	GROSS DRY REAL :	1104.5	**/scf**	1110.5	**/scf**
	GROSS WET REAL :	1085.2	**/scf**	1091.2	**/scf**

NET HEATING VALUE (60 °F ideal reaction):	20116.6	**Btu/lbm**
GROSS HEATING VALUE (60°F ideal reaction):	22255.4	**Btu/lbm**
RELATIVE DENSITY (AIR=1):	0.6506	
DENSITY	0.04966	**lbm/scf**
COMPRESSIBILITY FACTOR :	0.9973	
REGULAR WOBBE INDEX	1370.0	

EMPACT

EXTENDED NATURAL GAS ANALYSIS (*DHA)

GLYCALC INFORMATION

PROJECT NO. :	202405125	ANALYSIS NO. :	01
COMPANY NAME :	CAERUS OIL & GAS LLC	ANALYSIS DATE:	MAY 30, 2024 12:40
ACCOUNT NO. :		SAMPLE DATE :	MAY 23, 2024 7:30
PRODUCER :	CAERUS PICEANCE LLC	CYLINDER NO. :	ECA-822
LEASE NO. :	110170021	SAMPLED BY :	ALEX GALLEGOS
NAME/DESCRIP :	GG3 CHEVRON 33-7D CASING		
FIELD DATA		SAMPLE TEMP. :	43
SAMPLE PRES. :	339	AMBIENT TEMP.:	
H2S BY STAIN TUBE:	_ *ppm mol*		
COMMENTS :	***SPOT*** ***NO PROBE*** ***Possible moisture observed.***		

Componet	Mole %	Wt %
Helium	0.00	0.00
Hydrogen	0.06	0.01
Carbon Dioxide	2.15	5.02
Nitrogen	0.08	0.12
Methane	87.2770	74.2959
Ethane	7.1851	11.4642
Propane	1.9815	4.6364
Isobutane	0.4687	1.4455
n-Butane	0.3430	1.0579
Isopentane	0.1691	0.6473
n-Pentane	0.0858	0.3285
Cyclopentane	0.0032	0.0119
n-Hexane	0.0299	0.1367
Cyclohexane	0.0087	0.0388
Other Hexanes	0.0772	0.3516
Heptanes	0.0337	0.1783
Methylcyclohexane	0.0109	0.0568
2,2,4 Trimethylpentane	0.0000	0.0000
Benzene	0.0028	0.0116
Toluene	0.0014	0.0068
Ethylbenzene	0.0001	0.0006
Xylenes	0.0004	0.0023
C8+ Heavies	0.0252	0.1679
Subtotal	99.99370	99.98900
Oxygen/Argon	0.00	0.00
Alcohols	0.0063	0.0110
Total	100.00000	100.00000

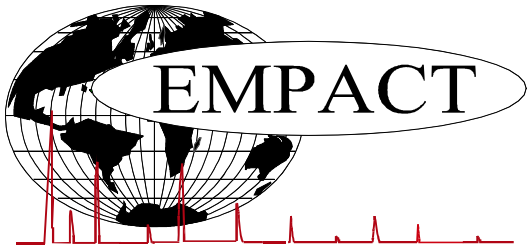
Calculated Values BTU @ **14.65**		**Total Sample**	**C6+ Fraction**	**C8+ Fraction**	**C10+ Fraction**	
LHV	Net Dry Real:	998.3	4723.1	5764.9	6610.4	**Btu/scf**
	Net Wet Real:	980.8	4640.5	5664.1	6494.8	**Btu/scf**
HHV	Gross Dry Real:	1104.5	5082.9	6160.3	7029.7	**Btu/scf**
	Gross Wet Real:	1085.2	4994.0	6052.6	6906.8	**Btu/scf**
Other Calculated Values						
Regualr Wobbe Index*		1370.0	2801.5	2966.3	3239.6	**Btu/scf**
Net Heating Value (60 °F ideal reaction):		20116.6	18906.9	17080.5	18316.1	**Btu/lbm**
Gross Heating Value (60°F ideal reaction):		22255.4	20344.7	18249.9	19478.5	**Btu/lbm**
Molar Mass (MW):		18.84485	94.29	125.493	137.092	**g/mol**
Relative Density (AIR=1):		0.6506	3.2554	4.3325	4.7333	**SG**
Density:		0.04966	0.24848	0.33070	0.36125	**lbm/scf**
Compressiblity Factor:		0.9973	0.9913	0.9991	0.9995	**Z**
Liquid Volume real gas @:	**14.65**	17.9766	0.0768	0.01	0.004	**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 uderscore) indicates there was no tube pulled for H2S.

EMPACT Analytical Systems Inc. 365 S Main St Brighton, CO 80601 303-637-0150



EXTENDED NATURAL GAS ANALYSIS (*DHA)

DHA COMPONENT LIST

PRIMARY DB KEY:	**05-045-09022**	NAME/DESCRIP :	**GG3 CHEVRON 33-7D**
LEASE #:	**110170021**		**CASING**
FIELD/AREA:	**GRAND VALLEY - #31290**		
PROJECT NO. :	**202405125**	ANALYSIS NO. :	**01**
COMPANY NAME :	**CAERUS OIL & GAS LLC**	ANALYSIS DATE:	MAY 30, 2024 12:40
OFFICE / BRANCH:	PARACHUTE, CO	SAMPLE DATE :	MAY 23, 2024 7:30
CUSTOMER REF:		TO:	
PRODUCER :	CAERUS PICEANCE LLC	EFFECTIVE DATE:	
FIELD DATA			
SAMPLE CYCLE:		SAMPLE TYPE:	SPOT
SAMPLE PRES. :	339 psig	PROBE :	NO
FLOW PRES. :	psig	CYLINDER NO. :	ECA-822
LAB PRES:	psig	SAMPLED BY :	ALEX GALLEGOS
SAMPLE TEMP. :	43 ºf	SAMPLING COMPANY:	CAERUS OIL & GAS LLC
AMBIENT TEMP.:	ºf	H2S BY STAIN TUBE:	_ ppm mol
H2O BY STAIN TUBE:	- #/mmcf	CO2 BY STAIN TUBE:	- Mol %
FIELD COMMENTS:			
LAB COMMENTS:	***Possible moisture observed.***		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ **14.65**	GPM @ **14.73**
Helium	---	0.00	0.00	---	---
Hydrogen	---	0.06	0.01	---	---
Oxygen/Argon	---	0.00	0.00	---	---
Nitrogen	---	0.08	0.12	---	---
Carbon Dioxide	---	2.15	5.02	---	---
Methane	P1	87.2770	74.2959	---	---
Ethane	P2	7.1851	11.4642	1.916	1.927
Propane	P3	1.9815	4.6364	0.545	0.548
i-Butane	I4	0.4687	1.4455	0.153	0.154
Methanol	X1	0.0062	0.0106	0.001	0.001
n-Butane	P4	0.3430	1.0579	0.108	0.109
2,2-Dimethylpropane	I5	0.0046	0.0176	0.002	0.002
i-Pentane	I5	0.1645	0.6297	0.060	0.060
n-Pentane	P5	0.0858	0.3285	0.031	0.031
2,2-Dimethylbutane	I6	0.0056	0.0256	0.002	0.002
Cyclopentane	N5	0.0032	0.0119	0.001	0.001
2,3-Dimethylbutane	I6	0.0088	0.0402	0.004	0.004
2-Methylpentane	I6	0.0331	0.1513	0.014	0.014
3-Methylpentane	I6	0.0175	0.0800	0.007	0.007
n-Hexane	P6	0.0299	0.1367	0.012	0.012
2-Butanol	X4	0.0001	0.0004	0.000	0.000
2,2-Dimethylpentane	I7	0.0011	0.0058	0.001	0.001
Methylcyclopentane	N6	0.0122	0.0545	0.004	0.004
2,4-Dimethylpentane	I7	0.0020	0.0106	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0005	0.0026	0.000	0.000
Benzene	A6	0.0028	0.0116	0.001	0.001
3,3-Dimethylpentane	I7	0.0006	0.0032	0.000	0.000

EMPACT Analytical Systems, Inc 365 S. Main Street, Brighton, CO 80601 303-637-0150

Cyclohexane	N6	0.0087	0.0388	0.003	0.003
2-Methylhexane	I7	0.0071	0.0377	0.003	0.003
2,3-Dimethylpentane	I7	0.0015	0.0080	0.001	0.001
1,1-Dimethylcyclopentane	N7	0.0011	0.0057	0.000	0.000
3-Methylhexane	I7	0.0058	0.0308	0.003	0.003
1c,3-Dimethylcyclopentane	N7	0.0015	0.0078	0.001	0.001
1t,3-Dimethylcyclopentane	N7	0.0013	0.0068	0.001	0.001
3-Ethylpentane	I7	0.0002	0.0011	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0021	0.0109	0.001	0.001
n-Heptane	P7	0.0084	0.0447	0.004	0.004
1c,2-Dimethylcyclopentane	N7	0.0002	0.0011	0.000	0.000
Methylcyclohexane	N7	0.0109	0.0568	0.004	0.004
2,2-Dimethylhexane	I8	0.0003	0.0018	0.000	0.000
Ethylcyclopentane	N7	0.0003	0.0015	0.000	0.000
2,5-Dimethylhexane	I8	0.0003	0.0018	0.000	0.000
2,2,3-Trimethylpentane	I8	0.0003	0.0018	0.000	0.000
1c,2t,4-Trimethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
3,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
Toluene	A7	0.0014	0.0068	0.000	0.000
2,3-Dimethylhexane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0004	0.0024	0.000	0.000
4-Methylheptane	I8	0.0001	0.0006	0.000	0.000
3-Methylheptane	I8	0.0002	0.0012	0.000	0.000
1c,2t,3-Trimethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
1,1-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
n-Octane	P8	0.0001	0.0006	0.000	0.000
1,1,4-Trimethylcyclohexane	N9	0.0001	0.0007	0.000	0.000
Ethylbenzene	I8	0.0001	0.0006	0.000	0.000
1,3-Dimethylbenzene (m-Xylene)	A8	0.0001	0.0006	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0003	0.0017	0.000	0.000
i-Propylbenzene	A9	0.0002	0.0013	0.000	0.000
3,6-Dimethyloctane	I10	0.0015	0.0113	0.001	0.001
1,3-Methylethylbenzene	A9	0.0053	0.0338	0.003	0.003
1,4-Methylethylbenzene	A9	0.0025	0.0159	0.001	0.001
1,3,5-Trimethylbenzene	A9	0.0025	0.0159	0.001	0.001
1,2-Methylethylbenzene	A9	0.0020	0.0127	0.001	0.001
2-Methylnonane	I10	0.0001	0.0007	0.000	0.000
3-Methylnonane	I10	0.0001	0.0007	0.000	0.000
t-Butylbenzene	A10	0.0063	0.0449	0.003	0.003
i-Butylbenzene	A10	0.0001	0.0007	0.000	0.000
sec-Butylbenzene	A10	0.0001	0.0007	0.000	0.000
n-Decane	P10	0.0001	0.0007	0.000	0.000
1,2,3-Trimethylbenzene	A9	0.0007	0.0045	0.000	0.000
1,3-Methyl-i-propylbenzene	A10	0.0001	0.0007	0.000	0.000
1,3-Diethylbenzene	A10	0.0001	0.0007	0.000	0.000
1,3-Methyl-n-propylbenzene	A10	0.0001	0.0007	0.000	0.000
1,4-Diethylbenzene	A10	0.0001	0.0007	0.000	0.000
n-Butylbenzene	A10	0.0001	0.0007	0.000	0.000
1,4-Methyl-t-butylbenzene	A11	0.0001	0.0008	0.000	0.000
n-Undecane	P11	0.0001	0.0008	0.000	0.000
UnknownC11s	U11	0.0003	0.0025	0.000	0.000
UnknownC12s	U12	0.0001	0.0008	0.000	0.000
TOTAL		100.00000	100.00000	2.8936	2.9093

BTEX COMPONENTS	MOLE%	WT%
BENZENE	0.0028	0.0116
TOLUENE	0.0014	0.0068
ETHYLBENZENE	0.0001	0.0006
XYLENES	0.0004	0.0023
TOTAL BTEX	0.0047	0.0213

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

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

CALCULATED VALUES**

	BTU @	14.65	14.73	
LHV	NET DRY REAL :	998.3 /scf	1003.8	/scf
	NET WET REAL :	980.8 /scf	986.3	/scf
HHV	GROSS DRY REAL :	1104.5 /scf	1110.5	/scf
	GROSS WET REAL :	1085.2 /scf	1091.2	/scf
	NET HEATING VALUE (60 °F ideal reaction):		20116.6	Btu/lbm
	GROSS HEATING VALUE (60°F ideal reaction):		22255.4	Btu/lbm
	RELATIVE DENSITY (AIR=1):		0.6506	
	DENSITY		0.04966	lb/scf
	COMPRESSIBILITY FACTOR :		0.9973	
	REGULAR WOBBE INDEX		1370.0	

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

					C6+factors
Net Dry Ideal BTU	4696.8 /scf	Relative Density - SG (Air=1)	3.2554		0.99014
Gross Dry Ideal BTU	5054.6 /scf	Z Compressiblity Factor	0.99131		
Net Dry Ideal BTU	18906.9 /lb	Density Factor	248.477	lbm/1000 ft3	
Gross Dry Ideal BTU	20344.7 /lb	Molar Mass or MW	94.29	g/mol	
		Volume Liquid Ideal gas	0.077	scf/gal	23.2

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.

EMPACT Analytical Systems, Inc 365 S. Main Street, Brighton, CO 80601 303-637-0150