## EXTENDED NATURAL GAS ANALYSIS (*DHA)

### MAIN PAGE

| | | | |
|---|---|---|---|
| PRIMARY DB KEY: | **05-045-08959** | NAME/DESCRIP : | **N5A COUEY FEDERAL 5-14B** |
| LEASE #: | **05-045-08959** | | **BRAIDEN HEAD** |
| FIELD/AREA: | | | |

| | | | |
|---|---|---|---|
| PROJECT NO. : | **202107021** | ANALYSIS NO. : | **03** |
| COMPANY NAME : | **CAERUS OIL & GAS LLC** | ANALYSIS DATE: | JULY 09, 2021 06:17 |
| OFFICE / BRANCH: | PARACHUTE, CO | SAMPLE DATE : | JUNE 30, 2021 |
| CUSTOMER REF: | | TO: | |
| PRODUCER : | CAERUS OIL & GAS LLC | EFFECTIVE DATE: | |

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

| | | | | |
|---|---|---|---|---|
| SAMPLE CYCLE: | | | SAMPLE TYPE: | SPOT |
| SAMPLE PRES. : | 40 | psig | PROBE : | NO |
| FLOW PRES. : | | psig | CYLINDER NO. : | ECA-716 |
| LAB PRES: | | psig | SAMPLED BY : | MIKE KELLEY |
| SAMPLE TEMP. : | 63 | ºf | SAMPLING COMPANY: | COG |
| AMBIENT TEMP.: | | ºf | H2S BY STAIN TUBE: | - ppm |
| H2O BY STAIN TUBE: | - | #/mmcf | CO2 BY STAIN TUBE: | - Mol % |

FIELD COMMENTS:

LAB COMMENTS:

| COMPONENT | MOLE % | MASS % | GPM @ 14.65 | GPM @ 14.73 |
|---|---|---|---|---|
| ALCOHOLS | 0.0236 | 0.0413 | 0.0030 | 0.0030 |
| HELIUM | 0.06 | 0.01 | --- | --- |
| HYDROGEN | 1.49 | 0.16 | --- | --- |
| OXYGEN/ARGON | 0.03 | 0.05 | --- | --- |
| NITROGEN | 3.57 | 5.47 | --- | --- |
| CARBON DIOXIDE | 0.07 | 0.17 | --- | --- |
| METHANE | 87.1936 | 76.4598 | --- | --- |
| ETHANE | 4.1242 | 6.7786 | 1.0992 | 1.1052 |
| PROPANE | 1.6401 | 3.9531 | 0.4507 | 0.4531 |
| I-BUTANE | 0.4491 | 1.4268 | 0.1469 | 0.1477 |
| N-BUTANE | 0.4996 | 1.5872 | 0.1569 | 0.1577 |
| I-PENTANE | 0.2385 | 0.9398 | 0.0859 | 0.0864 |
| N-PENTANE | 0.1903 | 0.7505 | 0.0689 | 0.0693 |
| HEXANES PLUS | 0.4210 | 2.2029 | 0.1630 | 0.1635 |
| TOTALS | 100.00000 | 100.00000 | 2.1745 | 2.1859 |

| BTEX COMPONENTS | MOLE% | WT% |
|---|---|---|
| BENZENE | 0.0092 | 0.0393 |
| TOLUENE | 0.0180 | 0.0907 |
| ETHYLBENZENE | 0.0011 | 0.0064 |
| XYLENES | 0.0079 | 0.0458 |
| TOTAL BTEX | 0.0362 | 0.1822 |

**(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 : | 964.9 | **/scf** | 970.1 | **/scf** |
| | NET WET REAL : | 948.0 | **/scf** | 953.2 | **/scf** |
| HHV | GROSS DRY REAL : | 1068.0 | **/scf** | 1073.8 | **/scf** |
| | GROSS WET REAL : | 1049.3 | **/scf** | 1055.1 | **/scf** |

| | | |
|---|---|---|
| NET HEATING VALUE (60 °F ideal reaction): | 20049.1 | **Btu/lbm** |
| GROSS HEATING VALUE (60°F ideal reaction): | 22190.2 | **Btu/lbm** |
| RELATIVE DENSITY (AIR=1): | 0.6306 | |
| DENSITY | 0.04821 | **lbm/scf** |
| COMPRESSIBILITY FACTOR : | 0.9976 | |
| REGULAR WOBBE INDEX | 1345.9 | |

EMPACT

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

**GLYCALC INFORMATION**

| | | | |
|---|---|---|---|
| PROJECT NO. : | 202107021 | ANALYSIS NO. : | 03 |
| COMPANY NAME : | CAERUS OIL & GAS LLC | ANALYSIS DATE: | JULY 09, 2021 06:17 |
| ACCOUNT NO. : | | SAMPLE DATE : | JUNE 30, 2021 |
| PRODUCER : | CAERUS OIL & GAS LLC | CYLINDER NO. : | ECA-716 |
| LEASE NO. : | 05-045-08959 | SAMPLED BY : | MIKE KELLEY |
| NAME/DESCRIP : | N5A COUEY FEDERAL 5-14B<br>BRAIDEN HEAD | | |
| ***FIELD DATA*** | | SAMPLE TEMP. : | 63 |
| SAMPLE PRES. : | 40 | AMBIENT TEMP.: | |
| H2S BY STAIN TUBE: | _ *ppm* | | |
| COMMENTS : | *SPOT* *NO PROBE* | | |

| Componet | Mole % | Wt % |
|---|---|---|
| Helium | 0.06 | 0.01 |
| Hydrogen | 1.49 | 0.16 |
| Carbon Dioxide | 0.07 | 0.17 |
| Nitrogen | 3.57 | 5.47 |
| Methane | 87.1936 | 76.4598 |
| Ethane | 4.1242 | 6.7786 |
| Propane | 1.6401 | 3.9531 |
| Isobutane | 0.4491 | 1.4268 |
| n-Butane | 0.4996 | 1.5872 |
| Isopentane | 0.2313 | 0.9122 |
| n-Pentane | 0.1903 | 0.7505 |
| Cyclopentane | 0.0072 | 0.0276 |
| n-Hexane | 0.0635 | 0.2991 |
| Cyclohexane | 0.0310 | 0.1426 |
| Other Hexanes | 0.1262 | 0.5919 |
| Heptanes | 0.0558 | 0.3044 |
| Methylcyclohexane | 0.0403 | 0.2163 |
| 2,2,4 Trimethylpentane | 0.0001 | 0.0006 |
| Benzene | 0.0092 | 0.0393 |
| Toluene | 0.0180 | 0.0907 |
| Ethylbenzene | 0.0011 | 0.0064 |
| Xylenes | 0.0079 | 0.0458 |
| C8+ Heavies | 0.0679 | 0.4658 |
| ***Subtotal*** | 99.94640 | 99.90870 |
| Oxygen/Argon | 0.03 | 0.05 |
| Alcohols | 0.0236 | 0.0413 |
| **Total** | 100.00000 | 100.00000 |

| **Calculated Values BTU @** **14.65** | | **Total Sample** | **C6+ Fraction** | **C8+ Fraction** | **C10+ Fraction** | |
|---|---|---|---|---|---|---|
| **LHV** | Net Dry Real: | 964.9 | 4820.2 | 6119.3 | 7278.0 | **Btu/scf** |
| | Net Wet Real: | 948.0 | 4735.9 | 6012.3 | 7150.8 | **Btu/scf** |
| **HHV** | Gross Dry Real: | 1068.0 | 5184.5 | 6588.9 | 7883.9 | **Btu/scf** |
| | Gross Wet Real: | 1049.3 | 5093.9 | 6473.7 | 7746.1 | **Btu/scf** |
| **Other Calculated Values** | | | | | | |
| Regualr Wobbe Index* | | 1345.9 | 2839.8 | 3200.1 | 3531.5 | **Btu/scf** |
| Net Heating Value (60 °F ideal reaction): | | 20049.1 | 19182.1 | 19249.5 | 19018.2 | **Btu/lbm** |
| Gross Heating Value (60°F ideal reaction): | | 22190.2 | 20631.8 | 20727.3 | 20589.7 | **Btu/lbm** |
| Molar Mass (MW): | | 18.29535 | 95.707 | 123.17 | 145.172 | **g/mol** |
| Relative Density (AIR=1): | | 0.6306 | 3.3046 | 4.2528 | 5.0117 | **SG** |
| Density: | | 0.04821 | 0.25220 | 0.32456 | 0.38255 | **lbm/scf** |
| Compressiblity Factor: | | 0.9976 | 0.9926 | 0.9984 | 0.9997 | **Z** |
| Liquid Volume real gas @: | **14.65** | 17.4123 | 0.1625 | 0.0279 | 0.005 | **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.***



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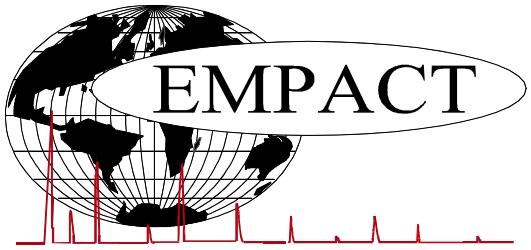


# EXTENDED NATURAL GAS ANALYSIS (*DHA)

## DHA COMPONENT LIST

| | | | |
|---|---|---|---|
| PRIMARY DB KEY: | **05-045-08959** | NAME/DESCRIP : | **N5A COUEY FEDERAL 5-14B** |
| LEASE #: | **05-045-08959** | | **BRAIDEN HEAD** |
| FIELD/AREA: | | | |
| PROJECT NO. : | **202107021** | ANALYSIS NO. : | **03** |
| COMPANY NAME : | **CAERUS OIL & GAS LLC** | ANALYSIS DATE: | JULY 09, 2021 06:17 |
| OFFICE / BRANCH: | PARACHUTE, CO | SAMPLE DATE : | JUNE 30, 2021 |
| CUSTOMER REF: | | TO: | |
| PRODUCER : | CAERUS OIL & GAS LLC | EFFECTIVE DATE: | |
| ***FIELD DATA*** | | | |
| SAMPLE CYCLE: | | SAMPLE TYPE: | SPOT |
| SAMPLE PRES. : | 40 psig | PROBE : | NO |
| FLOW PRES. : | psig | CYLINDER NO. : | ECA-716 |
| LAB PRES: | psig | SAMPLED BY : | MIKE KELLEY |
| SAMPLE TEMP. : | 63 ºf | SAMPLING COMPANY: | COG |
| AMBIENT TEMP.: | ºf | H2S BY STAIN TUBE: | - ppm |
| 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 | --- | 0.06 | 0.01 | --- | --- |
| Hydrogen | --- | 1.49 | 0.16 | --- | --- |
| Oxygen/Argon | --- | 0.03 | 0.05 | --- | --- |
| Nitrogen | --- | 3.57 | 5.47 | --- | --- |
| Carbon Dioxide | --- | 0.07 | 0.17 | --- | --- |
| Methane | P1 | 87.1936 | 76.4598 | --- | --- |
| Ethane | P2 | 4.1242 | 6.7786 | 1.099 | 1.105 |
| Propane | P3 | 1.6401 | 3.9531 | 0.451 | 0.453 |
| i-Butane | I4 | 0.4491 | 1.4268 | 0.147 | 0.148 |
| Methanol | X1 | 0.0236 | 0.0413 | 0.003 | 0.003 |
| n-Butane | P4 | 0.4993 | 1.5863 | 0.157 | 0.158 |
| 2,2-Dimethylpropane | I5 | 0.0052 | 0.0205 | 0.002 | 0.002 |
| i-Pentane | I5 | 0.2261 | 0.8917 | 0.082 | 0.082 |
| UnknownC4s | U4 | 0.0003 | 0.0009 | 0.000 | 0.000 |
| n-Pentane | P5 | 0.1903 | 0.7505 | 0.069 | 0.069 |
| 2,2-Dimethylbutane | I6 | 0.0060 | 0.0283 | 0.002 | 0.002 |
| Cyclopentane | N5 | 0.0072 | 0.0276 | 0.002 | 0.002 |
| 2,3-Dimethylbutane | I6 | 0.0118 | 0.0556 | 0.005 | 0.005 |
| 2-Methylpentane | I6 | 0.0566 | 0.2666 | 0.023 | 0.023 |
| 3-Methylpentane | I6 | 0.0273 | 0.1286 | 0.011 | 0.011 |
| n-Hexane | P6 | 0.0635 | 0.2991 | 0.026 | 0.026 |
| 2,2-Dimethylpentane | I7 | 0.0008 | 0.0044 | 0.000 | 0.000 |
| Methylcyclopentane | N6 | 0.0244 | 0.1123 | 0.009 | 0.009 |
| 2,4-Dimethylpentane | I7 | 0.0023 | 0.0126 | 0.001 | 0.001 |
| 2,2,3-Trimethylbutane | I7 | 0.0004 | 0.0022 | 0.000 | 0.000 |
| Benzene | A6 | 0.0092 | 0.0393 | 0.003 | 0.003 |
| 3,3-Dimethylpentane | I7 | 0.0007 | 0.0038 | 0.000 | 0.000 |
| Cyclohexane | N6 | 0.0310 | 0.1426 | 0.011 | 0.011 |
| 2-Methylhexane | I7 | 0.0087 | 0.0477 | 0.004 | 0.004 |
| 2,3-Dimethylpentane | I7 | 0.0030 | 0.0165 | 0.001 | 0.001 |



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| | | | | | |
|---|---|---|---|---|---|
| 1,1-Dimethylcyclopentane | N7 | 0.0019 | 0.0102 | 0.001 | 0.001 |
| 3-Methylhexane | I7 | 0.0076 | 0.0417 | 0.003 | 0.003 |
| 1c,3-Dimethylcyclopentane | N7 | 0.0028 | 0.0150 | 0.001 | 0.001 |
| 1t,3-Dimethylcyclopentane | N7 | 0.0025 | 0.0134 | 0.001 | 0.001 |
| 3-Ethylpentane | I7 | 0.0002 | 0.0011 | 0.000 | 0.000 |
| 1t,2-Dimethylcyclopentane | N7 | 0.0043 | 0.0231 | 0.002 | 0.002 |
| 2,2,4-Trimethylpentane | I8 | 0.0001 | 0.0006 | 0.000 | 0.000 |
| UnknownC6s | U6 | 0.0001 | 0.0005 | 0.000 | 0.000 |
| n-Heptane | P7 | 0.0189 | 0.1035 | 0.009 | 0.009 |
| 1c,2-Dimethylcyclopentane | N7 | 0.0003 | 0.0016 | 0.000 | 0.000 |
| Methylcyclohexane | N7 | 0.0403 | 0.2163 | 0.016 | 0.016 |
| 2,2-Dimethylhexane | I8 | 0.0011 | 0.0069 | 0.001 | 0.001 |
| Ethylcyclopentane | N7 | 0.0012 | 0.0065 | 0.000 | 0.000 |
| 2,5-Dimethylhexane | I8 | 0.0007 | 0.0044 | 0.000 | 0.000 |
| 2,4-Dimethylhexane | I8 | 0.0006 | 0.0038 | 0.000 | 0.000 |
| 1c,2t,4-Trimethylcyclopentane | N8 | 0.0005 | 0.0031 | 0.000 | 0.000 |
| 3,3-Dimethylhexane | I8 | 0.0002 | 0.0013 | 0.000 | 0.000 |
| 1t,2c,4-Trimethylcyclopentane | N8 | 0.0007 | 0.0043 | 0.000 | 0.000 |
| 2,3,3-Trimethylpentane | I8 | 0.0001 | 0.0006 | 0.000 | 0.000 |
| Toluene | A7 | 0.0180 | 0.0907 | 0.006 | 0.006 |
| 2,3-Dimethylhexane | I8 | 0.0006 | 0.0038 | 0.000 | 0.000 |
| 2-Methyl-3-ethylpentane | I8 | 0.0001 | 0.0006 | 0.000 | 0.000 |
| 2-Methylheptane | I8 | 0.0033 | 0.0206 | 0.002 | 0.002 |
| 4-Methylheptane | I8 | 0.0008 | 0.0050 | 0.000 | 0.000 |
| 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,3-Dimethylcyclohexane | N8 | 0.0001 | 0.0006 | 0.000 | 0.000 |
| 3-Methylheptane | I8 | 0.0016 | 0.0100 | 0.001 | 0.001 |
| 1c,2t,3-Trimethylcyclopentane | N8 | 0.0048 | 0.0295 | 0.002 | 0.002 |
| 3-Ethylhexane | I8 | 0.0002 | 0.0013 | 0.000 | 0.000 |
| 1t,4-Dimethylcyclohexane | N8 | 0.0017 | 0.0104 | 0.001 | 0.001 |
| 1,1-Dimethylcyclohexane | N8 | 0.0006 | 0.0037 | 0.000 | 0.000 |
| 3t-Ethylmethylcyclopentane | N8 | 0.0002 | 0.0012 | 0.000 | 0.000 |
| 2t-Ethylmethylcyclopentane | N8 | 0.0002 | 0.0012 | 0.000 | 0.000 |
| 1,1-Methylethylcyclopentane | 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 | 0.0016 | 0.0098 | 0.001 | 0.001 |
| UnknownC7s | U7 | 0.0002 | 0.0011 | 0.000 | 0.000 |
| n-Octane | P8 | 0.0075 | 0.0468 | 0.004 | 0.004 |
| 1c,4-Dimethylcyclohexane | N8 | 0.0013 | 0.0080 | 0.001 | 0.001 |
| i-Propylcyclopentane | I8 | 0.0001 | 0.0006 | 0.000 | 0.000 |
| 2,4,4-Trimethylhexane | I9 | 0.0001 | 0.0007 | 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 |
| 1c,2-Dimethylcyclohexane | N8 | 0.0006 | 0.0037 | 0.000 | 0.000 |
| 1,1,4-Trimethylcyclohexane | N9 | 0.0019 | 0.0131 | 0.001 | 0.001 |
| 2,2,3-Trimethylhexane | I9 | 0.0015 | 0.0105 | 0.001 | 0.001 |
| Ethylcyclohexane | N8 | 0.0005 | 0.0031 | 0.000 | 0.000 |
| n-Propylcyclopentane | N8 | 0.0008 | 0.0049 | 0.000 | 0.000 |
| 1c,3c,5-Trimethylcyclohexane | N9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 3,3-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 | 0.0011 | 0.0064 | 0.000 | 0.000 |
| 2,3-Dimethylheptane | I9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,3-Dimethylbenzene (m-Xylene) | A8 | 0.0055 | 0.0319 | 0.002 | 0.002 |
| 1,4-Dimethylbenzene (p-Xylene) | A8 | 0.0014 | 0.0081 | 0.001 | 0.001 |
| 3,4-Dimethylheptane | I9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 3,4-Dimethylheptane (2) | I9 | 0.0002 | 0.0014 | 0.000 | 0.000 |
| 4-Methyloctane | I9 | 0.0005 | 0.0035 | 0.000 | 0.000 |
| 2-Methyloctane | I9 | 0.0009 | 0.0063 | 0.001 | 0.001 |
| 3-Ethylheptane | I9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 3-Methyloctane | I9 | 0.0008 | 0.0056 | 0.000 | 0.000 |
| 3,3-Diethylpentane | I9 | 0.0001 | 0.0007 | 0.000 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| 1,2-Dimethylbenzene (o-Xylene) | A8 | 0.0010 | 0.0058 | 0.000 | 0.000 |
| i-Butylcyclopentane | N9 | 0.0007 | 0.0048 | 0.000 | 0.000 |
| n-Nonane | P9 | 0.0051 | 0.0358 | 0.003 | 0.003 |
| 1,1-Methylethylcyclohexane | N9 | 0.0005 | 0.0034 | 0.000 | 0.000 |
| i-Propylbenzene | A9 | 0.0004 | 0.0026 | 0.000 | 0.000 |
| i-Propylcyclohexane | N9 | 0.0002 | 0.0014 | 0.000 | 0.000 |
| 2,2-Dimethyloctane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 2,4-Dimethyloctane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 2,6-Dimethyloctane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| n-Butylcyclopentane | N9 | 0.0006 | 0.0042 | 0.000 | 0.000 |
| 3,3-Dimethyloctane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| n-Propylbenzene | A9 | 0.0008 | 0.0053 | 0.000 | 0.000 |
| 3,6-Dimethyloctane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 3-Methyl-5-ethylheptane | I10 | 0.0003 | 0.0024 | 0.000 | 0.000 |
| 1,3-Methylethylbenzene | A9 | 0.0006 | 0.0039 | 0.000 | 0.000 |
| 1,4-Methylethylbenzene | A9 | 0.0002 | 0.0013 | 0.000 | 0.000 |
| 1,3,5-Trimethylbenzene | A9 | 0.0009 | 0.0059 | 0.000 | 0.000 |
| 2,3-Dimethyloctane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 5-Methylnonane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Methylethylbenzene | A9 | 0.0006 | 0.0039 | 0.000 | 0.000 |
| 2-Methylnonane | I10 | 0.0007 | 0.0055 | 0.000 | 0.000 |
| 3-Ethyloctane | I10 | 0.0002 | 0.0015 | 0.000 | 0.000 |
| 3-Methylnonane | I10 | 0.0005 | 0.0039 | 0.000 | 0.000 |
| 1,2,4-Trimethylbenzene | A9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| t-Butylbenzene | A10 | 0.0010 | 0.0073 | 0.000 | 0.000 |
| i-Butylcyclohexane | N10 | 0.0002 | 0.0015 | 0.000 | 0.000 |
| 1t-Methyl-2-n-propylcyclohexane | I10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| i-Butylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| sec-Butylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| UnknownC9s | U9 | 0.0011 | 0.0077 | 0.001 | 0.001 |
| n-Decane | P10 | 0.0033 | 0.0257 | 0.002 | 0.002 |
| 1,2,3-Trimethylbenzene | A9 | 0.0002 | 0.0013 | 0.000 | 0.000 |
| 1,3-Methyl-i-propylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,4-Methyl-i-propylbenzene | A10 | 0.0003 | 0.0022 | 0.000 | 0.000 |
| 1,2-Methyl-i-propylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,3-Diethylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,4-Diethylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,4-Methyl-n-propylbenzene | A10 | 0.0004 | 0.0030 | 0.000 | 0.000 |
| 1,3-Dimethyl-5-ethylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,2-Diethylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| t-Decahydronaphthalene | A9 | 0.0006 | 0.0051 | 0.000 | 0.000 |
| 1,2-Methyl-n-propylbenzene | A10 | 0.0002 | 0.0015 | 0.000 | 0.000 |
| 1,4-Dimethyl-2-ethylbenzene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,2-Dimethyl-4-ethylbenzene | A10 | 0.0002 | 0.0015 | 0.000 | 0.000 |
| 1,3-Dimethyl-2-ethylbenzene | A10 | 0.0002 | 0.0015 | 0.000 | 0.000 |
| 1,2-Ethyl-i-propylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| UnknownC10s | U10 | 0.0024 | 0.0186 | 0.001 | 0.001 |
| n-Undecane | P11 | 0.0012 | 0.0103 | 0.001 | 0.001 |
| 1,2,4,5-Tetramethylbenzene | A11 | 0.0002 | 0.0015 | 0.000 | 0.000 |
| 1,2-Methyl-n-butylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2,3,5-Tetramethylbenzene | A11 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,2-Methyl-t-butylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Ethyl-n-propylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 2-Methylindan | A11 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,3-Methyl-n-butylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,3-Di-i-propylbenzene | A11 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| sec-Pentylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Di-n-propylbenzene | A11 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| Tetrahydronaphthalene | A10 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| UnknownC11s | U11 | 0.0018 | 0.0154 | 0.001 | 0.001 |
| n-Dodecane | P12 | 0.0004 | 0.0037 | 0.000 | 0.000 |
| 1,2,4-Triethylbenzene | A12 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 2-Methylnaphthalene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| UnknownC12s | U12 | 0.0007 | 0.0060 | 0.000 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| n-Tridecane | P13 | 0.0001 | 0.0010 | 0.000 | 0.000 |
| UnknownC13s | U13 | 0.0001 | 0.0010 | 0.000 | 0.000 |
| TOTAL | | 100.00000 | 100.00000 | 2.1745 | 2.1859 |

| BTEX COMPONENTS | MOLE% | WT% |
|---|---|---|
| BENZENE | 0.0092 | 0.0393 |
| TOLUENE | 0.0180 | 0.0907 |
| ETHYLBENZENE | 0.0011 | 0.0064 |
| XYLENES | 0.0079 | 0.0458 |
| TOTAL BTEX | 0.0362 | 0.1822 |

**(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 : | 964.9 /scf | 970.1 /scf |
| | NET WET REAL : | 948.0 /scf | 953.2 /scf |
| HHV | GROSS DRY REAL : | 1068.0 /scf | 1073.8 /scf |
| | GROSS WET REAL : | 1049.3 /scf | 1055.1 /scf |

| | |
|---|---|
| NET HEATING VALUE (60 °F ideal reaction): | 20049.1 Btu/lbm |
| GROSS HEATING VALUE (60°F ideal reaction): | 22190.2 Btu/lbm |
| RELATIVE DENSITY (AIR=1): | 0.6306 |
| DENSITY | 0.04821 lb/scf |
| COMPRESSIBILITY FACTOR : | 0.9976 |
| REGULAR WOBBE INDEX | 1345.9 |

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

| | | | | |
|---|---|---|---|---|
| Net Dry Ideal BTU | 4799.7 /scf | Relative Density - SG (Air=1) | 3.3046 | ***C6+factors*** |
| Gross Dry Ideal BTU | 5162.4 /scf | **Z** Compressiblity Factor | 0.99262 | 0.99168 |
| Net Dry Ideal BTU | 19182.1 /lb | Density Factor | 252.199 lbm/1000 ft3 | |
| Gross Dry Ideal BTU | 20631.8 /lb | Molar Mass or MW | 95.707 g/mol | |
| | | Volume Liquid Ideal gas | 0.163 scf/gal | 23 |

***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.***