# EXTENDED NATURAL GAS ANALYSIS (*DHA)

## MAIN PAGE

| | | | |
|---|---|---|---|
| PRIMARY DB KEY: | **05-103-10782** | NAME/DESCRIP : | **FED 4S-95-1-21DP** |
| LEASE #: | | | **SURFACE CASING** |
| FIELD/AREA: | | | |

| | | | |
|---|---|---|---|
| PROJECT NO. : | **202508021** | ANALYSIS NO. : | **02** |
| COMPANY NAME : | **QB ENERGY OPERATING, LLC** | ANALYSIS DATE: | AUGUST 08, 2025 12:36 |
| OFFICE / BRANCH: | PARACHUTE, CO | SAMPLE DATE : | AUGUST 05, 2025 |
| CUSTOMER REF: | | TO: | |
| PRODUCER : | | EFFECTIVE DATE: | |

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

| | | | |
|---|---|---|---|
| SAMPLE CYCLE: | | SAMPLE TYPE: | |
| SAMPLE PRES. : | 30 psig | PROBE : | |
| FLOW PRES. : | psig | CYLINDER NO. : | TBI-566 |
| LAB PRES: | psig | SAMPLED BY : | NICK CROY |
| SAMPLE TEMP. : | ºf | SAMPLING COMPANY: | QB ENERGY OPERATING, LLC |
| AMBIENT TEMP.: | ºf | H2S BY STAIN TUBE: | ppm mol |
| H2O BY STAIN TUBE: | #/mmcf | CO2 BY STAIN TUBE: | Mol % |

FIELD COMMENTS:

LAB COMMENTS:

| COMPONENT | MOLE % | MASS % | GPM @ 14.65 | GPM @ 14.73 |
|---|---|---|---|---|
| ALCOHOLS | 0.0012 | 0.0033 | 0.0000 | 0.0000 |
| HELIUM | 0.00 | 0.00 | --- | --- |
| HYDROGEN | 0.01 | 0.00 | --- | --- |
| OXYGEN/ARGON | 0.02 | 0.04 | --- | --- |
| NITROGEN | 0.97 | 1.64 | --- | --- |
| CARBON DIOXIDE | 0.03 | 0.08 | --- | --- |
| METHANE | 97.7862 | 94.8768 | --- | --- |
| ETHANE | 0.7793 | 1.4172 | 0.2078 | 0.2089 |
| PROPANE | 0.1172 | 0.3126 | 0.0320 | 0.0321 |
| I-BUTANE | 0.0331 | 0.1164 | 0.0110 | 0.0110 |
| N-BUTANE | 0.0242 | 0.0851 | 0.0070 | 0.0070 |
| I-PENTANE | 0.0162 | 0.0706 | 0.0050 | 0.0050 |
| N-PENTANE | 0.0080 | 0.0349 | 0.0030 | 0.0030 |
| HEXANES PLUS | 0.2048 | 1.3231 | 0.0830 | 0.0830 |
| TOTALS | 100.00000 | 100.00000 | 0.3488 | 0.3500 |

| BTEX COMPONENTS | MOLE% | WT% |
|---|---|---|
| BENZENE | 0.0055 | 0.0260 |
| TOLUENE | 0.0151 | 0.0841 |
| ETHYLBENZENE | 0.0012 | 0.0077 |
| XYLENES | 0.0078 | 0.0501 |
| TOTAL BTEX | 0.0296 | 0.1679 |

**(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 : | 915.9 **/scf** | 920.9 **/scf** |
| | NET WET REAL : | 899.9 **/scf** | 904.9 **/scf** |
| HHV | GROSS DRY REAL : | 1016.7 **/scf** | 1022.2 **/scf** |
| | GROSS WET REAL : | 998.9 **/scf** | 1004.4 **/scf** |

| | |
|---|---|
| NET HEATING VALUE (60 °F ideal reaction): | 21076.8 **Btu/lbm** |
| GROSS HEATING VALUE (60°F ideal reaction): | 23392.3 **Btu/lbm** |
| RELATIVE DENSITY (AIR=1): | 0.5697 |
| DENSITY | 0.04357 **lbm/scf** |
| COMPRESSIBILITY FACTOR : | 0.9980 |
| REGULAR WOBBE INDEX | 1348.5 |

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

**GLYCALC INFORMATION**

| | | | |
|---|---|---|---|
| PROJECT NO. : | 202508021 | ANALYSIS NO. : | 02 |
| COMPANY NAME : | QB ENERGY OPERATING, LLC | ANALYSIS DATE: | AUGUST 08, 2025 12:36 |
| ACCOUNT NO. : | | SAMPLE DATE : | AUGUST 05, 2025 |
| PRODUCER : | | CYLINDER NO. : | TBI-566 |
| LEASE NO. : | | SAMPLED BY : | NICK CROY |
| NAME/DESCRIP : | FED 4S-95-1-21DP<br>SURFACE CASING | | |
| ***FIELD DATA*** | | SAMPLE TEMP. : | |
| SAMPLE PRES. : | 30 | AMBIENT TEMP.: | |
| H2S BY STAIN TUBE: | _ *ppm mol* | | |
| COMMENTS : | | | |

| Componet | Mole % | Wt % |
|---|---|---|
| Helium | 0.00 | 0.00 |
| Hydrogen | 0.01 | 0.00 |
| Carbon Dioxide | 0.03 | 0.08 |
| Nitrogen | 0.97 | 1.64 |
| Methane | 97.7862 | 94.8768 |
| Ethane | 0.7793 | 1.4172 |
| Propane | 0.1172 | 0.3126 |
| Isobutane | 0.0331 | 0.1164 |
| n-Butane | 0.0242 | 0.0851 |
| Isopentane | 0.0153 | 0.0668 |
| n-Pentane | 0.0080 | 0.0349 |
| Cyclopentane | 0.0009 | 0.0038 |
| n-Hexane | 0.0068 | 0.0354 |
| Cyclohexane | 0.0107 | 0.0545 |
| Other Hexanes | 0.0226 | 0.1169 |
| Heptanes | 0.0388 | 0.2335 |
| Methylcyclohexane | 0.0256 | 0.1520 |
| 2,2,4 Trimethylpentane | 0.0000 | 0.0000 |
| Benzene | 0.0055 | 0.0260 |
| Toluene | 0.0151 | 0.0841 |
| Ethylbenzene | 0.0012 | 0.0077 |
| Xylenes | 0.0078 | 0.0501 |
| C8+ Heavies | 0.0707 | 0.5629 |
| ***Subtotal*** | 99.97880 | 99.95670 |
| Oxygen/Argon | 0.02 | 0.04 |
| Alcohols | 0.0012 | 0.0033 |
| **Total** | 100.00000 | 100.00000 |

| **Calculated Values BTU @** **14.65** | | **Total Sample** | **C6+ Fraction** | **C8+ Fraction** | **C10+ Fraction** | |
|---|---|---|---|---|---|---|
| **LHV** | Net Dry Real: | 915.9 | 5323.8 | 6394.4 | 8306.1 | **Btu/scf** |
| | Net Wet Real: | 899.9 | 5230.7 | 6282.6 | 8160.9 | **Btu/scf** |
| **HHV** | Gross Dry Real: | 1016.7 | 5717.4 | 6882.6 | 8981.8 | **Btu/scf** |
| | Gross Wet Real: | 998.9 | 5617.5 | 6762.3 | 8824.8 | **Btu/scf** |
| **Other Calculated Values** | | | | | | |
| Regualr Wobbe Index* | | 1348.5 | 2974.2 | 3271.4 | 3766.7 | **Btu/scf** |
| Net Heating Value (60 °F ideal reaction): | | 21076.8 | 19272.3 | 19543.2 | 19792.6 | **Btu/lbm** |
| Gross Heating Value (60°F ideal reaction): | | 23392.3 | 20697.5 | 21030.7 | 21388.5 | **Btu/lbm** |
| Molar Mass (MW): | | 16.53484 | 106.78 | 128.627 | 165.645 | **g/mol** |
| Relative Density (AIR=1): | | 0.5697 | 3.6875 | 4.4413 | 5.7196 | **SG** |
| Density: | | 0.04357 | 0.28139 | 0.33896 | 0.43651 | **lbm/scf** |
| Compressiblity Factor: | | 0.9980 | 0.9958 | 0.9986 | 0.9998 | **Z** |
| Liquid Volume real gas @: | **14.65** | 16.9448 | 0.0827 | 0.0349 | 0.009 | **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: **05-103-10782** NAME/DESCRIP : **FED 4S-95-1-21DP**
LEASE #: **SURFACE CASING**
FIELD/AREA:

PROJECT NO. : **202508021** ANALYSIS NO. : **02**
COMPANY NAME : **QB ENERGY OPERATING, LLC** ANALYSIS DATE: AUGUST 08, 2025 12:36
OFFICE / BRANCH: PARACHUTE, CO SAMPLE DATE : AUGUST 05, 2025
CUSTOMER REF: TO:
PRODUCER : EFFECTIVE DATE:
***FIELD DATA***
SAMPLE CYCLE: SAMPLE TYPE:
SAMPLE PRES. : 30 psig PROBE :
FLOW PRES. : psig CYLINDER NO. : TBI-566
LAB PRES: psig SAMPLED BY : NICK CROY
SAMPLE TEMP. : ºf SAMPLING COMPANY: QB ENERGY OPERATING, LLC
AMBIENT TEMP.: ºf 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** |
|---|---|---|---|---|---|
| Hydrogen | --- | 0.01 | 0.00 | --- | --- |
| Oxygen/Argon | --- | 0.02 | 0.04 | --- | --- |
| Nitrogen | --- | 0.97 | 1.64 | --- | --- |
| Carbon Dioxide | --- | 0.03 | 0.08 | --- | --- |
| Methane | P1 | 97.7862 | 94.8768 | --- | --- |
| Ethane | P2 | 0.7793 | 1.4172 | 0.208 | 0.209 |
| Propane | P3 | 0.1172 | 0.3126 | 0.032 | 0.032 |
| i-Butane | I4 | 0.0331 | 0.1164 | 0.011 | 0.011 |
| Methanol | X1 | 0.0006 | 0.0012 | 0.000 | 0.000 |
| n-Butane | P4 | 0.0230 | 0.0809 | 0.007 | 0.007 |
| 2,2-Dimethylpropane | I5 | 0.0013 | 0.0057 | 0.000 | 0.000 |
| i-Pentane | I5 | 0.0140 | 0.0611 | 0.005 | 0.005 |
| Acetone | X3 | 0.0006 | 0.0021 | 0.000 | 0.000 |
| UnknownC4s | U4 | 0.0012 | 0.0042 | 0.000 | 0.000 |
| n-Pentane | P5 | 0.0080 | 0.0349 | 0.003 | 0.003 |
| 2,2-Dimethylbutane | I6 | 0.0022 | 0.0115 | 0.001 | 0.001 |
| Cyclopentane | N5 | 0.0009 | 0.0038 | 0.000 | 0.000 |
| 2,3-Dimethylbutane | I6 | 0.0019 | 0.0099 | 0.001 | 0.001 |
| 2-Methylpentane | I6 | 0.0066 | 0.0344 | 0.003 | 0.003 |
| 3-Methylpentane | I6 | 0.0049 | 0.0255 | 0.002 | 0.002 |
| n-Hexane | P6 | 0.0068 | 0.0354 | 0.003 | 0.003 |
| 2,2-Dimethylpentane | I7 | 0.0009 | 0.0054 | 0.000 | 0.000 |
| Methylcyclopentane | N6 | 0.0070 | 0.0356 | 0.002 | 0.002 |
| 2,4-Dimethylpentane | I7 | 0.0010 | 0.0061 | 0.000 | 0.000 |
| 2,2,3-Trimethylbutane | I7 | 0.0004 | 0.0024 | 0.000 | 0.000 |
| Benzene | A6 | 0.0055 | 0.0260 | 0.002 | 0.002 |
| 3,3-Dimethylpentane | I7 | 0.0008 | 0.0048 | 0.000 | 0.000 |
| Cyclohexane | N6 | 0.0107 | 0.0545 | 0.004 | 0.004 |



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| | | | | | |
|---|---|---|---|---|---|
| 2-Methylhexane | I7 | 0.0052 | 0.0315 | 0.002 | 0.002 |
| 2,3-Dimethylpentane | I7 | 0.0017 | 0.0103 | 0.001 | 0.001 |
| 1,1-Dimethylcyclopentane | N7 | 0.0012 | 0.0071 | 0.000 | 0.000 |
| 3-Methylhexane | I7 | 0.0051 | 0.0309 | 0.002 | 0.002 |
| 1c,3-Dimethylcyclopentane | N7 | 0.0018 | 0.0107 | 0.001 | 0.001 |
| 1t,3-Dimethylcyclopentane | N7 | 0.0017 | 0.0101 | 0.001 | 0.001 |
| 3-Ethylpentane | I7 | 0.0003 | 0.0018 | 0.000 | 0.000 |
| 1t,2-Dimethylcyclopentane | N7 | 0.0027 | 0.0160 | 0.001 | 0.001 |
| n-Heptane | P7 | 0.0086 | 0.0521 | 0.004 | 0.004 |
| 1c,2-Dimethylcyclopentane | N7 | 0.0058 | 0.0345 | 0.003 | 0.003 |
| Methylcyclohexane | N7 | 0.0256 | 0.1520 | 0.010 | 0.010 |
| 2,2-Dimethylhexane | I8 | 0.0007 | 0.0048 | 0.000 | 0.000 |
| 1,1,3-Trimethylcyclopentane | N7 | 0.0003 | 0.0021 | 0.000 | 0.000 |
| Ethylcyclopentane | N7 | 0.0011 | 0.0065 | 0.000 | 0.000 |
| 2,5-Dimethylhexane | I8 | 0.0011 | 0.0076 | 0.001 | 0.001 |
| 2,2,3-Trimethylpentane | I8 | 0.0009 | 0.0062 | 0.000 | 0.000 |
| 2,4-Dimethylhexane | I8 | 0.0002 | 0.0014 | 0.000 | 0.000 |
| 1c,2t,4-Trimethylcyclopentane | N8 | 0.0005 | 0.0034 | 0.000 | 0.000 |
| 3,3-Dimethylhexane | I8 | 0.0004 | 0.0028 | 0.000 | 0.000 |
| Toluene | A7 | 0.0151 | 0.0841 | 0.005 | 0.005 |
| 2,3-Dimethylhexane | I8 | 0.0007 | 0.0048 | 0.000 | 0.000 |
| 2-Methyl-3-ethylpentane | I8 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 2-Methylheptane | I8 | 0.0037 | 0.0256 | 0.002 | 0.002 |
| 4-Methylheptane | I8 | 0.0013 | 0.0090 | 0.001 | 0.001 |
| 3-Methyl-3-ethylpentane | I8 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 3,4-Dimethylhexane | I8 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 3-Methylheptane | I8 | 0.0034 | 0.0235 | 0.002 | 0.002 |
| 1c,2t,3-Trimethylcyclopentane | N8 | 0.0043 | 0.0292 | 0.002 | 0.002 |
| 3-Ethylhexane | I8 | 0.0007 | 0.0048 | 0.000 | 0.000 |
| 1t,4-Dimethylcyclohexane | N8 | 0.0021 | 0.0143 | 0.001 | 0.001 |
| 1,1-Dimethylcyclohexane | N8 | 0.0008 | 0.0054 | 0.000 | 0.000 |
| 2,2,5-Trimethylhexane | I9 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 3c-Ethylmethylcyclopentane | N8 | 0.0002 | 0.0013 | 0.000 | 0.000 |
| 3t-Ethylmethylcyclopentane | N8 | 0.0002 | 0.0013 | 0.000 | 0.000 |
| 2t-Ethylmethylcyclopentane | N8 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 2,2,4-Trimethylhexane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1t,2-Dimethylcyclohexane | N8 | 0.0015 | 0.0102 | 0.001 | 0.001 |
| 1t,3-Dimethylcyclohexane | N8 | 0.0016 | 0.0109 | 0.001 | 0.001 |
| UnknownC7s | U7 | 0.0002 | 0.0012 | 0.000 | 0.000 |
| n-Octane | P8 | 0.0052 | 0.0359 | 0.003 | 0.003 |
| 1c,4-Dimethylcyclohexane | N8 | 0.0011 | 0.0074 | 0.001 | 0.001 |
| i-Propylcyclopentane | I8 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 2,3,5-Trimethylhexane | I9 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 2,3,4-Trimethylhexane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 2,2-Dimethylheptane | I9 | 0.0004 | 0.0031 | 0.000 | 0.000 |
| 1,1,4-Trimethylcyclohexane | N9 | 0.0011 | 0.0084 | 0.001 | 0.001 |
| 2,2,3-Trimethylhexane | I9 | 0.0003 | 0.0023 | 0.000 | 0.000 |
| 2,4-Dimethylheptane | I9 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| Ethylcyclohexane | N8 | 0.0008 | 0.0054 | 0.000 | 0.000 |
| n-Propylcyclopentane | N8 | 0.0003 | 0.0021 | 0.000 | 0.000 |
| 1c,3c,5-Trimethylcyclohexane | N9 | 0.0003 | 0.0023 | 0.000 | 0.000 |
| 2,5-Dimethylheptane | I9 | 0.0008 | 0.0062 | 0.000 | 0.000 |
| 3,3-Dimethylheptane | I9 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 2,6-Dimethylheptane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,1,3-Trimethylcyclohexane | N9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| Ethylbenzene | I8 | 0.0012 | 0.0077 | 0.000 | 0.000 |
| 2,3-Dimethylheptane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,3-Dimethylbenzene (m-Xylene) | A8 | 0.0050 | 0.0321 | 0.002 | 0.002 |
| 1,4-Dimethylbenzene (p-Xylene) | A8 | 0.0017 | 0.0109 | 0.001 | 0.001 |
| 3,4-Dimethylheptane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 3,4-Dimethylheptane (2) | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| 4-Ethylheptane | I9 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 4-Methyloctane | I9 | 0.0010 | 0.0077 | 0.001 | 0.001 |
| 2-Methyloctane | I9 | 0.0014 | 0.0109 | 0.001 | 0.001 |
| 1c,2t,3-Trimethylcyclohexane | N9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 3-Ethylheptane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 3-Methyloctane | I9 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 1c,2t,4c-Trimethylcyclohexane | I9 | 0.0013 | 0.0099 | 0.001 | 0.001 |
| 1,1,2-Trimethylcyclohexane | N9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 3,3-Diethylpentane | I9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Dimethylbenzene (o-Xylene) | A8 | 0.0011 | 0.0071 | 0.000 | 0.000 |
| i-Butylcyclopentane | N9 | 0.0006 | 0.0046 | 0.000 | 0.000 |
| UnknownC8s | U8 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| n-Nonane | P9 | 0.0034 | 0.0264 | 0.002 | 0.002 |
| 1,1-Methylethylcyclohexane | N9 | 0.0003 | 0.0023 | 0.000 | 0.000 |
| i-Propylbenzene | A9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| i-Propylcyclohexane | N9 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 2,2-Dimethyloctane | I10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 2,4-Dimethyloctane | I10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 2,6-Dimethyloctane | I10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 2,5-Dimethyloctane | I10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| n-Butylcyclopentane | N9 | 0.0004 | 0.0030 | 0.000 | 0.000 |
| 3,3-Dimethyloctane | I10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| n-Propylbenzene | A9 | 0.0004 | 0.0029 | 0.000 | 0.000 |
| 3-Methyl-5-ethylheptane | I10 | 0.0004 | 0.0035 | 0.000 | 0.000 |
| 1,3-Methylethylbenzene | A9 | 0.0011 | 0.0080 | 0.001 | 0.001 |
| 1,4-Methylethylbenzene | A9 | 0.0005 | 0.0036 | 0.000 | 0.000 |
| 1,3,5-Trimethylbenzene | A9 | 0.0009 | 0.0065 | 0.000 | 0.000 |
| 2,3-Dimethyloctane | I10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 5-Methylnonane | I10 | 0.0003 | 0.0026 | 0.000 | 0.000 |
| 1,2-Methylethylbenzene | A9 | 0.0005 | 0.0036 | 0.000 | 0.000 |
| 2-Methylnonane | I10 | 0.0003 | 0.0026 | 0.000 | 0.000 |
| 3-Methylnonane | I10 | 0.0003 | 0.0026 | 0.000 | 0.000 |
| t-Butylbenzene | A10 | 0.0011 | 0.0090 | 0.001 | 0.001 |
| UnknownC9s | U9 | 0.0011 | 0.0085 | 0.001 | 0.001 |
| n-Decane | P10 | 0.0017 | 0.0146 | 0.001 | 0.001 |
| 1,2,3-Trimethylbenzene | A9 | 0.0001 | 0.0007 | 0.000 | 0.000 |
| 1,3-Methyl-i-propylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| Sec-Butylcyclohexane | A10 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 1,2-Methyl-i-propylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 3-Ethylnonane | I10 | 0.0002 | 0.0019 | 0.000 | 0.000 |
| 1,3-Diethylbenzene | A10 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 1,4-Diethylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,4-Methyl-n-propylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| n-Butylbenzene | A10 | 0.0003 | 0.0024 | 0.000 | 0.000 |
| 1,3-Dimethyl-5-ethylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Diethylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| t-Decahydronaphthalene | A9 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 1,2-Methyl-n-propylbenzene | A10 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 1,3-Dimethyl-4-ethylbenzene | A10 | 0.0004 | 0.0033 | 0.000 | 0.000 |
| 1,2-Dimethyl-4-ethylbenzene | A10 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 1,3-Dimethyl-2-ethylbenzene | A10 | 0.0003 | 0.0024 | 0.000 | 0.000 |
| 1,2-Dimethyl-3-ethylbenzene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,4-Methyl-t-butylbenzene | A11 | 0.0002 | 0.0018 | 0.000 | 0.000 |
| UnknownC10s | U10 | 0.0011 | 0.0095 | 0.001 | 0.001 |
| n-Undecane | P11 | 0.0019 | 0.0180 | 0.001 | 0.001 |
| 1,2,4,5-Tetramethylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Methyl-n-butylbenzene | A11 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 1,2,3,5-Tetramethylbenzene | A11 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| 1,2-Methyl-t-butylbenzene | A11 | 0.0001 | 0.0009 | 0.000 | 0.000 |
| 5-Methylindan | A11 | 0.0002 | 0.0016 | 0.000 | 0.000 |
| 1,2-Ethyl-n-propylbenzene | A11 | 0.0002 | 0.0018 | 0.000 | 0.000 |
| sec-Pentylbenzene | A11 | 0.0001 | 0.0009 | 0.000 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| n-Pentylbenzene | A11 | 0.0002 | 0.0018 | 0.000 | 0.000 |
| 1,2-Di-n-propylbenzene | A11 | 0.0002 | 0.0019 | 0.000 | 0.000 |
| Tetrahydronaphthalene | A10 | 0.0001 | 0.0008 | 0.000 | 0.000 |
| Naphthalene | A10 | 0.0003 | 0.0023 | 0.000 | 0.000 |
| 1-t-Butyl-3,5-dimethylbenzene | A12 | 0.0001 | 0.0010 | 0.000 | 0.000 |
| UnknownC11s | U11 | 0.0006 | 0.0057 | 0.000 | 0.000 |
| n-Dodecane | P12 | 0.0016 | 0.0165 | 0.001 | 0.001 |
| 1,3,5-Triethylbenzene | A12 | 0.0003 | 0.0030 | 0.000 | 0.000 |
| 1,4-Methyl-n-pentylbenzene | A12 | 0.0001 | 0.0010 | 0.000 | 0.000 |
| n-Hexylbenzene | A12 | 0.0002 | 0.0019 | 0.000 | 0.000 |
| 1,2,3,4,5-Pentamethylbenzene | A13 | 0.0002 | 0.0018 | 0.000 | 0.000 |
| UnknownC12s | U12 | 0.0005 | 0.0047 | 0.000 | 0.000 |
| n-Tridecane | P13 | 0.0007 | 0.0078 | 0.001 | 0.001 |
| UnknownC13s | U13 | 0.0007 | 0.0078 | 0.001 | 0.001 |
| n-Tetradecane | P14 | 0.0001 | 0.0012 | 0.000 | 0.000 |
| UnknownC14s | U14 | 0.0001 | 0.0012 | 0.000 | 0.000 |
| UnknownC15s | U15 | 0.0002 | 0.0025 | 0.000 | 0.000 |
| n-Hexadecane | P16 | 0.0001 | 0.0014 | 0.000 | 0.000 |
| n-Octadecane | P18 | 0.0002 | 0.0031 | 0.000 | 0.000 |
| n-Nonadecane | P19 | 0.0009 | 0.0146 | 0.001 | 0.001 |
| n-Eicosane | P20 | 0.0007 | 0.0119 | 0.001 | 0.001 |
| UnknownC21s | U21 | 0.0004 | 0.0072 | 0.000 | 0.000 |
| TOTAL | | 100.00000 | 100.00000 | 0.3488 | 0.3500 |

| BTEX COMPONENTS | MOLE% | WT% |
|---|---|---|
| BENZENE | 0.0055 | 0.0260 |
| TOLUENE | 0.0151 | 0.0841 |
| ETHYLBENZENE | 0.0012 | 0.0077 |
| XYLENES | 0.0078 | 0.0501 |
| TOTAL BTEX | 0.0296 | 0.1679 |

**(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 : | 915.9 /scf | 920.9 /scf |
| | NET WET REAL : | 899.9 /scf | 904.9 /scf |
| HHV | GROSS DRY REAL : | 1016.7 /scf | 1022.2 /scf |
| | GROSS WET REAL : | 998.9 /scf | 1004.4 /scf |
| | NET HEATING VALUE (60 °F ideal reaction): | | 21076.8 Btu/lbm |
| | GROSS HEATING VALUE (60°F ideal reaction): | | 23392.3 Btu/lbm |
| | RELATIVE DENSITY (AIR=1): | | 0.5697 |
| | DENSITY | | 0.04357 lb/scf |
| | COMPRESSIBILITY FACTOR : | | 0.9980 |
| | REGULAR WOBBE INDEX | | 1348.5 |

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

| | | | | |
|---|---|---|---|---|
| Net Dry Ideal BTU | 5318.1 /scf | Relative Density - SG (Air=1) | 3.6875 | ***C6+factors*** |
| Gross Dry Ideal BTU | 5711.3 /scf | **Z** Compressiblity Factor | 0.99581 | 0.9951 |
| Net Dry Ideal BTU | 19272.3 /lb | Density Factor | 281.387 lbm/1000 ft3 | |
| Gross Dry Ideal BTU | 20697.5 /lb | Molar Mass or MW | 106.78 g/mol | |
| | | Volume Liquid Ideal gas | 0.083 scf/gal | 21.4 |

***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.*