



303-637-0150

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

**MAIN PAGE**

PROJECT NO. :	201404102	ANALYSIS NO. :	01
COMPANY NAME :	LINN OPERATING	ANALYSIS DATE:	APRIL 28, 2014
ACCOUNT NO. :		SAMPLE DATE :	APRIL 7, 2014
PRODUCER :		CYLINDER NO. :	1098
LEASE NO. :		SAMPLED BY :	MIKE KELLY
NAME/DESCRIP :	CHEVRON 36-5D BRADEN HEAD		
***FIELD DATA***		SAMPLE TEMP. :	50
SAMPLE PRES. :	380	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
ALCOHOLS	0.0011	0.0020		
HELIUM	0.01	0.00	---	---
HYDROGEN	0.00	0.00	---	---
OXYGEN/ARGON	0.00	0.00	---	---
NITROGEN	0.21	0.33	---	---
CARBON DIOXIDE	0.01	0.02	---	---
METHANE	93.11770	84.05810	---	---
ETHANE	3.7308	6.3124	0.9943	0.9997
PROPANE	1.5827	3.9271	0.4347	0.4371
I-BUTANE	0.2653	0.8677	0.0869	0.0874
N-BUTANE	0.4272	1.3972	0.1339	0.1346
I-PENTANE	0.1351	0.5480	0.0490	0.0492
N-PENTANE	0.1096	0.4450	0.0400	0.0402
HEXANES PLUS	0.4005	2.0925	0.1590	0.1595
TOTALS	100.00000	100.00000	1.8978	1.9077

BTEX COMPONENTS	MOLE%	WT%	BTU @	14.650	14.730
BENZENE	0.0235	0.1033	LOW NET DRY REAL :	991.2 /scf	996.6 /scf
TOLUENE	0.0390	0.2022	NET WET REAL :	973.9 /scf	979.3 /scf
ETHYLBENZENE	0.0001	0.0006	HIGH GROSS DRY REAL :	1097.1 /scf	1103.1 /scf
XYLENES	0.0003	0.0018	GROSS WET REAL :	1077.9 /scf	1083.9 /scf
TOTAL BTEX	0.0629	0.3079	NET DRY REAL :	21176.8 /lb	21292.5 /lb
			GROSS DRY REAL :	23446.3 /lb	23574.3 /lb

RELATIVE DENSITY (AIR=1): 0.6130  
COMPRESSIBILITY FACTOR : 0.99758

(CALC: GPA STD 2145 & TP-17 @14.696 & 60 F)

\*(DETAILED HYDROCARBON ANALYSIS/NJ 1993) ; ASTM D6730

THIS DATA HAS BEEN ACQUIRED THROUGH APPLICATION OF CURRENT STATE-OF-THE-ART ANALYTICAL TECHNIQUES.  
THE USE OF THIS INFORMATION IS THE RESPONSIBILITY OF THE USER. EMPACT ANALYTICAL SYSTEMS, ASSUMES NO  
RESPONSIBILITY FOR ACCURACY OF THE REPORTED INFORMATION NOR ANY CONSEQUENCES OF ITS APPLICATION.



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**GLYCALC INFORMATION**

PROJECT NO. :	201404102	ANALYSIS NO. :	01
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NAME/DESCRIP :	CHEVRON 36-5D BRADEN HEAD		
***FIELD DATA***		SAMPLE TEMP. :	50
SAMPLE PRES. :	380	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

Componet	Mole %	Wt %
Helium	0.01	0.00
Hydrogen	0.00	0.00
Carbon Dioxide	0.01	0.02
Nitrogen	0.21	0.33
Methane	93.11770	84.05810
Ethane	3.7308	6.3124
Propane	1.5827	3.9271
Isobutane	0.2653	0.8677
n-Butane	0.4272	1.3972
Isopentane	0.1302	0.5286
n-Pentane	0.1096	0.4450
Cyclopentane	0.0049	0.0194
n-Hexane	0.0356	0.1726
Cyclohexane	0.0246	0.1165
Other Hexanes	0.1010	0.4872
Heptanes	0.0867	0.4866
Methycyclohexane	0.0598	0.3304
2,2,4 Trimethylpentane	0.0001	0.0006
Benzene	0.0235	0.1033
Toluene	0.0390	0.2022
Ethylbenzene	0.0001	0.0006
Xylenes	0.0003	0.0018
C8+ Heavies	0.0298	0.1907
<b>Subtotal</b>	<b>99.99890</b>	<b>99.99800</b>
Oxygen/Argon	0.00	0.00
Alcohols	0.0011	0.0020
<b>Total</b>	<b>100.00000</b>	<b>100.00000</b>

THE DATA PRESENTED HEREIN HAS BEEN ACQUIRED THROUGH JUDICIOUS APPLICATION OF CURRENT STATE-OF-THE ART ANALYTICAL TECHNIQUES. THE APPLICATIONS OF THIS INFORMATION IS THE RESPONSIBILITY OF THE USER. EMPACT ANALYTICAL SYSTEMS, INC. ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE REPORTED INFORMATION NOR ANY CONSEQUENCES OF IT'S APPLICATION.



**EXTENDED NATURAL GAS ANALYSIS (\*DHA)**  
**DHA COMPONENT LIST**

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***FIELD DATA***		SAMPLE TEMP. :	50
SAMPLE PRES. :	380	AMBIENT TEMP.:	
VAPOR PRES. :		GRAVITY :	
COMMENTS :	SPOT; NO PROBE		

COMPONENT	PIANO #	MOLE %	MASS %	GPM @ 14.650	GPM @ 14.730
Helium	---	0.01	0.00	---	---
Hydrogen	---	0.00	0.00	---	---
Oxygen/Argon	---	0.00	0.00	---	---
Nitrogen	---	0.21	0.33	---	---
Carbon Dioxide	---	0.01	0.02	---	---
Methane	P1	93.11770	84.05810	---	---
Ethane	P2	3.7308	6.3124	0.994	1.000
Propane	P3	1.5827	3.9271	0.435	0.437
i-Butane	I4	0.2653	0.8677	0.087	0.087
Methanol	X1	0.0011	0.0020	0.000	0.000
n-Butane	P4	0.4272	1.3972	0.134	0.135
2,2-Dimethylpropane	I5	0.0073	0.0297	0.003	0.003
i-Pentane	I5	0.1229	0.4989	0.045	0.045
n-Pentane	P5	0.1096	0.4450	0.040	0.040
2,2-Dimethylbutane	I6	0.0080	0.0388	0.003	0.003
Cyclopentane	N5	0.0049	0.0194	0.001	0.001
2,3-Dimethylbutane	I6	0.0117	0.0567	0.005	0.005
2-Methylpentane	I6	0.0373	0.1809	0.015	0.015
3-Methylpentane	I6	0.0212	0.1028	0.009	0.009
n-Hexane	P6	0.0356	0.1726	0.015	0.015
2,2-Dimethylpentane	I7	0.0020	0.0113	0.001	0.001
Methylcyclopentane	N6	0.0228	0.1080	0.008	0.008
2,4-Dimethylpentane	I7	0.0029	0.0164	0.001	0.001
2,2,3-Trimethylbutane	I7	0.0009	0.0051	0.000	0.000
Benzene	A6	0.0235	0.1033	0.007	0.007
3,3-Dimethylpentane	I7	0.0013	0.0073	0.001	0.001
Cyclohexane	N6	0.0246	0.1165	0.008	0.008
2-Methylhexane	I7	0.0140	0.0789	0.006	0.006
2,3-Dimethylpentane	I7	0.0039	0.0220	0.002	0.002
1,1-Dimethylcyclopentane	N7	0.0031	0.0171	0.001	0.001
3-Methylhexane	I7	0.0131	0.0739	0.006	0.006
1c,3-Dimethylcyclopentane	N7	0.0044	0.0243	0.002	0.002
1t,3-Dimethylcyclopentane	N7	0.0040	0.0221	0.002	0.002
3-Ethylpentane	I7	0.0007	0.0039	0.000	0.000
1t,2-Dimethylcyclopentane	N7	0.0063	0.0348	0.003	0.003
2,2,4-Trimethylpentane	I8	0.0001	0.0006	0.000	0.000
n-Heptane	P7	0.0273	0.1540	0.013	0.013
1c,2-Dimethylcyclopentane	N7	0.0007	0.0039	0.000	0.000
Methylcyclohexane	N7	0.0598	0.3304	0.024	0.024
2,2-Dimethylhexane	I8	0.0023	0.0148	0.001	0.001
Ethylcyclopentane	N7	0.0021	0.0116	0.001	0.001
2,5-Dimethylhexane	I8	0.0019	0.0122	0.001	0.001

2,2,3-Trimethylpentane	I8	0.0003	0.0019	0.000	0.000
2,4-Dimethylhexane	I8	0.0022	0.0141	0.001	0.001
1c,2t,4-Trimethylcyclopentane	N8	0.0011	0.0069	0.001	0.001
3,3-Dimethylhexane	I8	0.0006	0.0039	0.000	0.000
1t,2c,4-Trimethylcyclopentane	N8	0.0008	0.0051	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	0.0390	0.2022	0.013	0.013
2,3-Dimethylhexane	I8	0.0010	0.0064	0.001	0.001
2-Methyl-3-ethylpentane	I8	0.0001	0.0006	0.000	0.000
2-Methylheptane	I8	0.0038	0.0244	0.002	0.002
4-Methylheptane	I8	0.0012	0.0077	0.001	0.001
3-Methyl-3-ethylpentane	I8	0.0002	0.0013	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	0.0027	0.0173	0.001	0.001
1c,2t,3-Trimethylcyclopentane	N8	0.0039	0.0246	0.002	0.002
3-Ethylhexane	I8	0.0005	0.0032	0.000	0.000
1t,4-Dimethylcyclohexane	N8	0.0019	0.0120	0.001	0.001
1,1-Dimethylcyclohexane	N8	0.0007	0.0044	0.000	0.000
3c-Ethylmethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
3t-Ethylmethylcyclopentane	N8	0.0001	0.0006	0.000	0.000
2t-Ethylmethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
1,1-Methylethylcyclopentane	N8	0.0002	0.0012	0.000	0.000
2,2,4-Trimethylhexane	I9	0.0001	0.0007	0.000	0.000
1t,2-Dimethylcyclohexane	N8	0.0008	0.0051	0.000	0.000
1t,3-Dimethylcyclohexane	N8	0.0001	0.0006	0.000	0.000
n-Octane	P8	0.0016	0.0103	0.001	0.001
1c,4-Dimethylcyclohexane	N8	0.0005	0.0032	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
1,4-Dimethylbenzene (p-Xylene)	A8	0.0001	0.0006	0.000	0.000
1,2-Dimethylbenzene (o-Xylene)	A8	0.0001	0.0006	0.000	0.000
n-Nonane	P9	0.0001	0.0007	0.000	0.000
1,3-Di-n-propylbenzene	A12	0.0001	0.0009	0.000	0.000
UnknownC11s	U11	0.0002	0.0017	0.000	0.000
<b>TOTAL</b>		<b>100.00000</b>	<b>100.00000</b>	<b>1.8978</b>	<b>1.9077</b>

<b>BTEX COMPONENTS</b>	<b>MOLE%</b>	<b>WT%</b>	<b>BTU @</b>	<b>14.650</b>	<b>14.730</b>
<b>BENZENE</b>	0.0235	0.1033	<b>LOW NET DRY REAL :</b>	991.2 /scf	996.6 /scf
<b>TOLUENE</b>	0.0390	0.2022	<b>NET WET REAL :</b>	973.9 /scf	979.3 /scf
<b>ETHYLBENZENE</b>	0.0001	0.0006	<b>HIGH GROSS DRY REAL :</b>	1097.1 /scf	1103.1 /scf
<b>XYLENES</b>	0.0003	0.0018	<b>GROSS WET REAL :</b>	1077.9 /scf	1083.9 /scf
<b>TOTAL BTEX</b>	0.0629	0.3079	<b>NET DRY REAL :</b>	21176.8 /lb	21292.5 /lb
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