



2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: EN170185
Cust No: 25400-11430

Well/Lease Information

Customer Name: ENERVEST
Well Name: ARNSTEIN #1B; CSG
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.: API 3004531029

OIL CONS. DIV DIST. 3

OCT 30 2017

Source: CASING
Well Flowing: Y
Pressure: 77 PSIG
Flow Temp: DEG. F
Ambient Temp: 57 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/24/2017
Sample Time: 11.15 AM
Sampled By: LEROY MARTINEZ
Sampled by (CO):

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2390	0.2379	0.0260	0.00	0.0023
CO2	0.5433	0.5409	0.0930	0.00	0.0083
Methane	82.3242	81.9547	14.0000	831.47	0.4560
Ethane	9.9600	9.9153	2.6720	176.26	0.1034
Propane	3.8206	3.8034	1.0560	96.13	0.0582
Iso-Butane	0.6149	0.6121	0.2020	20.00	0.0123
N-Butane	0.9699	0.9655	0.3070	31.64	0.0195
I-Pentane	0.3402	0.3387	0.1250	13.61	0.0085
N-Pentane	0.2660	0.2648	0.0970	10.66	0.0066
Hexane Plus	0.9219	0.9178	0.4120	48.59	0.0305
Total	100.0000	99.5511	18.9900	1228.37	0.7055

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0034
BTU/CU.FT IDEAL: 1231.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1235.4
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1213.9
DRY BTU @ 15.025: 1260.1
REAL SPECIFIC GRAVITY: 0.7077

CYLINDER #: 6
CYLINDER PRESSURE: 77 PSIG
DATE RUN: 10/25/17 11:15 AM
ANALYSIS RUN BY: CAMERON MANGAN

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 10/25/2017

GC Method: C6+ Gas

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ENERVEST
WELL ANALYSIS COMPARISON

Lease: ARNSTEIN #1B; CSG

CASING

Stn. No.:

10/25/2017

Mtr. No.:

25400-11430

Smpl Date:	10/24/2017	02/13/2015
Test Date:	10/25/2017	02/20/2015
Run No:	EN170185	EN150053
Nitrogen:	0.2390	0.2840
CO2:	0.5433	0.0050
Methane:	82.3242	81.3382
Ethane:	9.9600	9.9029
Propane:	3.8206	4.5940
I-Butane:	0.6149	0.8600
N-Butane:	0.9699	1.2950
I-Pentane:	0.3402	0.4980
N-Pentane:	0.2660	0.3800
Hexane+:	0.9219	0.8430
BTU:	1235.4	1269.7
GPM:	18.9900	19.1840
SPG:	0.7077	0.7214



2030 Afton Place
Farmington, NM 87401
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Analysis No: EN170184
Cust No: 25400-11425

Well/Lease Information

Customer Name: ENERVEST
Well Name: ARNSTEIN #1B; BHD
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Stn. No.: API 3004531029

OIL CONS. DIV DIST. 3

OCT 30 2017

Source: BRADENHEAD
Well Flowing: Y
Pressure: 9 PSIG
Flow Temp: DEG. F
Ambient Temp: 53 DEG. F
Flow Rate: MCF/D
Sample Method:
Date Sampled: 10/24/2017
Sample Time: 9.46 AM
Sampled By: LEROY MARTINEZ
Sampled by (CO): ENERVEST

Remarks:

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.8641	0.8467	0.0950	0.00	0.0084
CO2	0.0284	0.0278	0.0050	0.00	0.0004
Methane	94.1379	92.2440	15.9920	950.79	0.5214
Ethane	4.0609	3.9792	1.0880	71.87	0.0422
Propane	0.5139	0.5036	0.1420	12.93	0.0078
Iso-Butane	0.1484	0.1454	0.0490	4.83	0.0030
N-Butane	0.0529	0.0518	0.0170	1.73	0.0011
I-Pentane	0.0433	0.0424	0.0160	1.73	0.0011
N-Pentane	0.0183	0.0179	0.0070	0.73	0.0005
Hexane Plus	0.1319	0.1292	0.0590	6.95	0.0044
Total	100.0000	97.9880	17.4700	1051.56	0.5901

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0023
BTU/CU.FT IDEAL: 1054.0
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1056.3
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1037.9
DRY BTU @ 15.025: 1077.5
REAL SPECIFIC GRAVITY: 0.5912

CYLINDER #: 8
CYLINDER PRESSURE: 10 PSIG
DATE RUN: 10/25/17 12:00 AM
ANALYSIS RUN BY: CAMERON MANGAN

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

Last Cal/Verify: 10/25/2017

GC Method: C6+ Gas



ENERVEST
WELL ANALYSIS COMPARISON

Lease: ARNSTEIN #1B; BHD
Stn. No.:
Mtr. No.:

BRADENHEAD

10/25/2017
25400-11425

Smpl Date:	10/24/2017	02/13/2015
Test Date:	10/25/2017	02/20/2015
Run No:	EN170184	EN150052
Nitrogen:	0.8641	0.2880
CO2:	0.0284	0.0160
Methane:	94.1379	86.9319
Ethane:	4.0609	4.9160
Propane:	0.5139	1.7440
I-Butane:	0.1484	0.8600
N-Butane:	0.0529	1.7860
I-Pentane:	0.0433	1.2910
N-Pentane:	0.0183	1.0780
Hexane+:	0.1319	1.0890
BTU:	1056.3	1254.7
GPM:	17.4700	18.8210
SPG:	0.5912	0.7125



2030 Afton Place
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Analysis No: EN170186
Cust No: 25400-11780

Well/Lease Information

Customer Name: ENERVEST
Well Name: ARNSTEIN #1B; INT
County/State: SAN JUAN NM
Location:
Field:
Formation:
Cust. Strn. No.: API 3004531029

OIL CONS. DIV DIST. 3

OCT 30 2017

Source: INTERMEDIATE
Well Flowing: Y
Pressure: 2 PSIG
Flow Temp: DEG. F
Ambient Temp: 57 DEG. F
Flow Rate: MCF/D
Sample Method: Purge & Fill
Date Sampled: 10/24/2017
Sample Time: 11.00 AM
Sampled By:
Sampled by (CO):

Remarks: PRESSURED WITH HELIUM TO 30LBS.

Analysis

Component::	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4214	0.1564	0.0470	0.00	0.0041
CO2	0.2029	0.0753	0.0350	0.00	0.0031
Methane	76.8744	28.5286	13.0840	776.43	0.4258
Ethane	10.0842	3.7423	2.7080	178.46	0.1047
Propane	7.1201	2.6423	1.9690	179.15	0.1084
Iso-Butane	1.4842	0.5508	0.4880	48.26	0.0298
N-Butane	1.7176	0.6374	0.5440	56.03	0.0345
I-Pentane	0.5996	0.2225	0.2200	23.99	0.0149
N-Pentane	0.4654	0.1727	0.1690	18.66	0.0116
Hexane Plus	1.0302	0.3823	0.4610	54.30	0.0341
Total	100.0000	37.1106	19.7250	1335.29	0.7709

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0042
BTU/CU.FT IDEAL: 1338.4
BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1344.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1320.6
DRY BTU @ 15.025: 1370.9
REAL SPECIFIC GRAVITY: 0.7739

CYLINDER #: 103
CYLINDER PRESSURE: PSIG
DATE RUN: 10/25/17 11:00 AM
ANALYSIS RUN BY:

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA-2261

GC: Danalyzer Model 500

GC Method: C6+ Gas

Last Cal/Verify: 10/25/2017