Engineering Testimony
Weld County, Colorado
Docket No. 150700376
Unitization

Township 6 North, Range 61 West, 6th P.M.
Section 14: SE¼SW¼, SW¼SE¼
Section 23: NW¼, NE¼, NW¼SE¼

(D-Sand Formation)
Foundation Energy Management, LLC

In support of the Request for Director Approval of the Verified Application of Foundation Energy Management, LLC ("Foundation") in Docket No. 150700376, and pursuant to Rule 511 b, Joseph Tyree, Reservoir Engineer of Foundation deposes and states as follows:

I am employed as a Reservoir Engineer for Foundation. I have over four years of experience as a Petroleum Engineer and just under three years of experience as a Reservoir Engineer. I have been employed with Foundation since October 2012 working directly with properties that are the subject of the hearing. I have previously testified as an expert witness before the Hearing Officers of the COGCC.

In support of our Application today, I have prepared fourteen (14) exhibits. The exhibits are attached to my sworn testimony and form the basis for Foundation's Application to obtain an order to establish a secondary recovery unit in the D-Sand Formation in the following lands located in Weld County, Colorado (the "Application Lands"):

Township 6 North, Range 61 West, 6th P.M.
Section 14: SE¼SW¼, SW¼SE¼
Section 23: NW¼, NE¼, NW¼SE¼

Exhibit E-1 is a map showing all wells with their API numbers within 1500' of the Application Lands. None of the wells penetrating the "D" Sand Formation within one quarter (1/4) mile of the proposed injection well requires remedial action.

Exhibit E-2 is a description of the properties of the fluids expected to be produced, including initial oil and gas formation volume factor.

Exhibit E-3 is a table showing the reservoir engineering calculations for the unit wells, specifically the calculated EUR, OOIP, and drainage area of the unit wells.

Exhibit E-4 shows the porosity and resistivity values of the pay interval for unit wells and explanation of how water saturation was calculated for each well.

Exhibit E-5 is an explanation of permeability estimates.

Exhibit E-6 is a specification of the type of fluid to be injected, chemical analysis of the fluid to be injected, the source of the fluid, the estimated amounts to be injected daily, and the known fracture gradient. There are no anticipated water compatibility issues between the water to be injected and water in the injection zone. Total dissolved solids concentrations in water in the "D" Sand Formation has been calculated to be 8,943 mg/l. Applicant intends to submit a request for an aquifer exemption for the "D" Sand Formation in the Application Lands during the permitting process for the injection well.

Exhibit E-7 contains the decline curves for the three producing wells in the proposed unit along with examples of how the analysis was used to calculate EUR's for use in the drainage area calculations.

Exhibit E-8 are the wellbore diagrams for each of the three producing well in the proposed unit.

Exhibit E-9 shows a table of historical and predicted pressure data for the proposed unit reservoir.

Exhibit E-10 is an economic analysis showing cost of secondary recovery, estimated total additional recovery from the proposed secondary or enhanced recovery operation, and an analyses demonstrating that the proposed plan is economic and will not result in waste.

Exhibit E-11 shows decline curves comparing expected recovery without and with the proposed secondary or enhanced recovery operation.

Exhibit E-12 is a Plan of Development for the reservoir, along with a discussion as to what will drive the decision to drill additional wells or plug existing wells within the Application Lands.

Exhibit E-13 contains detailed information on the method used to calculate the tract factors.

Exhibit E-14 is a complete set of well data for the three producing wells in proposed unit: logs with the bottom and top of the unitized interval clearly marked, pressure data, completion report, and completed interval report.

Foundation believes that creating the proposed secondary recovery unit is necessary to efficiently develop the oil resources in the Application Lands and will allow full development of the D-Sand Formation to occur, will not promote waste, will not violate correlative rights, is economic and will assure the greatest ultimate recovery of oil, gas and associated hydrocarbon substances from the reservoir.

To the best of my knowledge and behalf, all of the matters set forth herein, my testimony and in the exhibits are true, correct and accurate.

Dated this 26th day of June, 2015

Joseph Tyree
Engineer

STATE OF COLORADO)
) ss
CITY AND COUNTY OF DENVER)

I, the undersigned Notary Public in and for said County in said State, hereby certify that Joseph Tyree, whose name as Engineer of Foundation Energy Management, LLC, is signed to the foregoing instrument and who is known to me, acknowledged before me on this day that, being informed of the contents of the instrument, executed the same voluntarily for and as the act of said corporation.

Subscribed and sworn to before me this 26 day of June, 2015

Witness my hand and official seal

My commission expires 10/26/17

Barbara L Ellard
Notary Public

BARBARA L ELLARD
NOTARY PUBLIC
Commission # 09008910
My Commission Expires 10-26-2017
STATE OF OKLAHOMA

Exhibit E-1

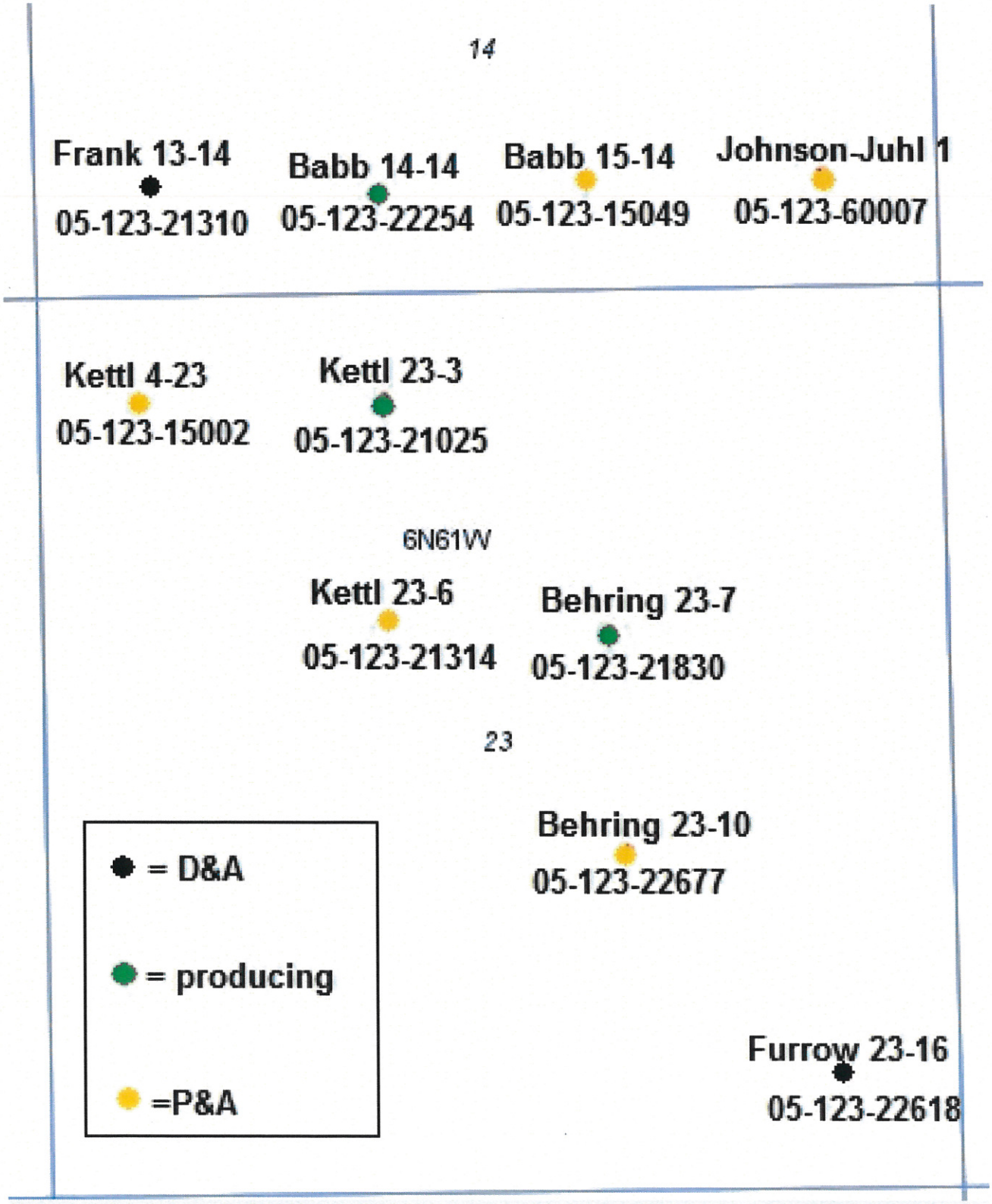

14
Frank 13-14
05-123-21310
Babb 14-14
05-123-22254
Babb 15-14
05-123-15049
Johnson-Juhl 1
05-123-60007
Kettl 4-23
05-123-15002
Kettl 23-3
05-123-21025
6N61W
Kettl 23-6
05-123-21314
Behring 23-7
05-123-21830
23
Behring 23-10
05-123-22677
= D&A
= producing
=P&A
Furrow 23-16
05-123-22618

Exhibit E-2

The initial oil gravity was 40 degrees, when reservoir pressure went below the bubble point, oil API gradually started to increase and are consistently around 55 degrees. A gas analysis shows a gas specific gravity of 1.0077. An initial oil formation volume factor was estimated to be 1.25 bbl/stb. An initial gas formation volume factor was estimated at .003 RB/scf.

Exhibit E-3

Well Name	Pay Interval [ft]	$Porosity_{avg}$ [-]	Rt_{avg} [-]	Sw_{avg} [-]	Oil EUR [Mbbl]	Gas EUR [MMcf]	Drainage Area [acres]
Behring 23-7	20	15.8%	39.8	0.4	43	399.2	3
Behring 23-10	6	10.8%	18.7	0.6211	6.3	86.4	3
Kettl 23-3	12	10.6%	46.8	0.3172	220.7	679.5	33
Babb 14-14	3	10.4%	21.7	0.5629	29.4	335.2	28
Babb 15-14	5	9.5%	37.7	0.4585	11.4	218.6	6
Kettl 23-6	2	9.8%	20	0.4799	0	0	-
Total Reservoir OOIP=			1,200	Mbbl			
Current Recovery Factor =			21.4%	[-]			
Primary Recovery Factor=			25.9%	[-]			

Exhibit E-4

Water saturation was calculated using Archie's Equation for sandstones using the following values for constants:

a = .65
m (cementation factor) = 2.15
n (saturation exponent) = 2

BEHRING 23-7

WELD COUNTY, COLORADO

DEPTH [ft]	THICKNESS [ft]	RESISTIVITY	GAMMA RAY	POROSITY	WATER SAT
6713-6715	2	20	28	15.5%	58.42%
6715-6717	2	30	22	15.6%	47.37%
6717-6719	2	38	30	17.0%	38.38%
6719-6721	2	42	30	13.8%	45.68%
6721-6723	2	45	24	15.0%	40.35%
6723-6725	2	50	24	17.8%	31.84%
6725-6727	2	67	25	17.5%	28.02%
6727-6729	2	66	25	17.5%	28.23%
6729-6731	2	30	40	16.0%	46.10%
AVG/TOT	18	43.1		16.2%	40.49%

	---PARAMETERS-
A	0.62
M	2.15
N	2
RW	0.2
OIL FVF	1.25

BEHRING 23-10

WELD COUNTY, COLORADO

DEPTH	THICKNESS	RESISTIVITY	POROSITY	WATER SAT
6712-6714	2	24	11.2%	75.63%
6714-6716	2	24	10.3%	82.76%
AVG/TOT	4	24.0	10.8%	79.19%

---------PARAMETERS--------	
A	0.62
M	2.15
N	2
RW	0.2
FVF	1.25

BABB 14-14

WELD COUNTY, COLORADO

DEPTH	THICKNESS	RESISTIVITY	POROSITY	WATER SAT
6736	1	23	12.1%	71.10%
6737	1	24	10.0%	85.43%
AVG/TOT	1	23.5	11.1%	78.26%

---------PARAMETERS--------	
A	0.62
M	2.15
N	2
RW	0.2
FVF	1.25

KETTL 23-3

WELD COUNTY, COLORADO

DEPTH	THICKNESS	RESISTIVITY	POROSITY	WATER SAT
6741-6743	2	23	10.0%	87.27%
6743-6745	2	28	12.0%	65.01%
6748-6750	2	30	13.0%	57.63%
6750-6752	2	50	18.2%	31.09%
6752-6754	2	110	19.0%	20.01%
6754-6756	2	40	16.0%	39.93%
AVG/TOT	12	46.8	14.7%	50.16%

---------PARAMETERS--------	
A	0.62
M	2.15
N	2
RW	0.2
FVF	1.25

BABB 15-14

WELD COUNTY, COLORADO

DEPTH	THICKNESS	RESISTIVITY	POROSITY	WATER SAT
6703-6705	2	38	9.2%	74.26%
6705-6707	2	40	9.4%	70.72%
6707-6709	2	35	9.8%	72.30%
AVG/TOT	6	37.7	9.5%	72.49%

---------PARAMETERS--------	
A	0.62
M	2.15
N	2
RW	0.2
FVF	1.25

KETTL 23-6

WELD COUNTY, COLORADO

DEPTH	THICKNESS	RESISTIVITY	POROSITY	WATER SAT
6744-6746	2	20	9.8%	83.14%
AVG/TOT	2	20.0	9.8%	83.14%

---------PARAMETERS--------	
A	0.62
M	2.15
N	2
RW	0.2
FVF	1.25

Exhibit E-5

With no core data taken for this reservoir, permeability is estimated be 50 mD based off work done in the R.M.A.G oil and gas field anthropologies (Crouch, 1983).

Exhibit E-6

J Sand water is planned to be injected into the proposed water flood formation. Daily goal injection rates are 600 BWPD. The estimated fracture gradient based on frac reports from the 3 current producers and analogous D Sand reservoirs is .75 psi/ft. Below is a water analysis of an offset J Sand well:

Endura Products Corp.
P.O. Box 3394 Midland, Texas 79706
Phone (915) 684-4233 * Fax (915) 684-4277

WATER ANALYSIS

Date: 12/18/2000 Endura Rep.: Dave Pickering Code: W-25769
Sampling Point/Date: Wellhead/12-15-00 State: CO
Company: Diversified Operating Co. County: Weld
Lease: Hoffman Well: 34-10

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na+ (Calc.)	3,013	131
Total Hardness as Ca++	176	0
Calcium, Ca++	80	4
Magnesium, Mg++	59	5
Barium, Ba++	0	0
Iron (Total) Fe+++*	9	0
ANIONS		
Chlorides, Cl-	3,800	107
Sulfate, SO4-	250	5
Carbonate, CO3-	0	0
Bicarbonates, HCO3-	1,732	28
Sulfide, S-*	0	0
Total Dissolved Solids (Calc.)	8,943	

OTHER PROPERTIES

pH*	7.593
Specific Gravity, 60/60 F.	1.006
Turbidity	249

SCALING INDICIES

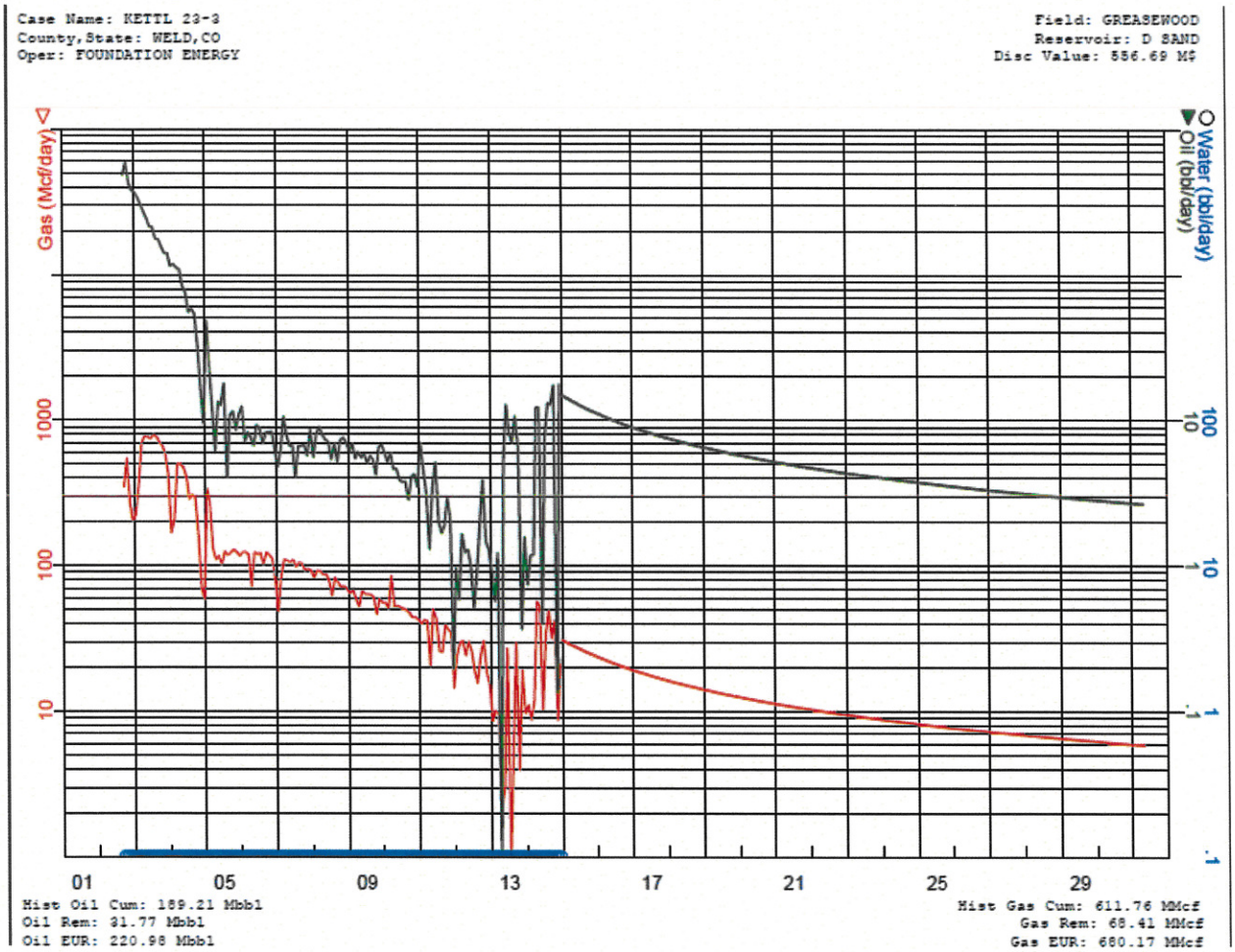
TEMP. F.	CA CO3	CASO4*2H2O	CA SO4	BA SO4
80	0.6166	-1.8878	-2.0332	-28.3341
120	0.8791	-1.9091	-1.8741	-28.5545
160	1.2109	-1.8811	-1.6735	-28.7028

PERFORATIONS

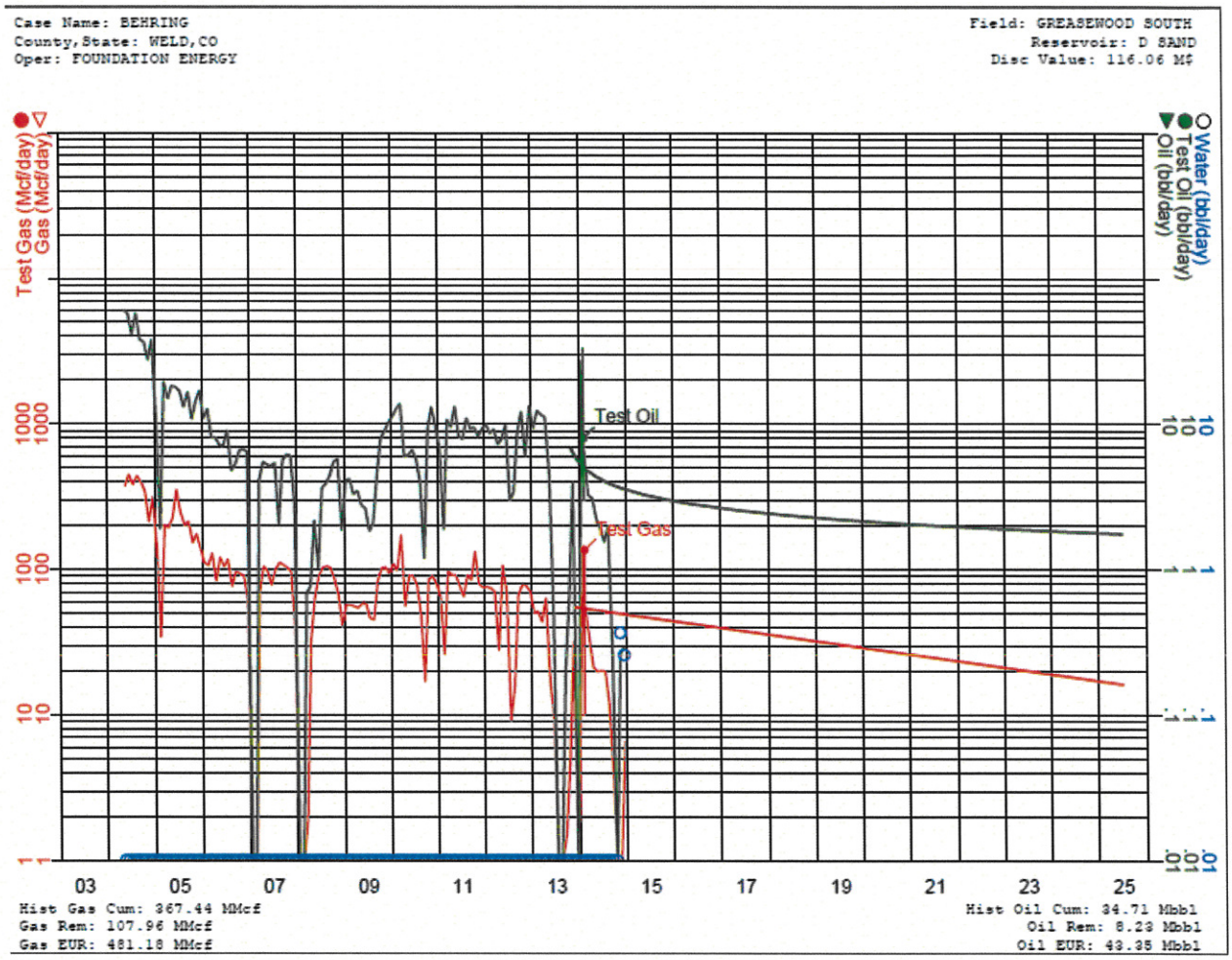
Exhibit E-7

EUR's were found using decline curve analysis.

Kettl 23-3 EUR



Behring 23-7 & 23-10 EUR



Babb 14-14 EUR

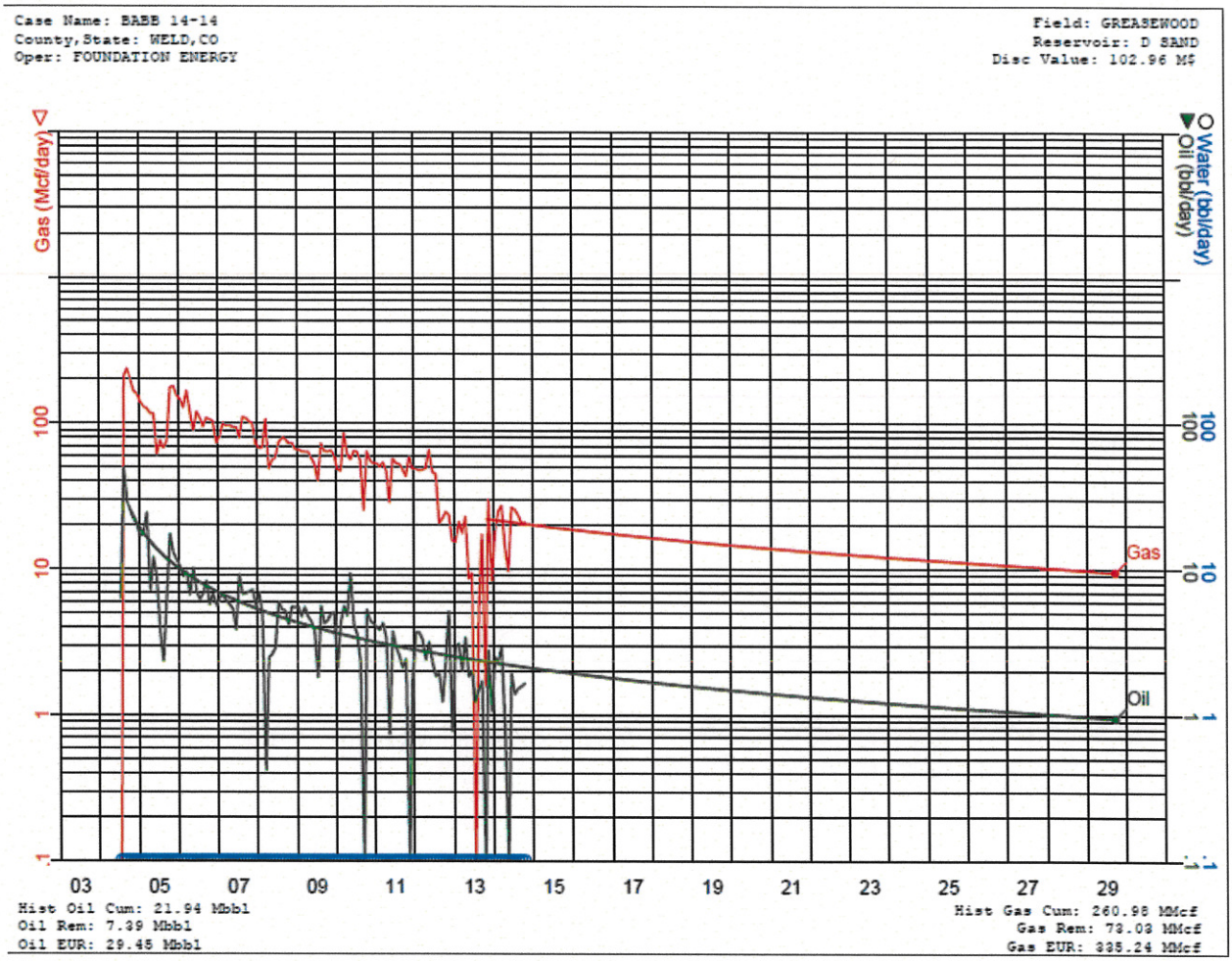


Exhibit E-8

Babb 14-14 WBD

Foundation Energy Management, LLC
WELLBORE DIAGRAM

Well / Battery	Prospect Name		Total Depth	Current Status
Babb 14-14	DOC IV		6,902'	PR
Location	**Sec-Twn-Rng**		**Producing Horizon**	**County & State**
SE SW	14-6N-61W		DSND	Weld, CO

WELLBORE DIAGRAM

Prepared Date: 08/22/14
Prepared By: Lance Bentley

General Info

API #: 05-123-22254

KB Elevation: 4,700'
GL Elevation: 4,690'

Spud Date: 06-25-2004
Completion Date: 07-02-2004

TVD: 6,902'
MD: 6,902'
Last PBTD: 6,857' (11-04-2013)

Tubing Detail
2-3/8" inch(OD)
4.7 # (weight)
J-55 grade

Tubing Tally

	Length	Depth
206 jts 2-3/8" tbg	6475	6475
TAC	3	6478
9 jts 2-3/8" tbg	279	6757
SN	1	6758
MA	25	6783

Surface Casing
8-5/8" inch (OD)
24 # (weight)
N-24 grade
322' depth from KB
Surface cement top — Visual Returns
235 sacks of cement
12-1/4" inch (OD) HOLE SIZE

Rod Design	length	depth
Polished rod	22	22
2', 2', 4', 6' - 7/8" subs	14	36
42 - 7/8"	1050	1086
226 - 3/4"	5650	6736
Insert pump	16	6752

Production Casing
5-1/2" inch (OD)
15.5 # (weight)
J-55 grade
6,900 depth from KB
5,595 cement top — CBL
200 sacks of cement
7-7/8" inch (OD) HOLE SIZE

Pump Details:
2" x 1-1/4" x 16' RHAC

Pumping Unit Details:
American 114 C96 64" stroke

Open Perforations
6,735' - 6,738' 12 holes
DSND

Well Notes:

PBTD: 6,857' (11-04-2013)

Behring 23-7 WBD

Foundation Energy Management, LLC
WELLBORE DIAGRAM

Well / Battery	Prospect Name		Total Depth	Current Status
Behring 23-7	DOC III/IV		6,885'	PR
Location	**Sec-Twn-Rng**		**Producing Horizon**	**County & State**
SW NE	23-6N-61W		DSND	Weld, CO

WELLBORE DIAGRAM

Prepared Date: 12-09-2013
Prepared By: Juan Posada

General Info

API #: 05-123-21830

KB Elevation: 4,176'
GL Elevation: 4,166'

Spud Date: 03-04-2004
Completion Date: 05-06-2004

TVD: 6,885'
MD: 6,885'
Last PBTD: 6,834 (10-24-2013)

Tubing Detail
2-3/8" inch(OD)
4.7 # (weight)
J-55 grade

Tubing Tally

	Length	Depth
210 jts 2-3/8" tbg	6541	6541
TAC 2-3/8" tbg - 5 1/2" CSG	4	4
6 jts 2-3/8" tbg	188	6729
SN	1	6730
4 ' perf. Sub	4	6734
MA	31	6765

Surface Casing
8-5/8" inch (OD)
24 # (weight)
N-24 grade
307 depth from KB
Surface cement top — Visual Returns
215 sacks of cement
12-1/4" inch (OD) HOLE SIZE

Rod Design

	length	depth
22' polished rod	22	22
1 - 2' x 7/8" sub	2	24
2 - 6' x 7/8" sub	12	36
31 - 7/8" rods	775	811
236 - 3/4" rods	5900	6711
16' pump	16	6727

Production Casing
5-1/2" inch (OD)
15.5 # (weight)
J-55 grade
6,855' depth from KB
5,404' cement top — CBL
200 sacks of cement
7-7/8" inch (OD) HOLE SIZE

Open Perforations
6,712' - 6,730' - 144 holes
DSND

PBTD: 6,834' (10-24-2013)

Pump Details:
2" x 1-1/2" x 16' RHBC

Pumping Unit Details:
Bethelem 320

Well Notes:

TACset with 19 K lbs pull into

Kettl 23-3 WBD

Foundation Energy Management, LLC
WELLBORE DIAGRAM

Well / Battery	Prospect Name		Total Depth	Current Status
Kettl 23-3	DOC IV		6,882'	PR
Location	**Sec-Twn-Rng**		**Producing Horizon**	**County & State**
NE NW	23-6N-61W		DSND	Weld, CO

WELLBORE DIAGRAM

Prepared Date: 4/1/2015
Prepared By: Adam Johnson

General Info

API #: 05-123-21025

KB Elevation: 4,694'
GL Elevation: 4,704'

Spud Date: 07-18-2002
Completion Date: 07-22-2002

TVD: 6,882'
MD: 6,882'
Last PBTD: 6,794' (05-13-2013)

Tubing Detail
2-3/8" inch(OD)
4.7 # (weight)
J-55 grade

Tubing Tally

	Length	Depth
205 jts - 2-3/8" tbg	6495	6495
5-1/2" x 2-3/8" TAC	3	6498
8 jts - 2-3/8" tbg	252	6750
SN	1	6751
1 jt 2-3/8" MA	32	6783

Surface Casing
8-5/8" inch (OD)
24 # (weight)
N-24 grade
322' depth from KB
Surface cement top — Visual Returns
235 sacks of cement
12-1/4" inch (OD) HOLE SIZE

Rod Design

	length	depth
20' polished rod	20	20
46 - 7/8" rods	1150	1170
208 - 3/4" rods	5200	6370
14 - 7/8" rods	350	6720
1-1/2" x 2" x 20' pump	20	6740

Production Casing
5-1/2" inch (OD)
15.5 # (weight)
J-55 grade
6,900 depth from KB
5,595 cement top — CBL
200 sacks of cement
7-7/8" inch (OD) HOLE SIZE

Perforations
6,741' - 6,756' 48 holes
DSND
0.375"

Pump Details:

Pumping Unit Details:
American 114 C96 64" stroke

Well Notes:
SN: 6,740'
TA: 6,474'

new rods and tubing (2/16/15)

PBTD: 6,804' (tagged on 05-10-2013)

Exhibit E-9

Greasewood North Reservoir Pressure Data Summary					
Date	Well	Pressure		Datum	Test Type
initial	-	2,250	psi	**6700**	*DST
3/24/2004	Behring 23-7	988	psi	6682	BHPS
6/29/2004	Babb 14-4	2250	psi	6758	DST
7/15/2004	Behring 23-7	772	psi	6680	BHPS
7/15/2004	Kettl 23-3	897	psi	6700	BHPS
9/27/2015	Behring 23-7	210	psi	6682	SIFL
3/17/2015	Babb 14-4	202	psi	6735	SIFL
3/17/2015	Kettl 23-3	258	psi	6700	SIFL
3 years after start of WF	-	1000	psi	-	predicted
6 years after start of WF	-	1800	psi	-	predicted

Exhibit E-10

Initial Investment	$200,000
Secondary Recovery	49 Mbbl
Price Deck	100% NYMEX (1-13-15)*
Economic Indicators:	
ROI [disc]	3.7
ROI [undisc]	7.2
Payout	3.9
IRR	33.9
PW10%	$477k

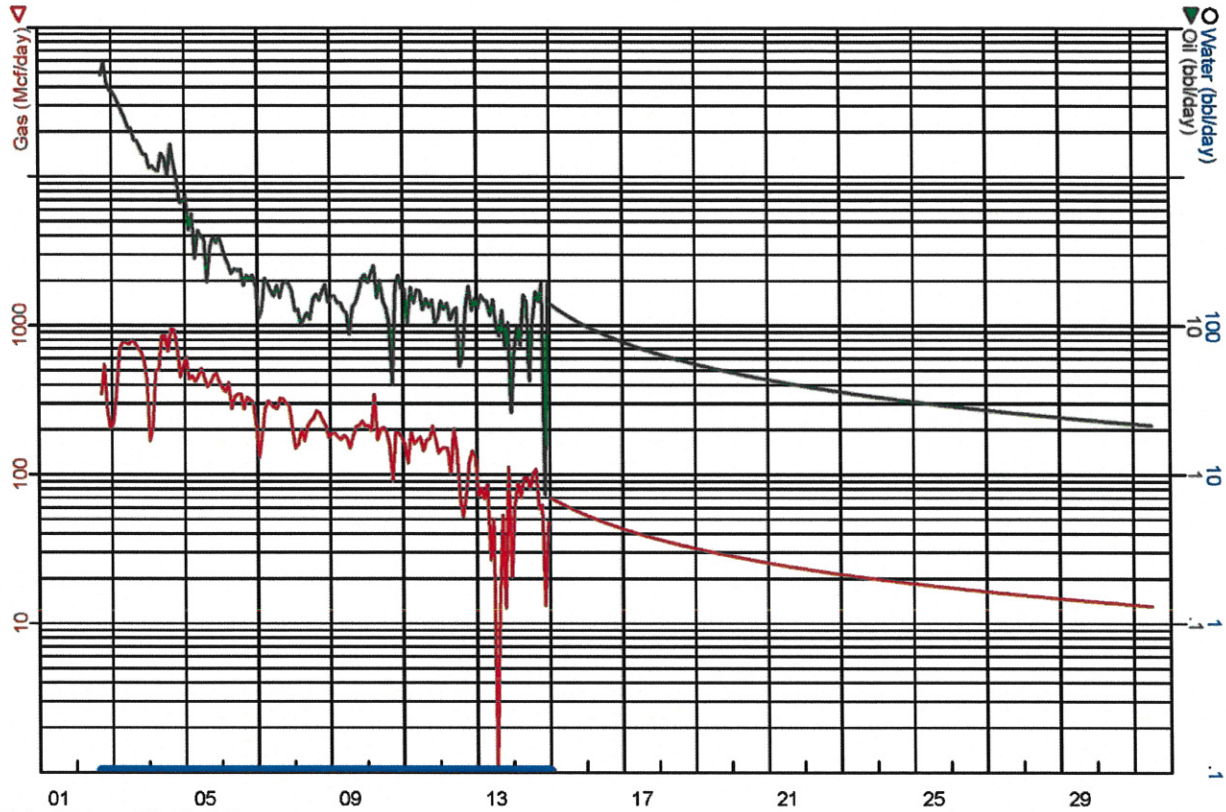
*NYMEX Price Deck from 1/13/15 assumes an average oil price of $61/bbl for next 5 years and then a flat $66.60/bbl until ECL. It assumes an average gas price of $3.58/MMbtu until ECL.

Exhibit E-11

Case Name: GREASEWOOD RESERVOIR
County,State: WELD,CO
Oper: FOUNDATION ENERGY

Field: GREASEWOOD
Reservoir: D SAND
Disc Value: 519.78 M$

Expected Recovery without Enhanced Recovery Operation



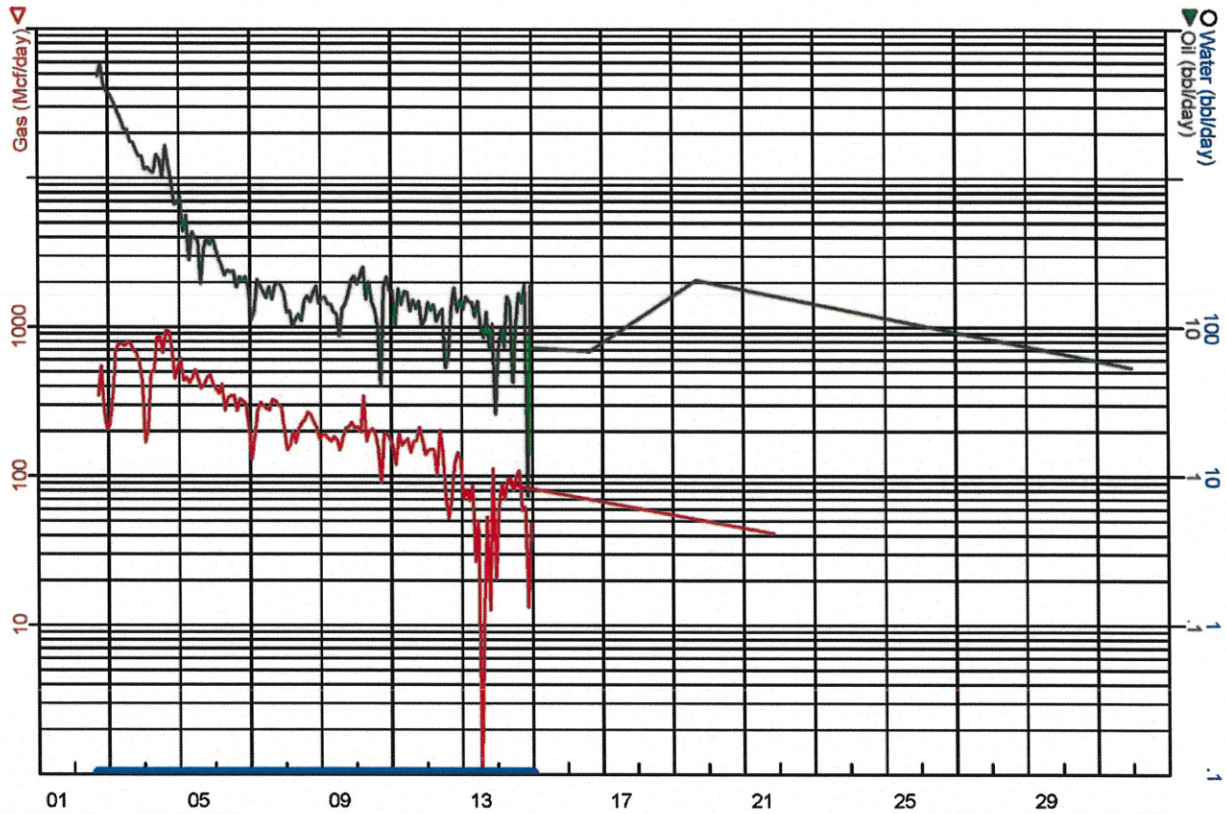
Hist Oil Cum: 246.03 Mbbl
Oil Rem: 27.04 Mbbl
Oil EUR: 273.08 Mbbl

Hist Gas Cum: 1,244.16 MMcf
Gas Rem: 155.25 MMcf
Gas EUR: 1,399.41 MMcf

Case Name: GREASEWOOD RESERVOIR WATER FLOOD
County,State: WELD,CO
Oper: FOUNDATION ENERGY

Field: GREASEWOOD
Reservoir: D SAND
Disc Value: 796.68 M$

Expected Recovery with Secondary Recovery Operations



Hist Oil Cum: 246.03 Mbbl
Oil Rem: 68.87 Mbbl
Oil EUR: 314.90 Mbbl

Hist Gas Cum: 1,244.16 MMcf
Gas Rem: 148.83 MMcf
Gas EUR: 1,392.99 MMcf

Exhibit E-12

The Babb 14-14 is the current candidate for conversion to injection, as the reservoir has no strong inclination. The Babb 14-14 was chosen as injector based on the most marginal production of the 3 current producers. The Behring 23-7 will be converted to injection to support the water flood when the water cut exceeds and economic limit. The Behring 2-23 is a possible new drill location located at NWNE Section 23 T6N-R61W, 6 PM, and depending on the response of the Kettl 23-3 and Behring 23-7 from the water flood, will be evaluated for drilling.

Exhibit E-13

The determination of the tract allocation factors was based largely on the balancing of royalty payments before and after unitization. Total royalty revenue was calculated for each royalty owner since Foundation Energy Management started operating in 2012, then each mineral owner was assigned a percentage of total royalty revenue distributed since 2012. Based on the expected water flood performance shown in Exhibit E-11, a system of variables were taken into account to try and match the percentage of total royalty revenue distributed since 2012. HCPV, acreage within tract, remaining primary oil, and remaining primary gas were used to calculate the tract allocation factor.

Tract #	HCPV [acre-ft]	acreage [acres]	Remaining Oil w/o WF [stb]	Remaining Gas w/o WF [Mcf]
Tract #1	6.89	40	7,510	74,260
Tract #2	14.02	40	-	-
Tract #3	60.27	160	31,990	69,830
Tract #4	130.04	200	14,631	112,840

The following weights, for the 4 previously mentioned variables, gave tract allocation factors that allowed for royalty revenue to remain relatively constant before and after unitization:

Method	Weight
HCPV	15.0%
Acreage	10.0%
Remaining Oil	37.5%
Remaining Gas	37.5%

The following tract allocations was then determined from the above weighted variables:

Tract #	Allocation Factor
Tract #1	17.4%
Tract #2	1.9%
Tract #3	40.3%
Tract #4	40.4%

Exhibit E-14

Babb 14-14 Resivity Log

PHOENIX SURVEYING Inc

01439620

DUAL INDUCTION GUARD LOG GAMMA RAY

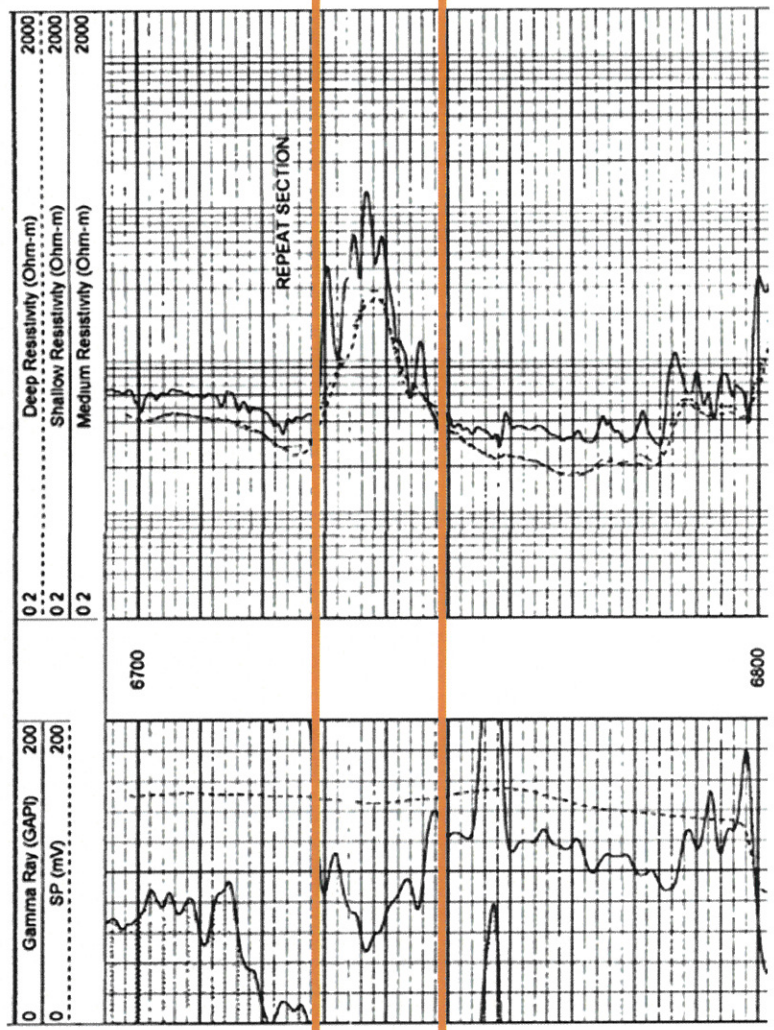
Company	Diversified Operating Corporation
Well	Babb 14-14
Field	Dolley
County	Weld
State	Colorado
Location	610' FSL & 2030' FWL SE SW Sec 14, Twp 6N, Rge 61W
Other Services	Density Neutron

Permanent Datum	GL	Elevation	4690
Log Measured From	KB		
Drilling Measured From	KB		

123-22254

Elevation
KB 4700
DF 4699
GL 4690

Date	June 28 2004
Run Number	1
Depth Driller	6900
Depth Logger	6902
Bottom Logged Interval	6902
Top Log Interval	Casing
Casing Driller	322
Casing Logger	322
Bit Size	7 7/8"
Type Fluid in Hole	Chem Gel
Density / Viscosity	9 1 / 61
pH / Fluid Loss	8 5 / 8 0
Source of Sample	Flowline
Rm @ Meas Temp	3 10 @ 71°F
Rmf @ Meas Temp	2 30 @ 71°F
Rmc @ Meas Temp	3 95 @ 71°F
Source of Rmf / Rmc	Measure / Calc
Rm @ BHT	1 22 @ 180°F
Time Circulation Stopped	1230
Time Logger on Bottom	1730
Maximum Recorded Temperature	180°F
Equipment Number	4078
Location	Brighton CO
Recorded By	Shaun Schuman
Witnessed By	Terry Cammon



Babb 14-14 Porosity Log

PHOENIX SURVEYS INC.

01439618

COMPENSATED DENSITY
COMPENSATED NEUTRON
GAMMA RAY

Company	Diversified Operating Corporation
Well	Babb 14-14
Field	Dolley
County	Weld
State	Colorado
Location	610' FSL & 2030' FWL SE SW Sec 14, Twp 6N, Rge 61W
Other Services	Dual Induction

Permanent Datum	GL	Elevation	4690
Log Measured From	KB		
Drilling Measured From	KB		

123 - 22254

Elevation
KB 4700
DF 4699
GL 4690

Date	June 28 2004
Run Number	1
Depth Driler	6900
Depth Logger	6902
Bottom Logged Interval	6882
Top Log Interval	5900
Casing Driler	322
Casing Logger	Not Logged
Bit Size	7 7/8"
Type Fluid in Hole	Chem Gel
Density / Viscosity	9 1 / 61
pH / Fluid Loss	8 5 / 8 0
Source of Sample	Flowline
Rm @ Meas Temp	3 10 @ 71°F
Rmf @ Meas Temp	2 30 @ 71°F
Rmc @ Meas Temp	3 95 @ 71°F
Source of Rmf / Rmc	Measure / Calc
Rm @ BHT	1 22 @ 180°F
Time Circulation Stopped	1230
Time Logger on Bottom	1730
Maximum Recorded Temperature	180°F
Equipment Number	4078
Location	Brighton CO
Recorded By	Shaun Schuman
Witnessed By	Terry Cammon

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JUL 30 2004
COGCC

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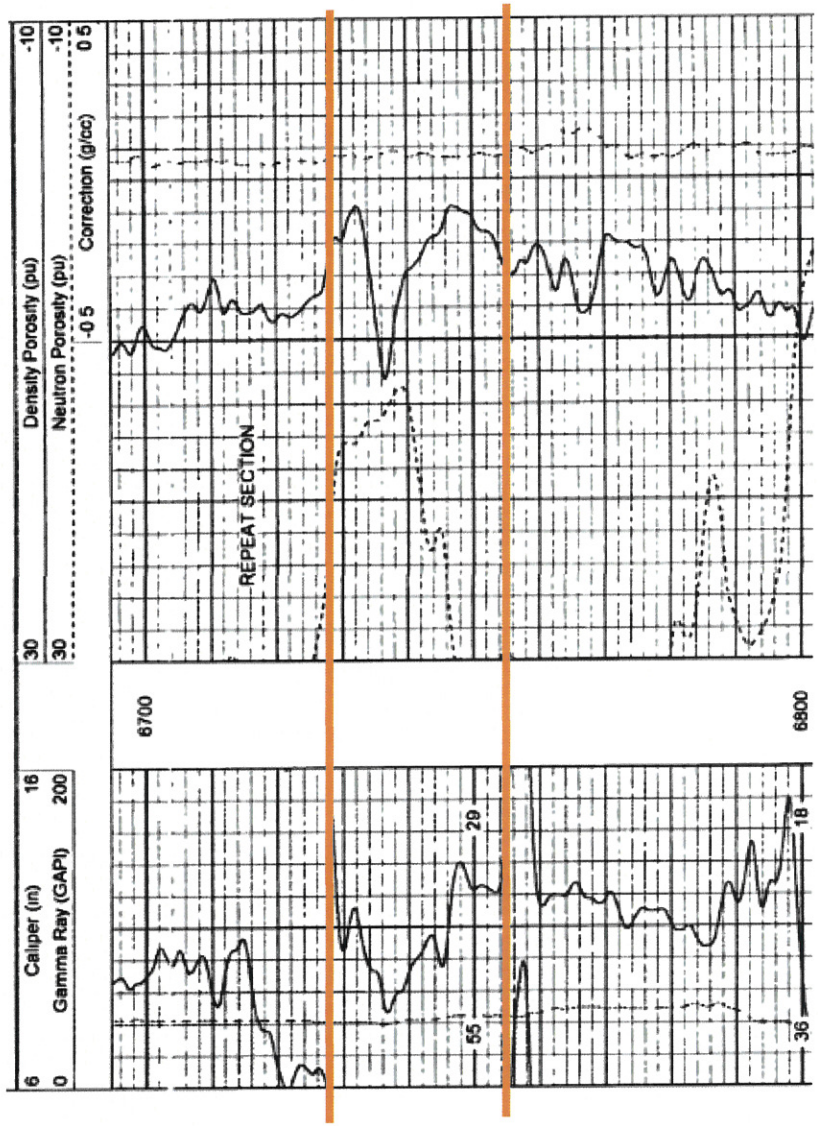


Babb 14-14 Drilling Completion Report

State of Colo.
Oil and Gas Conservation Commission

RECEIVED
COGCC

DRILLING COMPLETION REPORT

This form is to be submitted within 30 days of a wells completion. If the well is deepened or sidetracked, a new Form 5 is required. If an attempt has been made to complete/produce a well, then the operator shall submit Form 5A (Completed Interval Report). If the well has been plugged, submit Form 6 (Well Abandonment Report).

1. OGCC Operator Number: 21461
2. Name of Operator: Diversified Operating Corp
3. Address: 15000 W 6th Ave. 105
City: Golden State: CO Zip: 80401
4. Contact Name and Telephone: Cathy Cannon
No 303-384-9611
Fax 303-384-8612

Complete the Attachment Checklist

6. API Number: 05 113 22154
7. Well Name: Babb Well Number: 14-14
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): SE SW Sec 14 T4N R66W 6th
Footage at Surface: 2050' FWL 660' FSL
9. Field Name: Dewey Field Number: 17290
11. Spud Date: 6-25-04
12. Date TD: 6-28-04
13. Date Completed: 7-1-04
14. Total Depth MD 6903 TVD
15. Plug Back Total MD TVD
16. Was a Multiple Run? ☐ Yes ☒ No
** One copy of all wireline and mud logs must be submitted **
17. Elevations GR 4700 KB 4708
18. List Electric Logs Run: DIL, CDL, GR

15. Well Classification

☐ Dry ☒ Oil ☐ Gas
☐ Coalbed
☐ Disposal ☐ Storage
☐ Enhanced Recovery
☐ Gas Storage ☐ Observation
☐ Other

19. CASING, LINER and CEMENT

String	Hole Size	Casing Size	Cap/Liner Weight	Cap/Liner Top	Cap/Liner Setting Depth	No. of Sacks	Cement Interval Top	Cement Interval Bottom	Verify Method CBL	Verify Method Visual
Surface	12 1/4	8 5/8	24#	Surface	522	235	Surface	522	☐	☒
Production	7 7/8	5 1/2	15.5		6900	300	2593	6900	☒	☐
Stage Cement									☐	☐
									☐	☐
									☐	☐
Stage Cement									☐	☐
									☐	☐
									☐	☐
Stage Cement									☐	☐
									☐	☐
									☐	☐
									☐	☐

20. FORMATION LOG INTERVALS and TEST ZONES

Formation	Measured Depth Top	Measured Depth Bottom	Check if Applies DST	Check if Applies Core	** Attach Test and Core Analysis and be submitted to COGCC ** Comments
Fox Hills	600	1000	☐	☐	
Codell	6290	6310	✓		
J Sand	6430	6470			
J Sand	6600	TD			

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Henry J. Cannon

Signed: [signature] Title: President Date: 8/23/04

Babb 14-14 Completed Interval Report

State of Colorado
Oil and Gas Conservation

COMPLETED INTERVAL REPORT

RECEIVED
COGCC

Completions Attachment Checklist

1. COGCC Operator Number: 34461
2. Name of Operator: Noble Energy Corp
3. Address: 1500 Lincoln Pkwy #100
City: Golden State: CO Zip: 80401
4. Contact Name and Telephone: Cathy Cameron
No: 303-364-9164
Fax: 303-364-9611
5. API Number: 05-123-22204-00 6. County: Weld
7. Well Name: Babb Well Number: 14-14
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NE NW Sec 14 - T6N - R61W 6th

List in order of completion

FORMATION: D SAND [X] Producing [ ] Abandoned [ ] Shut-In [ ] Commingled
Perforated Interval Top: 6735 Bottom: 38 No. Holes: 12 Size: .3875"
Open Hole Completion Interval Top: [ ]
Formation Treatment Description: Frac'd w/ 750 BBL Vistar Fluid & 50,100 lb. 20-40 Sand

Initial Test Data: Date: 8/02/2004 Hours: 8 Test Date: 8/02/2004 MCF Gas: 50est BWPD: 50est
Production Method: Sand Flow Casing Pressure: 250 Choke Size: 16/64 Gas Disposition: Vented/Flared
Oil Gravity API: 39 Gas Gravity: [ ] Commingled [X] Gas [ ] CO2 [ ] Water [ ] Oil [ ] Condensate [ ] Helium [ ] Other
Calculated 24 Hr Rate: Oil Bbl: 24 MCF Gas: 150 Water Bbl: 150 Gas/Oil Ratio: 6250/1
Production Method: Flowing
Initial Flow Pressure: 210 Flowing Tubing Pressure: 6730' Choke Size: None
Reason for Non-Production:
Administrative Approval Date: Approved: [ ] Y [ ] N Back Ground:
Drilling Pits Lined: Back Ground Top:

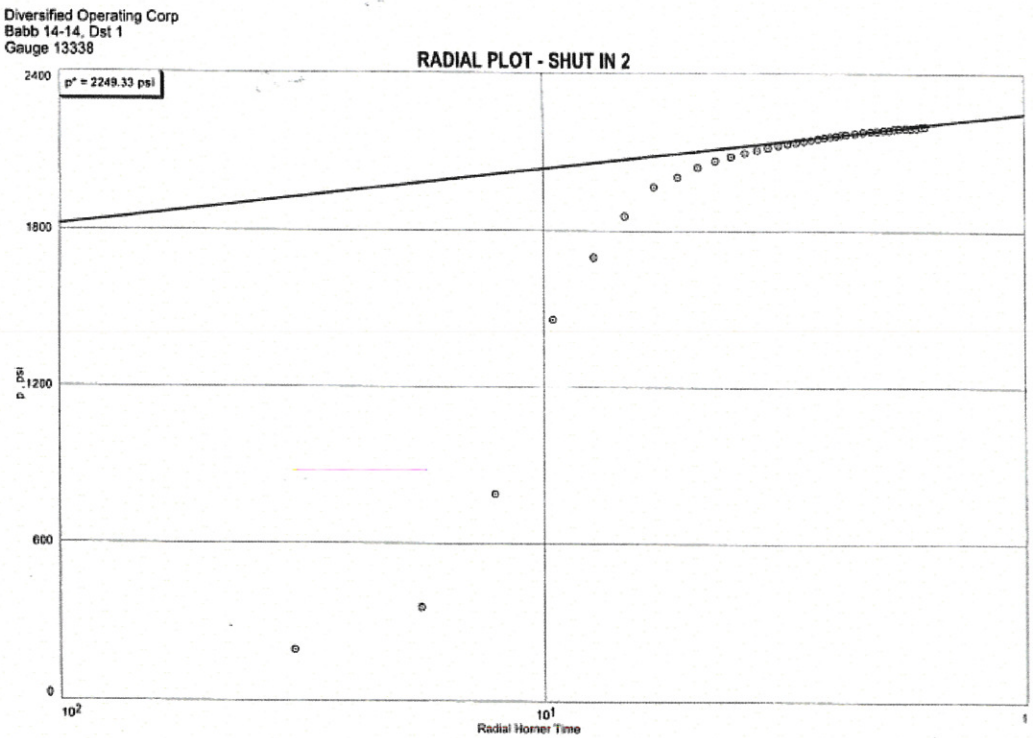
FORMATION: [ ] Producing [ ] Abandoned [ ] Shut-In [ ] Commingled
Perforated Interval Top: Bottom: No. Holes: Size: Open Hole Completion Interval Top:
Formation Treatment Description:

Initial Test Data: Date: Hours: Oil Bbl: MCF Gas: Water Bbl:
Production Test Method: Casing Pressure: Flowing Tubing Pressure: Choke Size:
API Gravity Oil: [ ] Gas [ ] Condensate MCF Gas: [ ] Inert [ ] CO2 [ ] Helium [ ] Dry [ ] Condensate [ ] Other: Gas Disposition:
Calculated 24 Hr Rate: Oil Bbl: MCF Gas: Water Bbl: Gas/Oil Ratio:
Production Method:
Tubing Size: Tubing Depth: Packer Depth:
Reason for Non-Production:
Administrative Approval Date: Approved: [ ] Y [ ] N Back Ground:
Drilling Pits Lined: Back Ground Top:

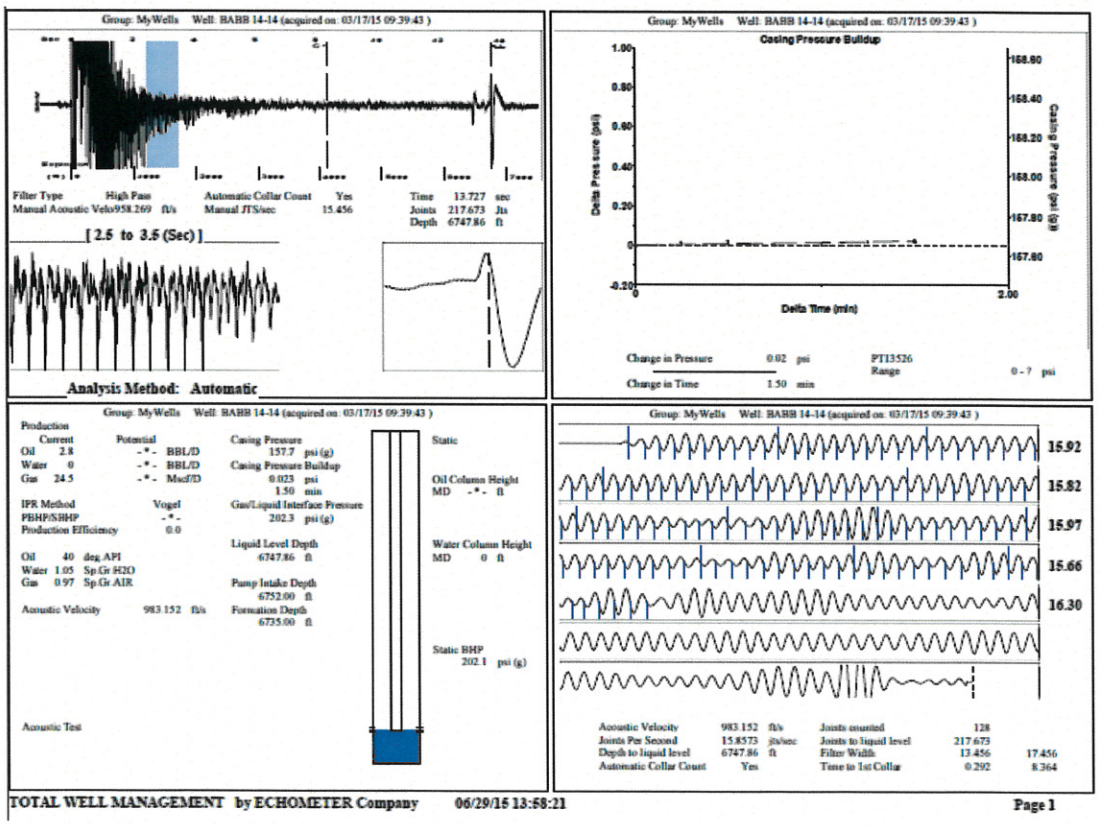
I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Cathy J. Cameron
Signature: [signature] Title: President Date: 9/23/04

Babb 14-14 DST



Babb 14-14 SIFL (3/17/15)



Behring 23-7 Resistivity Log

PHOENIX SURVEYS, INC

01282917

DUAL INDUCTION GUARD LOG GAMMA RAY

Company	Diversified Operating Corporation
Well	DOC Behring 23-7
Field	Dollery
County	Weld
State	Colorado

Location: 1980" FNL & 1980' FEL, SW NE, Sec 23, Twp 6N, Rge 61W

Other Services: Density, Neutron

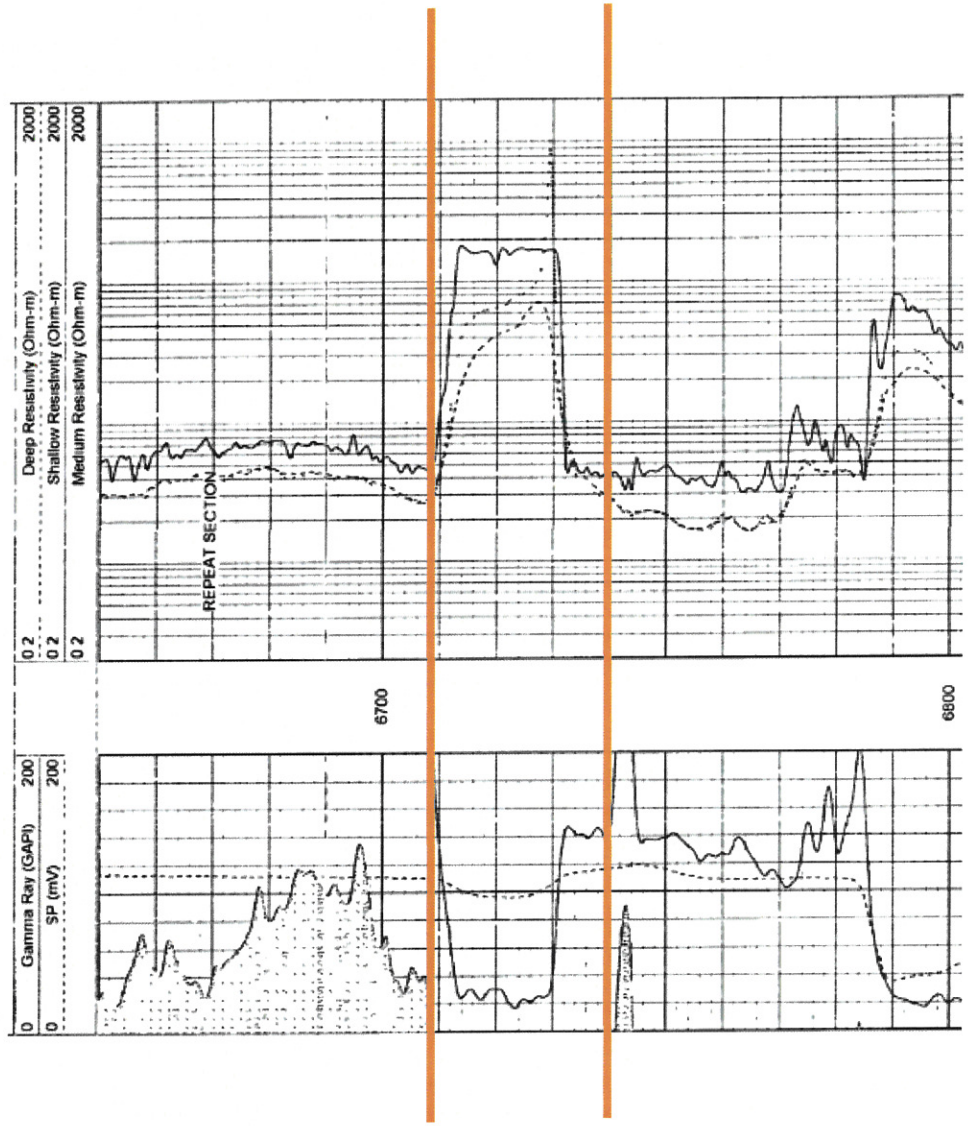
Permanent Datum	GL	Elevation	4689
Log Measured From	KB		
Drilling Measured From	KB		

Elevation: KB 4699, DF 4698, GL 4689

123-21830

Date	March 10 2004
Run Number	1
Depth Driller	6872
Depth Logger	6865
Bottom Logged Interval	6865
Top Log Interval	Casing
Casing Driller	307
Casing Logger	307
Bit Size	7 7/8
Type Fluid in Hole	Chem Gel
Density / Viscosity	9 2 / 65
pH / Fluid Loss	8 0 / 10 0
Source of Sample	Flowline
Rm @ Meas Temp	3 30 @ 83 F
Rmf @ Meas Temp	2 49 @ 83 F
Rmc @ Meas Temp	4 12 @ 83 F
Source of Rmf / Rmc	Measure / Calc
Rm @ BHT	1 62@ 167 F
Time Circulation Stopped	2230 3/9/04
Time Logger on Bottom	0150
Maximum Recorded Temperature	167 F
Equipment Number	4078
Location	Brighton CO
Recorded By	Ian Harris
Witnessed By	Mark Scarrello

RECEIVED 03 09 2004 COGCC



Behring 23-7 Porosity Log

PHOENIX SURVEYING INC

01282918

COMPENSATED DENSITY
COMPENSATED NEUTRON
GAMMA RAY

Company	Diversified Operating Corporation
Well	DOC Behring 23-7
Field	Dollery
County	Weld
State	Colorado

Location	1980" FNL & 1980' FEL SW NE Sec 23, Twp 6N, Rge 61W
Other Services	Induction

Permanent Datum	GL	Elevation	4689
Log Measured From	KB		
Drilling Measured From	KB		

123-21830

Elevation
KB 4699
DF 4698
GL 4689

Date	March 10 2004
Run Number	1
Depth Driller	6872
Depth Logger	6865
Bottom Logged Interval	6845
Top Log Interval	Casing
Casing Driller	307
Casing Logger	Not Logged
Bit Size	7 7/8"
Type Fluid in Hole	Chem Gel
Density / Viscosity	9 2 / 65
pH / Fluid Loss	8 0 / 10 0
Source of Sample	Flowline
Rm @ Meas Temp	3 30 @ 83 F
Rmf @ Meas Temp	2 49 @ 83 F
Rmc @ Meas Temp	4 12 @ 83 F
Source of Rmf / Rmc	Measure / Calc
Rm @ BHT	1 62@ 167 F
Time Circulation Stopped	2230 3/9/04
Time Logger on Bottom	0150
Maximum Recorded Temperature	167 F
Equipment Number	4078
Location	Brighton CO
Recorded By	Ian Harris
Witnessed By	Mark Scanello

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11-5-04
COGCC

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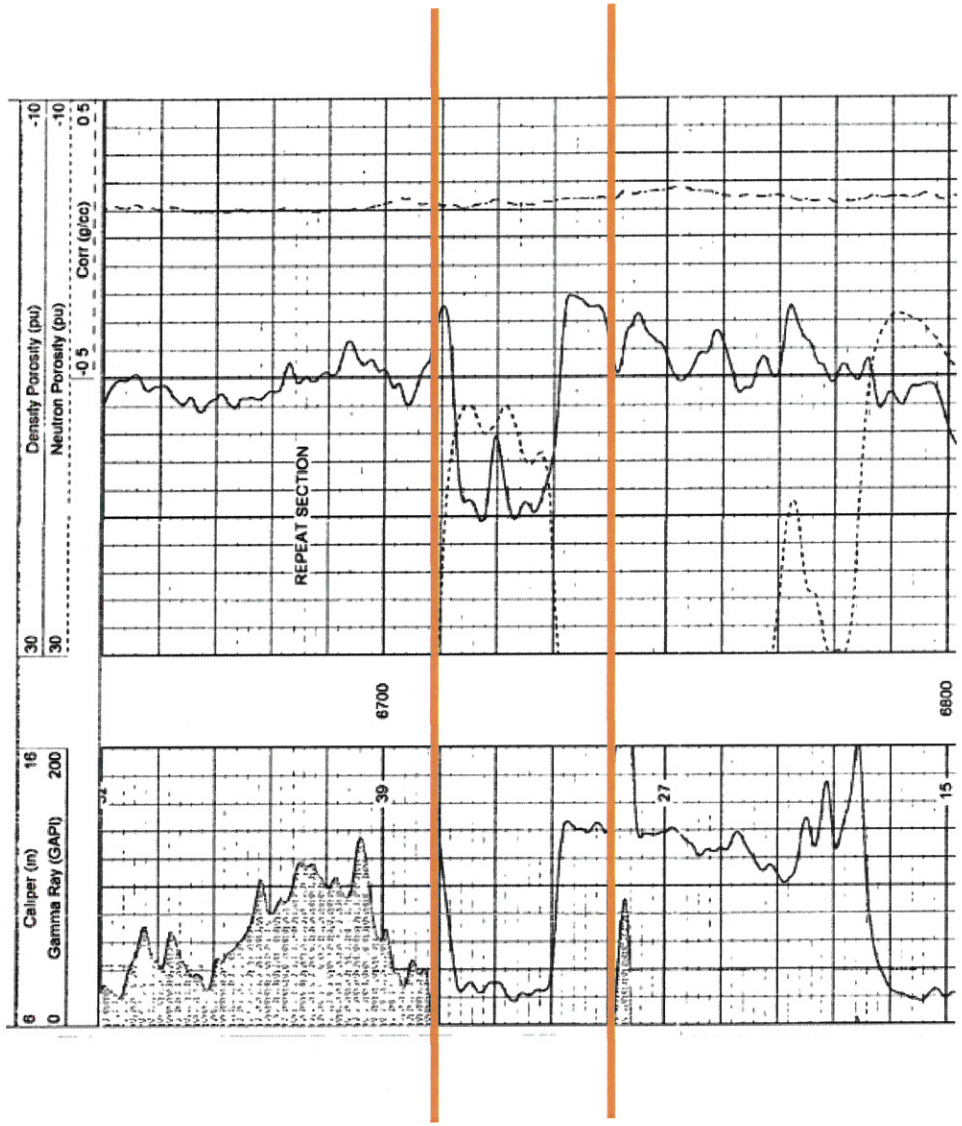


Behring 23-7 Drilling Completion Report

Form 5

State of Colorado
Oil and Gas Conservation Commission

DRILLING COMPLETION REPORT

This form is to be submitted within 30 days of the well's completion. If the well is deepened or sidetracked, a new Form 5 is required. If an attempt has been made to complete/produce a well, then the operator must submit Form 5A (Completed Interval Report). If the well has been plugged, submit Form 6 (Well Abandonment Report).

COGCC

Complete the Attachment Checklist

15. Well Classification

☐ Dry ☒ Oil ☐ Gas
☐ Coalbed
☐ Methane ☐ Disposal
☐ Enhanced Recovery
☐ Gas Storage ☐ Observation
☐ Other

CASING, LINER and CEMENT

String	Hole Size	Casing Size	Casing Weight	Casing Type	Casing Setting Depth	No. Sacks	Cement Top	Cement Bottom	Verify Cement CBL	Verify Cement Other
Surface	12 1/4	8 5/8"	24#	Surface	303	215	Surface	303	☒	☒
Production	7	4 1/2"	15.5	J1	6355	200	5400	6355	☒	☐
Stage Cement									☐	☐
									☐	☐
									☐	☐
Stage Cement									☐	☐
									☐	☐
									☐	☐
Stage Cement									☐	☐
									☐	☐
									☐	☐
									☐	☐

FORMATION LOG INTERVALS and TEST ZONES

Formation	Measured Depth Top	Measured Depth Bottom	Core Samples DST	Core Samples Core	Comments
Niobrara	4960'		☐	☐	
Ft. Hays	5510'				
Codell	5562'				
G. Sand	5918				
J Sand	6154				
TD	6355				

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: T.J. Cannon

Signature: [signature] Title: Prod. [illegible]

Behring 23-7 Completed Interval Report

State of Colorado
Oil and Gas Conservation Commission
COMPLETED INTERVAL REPORT

RECEIVED
COGCC

Operator Number: 34151
Name of Operator: Diversified Operating Corp.
Address: 15000 West 6th Ave. Suite 101
City: Golden State: CO Zip: 80401
Contact Name: Cathy Cannon
Phone: 303-384-9611
Fax: 303-384-9612

API Number: 05-123-21830 County: Weld
Well Name: Behring Well Number: 23-7
Location (QtrQtr, Sec, Twp, Rng, Meridian): SWNE Sec 23-T4N-R61W

List in order of completion:

FORMATION: J&D [X] Producing [ ] Abandoned [ ] Shut-In [ ] Commingled
Perforated Interval Top: 6744 Bottom: 6750 No. Holes: 42 Size: .325" Open Hole Completion (Date, Time):
Formation Treatment Details: NONE

Initial Production Date: 3/21/04 Hours: 7 Bbls Oil: 21 API Oil: NA Bbls Gas: 730m
Initial Test Method: Flowing Casing Pressure: 400 Flowing Tubing Pressure: 250 Choke Size: None
Oil Density: 38 [X] Oil [ ] Condensate Gas Density: NA [X] Flare [ ] Vent [ ] Dry [ ] Gas Lift [ ] Other: Gas Disposition: Sold/Duke
Calculated 24 hr Rate: Bbls Oil: 72 Mcf Gas: No measurement Bbls H2O: 210 GOR: NA
Initial Measured Totals
Casing Size: 2 1/8 Setting Depth: 6721 Packer Depth: None
Reperforated Zone Date: Squeezed [ ] Y [ ] N Sacks Cement:
Perforation Data: Sacks Cement on Top:

FORMATION: [ ] Producing [ ] Abandoned [ ] Shut-In [ ] Commingled
Perforated Interval Top: Bottom: No. Holes: Size: Open Hole Completion (Date, Time):
Formation Treatment Details:

Initial Production Date: Hours: Bbls Oil: API Oil: Bbls Gas:
Initial Test Method: Casing Pressure: Flowing Tubing Pressure: Choke Size:
Oil Density: [ ] Oil [ ] Condensate BTU Gas: [ ] Water [ ] CO2 [ ] Dry [ ] Condensate [ ] Flare [ ] Other: Gas Disposition:
Calculated 24 hr Rate: Bbls Oil: Mcf Gas: Bbls H2O: GOR:
Initial Measured Totals
Casing Size: Setting Depth: Packer Depth:
Reperforated Zone Date: Squeezed [ ] Y [ ] N Sacks Cement:
Perforation Data: Sacks Cement on Top:

I hereby certify that the information supplied on this form, to the best of my knowledge, true, correct, and complete.
Print Name: Terry J. Cannon
Signature: Title: President Date: 6/28/2004

Behring 23-7 BHPS

MARK KERKER
President

CABLE INC.

Telephone
970-522-4751 — 522-4784

PRODUCTION ENGINEERING
440 - 442 SOUTH FRONT STREET
BOX 888
STERLING, COLORADO 80751

Company: Diversified Operating Corp.
Well: Behring #23-7
Field: Grassewood

County: Weld
State: Colorado

Engineer:
Gauge Type: Silicon Crystal
Serial No.: 5351
Gauge Range: 10000
Gauge Depth: 6680 ft

Date: 07/15/2004
Well Type: Production
Test Type: FOOK Gradiant
Well Status: Shut In

Tubing: TO
Tubing: TO
Casing: TO
Perfs.:
Perfs.:
Elevation:

Oil Level 5924 ft
H2O Level None

Zero: Master Valve

Shut-in BHP 772 @ 6680 ft
Shut-in WHP 421
Casing CSGP 650

Shut-in BHT 231 F @ 6680 ft
Shut-in WHT 73 F

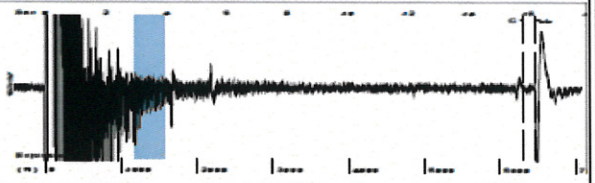
[GRADIENT DATA]

#	MD	TVD	PRESSURE	PSI/ft
1	0	0	421.28	
2	3000	3000	469.67	0.016
3	4000	4000	488.46	0.019
4	5000	5000	510.44	0.022
5	6000	6000	555.15	0.045
6	6680	6680	772.25	0.319

Remarks: File Name: BEHRING2.*
Bombs Off Bottom: 14:50

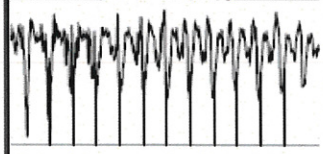
Behring 23-7 SIFL (9/27/14)

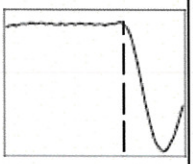
Group: MyWells Well: BEHRING 23-7 (acquired on: 09/25/14 11:53:02)



Filter Type High Pass
Manual Acoustic Velo 788.436 ft/s
Automatic Collar Count Yes
Manual JTS/sec 13.1406
Time 16.234 sec
Joints 215.468 Jts
Depth 6464.04 ft

[3.0 to 4.0 (Sec)]





Analysis Method: Automatic

Group: MyWells Well: BEHRING 23-7 (acquired on: 09/25/14 11:53:02)

NO PRESSURE DATA AVAILABLE

Change in Pressure 0.00 psi
Change in Time 0.00 min
PT 15256
Range 0 - 7 psi

Group: MyWells Well: BEHRING 23-7 (acquired on: 09/25/14 11:53:02)

Production

	Current	Potential	
Oil	7	- * -	BBL/D
Water	0	- * -	BBL/D
Gas	45.0	- * -	Mscf/D

IPR Method Vogel
FBHP/SBHP - * -
Production Efficiency 0.0

Oil 40 deg.API
Water 1.05 Sp.Gr.H2O
Gas 1.15 Sp.Gr.AIR

Acoustic Velocity 796.358 ft/s

Casing Pressure
94.1 psi (g)
Casing Pressure Buildup
12799.6 psi
14.50 min
Gas/Liquid Interface Pressure
126.4 psi (g)

Liquid Level Depth
6464.04 ft

Pump Intake Depth
6675.00 ft
Formation Depth
6712.00 ft

Static

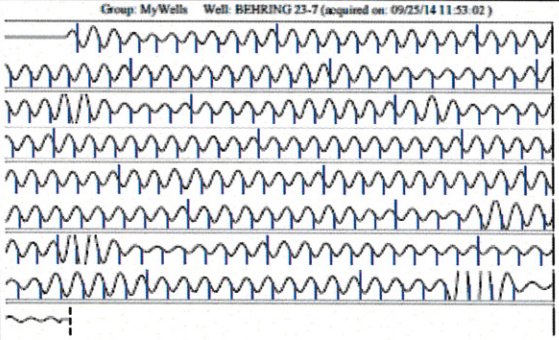
Oil Column Height
MD 248 ft

Water Column Height
MD 0 ft

Static BHP
210.5 psi (g)

Acoustic Test

Group: MyWells Well: BEHRING 23-7 (acquired on: 09/25/14 11:53:02)



Acoustic Velocity	796.358	ft/s	Joints counted	207	
Joints Per Second	13.2726	jts/sec	Joints to liquid level	215.468	
Depth to liquid level	6464.04	ft	Filter Width	11.1406	15.1406
Automatic Collar Count	Yes		Time to 1st Collar	0.264	15.86

Kettl 23-3 Resistivity Log

PHOENIX SURVEYS, INC.

DUAL INDUCTION GUARD LOG GAMMA RAY

Company	Diversified Operating Corporation
Well	DOC Kettl 23-3
Field	Dolley
County	Weld State Colorado

01236523

Location: 600' FNL & 2040' FWL, NE NW, Sec - 23, Twp - 6N, Rge - 61W

Other Services: Density, Neutron

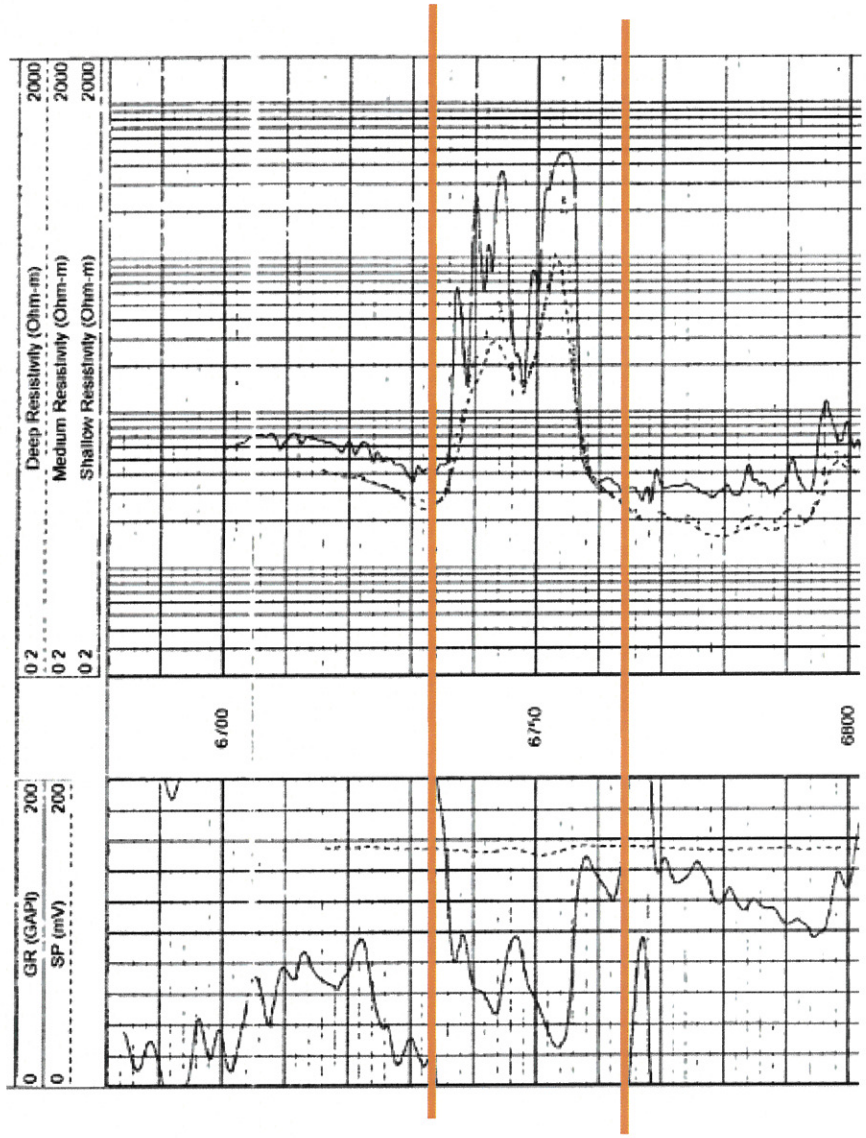
Permanent Datum	GL	Elevation	4694
Log Measured From	KB		
Drilling Measured From	KB		

Elevation: KB 4704, DF 4703, GL 4694

123-21025

Date	July 22 2002
Run Number	1
Depth Driller	6880
Depth Logger	6882
Bottom Logged Interval	6882
Top Log Interval	Casing
Casing Driller	314
Casing Logger	314
Bit Size	7-7/8"
Type Fluid in Hole	Chem Gel
Density / Viscosity	9.3 / 70
pH / Fluid Loss	9.5 / 8.0
Source of Sample	Flowline
Rm @ Meas. Temp	3.31 @ 82 F
Rmf @ Meas. Temp	2.46 @ 82 F
Rmc @ Meas. Temp	4.13 @ 82 F
Source of Rmf / Rmc	Meas. / Calc.
Rm @ BHT	1.61 @ 165 F
Time Circulation Stopped	2200
Time Logger on Bottom	0130
Maximum Recorded Temperature	168 F
Equipment Number	4057
Location	Brighton CO
Recorded By	Patterson
Witnessed By	Mat Goolsby

RECEIVED
OIL & GAS COMMISSION



Kettl 23-3 Porosity Log

PHOENIX SURVEYS, INC

COMPENSATED DENSITY
COMPENSATED NEUTRON
GAMMA RAY

Company	Diversified Operating Corporation
Well	DOC Kettl 23-3
Field	Dolley
County	Weld
State	Colorado

01236524

Location: 600' FNL & 2040' FWL, NE NW, Sec - 23, Twp - 6N, Rge - 61W

Other Services: Dual Induction

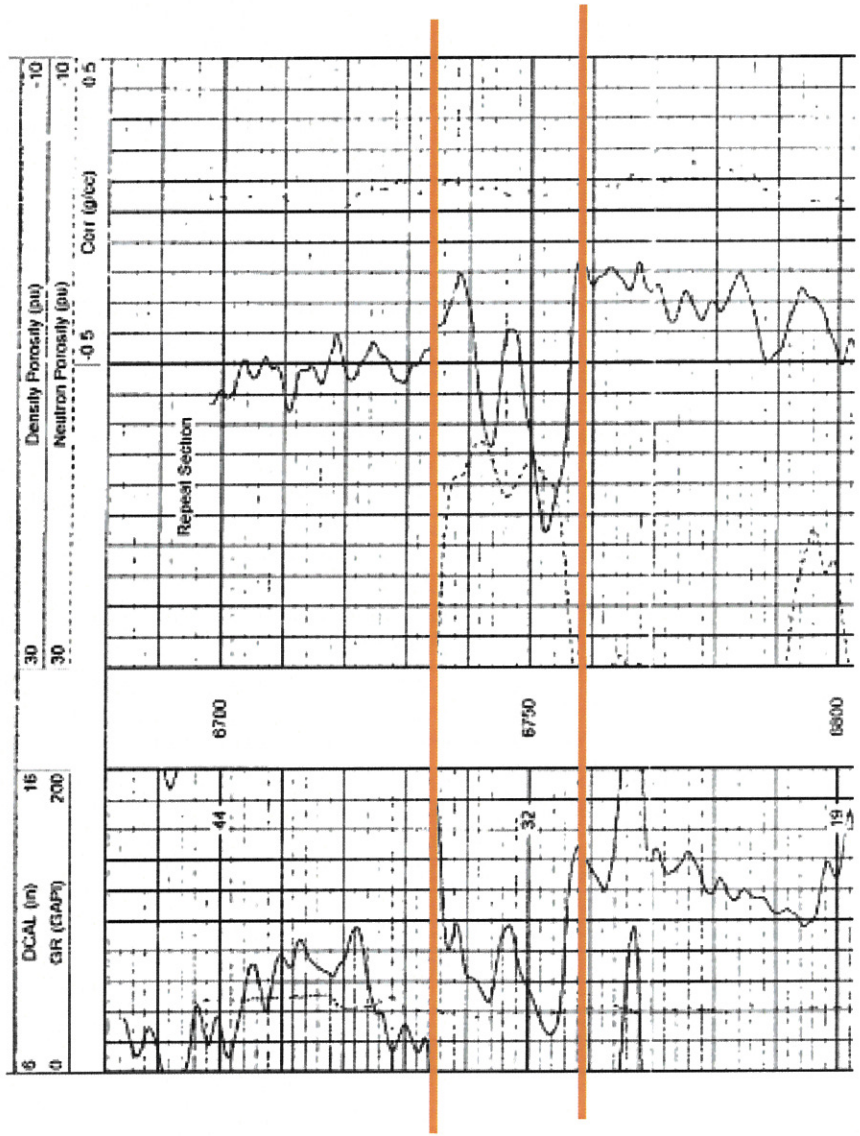
Permanent Datum	GL	Elevation	4694
Log Measured From	KB		
Drilling Measured From	KB		

Elevation: K B 4704, D F 4703, G L 4694

123-21025

Date	July 22, 2002
Run Number	1
Depth Driller	6880
Depth Logger	6882
Bottom Logged Interval	6882
Top Log Interval	5900
Casing Driller	314
Casing Logger	Not Logged
Bit Size	7 7/8
Type Fluid in Hole	Chem Gel
Density / Viscosity	9.3 / 70
pH / Fluid Loss	9.5 / 8.0
Source of Sample	Flowline
Rm @ Meas. Temp	3.31 @ 82 F
Rmf @ Meas. Temp	2.48 @ 82 F
Rmc @ Meas. Temp	4.13 @ 82 F
Source of Rmf / Rmc	Meas / Calc
Rm @ BHT	1.61 @ 168 F
Time Circulation Stopped	2200
Time Logger on Bottom	0130
Maximum Recorded Temperature	168 F
Equipment Number	4057
Location	Brighton, CO
Recorded By	Patterson
Witnessed By	Mat Goolsby

RECEIVED
OIL & GAS COMMISSION



Kettl 23-3 Drilling Completion Report

State of Colorado
Oil and Gas Conservation

RECEIVED
DEC - 3 02
COGCC

DRILLING COMPLETION REPORT

This form is to be submitted within 30 days of the well's completion. If the well is dispositioned or shut-in, a new Form 5 is required. If an attempt has been made to complete/produce a well, then the operator shall submit Form 5A (Completed Interval Report). If the well has been plugged, submit Form 6 (Well Abandonment Report).

1. OGCC Operator Number: 21461
2. Name of Operator: Diversified Operating Corp
3. Address: 15000 W 6th Ave, #103
City: Golden State: CO Zip: 80401
4. Contact Name and Telephone: Cathy Common
No: 303-384-9611
Fax: 303-384-9617

Complete the Attachment Checklist

	Ind.	Oper.
Logs	✓	
Directional Data		
Mud Log		
Other		
Cmt	✓	

5. API Number: 05-123-21005
6. County: Weld
7. Well Name: Kettl
Well Number: 23-3
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NE NE Sec 23 T6N R66W 6th PM
Footages at Surface: 405' FNL 2095' FEL
9. Ground Elevation: 4915
Elevation at Top of Prod. Zone:
Elevation at Bottom Hole:
10. Field Name: Watkins
Field Number:
11. Federal, Indian or State Lease Number:

12. Spud Date: 7-18-2001
13. Date TD: 7-22-2001
14. Date Completed: 8/15/02
15. Total Depth: MD 6882 TVD 6881
16. Plug Back Total: MD TVD
17. Was a Mud Log Run? ☒ Yes ☐ No
"One copy of all mud logs and mud logs must be submitted."
18. Type of Electric and Other Logs Run: DIL SP CNL GR CBL
19. Elevations: GR 4914 KB 4924

15. Well Classification

☐ Dry ☒ Oil ☐ Gas
☐ Coalbed
☐ Stratigraphic ☐ Disposal
☐ Enhanced Recovery
☐ Gas Storage ☐ Observation
☐ Other:

20. CASING, LINER and CEMENT

String	Hole Size	Casing Size	Casing Wt (lbs)	Casing Top	Casing Setting Depth	No. of Sacks	Cement Interval Top	Cement Interval Bottom	Verify Method Calc.	Verify Method Calc.
Surface	12 1/4	8 5/8	24#	Surface	314	215	Surface	314	Circ.	Visual
Stage Cement										
Production	7 7/8	5 1/2	15.50	Surface	6880	200	500	6880		
DV Tool		Stage Cement		0	1750	175	Surface	1300		
Stage Cement										

21. FORMATION LOG INTERVALS and TEST ZONES

Formation	Measured Depth Top	Measured Depth Bottom	Chemical Analysis Water	Chemical Analysis Gas	Comments
Niobrara	6098				
Ft. Hays	6270				
Codell	6324				
X Carlile	6336				
D Sandstone	6734				
J Shale (Muddy)	6795				
J Sandstone	6810				
TD	6882				

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Cathy J. Common

Signature: [signature] Title: President Date: 9/16/02

Kettl 23-3 Completed Interval Report

State of Colorado
Oil and Gas Conservation

COMPLETED INTERVAL REPORT

RECEIVED
DEC - 3 02
COGCC

Operator: Diversified Operating Corp.
Contact: Cathy Cannon
Phone: 303-384-9611
Fax: 303-384-9612
Address: 1500E West 6th Ave., Suite 102
City: Denver State: CO Zip: 80401

API Number: 05-123-22025-00
County: Weld
Well Name: Kettl
Well Number: 23-3
Location (QtrQtr, Sec, Twp, Rng, Meridian): NE/NW Sec. 23 T2N R66W

List in order of completion:

FORMATION: Dnb | Producing | Abandoned | Shut In | Commingled
Perforated Interval: 6744 - 6756 | Holes: 48 | Size: .375

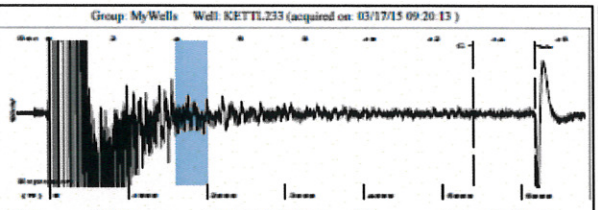
Test Information: Date 9/5/02 | Hours 24 | Prod Oil 155 | MCF Gas 175 | Gravity 38.7m
Calculated 24 Hour Rate: Oil 155 | Gas 175 | Water 38.7m
Tubing Size: 2 3/8 | Tubing Depth: 6743' | Packer Depth: N/A
Reason for Test/Perforation: Producing/Stress
Initial Completion Date: 9/5/02
Production Method: Pumping
Bridge Plug Depth:

FORMATION: | Producing | Abandoned | Shut In | Commingled
Perforated Interval: | Holes: | Size:
Test Information: Date | Hours | Prod Oil | MCF Gas | Gravity
Calculated 24 Hour Rate: Oil | Gas | Water
Tubing Size | Tubing Depth | Packer Depth
Reason for Test/Perforation
Initial Completion Date
Production Method
Bridge Plug Depth

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.
Print Name: Terry J. Cannon
Signature: [signature] Title: President Date: 9/9/02

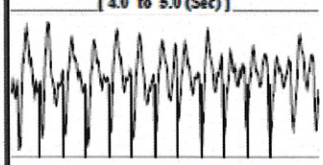
Kettl 23-3 SIFL (3/17/15)

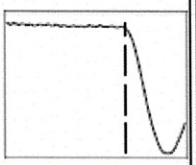
Group: MyWells Well: KETTL233 (acquired on: 03/17/15 09:20:13)



Filter Type	High Pass	Automatic Collar Count	Yes	Time	15.183 sec
Manual Acoustic Velo	824.468 ft/s	Manual JTS/sec	13.2979	Joints	199.283 Jts
				Depth	6177.76 ft

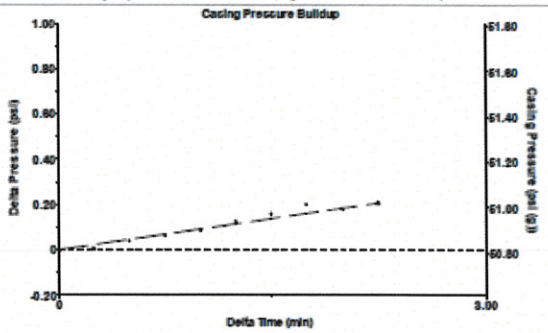
[4.0 to 5.0 (Sec)]





Analysis Method: Automatic

Group: MyWells Well: KETTL233 (acquired on: 03/17/15 09:20:13)



Change in Pressure	0.21 psi	PT13526 Range	0 - ? psi
Change in Time	2.25 min		

Group: MyWells Well: KETTL233 (acquired on: 03/17/15 09:20:13)

Production

	Current	Potential	
Oil	2.4	-*-	BBL/D
Water	0	-*-	BBL/D
Gas	12.1	-*-	Mscf/D

IPR Method	Vogel
PBHP/SBHP	-*-
Production Efficiency	0.0

Oil	40	deg.API
Water	1.05	Sp.Gr.H2O
Gas	1.15	Sp.Gr.AIR

Acoustic Velocity 813.774 ft/s

Casing Pressure 50.8 psi (g)

Casing Pressure Buildup 0.2 psi 2.25 min

Gas/Liquid Interface Pressure 68.8 psi (g)

Liquid Level Depth 6177.76 ft

Pump Intake Depth 6740.00 ft

Formation Depth 6736.00 ft

Static

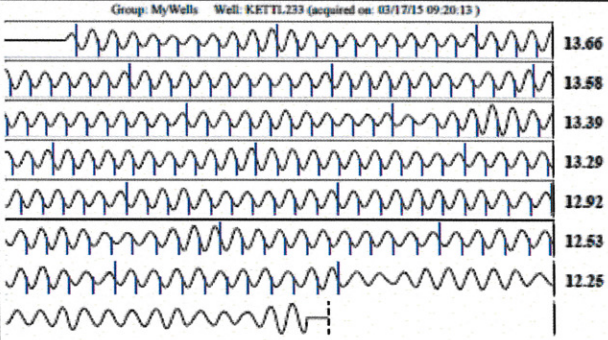
Oil Column Height MD 558 ft

Water Column Height MD 0 ft

Static BHP 258.4 psi (g)

Acoustic Test

Group: MyWells Well: KETTL233 (acquired on: 03/17/15 09:20:13)



Acoustic Velocity	813.774 ft/s	Joints counted	170	
Joints Per Second	13.1254 jts/sec	Joints to liquid level	199.283	
Depth to liquid level	6177.76 ft	Filter Width	11.2979	15.2979
Automatic Collar Count	Yes	Time to 1st Collar	0.264	13.216

Joseph M. Tyree

(918) 504-7171 · jtyree@foundationenergy.com
1439 E. 36th St. · Tulsa, OK 74105

EDUCATION

University of Tulsa	Tulsa, Oklahoma
Degree	B.S. in Petroleum Engineering
Cumulative GPA	2.92/4.00
Graduation Date	May, 2011
OUILHS	Norman, Oklahoma
High School Diploma	College Preparatory Curriculum
Cumulative GPA	3.96/4.00
ACT Composite	32
Graduation Date	June, 2006

PROFESSIONAL EXPERIENCE

Foundation Energy Management, LLC (Oct 2012 – Present)
Reservoir Engineer

- Work with third party engineering firm in formulation of year end reserves and periodic updates
- Organize and maintain reserve database in PHDWin and update as required
- Perform volumetric and material balance calculations for reserve calculations
- Examine and make recommendations of PTA analysis of wells
- Develop and update capital budget for planning and execution of capital expenditure projects
- Evaluate proposed work on outside operated properties (participation elections)
- Evaluate economics on drilling, completion, stimulation, and plugging candidates

Foundation Energy Management, LLC (May 2011 – Nov 2012)
Operations Engineer

- Responsible for monitoring and maximizing production performance for oil and natural gas assets in Texas, Louisiana, Kansas, and Oklahoma
- Work with field personnel to reduce LOE by optimizing production equipment and methods in order to maximize production rates in a safe and environmental manner
- Design, recommend, and oversee well workovers and recompletions in operated assets
- Prepare AFE documents on projects for presentation/recommendation to management
- Run and present economic evaluations (PhdWin) for operated and non-operated projects
- Designed and implemented reservoir analysis program to optimize waterflood oil recovery
- Assists Reservoir Engineer with preparing year end reserves for operated wells
- Responsible for correcting regulatory related issues and filing reports to state agencies
- Assist with company drilling operations and geological projects
- Certified drilling supervisor with Surface BOP stacks

Bravo Natural Gas (October 2008 – May 2011)
Petroleum Engineering Intern

- Worked with engineers and geologists on projects related to operations, reservoir engineering, land, regulatory, and asset acquisition
- Completed geological log analysis
- Responsible for reporting monthly production and correcting regulatory issues
- Assisted geologists with preparing maps and cross-sections
- Assisted engineers and geologists with examination of potential asset acquisitions

University of Tulsa, Petroleum Engineering Department (May 2008 – October 2008)
Undergraduate Researcher

- Supported graduate level researchers with a project to create 3D reservoir analysis of a field in Wyoming
- Attended training course for PETRA reservoir modeling software

Butkin Oil Company (May 2007 – August 2007)
Field Intern

- Worked with field personnel in daily operations to maximize oil production
- Gained field experience related to rod pumping operations
- Repaired and replaced broken equipment and gauged daily production
- Worked with engineer regarding recompletion projects

PROFESSIONAL RELATED SKILLS

PhDWin, PETRA, Aries, RodStar, Snap, Qrod, Powertools, Petrel, PI/Dwights PLUS, PipeSim, Tank, FieldDirect, Microsoft Office (Word, Excel, and PowerPoint), Paint Shop Pro, Photoshop, VBA Programming, ProPresenter

RELATED COURSEWORK

Fall, 2006:	Chemistry I, Calculus I, Introduction to Petroleum Engineering
Spring, 2007:	Physics I, Calculus II, Physical Geology
Fall, 2007:	Physics II, Calculus III, Thermodynamics, Statics, Sedimentary Rocks and Processes
Spring, 2008:	Dynamics, Rock and Fluid Properties, Electric Circuit Analysis, Differential Equations
Fall, 2008:	Computer Applications in Petroleum Engineering, Mechanics of Materials, Reservoir Engineering, Introduction to Fluid Mechanics, Heat Transfer, Rock and Fluid Properties Lab
Spring, 2009:	Formation Evaluation, Petroleum Geology, Statistical Methods for Engineers
Fall, 2009:	Production Engineering I, Natural Gas Production Engineering
Spring, 2010:	Natural Gas Reservoir Engineering, Drilling Engineering I
Fall, 2010:	Drilling Engineering II, Production Engineering II, Well Completions, Drilling Lab, Production Lab, Hydrogeology
Spring, 2011:	Capstone, Reservoir Engineering II

ACADEMIC AWARDS

Awards:	Robert C. Byrd Honors Scholarship (2006-2010)
	B. B. Blair Scholarship (2007-2010)
	Oklahoma Energy Resources Board Scholar (2006-2010)
	Mid-Continent Society of Petroleum Engineers Scholar (2006-2010)
	University of Tulsa, University Academic Scholarship (2006-2010)
	University of Tulsa, Trustee Scholarship (2006-2010)