

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

ORIGINAL

Form ACO-1
June 2009

Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 32119
Name: Northern Natural Gas
Address 1: 1111 South 103rd Street
Address 2: _____
City: Omaha State: NE Zip: 68124 + _____
Contact Person: Michael Loeffler
Phone: (402) 398-7103
CONTRACTOR: License # 34541
Name: Ninnescah Drilling, LLC
Wellsite Geologist: Frank Mize, #365
Purchaser: NA

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
 Gas D&A ENHR SIGW
 OG GSW Temp. Abd.
 CM (Coal Bed Methane)
 Cathodic Other (Core, Expl., etc.): Water Supply well

If Workover/Re-entry: Old Well Info as follows:

Operator: _____
Well Name: _____

Original Comp. Date: 4/21/12 Original Total Depth: 4802

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
 Conv. to GSW
- Plug Back: _____ Plug Back Total Depth _____
 Commingled Permit #: _____
 Dual Completion Permit #: _____
 SWD Permit #: _____
 ENHR Permit #: _____
 GSW Permit #: _____

2/27/12	3/8/12	4/21/12
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 151-22385-00-00

Spot Description: 1404' FNL & 2560' FWL

_____ SE NW Sec. 23 Twp. 26 S. R. 11 East West
1,404 Feet from North / South Line of Section
2,560 Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

County: Pratt

Lease Name: NNG WWW Well #: #2

Field Name: None

Producing Formation: Arbuckle

Elevation: Ground: 1830 Kelly Bushing: 13

Total Depth: 4802 Plug Back Total Depth: 4802

Amount of Surface Pipe Set and Cemented at: 1853 Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: NA Feet

If Alternate II completion, cement circulated from: NA

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 1500-120000 ppm Fluid volume: 1400 bbls

Dewatering method used: Closed Loop dewatering system used

Location of fluid disposal if hauled offsite:

Operator Name: Luka-Cami Development

Lease Name: SICU #22 License #: 31739

Quarter _____ Sec. 18 Twp. 12 S. R. 12 East West

County: Pratt Permit #: E8202

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INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 1078, Topeka, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: [Signature] Jason Goss

Title: Consulting Engineer Date: 5/17/12

(405) 830-8365

KCC Office Use ONLY

- Letter of Confidentiality Received
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: [Signature] Date: 6/13/12

KCC/WHITA

Operator Name: Northern Natural Gas Lease Name: NNG WWW Well #: #2
 Sec. 23 Twp. 26 S. R. 11 East West County: Pratt

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> List All E. Logs Run: MPD/MDN-MSS-MLL-MAE/MFE, CBL, GR, CIT	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum See Attached Sheet
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CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Water String	17 1/2"	13 3/8"	48#	213	Single Stage	240	2% CC, 1/4# cello flake
Surface Csg	12 1/4"	9 5/8"	36#	1853	Single stage	670	A Con & Common
Production Csg	8 3/4"	7"	23#	4522	2 stage w/ DV tool	250/300	A Con & Common

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				Cement Circulated to surface on all 3 strings

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
OPEN HOLE	OPEN Hole Completion 4522-4802'	Natural Completion	4522-4802

TUBING RECORD:		Size: <u>3 1/2" 9.3# J-55</u>	Set At: <u>4352</u>	Packer At: <u>NA</u>	Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR. <u>4/21/12</u>		Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____			
Estimated Production Per 24 Hours	Oil Bbls. <u>0</u>	Gas Mcf <u>0</u>	Water Bbls. <u>4500</u>	Gas-Oil Ratio	Gravity

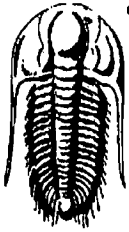
DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input checked="" type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
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WWW #2 Tops Picked from E Logs

Formation	Top	Datum
Heebner	3433	-1590
Lansing	3612	-1769
Stark	3889	-2046
BKC	3956	-2113
Mississippian	4068	-2225
Kinderhook	4152	-2309
Viola	4321	2478
Arbuckle	4503	-2660

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TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Northern Natural Gas
 1111 South 103rd Street
 Omaha NE 68124
 ATTN: Michael Loffler/Fran

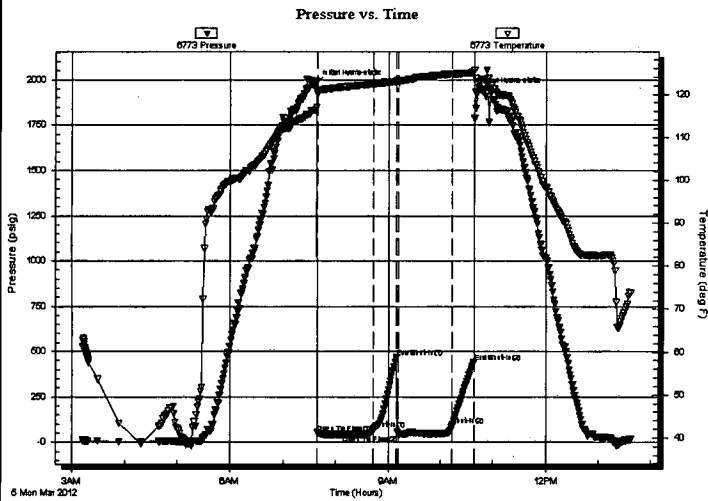
Pratt KS
NNG WWWW#2
 Job Ticket: 47466 **DST#: 1**
 Test Start: 2012.03.05 @ 03:11:51

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: 07:39:21
 Time Test Ended: 13:36:51
 Test Type: **Conventional Bottom Hole (Initial)**
 Tester: **Chris Staats**
 Unit No: **47**
 Interval: **4074.00 ft (KB) To 4118.00 ft (KB) (TVD)**
 Total Depth: **4118.00 ft (KB) (TVD)**
 Hole Diameter: **8.75 inches** Hole Condition: **Fair**
 Reference Elevations: **4738.00 ft (KB)**
4725.00 ft (CF)
KB to GR/CF: 13.00 ft

Serial #: 6773 **Outside**
 Press@RunDepth: **91.22 psig @ 4074.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2012.03.05** End Date: **2012.03.05** Last Calib.: **2012.03.05**
 Start Time: **03:11:56** End Time: **13:36:51** Time On Btm: **2012.03.05 @ 07:36:21**
 Time Off Btm: **2012.03.05 @ 10:40:06**

TEST COMMENT: IF: Strong blow BOB 2 min
 IS: Strong blow 6"
 FF: Strong blow BOB 2 sec
 FSI: Weak surface blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1974.99	116.22	Initial Hydro-static
3	50.83	120.57	Open To Flow (1)
67	69.12	122.44	Shut-In(1)
93	469.55	122.94	End Shut-In(1)
96	41.07	122.84	Open To Flow (2)
158	91.22	124.70	Shut-In(2)
182	441.26	124.98	End Shut-In(2)
184	1934.40	123.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	MUD 100%	0.70

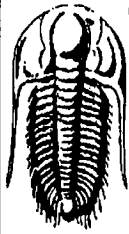
Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Natural Gas

Pratt KS

1111 South 103rd Street
Omaha NE 68124

NNG WWW#2

Job Ticket: 47466

DST#: 1

ATTN: Michael Loffler/Fran

Test Start: 2012.03.05 @ 03:11:51

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 35.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.39 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6800.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	MUD 100%	0.701

Total Length: 50.00 ft

Total Volume: 0.701 bbl

Num Fluid Samples: 0

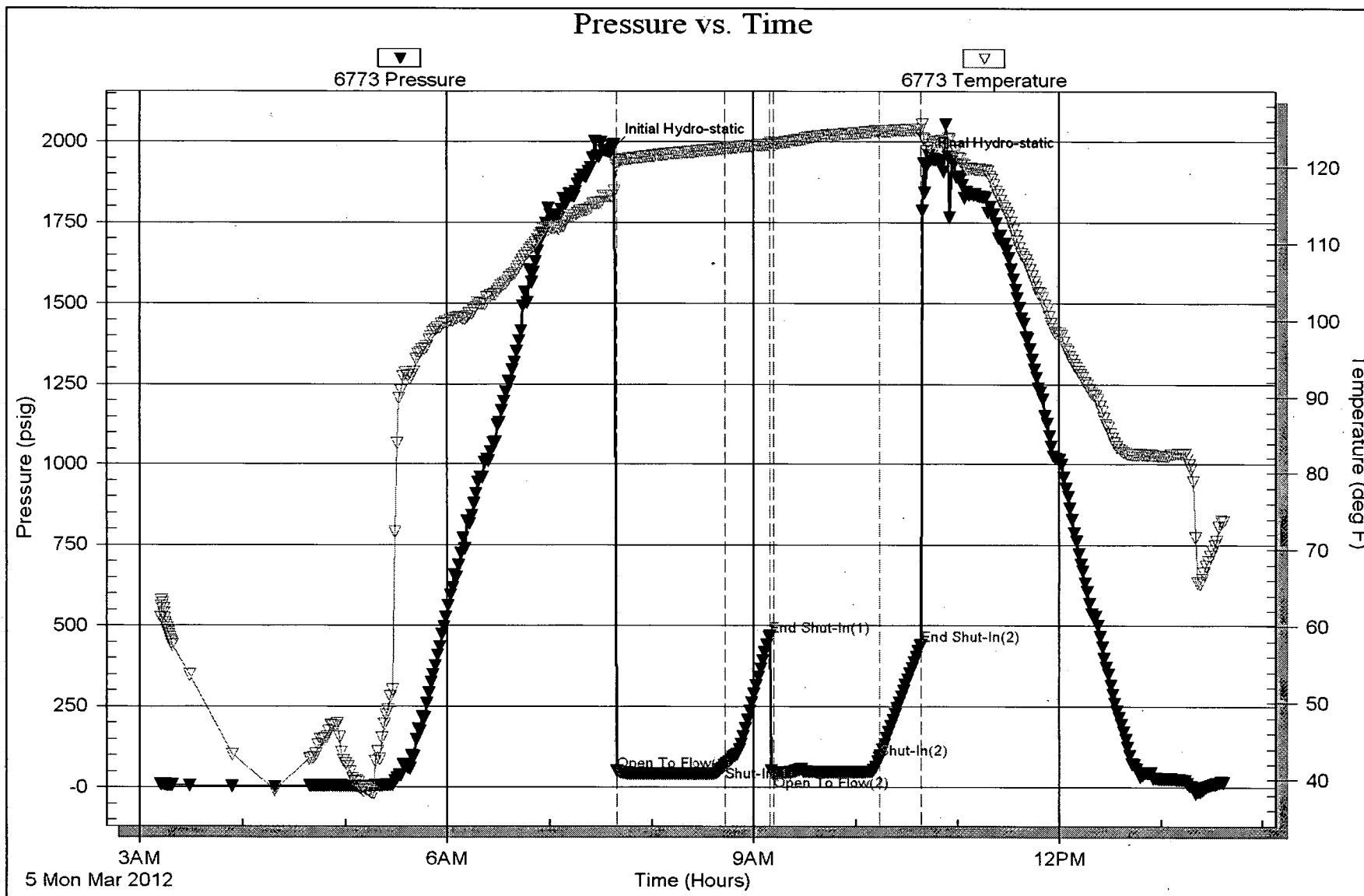
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



CASING AND CEMENTING REPORT

DISTRICT Pratt Co., Ks LEASE NNGCo. / WWW#2 DATE 3/1/2012
 DATUM KB 13' FT. A.G.L. LAST CASING: SIZE 13 3/8" SET AT: 214' THIS CASING SIZE: 9.625" SET AT: 1,853
 TD DRILLER: 1859' TD LOGGE HOLE SIZE 12.25"
 CASING ON HAND : NUMBER OF JTS 46 MEASURED OVERALL: 1,916.29 MEASURED LESS THDS: 1887.89

LOG OF CASING STRING , EACH ITEM BEING LISTED IN SAME ORDER AS RUN INTO WELL

PIECES	DESCRIPTION	WT/FT	GRADE	THREADS	COND'N	MADE UP LENGTH
45	9 5/8"	36#	H-40	ST&C	New	1855.58
	PBTD - Float Insert at	1,814.00	KB			

TOP OF CASING STRING ABOVE KB: 3.68 FEET TOTAL: 1853.00
 CASING LEFT OUT OF STRING: NUMBER OF FULL JOIN 1 AMOUNT OVERALL 41.61 AMOUNT LESS THREADS 41.21
 CENTRALIZERS : NO. 8 MAKE Basic PLACED Top #1, #3, #5, #12, #19, #26, #32, #39

Cement Basket Top #41 (4 Jts Down)

ITEMS THREAD LOCKED OR WELDED: Thread Lock Shoe & 1st Collar
 CASING STRING WAS FILLED OR CIRCULATED ON JOINT: 1853' #45
 CASING MAKEUP TORQUE : 3200 f/lb
 STRING WT ON BOTTOM: 60,000 WT WHEN BUMPED PLUG: WT. SET ON CASING SLIPS 0
 BEFORE CEMENTING : MUD WT : 10.2 VIS 48 LCM 0 FLARE or BGG 0
 CEMENTING COMPANY: Basic Energy Services # OF PUMP TRUCKS: 1

SPACERS PUMPED AHEAD OF CMT: 5 bbls f/w
 SLURRY PUMPED: Mix & Pump 395 sx A Con Blend cmt+3%CC+1/4#CelloFlake/sx, mixed @ 12.6 ppg, 2.12 cfs yield / Slurry Volume =
149 bbls / 837.4 cf, Tail in w/ 175 sx Common cmt+2%cc+.25lb/sxCelloFlake, mixed @ 15.6 ppg, yeild 1.20 cfs, slurry volume
37.5 bbls, 210 cf, (100% excess of total) Displace w/ 140.5 bbls f/w, pumped 1/2 bbl over, didn't bump plug (landed w/ 600 psi)

check float / Held ok / shut in cmt head & hold flow back pressure on csg. / Circ 40 bbls cement to pits
 CEMENT VOLUME WAS CALCULATED FOR TOC AT: Circulate
 AVG RATE MIXING CMT: 6 bbls AVG RATE ON DISPLACEMENT : 4 bpm BUMP PLUG? NO
 RATE & PRESSURE JUST PRIOR TO BUMPING PLUG: 2 bpm / 600 psi BUMP PLUG AT PSI : n
 DID FLOAT HOLD? yes CALCULATED DISPLACEMENT (BBLs) 140 BBLs DISP. PUMPED: 140.5 DISPLACED WITH: f/w
 FULL CIRC. DURING CEMENT JOB ? Yes BBLs CMT CIRC TO PIT : 40
 MIX WATER SOURCE : Well on location o

JOB COMMENTS AND / OR PROBLEMS:
Plug didn't bump

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Report By: Luther Welch

CASING AND CEMENTING REPORT

DISTRICT Pratt Co., Ks LEASE NNGCo. / WWW#2 DATE 3/8/2012
 DATUM KB 13' FT. A.G.L. LAST CASING: SIZE 9.625" SET AT: 1853' THIS CASING SIZE: 7" SET AT: _____
 TD DRILLER: 4802 TD LOGGE 4801 HOLE SIZE 8 3/4"
 CASING ON HAND : NUMBER OF JTS 116 MEASURED OVERALL: 4,907.27 MEASURED LESS THDS: 4860.87

LOG OF CASING STRING , EACH ITEM BEING LISTED IN SAME ORDER AS RUN INTO WELL

PIECES	DESCRIPTION	WT/FT	GRADE	THREADS	COND'N	MADE UP LENGTH
1	International Rubber Packer Shoe				New	2.75
1	7" / Insert float (top)	23#	J-55	LT&C	New	38.65
42	7"	23#	J-55	LT&C	New	1756.38
1	Weatherford Stage Tool					2.40
65	7"	23#	J-55	LT&C	New	2724.82
	PBTD - Float Insert at	4,478.00	KB			4525.00

TOP OF CASING STRING ABOVE KB: 3.00 FEET TOTAL: 4522.00
 CASING LEFT OUT OF STRING: NUMBER OF FULL JOIN 8 AMOUNT OVERALL 339.07 AMOUNT LESS THREADS 335.87
 CENTRALIZERS : NO. 10 MAKE Basic PLACED Top #1, #3, #6, #12, #15, #46, #49, #52, #55, #58

Cement Basket 1 jt below Stage Tool (#42) 1 Jt above Packer Shoe (top #2)
 ITEMS THREAD LOCKED OR WELDE Thread Lock Packer Shoe, 1st Collar (insert float), top & bottom DV tool

CASING STRING WAS FILLED OR CIRCULATED ON JOINT: 20 jts (829'), 60 jts (2500')
 CASING MAKEUP TORQUE : 3100 ft/lb
 STRING WT ON BOTTOM: 78,000 WT WHEN BUMPED PLUG: 72,000 WT. SET ON CASING SLIPS 72,000
 BEFORE CEMENTING : MUD WT : 8.7 VIS 35 LCM 0 FLARE or BGG 0
 CEMENTING COMPANY: Basic Energy Services # OF PUMP TRUCKS: 1

SPACERS PUMPED AHEAD OF CMT: 24 bbls Super Flu:
 SLURRY PUMPED: Mix & Pump 100 sx A Con cmt+3%CC+1/4#CelloFlake/sx, mixed @ 13.0 ppg, 1.93 cfs yield / Slurry Volume =
34 bbls / 193 cf, Tail in w/ 150 sx Con cmt+2%cc+.25lb/sxCelloFlake, mixed @ 15.3 ppg, yeild 1.36 cfs, slurry volume
36 bbls, 204 cf, Displace w/ 65 bbls f/w, 115 bbls mud / bump plug w/ 700 psi bumped to 2000 psi/ float held / Drop Bomb / wait
15 min / open Stage tool w/ 800 psi / pump 10 bbls mud thru ports / rig circ 4 hrs WOC / circ 10 bbls good cmt to pits (bottoms up)

CEMENT VOLUME WAS CALCULATED FOR TOC AT: 2722
 AVG RATE MIXING CMT: 6 bbls AVG RATE ON DISPLACEMENT : 4 bpm BUMP PLUG? yes
 RATE & PRESSURE JUST PRIOR TO BUMPING PLUG: 2 bpm / 700 psi BUMP PLUG AT PSI : 2000
 DID FLOAT HOLD? yes CALCULATED DISPLACEMENT (BBLS) 180 BBLS DISP. PUMPED: 180 DISPLACED WITH: f/w & mud
 FULL CIRC. DURING CEMENT JOB ? Yes BBLS CMT CIRC TO PIT : 10

MIX WATER SOURCE : Well on location
 JOB COMMENTS AND / OR PROBLEMS: Top Stage cmt / Pump 5 bbl spacer, Mix & Pump
Top Stage cmt / Pump 5 bbl spacer, Mix & Pump 300 sx A-con Cmt mixed @ 12.6 ppg, yeild 2.12 cfs / slurry volume 113 bbls, 636 cf
Displace w/ 107 bbls f/w / landed plug w/ 1500 psi / Close DV w/ 2000 psi / check flow back / no flow / circ 5 bbls good cmt to pits

Report By: Luther Welch

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