

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

ORIGINAL

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

OPERATOR: License # 32119
Name: Northern Natural Gas
Address 1: 1111 South 103rd Street
Address 2: _____
City: Omaha State: OK 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

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

Original Comp. Date: 3/30/12 Original Total Depth: _____
 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 #: _____

<u>2/11/12</u>	<u>2/21/12</u>	<u>3/30/12</u>
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 155-21580-00-00
Spot Description: _____
SW SW SW Sec. 31 Twp. 26 S. R. 10 East West
138 Feet from North / South Line of Section
373 Feet from East / West Line of Section
Footages Calculated from Nearest Outside Section Corner:
 NE NW SE SW
County: Reno
Lease Name: WWW Well #: 1
Field Name: Cunningham
Producing Formation: Arbuckle
Elevation: Ground: 1758.5 Kelly Bushing: 1771.3
Total Depth: 4660 Plug Back Total Depth: 4660
Amount of Surface Pipe Set and Cemented at: 1805 Feet
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set: _____ Feet
If Alternate II completion, cement circulated from: _____
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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APR 27 2012

KCC WICHITA

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, 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]
Title: Engineer (Agent) Date: 4/25/12

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: Dg Date: 5/1/12

Operator Name: Northern Natural Gas Lease Name: WWW Well #: 1
 Sec. 31 Twp. 26 S. R. 10 East West County: Reno

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-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 type="checkbox"/> Yes <input checked="" 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 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#	210	Single stage	240	2% CC, 1/4# Cello flake,
Surface CSG	12 1/4"	9 5/8"	36#	1805	Single stage	620	A Con & Common
Production String	8 3/4"	7"	23#	4493	2 stage w/ DV tool	275/300	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 <i>(Amount and Kind of Material Used)</i>	Depth
OPEN HOLE	OPEN HOLE Completion 4492-4660	Natural Completion	4492-4660
			RECEIVED APR 27 2012 KCC WICHITA

TUBING RECORD:	Size: <u>3 1/2" 9.3</u>	Set At: <u>3926</u>	Packer At: <u>NONE</u>	Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR. <u>3/30/12</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 bbls</u>	Gas Mcf <u>0 bbls</u>	Water Bbls. <u>4000 BPD</u>	Gas-Oil Ratio <u>0</u>
				Gravity <u>0</u>

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> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: <u>4462'-4660'</u>
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CASING AND CEMENTING REPORT

DISTRICT _____ LEASE _____ NNGCo. / WWW#1 _____ DATE 2/12/2012
 DATUM KB 13' FT. A.G.L. LAST CASING: SIZE _____ SET AT: _____ THIS CASING SIZE: 13.375" SET AT: 210'
 TD DRILLER: 215' TD LOGGE _____ HOLE SIZE 17.5"
 CASING ON HAND : NUMBER OF JTS 5 MEASURED OVERALL: 215.60' MEASURED LESS THDS: 213.60'

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
5	13 3/8"	48#	H-40	ST&C	New	213.60
	PBTD - Float Insert at _____ KB					213.60

TOP OF CASING STRING ABOVE KB: 3.60' FEET TOTAL: 210.00

CASING LEFT OUT OF STRING: NUMBER OF FULL JOIN 0 AMOUNT OVERALL 5 AMOUNT LESS THREADS 213.60'

CENTRALIZERS : NO. 2 MAKE Basic PLACED top #2 & #3

ITEMS THREAD LOCKED OR WELDED: Strap weld 1st (2) collars

CASING STRING WAS FILLED OR CIRCULATED ON JOINTS: 5

CASING MAKEUP TORQUE : 4000 f/lb

STRING WT ON BOTTOM: 9000# WT WHEN BUMPED PLUG: n/a WT. SET ON CASING SLIPS n/a

BEFORE CEMENTING : MUD WT : 9.1 VIS 48 LCM 0 FLARE or BGG 0

CEMENTING COMPANY: Basic Energy Services # OF PUMP TRUCKS: 1

SPACERS PUMPED AHEAD OF CMT: 10 bbls f/w

SLURRY PUMPED: Mix & Pump 240 sx Common cmt+2%CC+1/4#CelloFlake/sx, mixed @ 15.6 ppg, 1.20 cfs yield / Slurry Volume =

51.3 bbls / 288 cf / Displace w/ 27.3 bbls F/W / landed plug 40' up @ 170' / Circ 10 bbls good 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: 250 psi BUMP PLUG AT PSI : n

DID FLOAT HOLD? _____ CALCULATED DISPLACEMENT (BBLs) 27.3 BBLs DISP. PUMPED: 27.3 DISPLACED WITH: 27.3

FULL CIRC. DURING CEMENT JOB ? Yes BBLs CMT CIRC TO PIT : 10

MIX WATER SOURCE : Well on location o

JOB COMMENTS AND / OR PROBLEMS:

Report By: Luther Welch

CASING AND CEMENTING REPORT

DISTRICT Reno Co., Ks LEASE NNGCo. / WWW#1 DATE 2/16/2012
 DATUM KB 13' FT. A.G.L. LAST CASING: SIZE 13 3/8" SET AT: 210' THIS CASING SIZE: 9.625" SET AT: 1,802
 TD DRILLER: 1800' TD LOGGE HOLE SIZE 12.25"
 CASING ON HAND : NUMBER OF JTS 44 MEASURED OVERALL: 1,904.23 MEASURED LESS THDS: 1886.63

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
42	9 5/8"	36#	H-40	ST&C	New	1805.42
	PBTD - Float Insert at	1,760.00	KB			

TOTAL: 1802.00

TOP OF CASING STRING ABOVE KB: 3.42 FEET
 CASING LEFT OUT OF STRING: NUMBER OF FULL JOIN 2 AMOUNT OVERALL 83.11 AMOUNT LESS THREADS 82.31

CENTRALIZERS : NO. 8 MAKE Basic PLACED Top #1, #3, #5, #12, #19, #26, #32, #36
Cement Bz

ITEMS THREAD LOCKED OR WELDED: Thread L

CASING STRING WAS FILLED OR CIRCULATED ON JOINTS: 1500'

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 : 10.3 VIS 48 LCM 0 FLARE or BGG 0

CEMENTING COMPANY: Basic Energy Services # OF PUMP TRUCKS: 1

SPACERS PUMPED AHEAD OF CMT: 10 bbls f/w

SLURRY PUMPED: Mix & Pump 445 sx A Con Blend cmt+3%CC+1/4#CelloFlake/sx, mixed @ 12.6 ppg, 2.12 cfs yield / Slurry Volume =

168 bbls / 943.4 cf, Tail in w/ 175 sx Common cmt+2%cc+.25lb/sxCelloFlake, mixed @ 15.6 ppg, yeild 1.20 cfs, slurry volume

37 bbls, 210 cf, (100% excess of total) Displace w/ 137 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 35 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) 137 BBLs DISP. PUMPED: 137.5 DISPLACED WITH: f/w

FULL CIRC. DURING CEMENT JOB ? Yes BBLs CMT CIRC TO PIT : 35

MIX WATER SOURCE : Well on location o

JOB COMMENTS AND / OR PROBLEMS:

Plug didn't bump

Report By: Luther Welch

CASING AND CEMENTING REPORT

DISTRICT Reno Co., Ks LEASE NNGCo. / WWW#1 DATE 2/23/2012
 DATUM KB 13' FT. A.G.L. LAST CASING: SIZE 9.625" SET AT: 1803' THIS CASING SIZE: 7" SET AT: 4491'
 TD DRILLER: 4660' TD LOGGE 4660' HOLE SIZE 8 3/4"
 CASING ON HAND : NUMBER OF JTS 118 MEASURED OVERALL: 4,929.64 MEASURED LESS THDS: 4882.44

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	43.32
42	7"	23#	J-55	LT&C	New	1734.76
1	Weatherford Stage Tool					2.40
65	7"	23#	J-55	LT&C	New	2710.58
	PBTD - Float Insert at	4,447.68	KB			4493.81

TOP OF CASING STRING ABOVE KB: 2.81 FEET TOTAL: 4491.00

CASING LEFT OUT OF STRING: NUMBER OF FULL JOIN' 10 AMOUNT OVERALL 397.78' AMOUNT LESS THREADS 393.78'

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)

ITEMS THREAD LOCKED OR WELDE Thread Lock Packer Shoe, 1st Collar (insert float), top & bottom DV tool

CASING STRING WAS FILLED OR CIRCULATED ON JOINTS: 10 jts (422'), 50 jts (2071'), 97 jts (4031')

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 : 9.3 VIS 54 LCM 4 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 125 sx A Con cmt+3%CC+1/4#CelloFlake/sx, mixed @ 13.0 ppg, 1.93 cfs yield / Slurry Volume =

43 bbls / 241 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/ 70 bbls f/w, 105 bbls mud / bump plug w/ 1800 psi / float held / Drop Bomb / wait 15 min Open

Stage tool w/ 700 psi / pump 10 bbls mud thru ports / rig circ 4 hrs WOC / circ 15 bbls good cmt to pits (bottoms up

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 : y

DID FLOAT HOLD? yes CALCULATED DISPLACEMENT (BBLs) 175 BBLs DISP. PUMPED: 175 DISPLACED WITH: f/w & mud

FULL CIRC. DURING CEMENT JOB ? Yes BBLs CMT CIRC TO PIT : 15

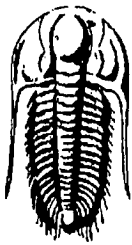
MIX WATER SOURCE : Well on location

JOB COMMENTS AND / OR PROBLEMS: Top St

Top Stage cmt / Pump 5 bbl spacer, Mix & Pump 300 sx A-con Cmt mixed @ 12.6 ppg, yeild 2.12 cfs / slurry volume 106 bbls, 636 cf

Displace w/ 106 bbls f/w / landed plug w/ 1000 psi / Close DV w/ 2200 psi / check flow back / no flow / circ 15 bbls good cmt to pits

Report By: Luther Welch



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Northern Natural Gas

31-25s-10w

1111 South 103RD Street
Omaha NE 68124

NNGWWWW#1

Job Ticket: 47458 **DST#: 2**

ATTN: Michael Loeffler/ Fr

Test Start: 2012.02.20 @ 20:51:33

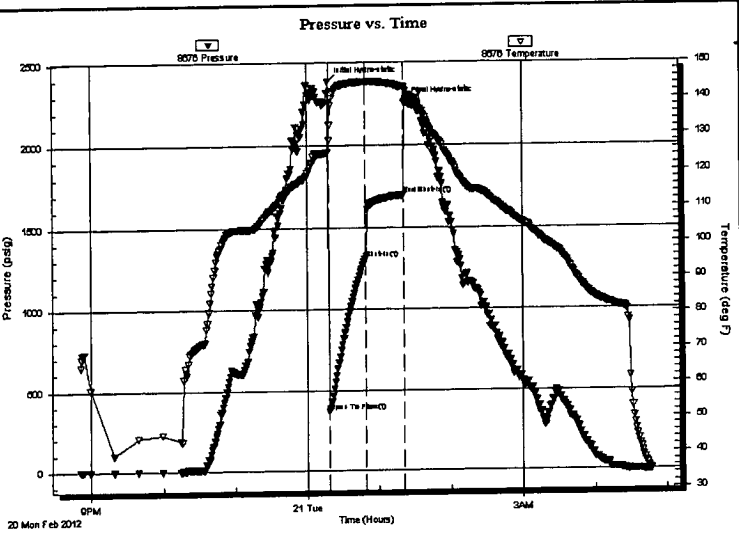
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:19:03
 Time Test Ended: 04:47:33
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Chris Staats
 Unit No: 47
 Interval: **4611.00 ft (KB) To 4660.00 ft (KB) (TVD)**
 Reference Elevations: 1769.00 ft (KB)
 Total Depth: 4660.00 ft (KB) (TVD) 1758.00 ft (CF)
 Hole Diameter: 8.75 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

Serial #: 8676

Press@RunDepth: 1306.82 psig @ ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.02.20 End Date: 2012.02.21 Last Calib.: 2012.02.21
 Start Time: 20:51:38 End Time: 04:47:32 Time On Btm: 2012.02.21 @ 00:17:48
 Time Off Btm: 2012.02.21 @ 01:22:18

TEST COMMENT: IF: Strong blow BOB 1 min
 IS: No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2386.72	125.01	Initial Hydro-static
2	365.40	132.57	Open To Flow (1)
31	1306.82	144.62	Shut-In(1)
64	1697.74	143.06	End Shut-In(1)
65	2263.41	142.00	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
310.00	W,M 40% w ater 60% mud	4.35
248.00	M,W 40% mud 60% w ater	3.48
1682.00	W 100% w ater	23.59

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Natural Gas

31-25s-10w

1111 South 103RD Street
Omaha NE 68124

NNGWWWW#1

Job Ticket: 47458

DST#: 2

ATTN: Michael Loeffler/ Fr

Test Start: 2012.02.20 @ 20:51:33

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 10.00 lb/gal
Viscosity: 52.00 sec/qt
Water Loss: 9.59 in³
Resistivity: 0.00 ohm.m
Salinity: 6500.00 ppm
Filter Cake: 0.02 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: deg API
Water Salinity: 36000 ppm

Recovery Information

Recovery Table

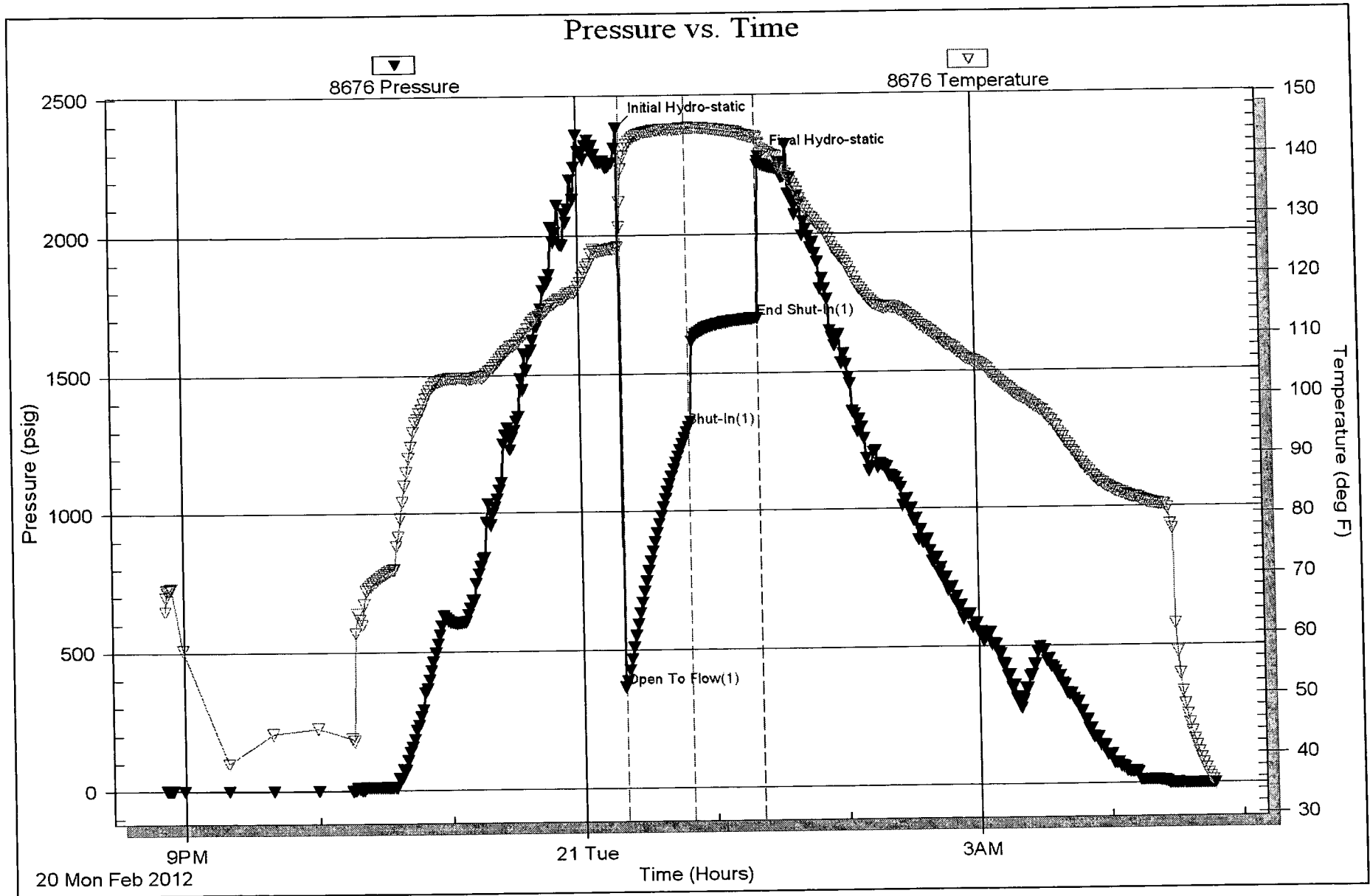
Length ft	Description	Volume bbl
310.00	W,M 40% w ater 60% mud	4.348
248.00	M,W 40% mud 60% w ater	3.479
1682.00	W 100% w ater	23.594

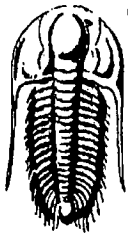
Total Length: 2240.00 ft Total Volume: 31.421 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Northern Natural Gas

31-25s-10w

1111 South 103RD Street
Omaha NE 68124

NNGWWWW#1

Job Ticket: 47458

DST#: 2

ATTN: Michael Loeffler/ Fr

Test Start: 2012.02.20 @ 20:51:33

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:19:03

Time Test Ended: 04:47:33

Test Type: Conventional Bottom Hole (Reset)

Tester: Chris Staats

Unit No: 47

Interval: **4611.00 ft (KB) To 4660.00 ft (KB) (TVD)**

Reference Elevations: 1769.00 ft (KB)

Total Depth: 4660.00 ft (KB) (TVD)

1758.00 ft (CF)

Hole Diameter: 8.75 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 8676

Press@RunDepth: 1306.82 psig @ ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.02.20

End Date: 2012.02.21

Last Calib.: 2012.02.21

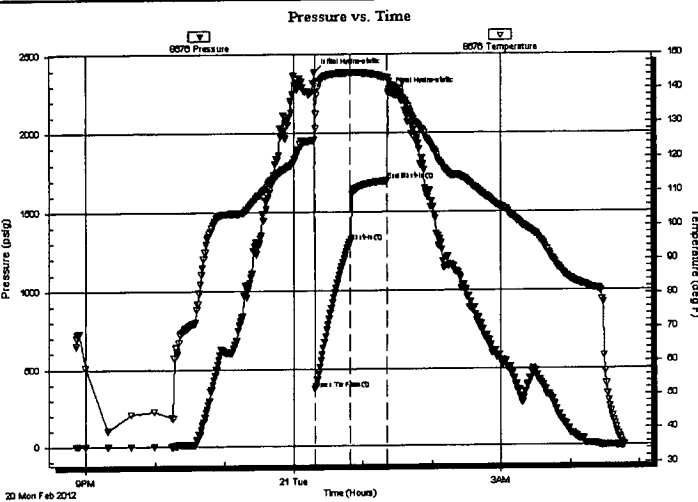
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Time On Btm: 2012.02.21 @ 00:17:48

Time Off Btm: 2012.02.21 @ 01:22:18

TEST COMMENT: IF: Strong blow BOB 1 min
IS: No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2386.72	125.01	Initial Hydro-static
2	365.40	132.57	Open To Flow (1)
31	1306.82	144.62	Shut-in(1)
64	1697.74	143.06	End Shut-in(1)
65	2263.41	142.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
310.00	W,M 40% w ater 60% mud	4.35
248.00	M,W 40% mud 60% w ater	3.48
1682.00	W 100% w ater	23.59

* Recovery from multiple tests

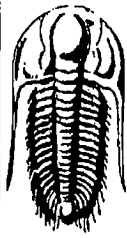
Gas Rates

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

RECEIVED

APR 27 2012

KCC WICHITA



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Natural Gas

31-25s-10w

1111 South 103RD Street
Omaha NE 68124

NNGWWWW#1

Job Ticket: 47458

DST#: 2

ATTN: Michael Loeffler/ Fr

Test Start: 2012.02.20 @ 20:51:33

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

36000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6500.00 ppm

Filter Cake: 0.02 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
310.00	W,M 40% w ater 60% mud	4.348
248.00	M,W 40% mud 60% w ater	3.479
1682.00	W 100% w ater	23.594

Total Length: 2240.00 ft

Total Volume: 31.421 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

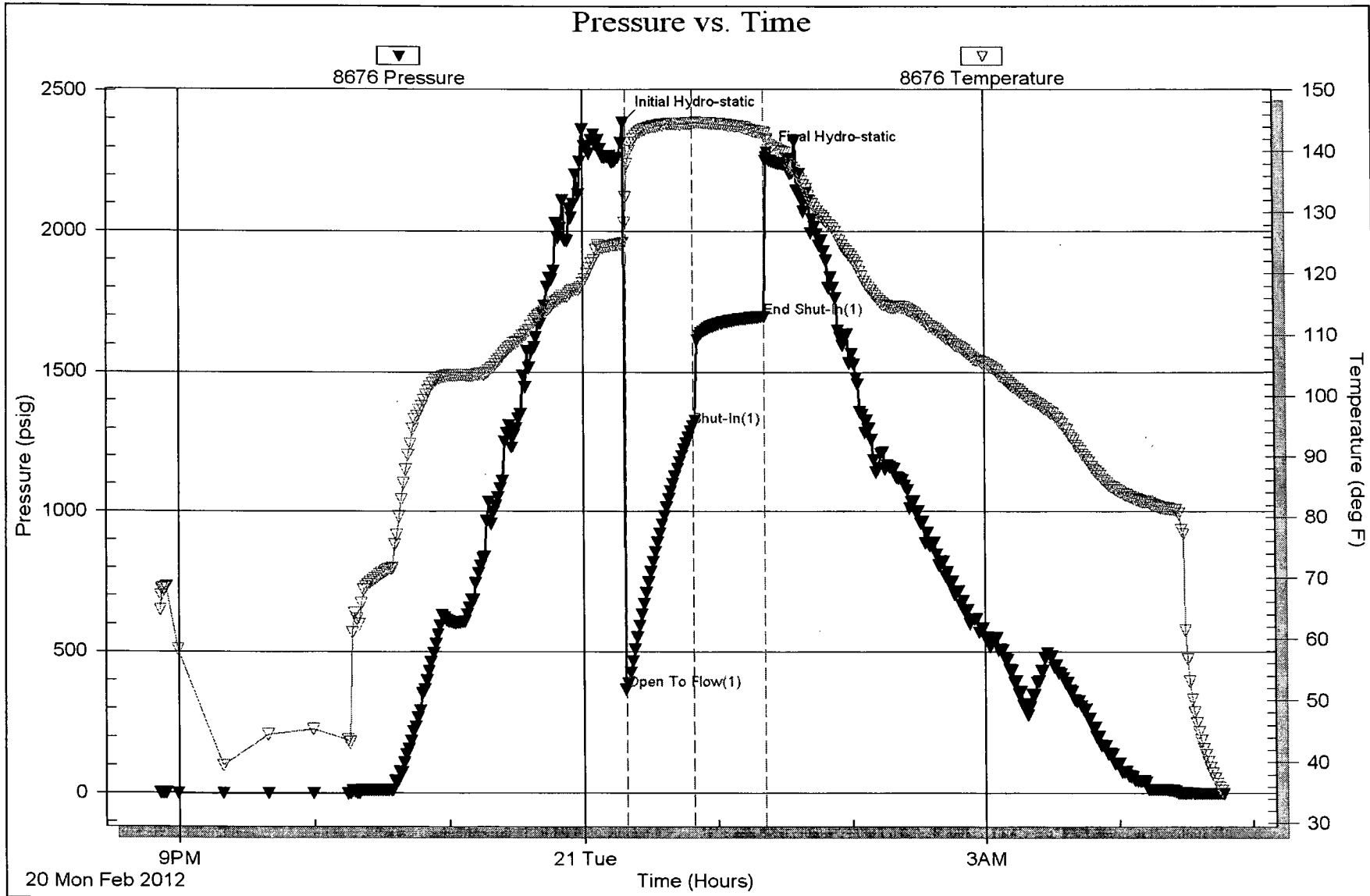
Recovery Comments:

Serial #: 8676

Northern Natural Gas

NNGWWWW#1

DST Test Number: 2



WWW #1 Tops Picked for E Logs

Formation	Top	Datum
Heebner	3393	-1693
Lansing	3570	-1799
Stark	3950	-2179
BKC	4024	-2253
Mississippian	4048	-2277
Kinderhook	4118	-2347
Viola	4294	-2523
Simpson	4394	-2623
Simpson SS	4401	-2630
Arbuckle	4458	-2687