



**WELL COMPLETION FORM**  
**WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

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.): \_\_\_\_\_

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

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ 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 #: \_\_\_\_\_

Spud Date or Recompletion Date      Date Reached TD      Completion Date or Recompletion Date

API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ 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: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite: \_\_\_\_\_

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**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.

Submitted Electronically

**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: \_\_\_\_\_ Date: \_\_\_\_\_



1075488

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**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 type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

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

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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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 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 <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Great Plains Energy, Inc.
Well Name	Cathcart 1-20
Doc ID	1075488

Tops

Name	Top	Datum
Ahydrite	1954	+593
Base	1978	+569
Topeka	3098	-551
Heebner	3208	-661
Toronto	3235	-688
LKC	3649	-702
Base LKC	3459	-912
Granite	3607	-1060

# ALLIED CEMENTING CO., LLC. 035988

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

SERVICE POINT: Dak Co. #45

DATE <u>9/16/11</u>	SEC. <u>20</u>	TWP. <u>1</u>	RANGE <u>27</u>	CALLED OUT	ON LOCATION	JOB START <u>5:30</u>	JOB FINISH <u>6:30</u>
LEASE <u>Cathcart</u>	WELL # <u>120</u>	LOCATION <u>Obertin SE 9N 314E</u>			COUNTY <u>Hecaton</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>5 into</u>							

CONTRACTOR Mug Fin 3  
 TYPE OF JOB PTA  
 HOLE SIZE 27/8 T.D.  
 CASING SIZE 8 5/8 DEPTH 259'  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG.  
 PERFS.  
 DISPLACEMENT

OWNER Same  
 CEMENT AMOUNT ORDERED 220 cov  
470 gal 14 Flt Seal  
 COMMON 132 @ 16.25 2145.00  
 POZMIX 88 @ 8.50 748.00  
 GEL 8 @ 21.25 170.00  
 CHLORIDE @  
 ASC @  
Flt Seal 55 lb @ 2.70 148.50  
 HANDLING 230 SKs @ 2.25 517.50  
 MILEAGE 114 SK/mile 202.40  
 TOTAL 9753.00

EQUIPMENT

PUMP TRUCK CEMENTER Alan  
 # 422 HELPER Wayne  
 BULK TRUCK DRIVER Earl  
 # 404  
 BULK TRUCK DRIVER

REMARKS:

25 SK @ 1965'  
100 SK @ 1350'  
40 SK @ 340'  
10 SK @ 40'  
30 SK R Hole  
20 SK M Hole

Thank You  
Alan, Wayne, Earl

SERVICE

DEPTH OF JOB 1965  
 PUMP TRUCK CHARGE 1250.00  
 EXTRA FOOTAGE @  
 MILEAGE 88 x 2 @ 7.00 1220.00  
 MANIFOLD @  
Lite Vehicle 80 x 2 @ 4.00 640.00  
 TOTAL 3010.00

PLUG & FLOAT EQUIPMENT

898 Wood Plug @ 92.00  
 @  
 @  
 @

TOTAL \_\_\_\_\_

SALES TAX (if Any) \_\_\_\_\_  
 TOTAL CHARGES \_\_\_\_\_  
 DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS

CHARGE TO: Great Plains Energy  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

To Allied Cementing Co., LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME \_\_\_\_\_

SIGNATURE Kurt Van Bilt



71730

# INVOICE

24 S. Lincoln Street  
P.O. Box 31  
Russell, KS 67665-2906

Voice: (817) 546-7282  
Fax: (817) 246-3361

Invoice Number: 128617  
Invoice Date: Sep 16, 2011  
Page: 1

SEP 20 2011

<b>Bill To:</b>
Great Plains Energy, Inc. P.O. Box 292 429 N. Linden Wahoo, NE 68066

Federal Tax I.D.#: 20-5975804

Customer ID	Well Name# or Customer P.O.	Payment Terms	
GrPIEn	Cathcart #1-20	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	Sep 16, 2011	10/16/11

Quantity	Item	Description	Unit Price	Amount
132.00	MAT	Class A Common	16.25	2,145.00
88.00	MAT	Pozmix	8.50	748.00
8.00	MAT	Gel	21.25	170.00
55.00	MAT	Flo Seal	2.70	148.50
230.00	SER	Handling	2.25	517.50
80.00	SER	Mileage	25.30	2,024.00
1.00	SER	Plug To Abandon	1,250.00	1,250.00
160.00	SER	Heavy Vehicle Mileage	7.00	1,120.00
160.00	SER	Light Vehicle Mileage	4.00	640.00
1.00	EQP	8 5/8 Wooden Plug	92.00	92.00
1.00	CEMENTER	Alan Ryan		
1.00	EQUIP OPER	Wayne Mc Ghghy		
1.00	OPER ASSIST	Earl Rebarck		

*Cementing Surface*

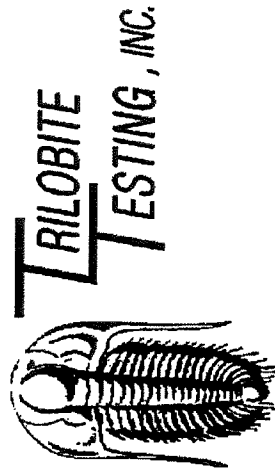
*RN*

ALL PRICES ARE NET, PAYABLE  
30 DAYS FOLLOWING DATE OF  
INVOICE. 1 1/2% CHARGED  
THEREAFTER. IF ACCOUNT IS  
CURRENT, TAKE DISCOUNT OF

\$ 1771.00

ONLY IF PAID ON OR BEFORE  
Oct 11, 2011

Subtotal	8,855.00
Sales Tax	646.42
Total Invoice Amount	9,501.42
Payment/Credit Applied	
<b>TOTAL</b>	<b>9,501.42</b>



## DRILL STEM TEST REPORT

Prepared For: **Great Plains Energy, Inc**

6121 South 58th St. STE B  
Lincoln, NE 68516

ATTN: Richard Bell

### **Cathcart #1-20**

#### **20-1s-27w Decatur,KS**

Start Date: 2011.09.14 @ 09:52:00

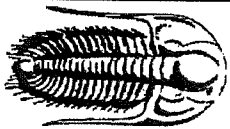
End Date: 2011.09.14 @ 16:07:00

Job Ticket #: 43796      DST#: 1

Trilobite Testing, Inc

PO Box 362    Hays, KS 67601

ph: 785-625-4778    fax: 785-625-5620



**TRILOBITE**  
**TESTING, INC**

**DRILL STEM TEST REPORT**

Great Plains Energy, Inc

20-1s-27w Decatur, KS

6121 South 58th St. STE B  
Lincoln, NE 68516

Cathcart #1-20

ATTN: Richard Bell

Job Ticket: 43796

DST#: 1

Test Start: 2011.09.14 @ 09:52:00

**GENERAL INFORMATION:**

Formation: LKC "A"  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 11:16:30  
Time Test Ended: 16:07:00  
Interval: 3207.00 ft (KB) To 3258.00 ft (KB) (TVD)  
Total Depth: 3258.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)  
Tester: James Winder  
Unit No: 46

Reference Elevations: 2551.00 ft (KB)  
2546.00 ft (CF)  
KB to GR/CF: 5.00 ft

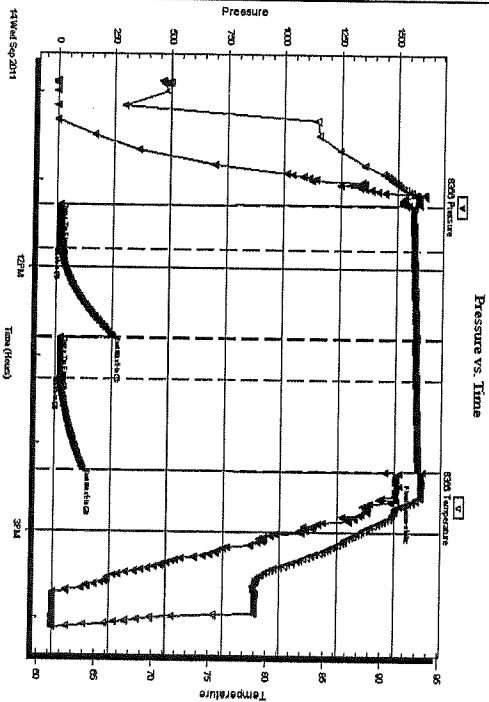
**Serial #: 8366** Inside

Press@Run Depth: 22.46 psig @ 3208.00 ft (KB)  
Start Date: 2011.09.14 End Date: 2011.09.14  
Start Time: 09:52:05 End Time: 16:06:59

Capacity: 8000.00 psig  
Last Callb.: 2011.09.14  
Time On Birt: 2011.09.14 @ 11:14:00  
Time Off Birt: 2011.09.14 @ 14:23:00

**TEST COMMENT:** 30 - IF: Blow built to 1/2" in 15 min., died back to 1/4" at close

- 60 - ISI: No blow back
- 30 - FF: No blow
- 60 - FSI: No blow back



**PRESSURE SUMMARY**

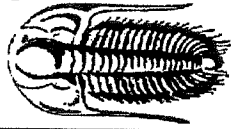
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1520.56	93.05	Initial Hydro-static
3	16.97	92.68	Open To Flow (1)
33	21.17	92.68	Shut-In(1)
93	253.33	92.96	End Shut-In(1)
94	21.66	92.88	Open To Flow(2)
122	22.46	92.96	Shut-In(2)
184	128.30	93.17	End Shut-In(2)
189	1505.97	93.45	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
5.00	OCM 88% n 12% o	0.03

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Great Plains Energy, Inc

20-1s-27w Decatur, KS

6121 South 58th St. STEB  
Lincoln, NE 68516

Cathcart #1-20

Job Ticket: 43796

DST#: 1

ATTN: Richard Bell

Test Start: 2011.09.14 @ 09:52:00

**Tool Information**

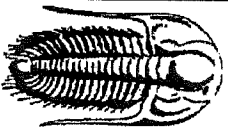
Drill Pipe: Length: 2680.00 ft Diameter: 3.80 inches Volume: 37.59 bbl Tool Weight: 3000.00 lb  
 Heavy Wt. Pipe: Length: 0.00 ft Diameter: 0.00 inches Volume: 0.00 bbl Weight set on Packer: 25000.00 lb  
 Drill Collar: Length: 517.00 ft Diameter: 2.50 inches Volume: 3.14 bbl Weight to Pull Loose: 62000.00 lb  
 Drill Pipe Above KB: 18.00 ft Total Volume: 40.73 bbl Tool Chased 0.00 ft  
 Depth to Top Packer: 3207.00 ft String Weight: Initial 60000.00 lb  
 Depth to Bottom Packer: ft Final 60000.00 lb  
 Interval between Packers: 51.00 ft  
 Tool Length: 79.00 ft  
 Number of Packers: 2 Diameter: 6.75 inches  
 Tool Comments:

**Tool Description Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Shut In Tool	5.00			3184.00	
Hydraulic tool	5.00			3189.00	
Jars	5.00			3194.00	
Safety Joint	3.00			3197.00	
Packer	5.00			3202.00	28.00 Bottom Of Top Packer
Packer	5.00			3207.00	
Stub	1.00			3208.00	
Recorder	0.00	8366	Inside	3208.00	
Recorder	0.00	8320	Outside	3208.00	
Perforations	15.00			3223.00	
Blank Spacing	32.00			3255.00	
Bullnose	3.00			3258.00	51.00 Bottom Packers & Anchor

**Total Tool Length: 79.00**





**TRILOBITE**  
TESTING, INC

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Great Plains Energy, Inc  
6121 South 58th St. STE B  
Lincoln, NE 68516  
ATTN: Richard Bell

**20-1s-27w Decatur,KS**  
**Cathcart #1-20**  
Job Ticket: 43796      DST#:1  
Test Start: 2011.09.14 @ 09:52:00

**Mud and Cushion Information**

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 54.00 sec/qt  
Water Loss: 5.96 in<sup>3</sup>  
Resistivity: ohmm  
Salinity: 800.00 ppm  
Filter Cake: 2.00 inches

Qushion Type:  
Qushion Length:  
Qushion Volume:  
Gas Qushion Type:  
Gas Qushion Pressure:

Oil API:  
Water Salinity:  
deg API  
ppm

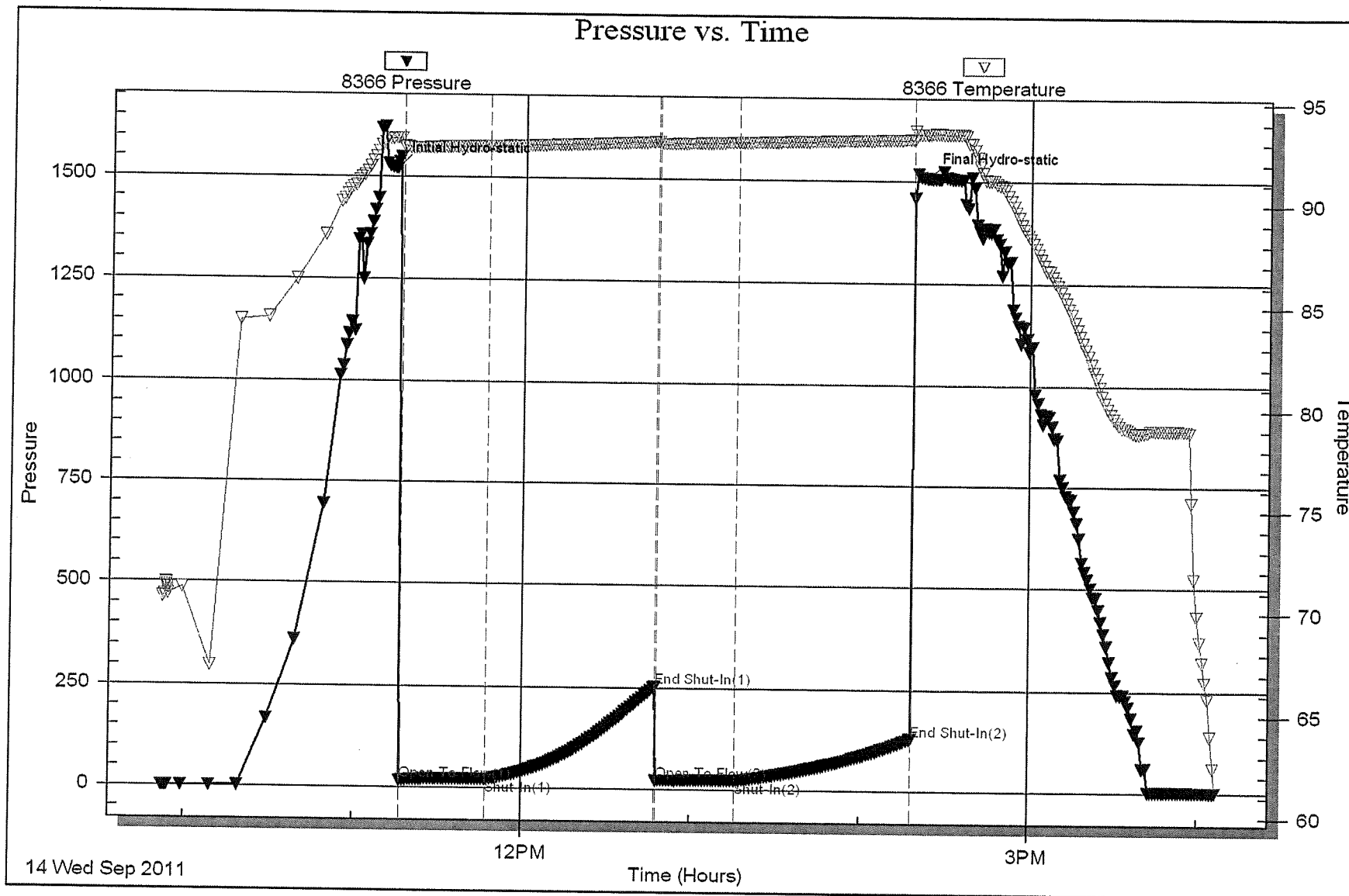
**Recovery Information**

**Recovery Table**

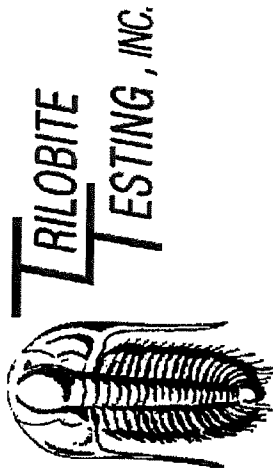
Length ft	Description	Volume bbl
5.00	OCM88%am, 12%o	0.030

Total Length: 5.00ft      Total Volume: 0.030 bbl

Num Fluid Samples: 0      Num Gas Bontbs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Great Plains Energy, Inc**

6121 South 58th St. STE B  
Lincoln, NE 68516

ATTN: Richard Bell

### **Cathcart #1-20**

#### **20-1s-27w Decatur,KS**

Start Date: 2011.09.15 @ 03:32:00

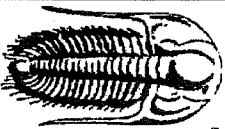
End Date: 2011.09.15 @ 09:46:00

Job Ticket #: 43797 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



**TRIBOLITE**  
**TESTING, INC**

**DRILL STEM TEST REPORT**

Great Plains Energy, Inc  
6121 South 58th St. STE B  
Lincoln, NE 68516  
ATTN: Richard Bell

**20-1s-27w Decatur,KS**  
**Cathcart #4-20**  
Job Ticket: 43797 **DST#: 2**  
Test Start: 2011.09.15 @ 03:32:00

**GENERAL INFORMATION:**

Formation: **LKC "B - D"**  
Deviated: **No** Whipstock: **ft (KB)**  
Time Tool Opened: 05:07:00  
Time Test Ended: 09:46:00  
Interval: **3258.00 ft (KB) To 3375.00 ft (KB) (TVD)**  
Total Depth: **3375.00 ft (KB) (TVD)**  
Hole Diameter: **7.88** inchesHole Condition: **Fair**

Test Type: **Conventional Bottom Hole (Reset)**  
Tester: **James Winder**  
Unit No: **46**

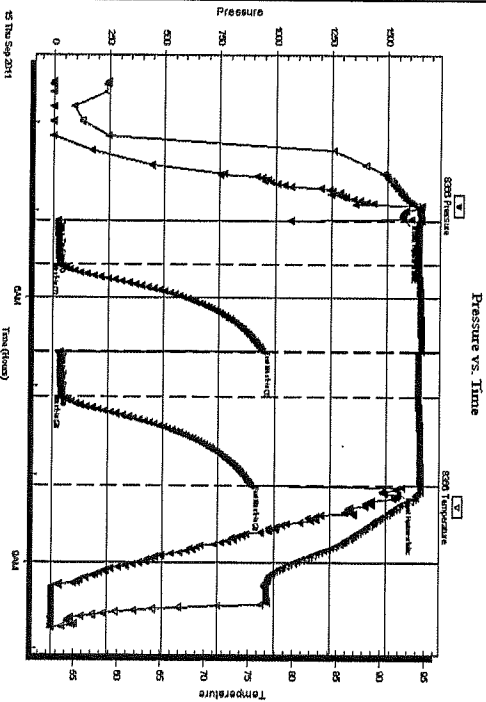
Reference Elevations: **2551.00 ft (KB)**  
**2546.00 ft (CF)**  
**KB to GR/CF: 5.00 ft**

**Serial #: 8366** **Inside**  
Press@Run Depth: **40.12 psig @ 3259.00 ft (KB)**  
Start Date: **2011.09.15** End Date: **2011.09.15**  
Start Time: **03:32:05** End Time: **09:45:59**

Capacity: **8000.00 psig**  
Last Callb.: **2011.09.15**  
Time On Birt: **2011.09.15 @ 05:04:30**  
Time Off Birt: **2011.09.15 @ 08:10:30**

**TEST COMMENT:** 30 - 1F: 1/2" blow at open, built to 1 1/2" in 12 min., blew at 1 1/2" till close

60 - ISI: No blow back  
30 - FF: No blow  
60 - FSI: No blow back



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1569.27	94.41	Initial Hydro-static
3	21.69	94.28	Open To Flow (1)
33	30.35	94.15	Shut-In(1)
92	945.15	94.52	End Shut-In(1)
93	33.71	94.23	Open To Flow (2)
123	40.12	94.20	Shut-In(2)
183	898.27	94.48	End Shut-In(2)
186	1552.04	94.54	Final Hydro-static

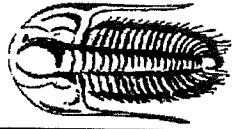
**Recovery**

Length (ft)	Description	Volume (bbl)
20.00	Mud 100%	0.12

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## TOOL DIAGRAM

Great Plains Energy, Inc

20-1s-27w Decatur, KS

6121 South 58th St. STE B  
Lincoln, NE 68516

Cathcart #1-20

Job Ticket: 43797

DST#: 2

ATTN: Richard Bell

Test Start: 2011.09.15 @ 03:32:00

### Tool Information

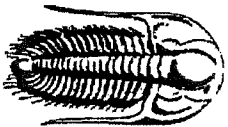
Drill Pipe:	Length: 2742.00 ft	Diameter: 3.80 inches	Volume: 38.46 bbl	Tool Weight: 4000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 517.00 ft	Diameter: 2.50 inches	Volume: 3.14 bbl	Weight to Pull Loose: 64000.00 lb
Drill Pipe Above KB:	29.00 ft	Total Volume: 41.60 bbl		Tool Chased 0.00 ft
Depth to Top Packer:	3258.00 ft			String Weight: Initial 60000.00 lb
Depth to Bottom Packer:	ft			Final 60000.00 lb
Interval between Packers:	117.00 ft			
Tool Length:	145.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3235.00	
Hydraulic tool	5.00			3240.00	
Jars	5.00			3245.00	
Safety Joint	3.00			3248.00	
Packer	5.00			3253.00	28.00 Bottom Of Top Packer
Packer	5.00			3258.00	
Stubb	1.00			3259.00	
Recorder	0.00	8366	Inside	3259.00	
Recorder	0.00	8320	Outside	3259.00	
Perforations	18.00			3277.00	
Blank Spacing	95.00			3372.00	
Bullnose	3.00			3375.00	117.00 Bottom Packers & Anchor

**Total Tool Length: 145.00**



**TRIOBITE**  
**TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Great Plains Energy, Inc

20-1s-27w Decatur, KS

6121 South 58th St. STE B  
Lincoln, NE 68516

Cathcart #1-20

Job Ticket: 43797

DST#: 2

ATTN: Richard Bell

Test Start: 2011.09.15 @ 03:32:00

**Mud and Cushion Information**

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 55.00 sec/qt  
Water Loss: 5.95 in<sup>3</sup>  
Resistivity: ohmm  
Salinity: 800.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length:  
Cushion Volume:  
Gas Cushion Type:  
Gas Cushion Pressure:

Oil API: deg API  
Water Salinity: ppm

**Recovery Information**

Recovery Table

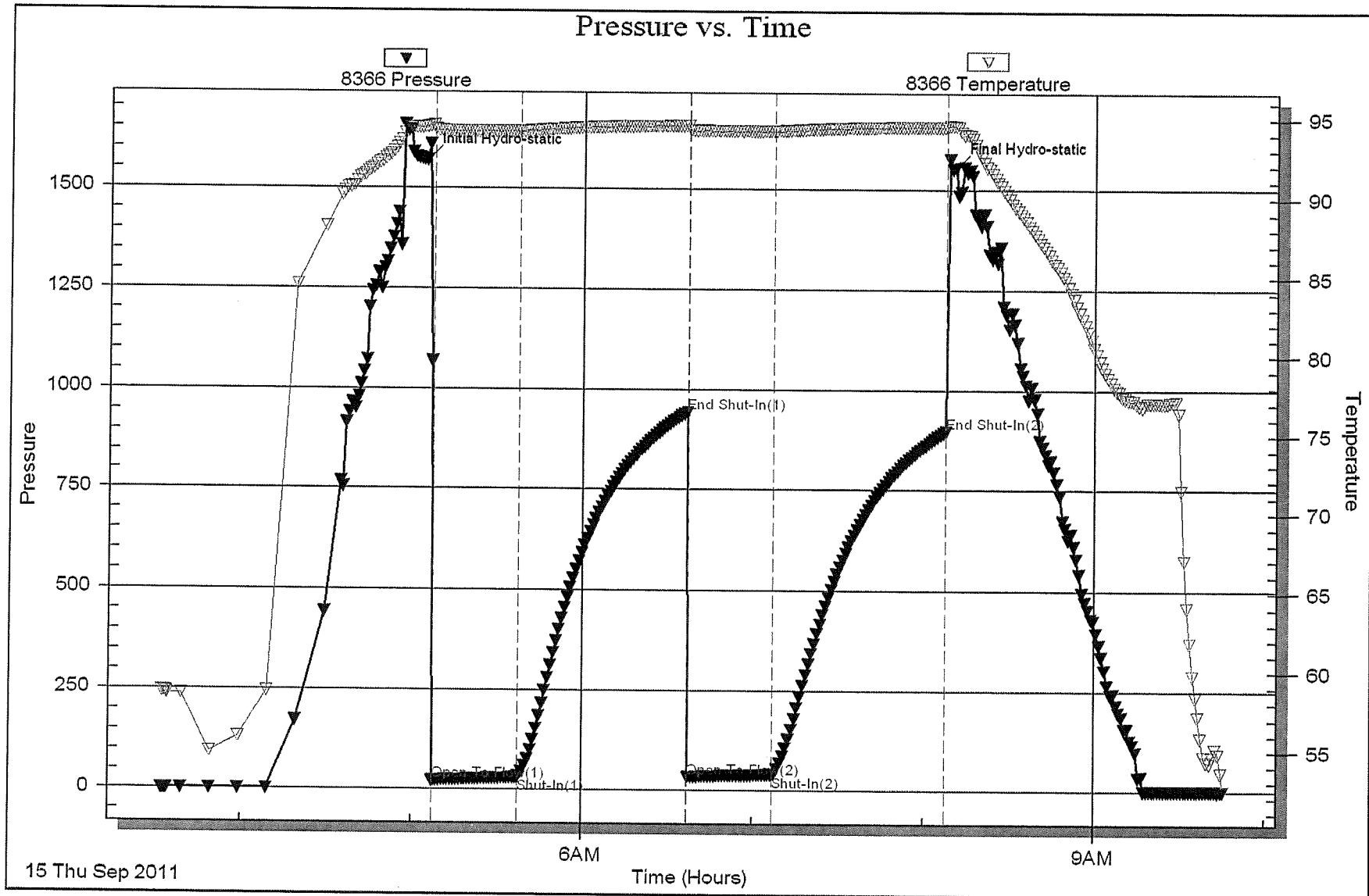
Length ft	Description	Volume bbl
20.00	Mud 100%	0.121

Total Length: 20.00ft Total Volume: 0.121 bbl

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

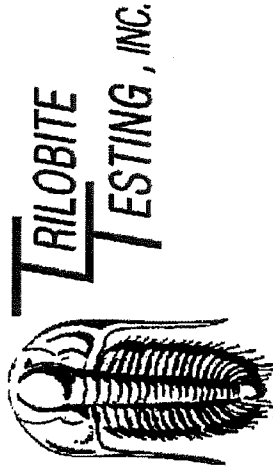
Laboratory Name: Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Great Plains Energy, Inc**

6121 South 58th St. STE B  
Lincoln, NE 68516

ATTN: Richard Bell

### Cathcart #1-20

#### 20-1s-27w Decatur,KS

Start Date: 2011.09.15 @ 19:40:00

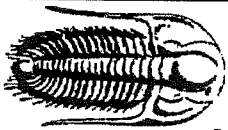
End Date: 2011.09.16 @ 02:03:30

Job Ticket #: 43798      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



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**TESTING, INC**

**DRILL STEM TEST REPORT**

Great Plains Energy, Inc  
6121 South 58th St. STE B  
Lincoln, NE 68516  
ATTN: Richard Bell

**20-1s-27w Decatur, KS**

**Cathcart #1-20**  
Job Ticket: 43798 **DST#: 3**  
Test Start: 2011.09.15 @ 19:40:00

**GENERAL INFORMATION:**

Formation: **LKC "E - G" (J - L)**  
Deviated: **No** Whipstock: **ft (KB)**  
Time Tool Opened: 21:25:30  
Time Test Ended: 02:03:30  
**Interval: 3378.00 ft (KB) To 3463.00 ft (KB) (TVD)**  
Total Depth: **3463.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches** Hole Condition: **Fail**

Test Type: **Conventional Bottom Hole (Reset)**  
Tester: **James Winder**  
Unit No: **46**

Reference Elevations: **2551.00 ft (KB)**  
**2546.00 ft (CF)**  
**KB to GRV/CF: 5.00 ft**

**Serial #: 8366**

**Inside**

Press@RunDepth: **29.75 psig @ 3379.00 ft (KB)**

Start Date: **2011.09.15**

End Date: **2011.09.16**

Capacity: **8000.00 psig**

Last Callb.: **2011.09.16**

Start Time: **19:40:05**

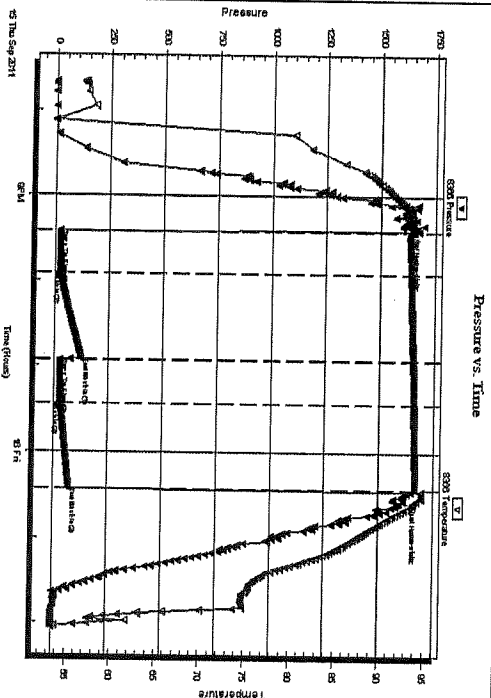
End Time: **02:03:29**

Time On Btm: **2011.09.15 @ 21:20:00**

Time Off Btm: **2011.09.16 @ 00:31:00**

**TEST COMMENT:**

**30 - FF: Blow built to 1", slowly drying back at end of open**  
**60 - SI: No blow back**  
**30 - FF: No blow**  
**60 - FSI: No blow back**



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1608.47	93.57	Initial Hydro-static
6	22.54	93.33	Open To Flow (1)
35	26.40	93.44	Shut-In(1)
95	123.23	93.72	End Shut-In(1)
96	27.68	93.71	Open To Flow (2)
127	29.75	93.87	Shut-In(2)
186	72.52	94.07	End Shut-In(2)
191	1607.10	94.83	Final Hydro-static

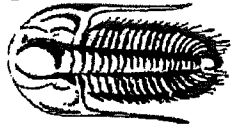
**Recovery**

Length (ft)	Description	Volume (bbl)
10.00	SOCM 90%/m 100%	0.06

\*Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Great Plains Energy, Inc

20-1s-27w Decatur,KS

6121 South 58th St. STEB  
Lincoln, NE 68516

Cathcart #1-20

Job Ticket: 43798

DST#:3

ATTN: Richard Bell

Test Start: 2011.09.15 @ 19:40:00

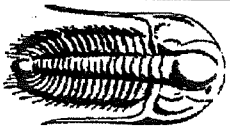
**Tool Information**

Drill Pipe: Length: 2866.00 ft Diameter: 3.80 inches Volume: 40.20 bbl Tool Weight: 3500.00 lb  
 Heavy Wt. Pipe: Length: 0.00 ft Diameter: 0.00 inches Volume: 0.00 bbl Weight set on Packer: 25000.00 lb  
 Drill Collar: Length: 517.00 ft Diameter: 2.50 inches Volume: 3.14 bbl Weight to Pull Loose: 70000.00 lb  
 Drill Pipe Above KB: 33.00 ft Total Volume: 43.34 bbl Tool Chased 0.00 ft  
 Depth to Top Packer: 3378.00 ft String Weight: Initial 60000.00 lb  
 Depth to Bottom Packer: ft Final 60000.00 lb  
 Interval between Packers: 85.00 ft  
 Tool Length: 113.00 ft  
 Number of Packers: 2 Diameter: 6.75 inches  
 Tool Comments:

**Tool Description Length (ft) Serial No. Position Depth (ft) Accum. Lengths**

Shut In Tool	5.00			3355.00	
Hydraulic tool	5.00			3360.00	
Jars	5.00			3365.00	
Safety Joint	3.00			3368.00	
Packer	5.00			3373.00	28.00
Packer	5.00			3378.00	Bottom Of Top Packer
Stubb	1.00			3379.00	
Recorder	0.00	8366	Inside	3379.00	
Recorder	0.00	8320	Outside	3379.00	
Perforations	17.00			3396.00	
Blank Spacing	64.00			3460.00	
Bullnose	3.00			3463.00	85.00
<b>Total Tool Length:</b>					<b>Bottom Packers &amp; Anchor</b>

**Total Tool Length: 113.00**



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Resistivity: ohm.m  
Salinity: 800.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig  
Oil API:  
Water Salinity: ppm  
deg API

**Recovery Information**

**Recovery Table**

Length ft	Description	Volume bbl
10.00	SOCM 90%/m 10%	0.061

Total Length: 10.00 ft      Total Volume: 0.061 bbl

Num Fluid Samples: 0      Num Gas Bortbs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

