



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



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> _____ <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Valhalla Exploration LLC
Well Name	Hullman 1-15
Doc ID	1158838

All Electric Logs Run

DIL
DUCP
MICRO
SONIC

Form	ACO1 - Well Completion
Operator	Valhalla Exploration LLC
Well Name	Hullman 1-15
Doc ID	1158838

Tops

Name	Top	Datum
TOP	2939	-1042
HEEB	3240	-1343
BR LM	3371	-1474
LANS	3391	-1494
BKC	3602	-1705
VIOL	3684	-1787
SIMP	3734	-1836
ARB	3786	-1889



PAGE 1 of 1	CUST NO 1007761	INVOICE DATE 07/17/2013
INVOICE NUMBER <b>1718 - 91240267</b>		

Pratt (620) 672-1201  
 B VALHALLA EXPLORATION LLC  
 I 133 NORTH GLENDALE  
 L WICHITA  
 L KS US 67208  
 T  
 O ATTN: KENNEDY

J LEASE NAME Hullman 1-15  
 O LOCATION  
 B COUNTY Stafford  
 S STATE KS  
 I JOB DESCRIPTION Cement-New Well Casing/Pi  
 T JOB CONTACT  
 E

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
40618316	19905		Net - 30 days	08/16/2013

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
<b>For Service Dates: 07/16/2013 to 07/16/2013</b>				
0040618316				
171808666A Cement-New Well Casing/Pi 07/16/2013 Cement 5 1/2" Longstring				
50/50 POZ	125.00	EA	8.25	1,031.18 T
60/40 POZ	80.00	EA	9.00	719.95 T
Celloflake	32.00	EA	2.77	88.79 T
C-41P	27.00	EA	3.00	80.99 T
Calcium Chloride	210.00	EA	0.79	165.36 T
Cement Friction Reducer	32.00	EA	4.50	143.99 T
Gypsum	625.00	EA	0.56	351.54 T
FLA-322	84.00	EA	5.62	472.47 T
Mud Flush	500.00	EA	0.64	322.48 T
Cement Gel	210.00	EA	0.19	39.37 T
Gilsonite	625.00	EA	0.50	314.04 T
Claymax KCL Substitute	4.00	EA	26.25	104.99 T
"Latch Down Plug & Baffle, 5 1/2" (Blue)	1.00	EA	299.98	299.98
"Auto Fill Float Shoe 5 1/2" (Blue)"	1.00	EA	269.98	269.98
"Turbolizer, 5 1/2" (Blue)"	8.00	EA	82.49	659.95
"5 1/2" Basket (Blue)"	1.00	EA	217.48	217.48
"Unit Mileage Chg (PU, cars one way)"	45.00	MI	3.19	143.43
Heavy Equipment Mileage	90.00	MI	5.25	472.47
"Proppant & Bulk Del. Chgs., per ton mil	392.00	EA	1.20	470.37
Depth Charge; 3001-4000'	1.00	EA	1,619.89	1,619.89
Blending & Mixing Service Charge	205.00	BAG	1.05	215.23
Plug Container Util. Chg.	1.00	EA	187.49	187.49
"Service Supervisor, first 8 hrs on loc.	1.00	EA	131.24	131.24

PLEASE REMIT TO:	SEND OTHER CORRESPONDENCE TO:	SUB TOTAL	8,522.66
BASIC ENERGY SERVICES, LP	BASIC ENERGY SERVICES, LP	TAX	274.21
PO BOX 841903	801 CHERRY ST, STE 2100	INVOICE TOTAL	8,796.87
DALLAS, TX 75284-1903	FORT WORTH, TX 76102		



**BASIC**<sup>SM</sup>  
ENERGY SERVICES  
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61  
P.O. Box 8613  
Pratt, Kansas 67124  
Phone 620-672-1201

FIELD SERVICE TICKET

1718 08666 A

1 of 2

DATE \_\_\_\_\_ TICKET NO. \_\_\_\_\_

DATE OF JOB 7-16-13	DISTRICT PRATT	NEW WELL <input checked="" type="checkbox"/>	OLD WELL <input type="checkbox"/>	PROD <input type="checkbox"/>	INJ <input type="checkbox"/>	WDW <input type="checkbox"/>	CUSTOMER ORDER NO.:			
CUSTOMER VAIHALLA EXPLORATION		LEASE HULLMAN		WELL NO. 1-15						
ADDRESS		COUNTY STAFFORD		STATE KS						
CITY		STATE		SERVICE CREW MATTAI, Young, P. ISON						
AUTHORIZED BY		JOB TYPE: C.N.W. L.S.								
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	PM	TIME
77216	.75						7-15-13			4:00
						ARRIVED AT JOB	7-15			7:15
77686/19905	.75					START OPERATION	7-16			2:38
						FINISH OPERATION				3:20
19831/19862	.75					RELEASED				4:00
						MILES FROM STATION TO WELL				45

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: Page 2  
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
CP 104	50/50 POZ	SK	125		1375 00
CP 103	60/40 POZ	SK	80		960 00
CC 102	celloflax	LB	32		118 40
CC 105	641 Defoamer	LB	27		108 00
CC 109	Calcium chloride	LB	210		220 50
CC 112	CMT Friction Reducer	LB	32		192 00
CC 113	GYP SUM	LB	625		408 00
CC 129	FIP-322 Low Fluid Loss	LB	84		630 00
CC 200	CMT gel	LB	210		52 50
CC 201	gill sum	LB	625		418 75
CF 607	LATCH DOWN Plug + GASKET Blue	ea	1		400 00
CF 1251	AUTO FILL float shoe Blue	ea	1		360 00
CF 1651	IMB 1.2-1 5/2 Blue	ea	8		880 00
CF 1901	5/2 BASKET Blue	ea	1		290 00
C 704	CLAY MAX KCL SUB	gal	4		140 00
CC 151	MUD FLUSH	gal	500		430 00
SUB TOTAL					

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT	%TAX ON \$	
MATERIALS	%TAX ON \$	
TOTAL		

SERVICE REPRESENTATIVE Mike MATTAI	THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: Page 2
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(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.





Customer VATHALLA EXPLORATION	Lease No. HULLMAN	Date 7-16-13	
Lease Hullman	Well # 1-15		
Field Order # 8666	Station PIATT	Casing 5 1/2	Depth
Type Job COW L.S.	Formation	County STAFFORD	State KS
		Legal Description 15-22-13	

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size 5 1/2	Tubing Size	Shots/Ft		Acid CMV 125 SKS	50 POC	RATE	PRESS	ISIP
Depth 3918.9	Depth	From	To	Pre Pad 50 SKS	60	Max		5 Min.
Volume 93.2	Volume	From	To	Pad		Min		10 Min.
Max Press 1500	Max Press	From	To	Frac		Avg		15 Min.
Well Connection P.C.	Annulus Vol.	From	To			HHP Used		Annulus Pressure
Plug Depth 5897.3	Packer Depth	From	To	Flush 92.76		Gas Volume		Total Load

Customer Representative			Station Manager				Treater		
Service Units	37216		77686	19905		19831	19862		
Driver Names	MATTAI		YOUNG			P. J. SM			

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
7:15					TRUCKS ON LOCATION / SAFETY MEETINGS
11:10					RUN 95 JOINTS 5 1/2 Casing
1:05					HOOK UP TO RIG / BREAK CIRC W. RIG
2:38	100		12	6	PUMP 12 BBL MUD FLUSH
2:41	100		3	6	PUMP 3 BBL H2O SPACER
2:43	100		11	3	MIX 50 SKS SCAVENGER
2:45	50		33	3	MIX 125 SKS 50/50 EQUUMBLIND
2:55					WASH PUMP + LINE, RELEASE PLUG
2:58	0		0	6	START H2O MIX. W 270 KCL
3:10	200	200	82	2	SLOW RATE
3:15	600		93		PLUG LAWDON + H2O CIRC THRU JOB
3:20			7		PLUG CATHOD
					JOB COMPLETE
					THANK YOU
					MIKE MATTAI





## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.09 @ 23:20:20

End Date: 2013.07.10 @ 05:54:50

Job Ticket #: 18409                      DST #: 1

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.10 @ 06:11:09



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18409

DST#: 1

Test Start: 2013.07.09 @ 23:20:20

## GENERAL INFORMATION:

Formation: **LKC "B-F"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 01:27:50  
 Tester: Shane Konzem  
 Time Test Ended: 05:54:50  
 Unit No: 3330/33/Great Bend  
 Interval: **3400.00 ft (KB) To 3463.00 ft (KB) (TVD)**  
 Reference Elevations: 1897.00 ft (KB)  
 Total Depth: 3463.00 ft (KB) (TVD)  
 1889.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 8.00 ft

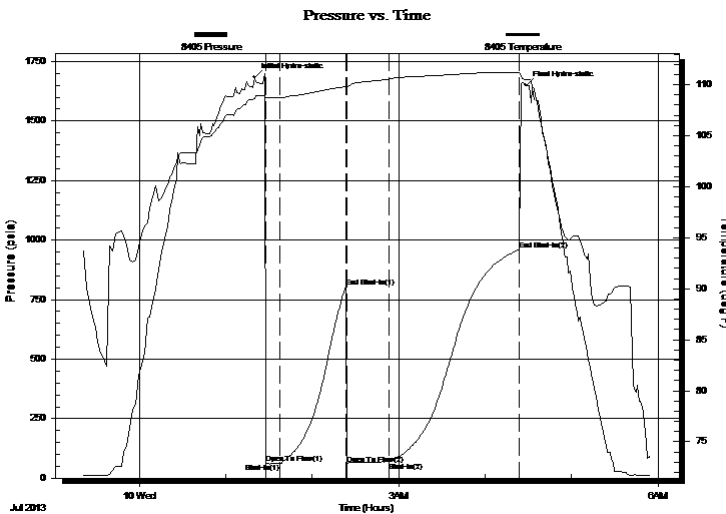
## Serial #: 8405

Inside

Press @ Run Depth: 68.30 psia @ 3458.68 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.07.09 End Date: 2013.07.10 Last Calib.: 2013.07.10  
 Start Time: 23:20:20 End Time: 05:54:50 Time On Btm: 2013.07.10 @ 01:19:50  
 Time Off Btm: 2013.07.10 @ 04:28:20

TEST COMMENT: 1st Open/ 10 Minutes. Weak blow built to 2 inches in 5 gallon bucket.  
 1st Shut In/ 45 Minutes. No blow back.  
 2nd Open/ 30 Minutes. Weak blow built to 1.5 inches in 5 gallon bucket.  
 2nd SHut In/ 90 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1683.12	108.62	Initial Hydro-static
8	61.43	108.77	Open To Flow (1)
18	61.32	108.69	Shut-In(1)
64	804.82	109.81	End Shut-In(1)
64	58.73	109.66	Open To Flow (2)
94	68.30	110.55	Shut-In(2)
184	959.14	111.20	End Shut-In(2)
189	1649.82	110.50	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	No gas	0.00
30.00	100% mud.	0.42

## Gas Rates

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



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
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ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18409

DST#: 1

Test Start: 2013.07.09 @ 23:20:20

## GENERAL INFORMATION:

Formation: **LKC "B-F"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 01:27:50  
 Time Test Ended: 05:54:50  
 Interval: **3400.00 ft (KB) To 3463.00 ft (KB) (TVD)**  
 Total Depth: 3463.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: 3330/33/Great Bend  
 Reference Elevations: 1897.00 ft (KB)  
 1889.00 ft (CF)  
 KB to GR/CF: 8.00 ft

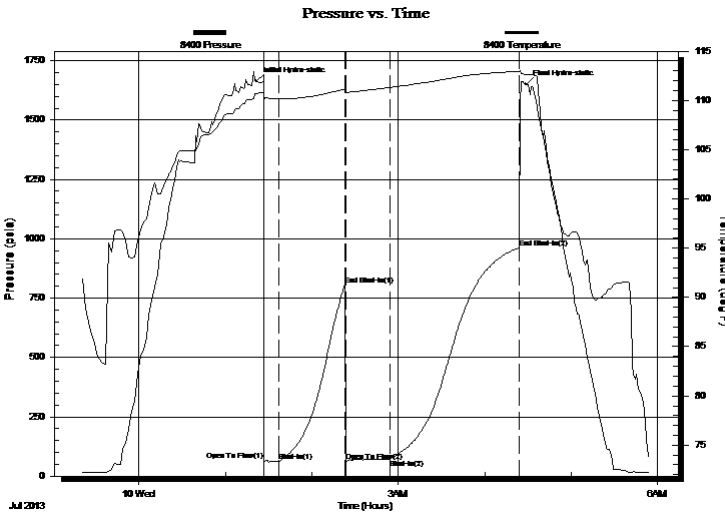
## Serial #: 8400

Outside

Press @ Run Depth: 962.30 psia @ 3459.68 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.07.09 End Date: 2013.07.10 Last Calib.: 2013.07.10  
 Start Time: 23:20:00 End Time: 05:55:00 Time On Btm: 2013.07.10 @ 01:21:30  
 Time Off Btm: 2013.07.10 @ 04:28:30

TEST COMMENT: 1st Open/ 10 Minutes. Weak blow built to 2 inches in 5 gallon bucket.  
 1st Shut In/ 45 Minutes. No blow back.  
 2nd Open/ 30 Minutes. Weak blow built to 1.5 inches in 5 gallon bucket.  
 2nd SHut In/ 90 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1663.19	110.74	Initial Hydro-static
6	67.37	109.87	Open To Flow (1)
16	63.56	110.17	Shut-In(1)
62	803.91	111.12	End Shut-In(1)
63	60.48	110.83	Open To Flow (2)
93	72.17	111.30	Shut-In(2)
183	962.30	112.94	End Shut-In(2)
187	1650.49	112.62	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	No gas	0.00
30.00	100% mud.	0.42

## Gas Rates

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



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18409

DST#: 1

Test Start: 2013.07.09 @ 23:20:20

## Tool Information

Drill Pipe:	Length: 3401.00 ft	Diameter: 3.80 inches	Volume: 47.71 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 47000.00 lb
			<u>Total Volume: 47.71 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 41000.00 lb
Depth to Top Packer:	3400.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.68 ft			
Tool Length:	91.68 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3372.00	
Shut-In Tool	5.00			3377.00	
Hydroic Tool	5.00			3382.00	
Jars	6.00			3388.00	
Safety Joint	2.00			3390.00	
Packer	5.00			3395.00	29.00 Bottom Of Top Packer
Packer	5.00			3400.00	
Perforations	5.00			3405.00	
Change Over Sub	0.75			3405.75	
Drill Pipe	31.18			3436.93	
Change Over Sub	0.75			3437.68	
Perforations	20.00			3457.68	
Recorder	1.00	8405	Inside	3458.68	
Recorder	1.00	8400	Outside	3459.68	
Bullnose	3.00			3462.68	62.68 Bottom Packers & Anchor

**Total Tool Length: 91.68**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18409

DST#: 1

Test Start: 2013.07.09 @ 23:20:20

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 43.00 sec/qt  
Water Loss: 8.80 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 4300.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	No gas	0.000
30.00	100% mud.	0.421

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

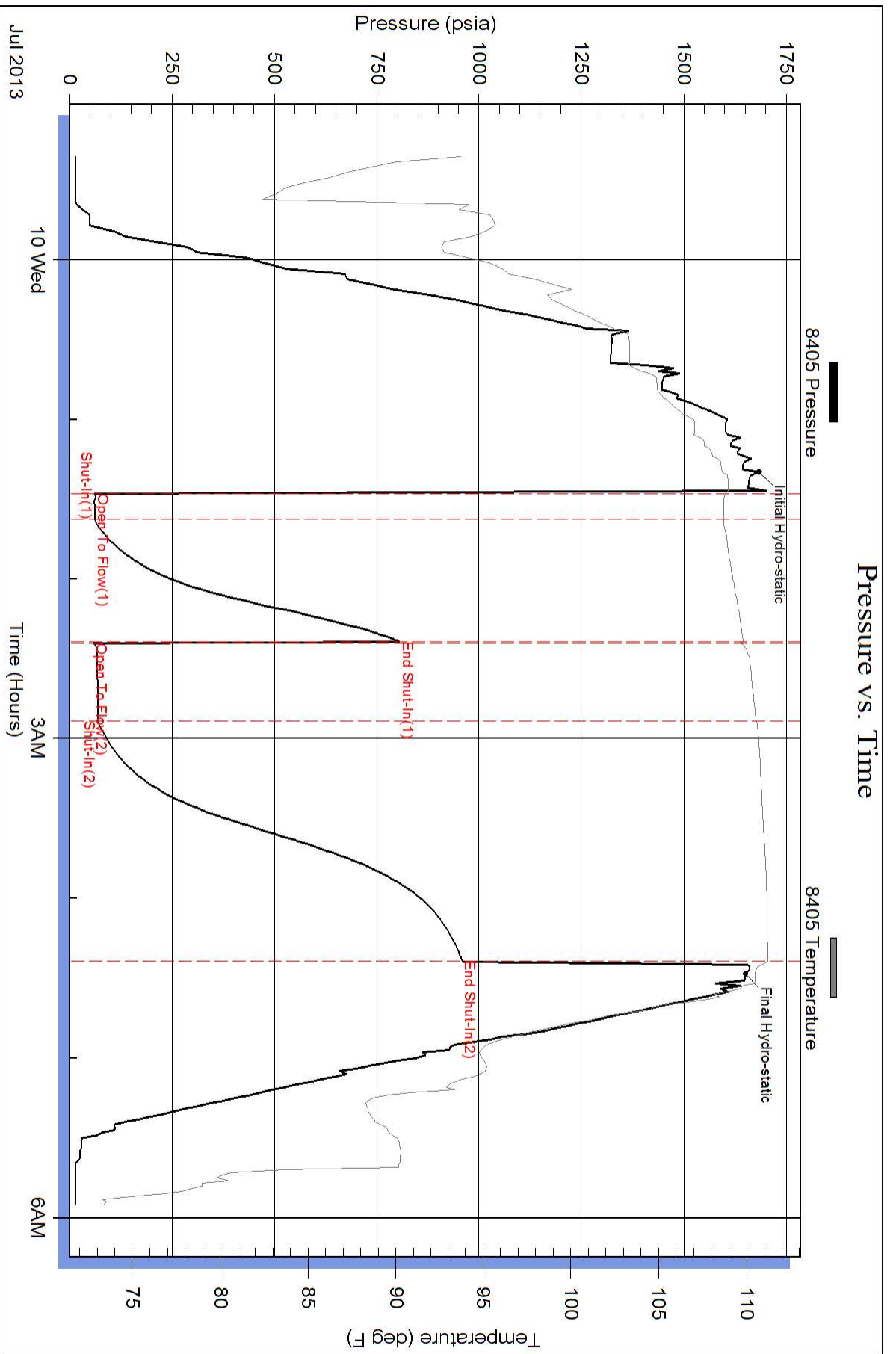
Num Gas Bombs: 0

Serial #:

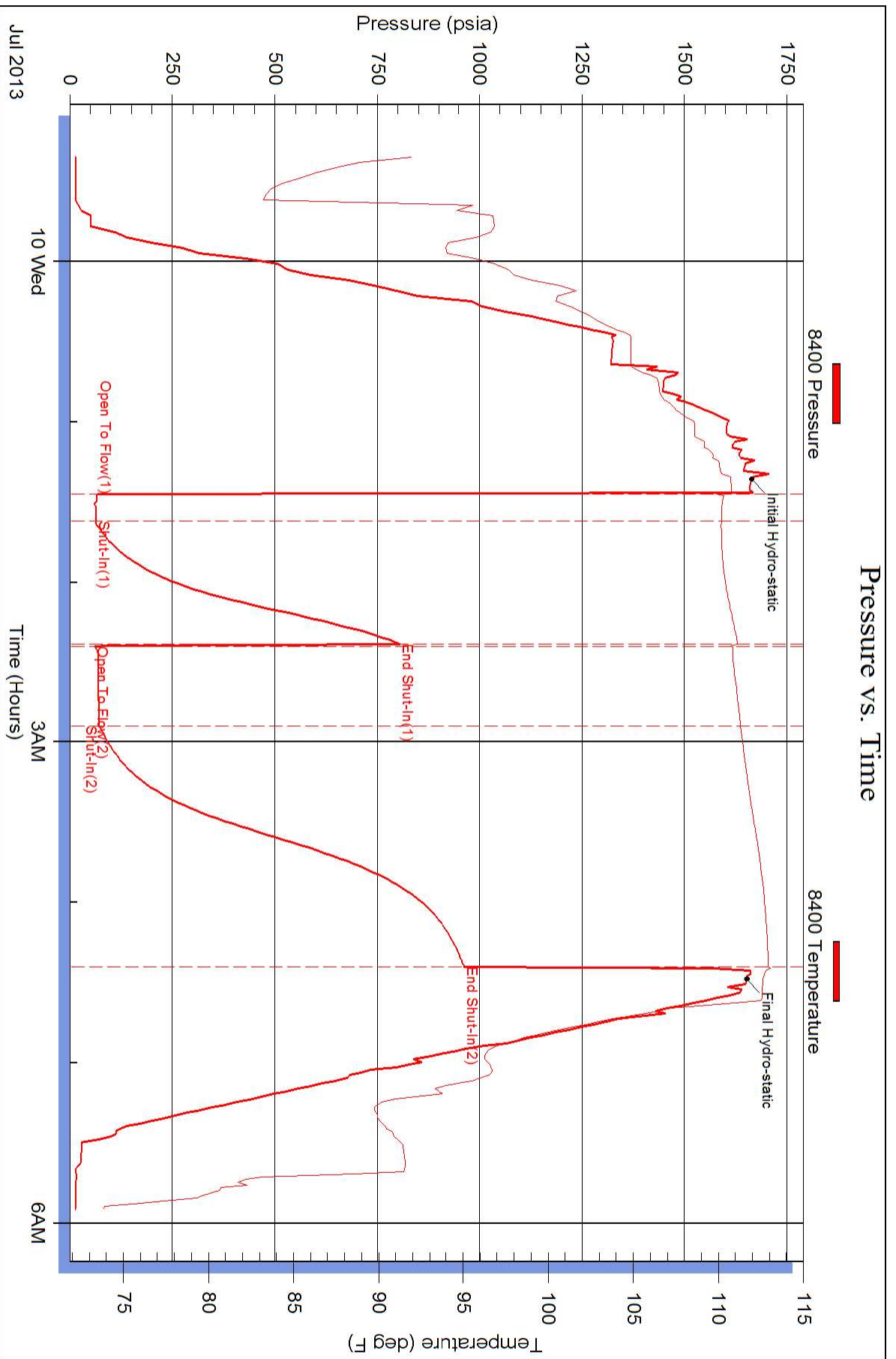
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.10 @ 15:30:00

End Date: 2013.07.10 @ 22:44:00

Job Ticket #: 18410                      DST #: 2

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.10 @ 22:57:11





# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18410

DST#: 2

Test Start: 2013.07.10 @ 15:30:00

## GENERAL INFORMATION:

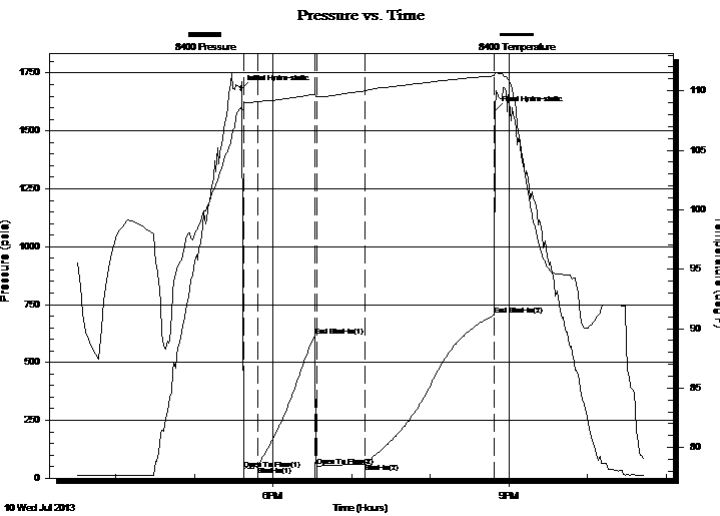
Formation: **LKC "H"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 17:38:30 Tester: Shane Konzem  
 Time Test Ended: 22:44:00 Unit No: 3330/33/Great Bend  
 Interval: **3495.00 ft (KB) To 3521.00 ft (KB) (TVD)** Reference Elevations: 1897.00 ft (KB)  
 Total Depth: 3521.00 ft (KB) (TVD) 1889.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 8.00 ft

## Serial #: 8400

Outside

Press @ Run Depth: 703.86 psia @ 3518.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.07.10 End Date: 2013.07.10 Last Calib.: 2013.07.10  
 Start Time: 15:30:00 End Time: 22:44:00 Time On Btm: 2013.07.10 @ 17:35:30  
 Time Off Btm: 2013.07.10 @ 20:49:30

TEST COMMENT: 1st Open/ 10 Minutes. Good blow built to bottom of 5 gallon bucket in 8 minutes and 30 seconds.  
 1st Shut In/ 45 Minutes. No blow back.  
 2nd Open/ 45 Minutes. Good blow built to bottom of 5 gallon bucket in 12 minutes.  
 2nd Shut In/ 90 Minutes. No blow back.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1677.87	108.57	Initial Hydro-static
3	39.73	108.95	Open To Flow (1)
13	49.59	109.10	Shut-In(1)
57	615.16	109.72	End Shut-In(1)
58	52.39	109.49	Open To Flow (2)
95	64.52	110.02	Shut-In(2)
194	703.86	111.26	End Shut-In(2)
194	1589.55	111.55	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	No gas	0.00
100.00	10% oil, 90% mud.	1.40

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18410

**DST#: 2**

Test Start: 2013.07.10 @ 15:30:00

## Tool Information

Drill Pipe:	Length: 3495.00 ft	Diameter: 3.80 inches	Volume: 49.03 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 49.03 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 41000.00 lb
Depth to Top Packer:	3495.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	55.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3467.00	
Shut-In Tool	5.00			3472.00	
Hydroic Tool	5.00			3477.00	
Jars	6.00			3483.00	
Safety Joint	2.00			3485.00	
Packer	5.00			3490.00	29.00 Bottom Of Top Packer
Packer	5.00			3495.00	
Perforations	21.00			3516.00	
Recorder	1.00	8405	Inside	3517.00	
Recorder	1.00	8400	Outside	3518.00	
Bullnose	3.00			3521.00	26.00 Bottom Packers & Anchor

**Total Tool Length: 55.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18410

DST#: 2

Test Start: 2013.07.10 @ 15:30:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 48.00 sec/qt  
Water Loss: 8.79 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 5000.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	No gas	0.000
100.00	10% oil, 90% mud.	1.403

Total Length: 100.00 ft      Total Volume: 1.403 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

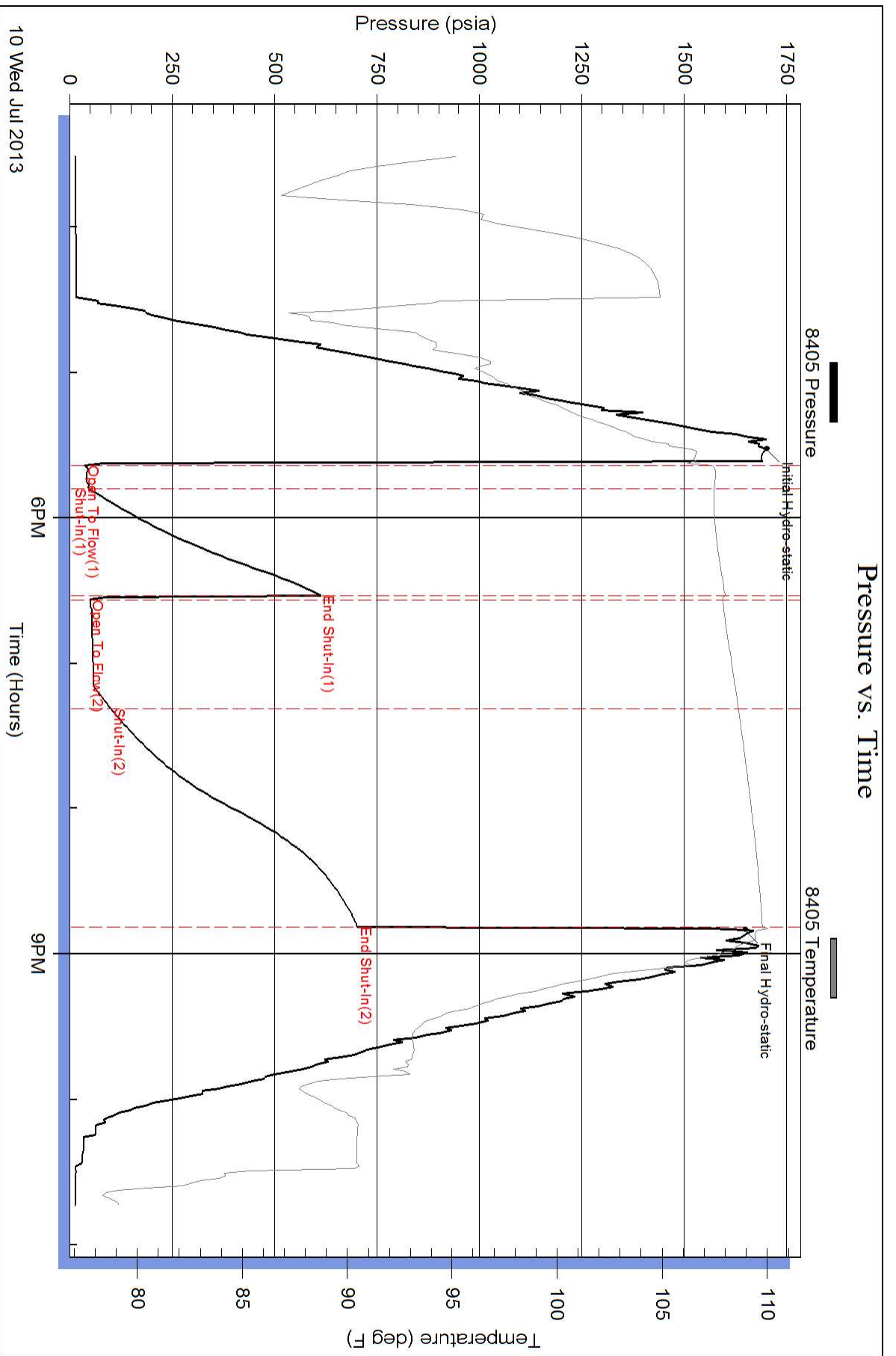
Serial #:

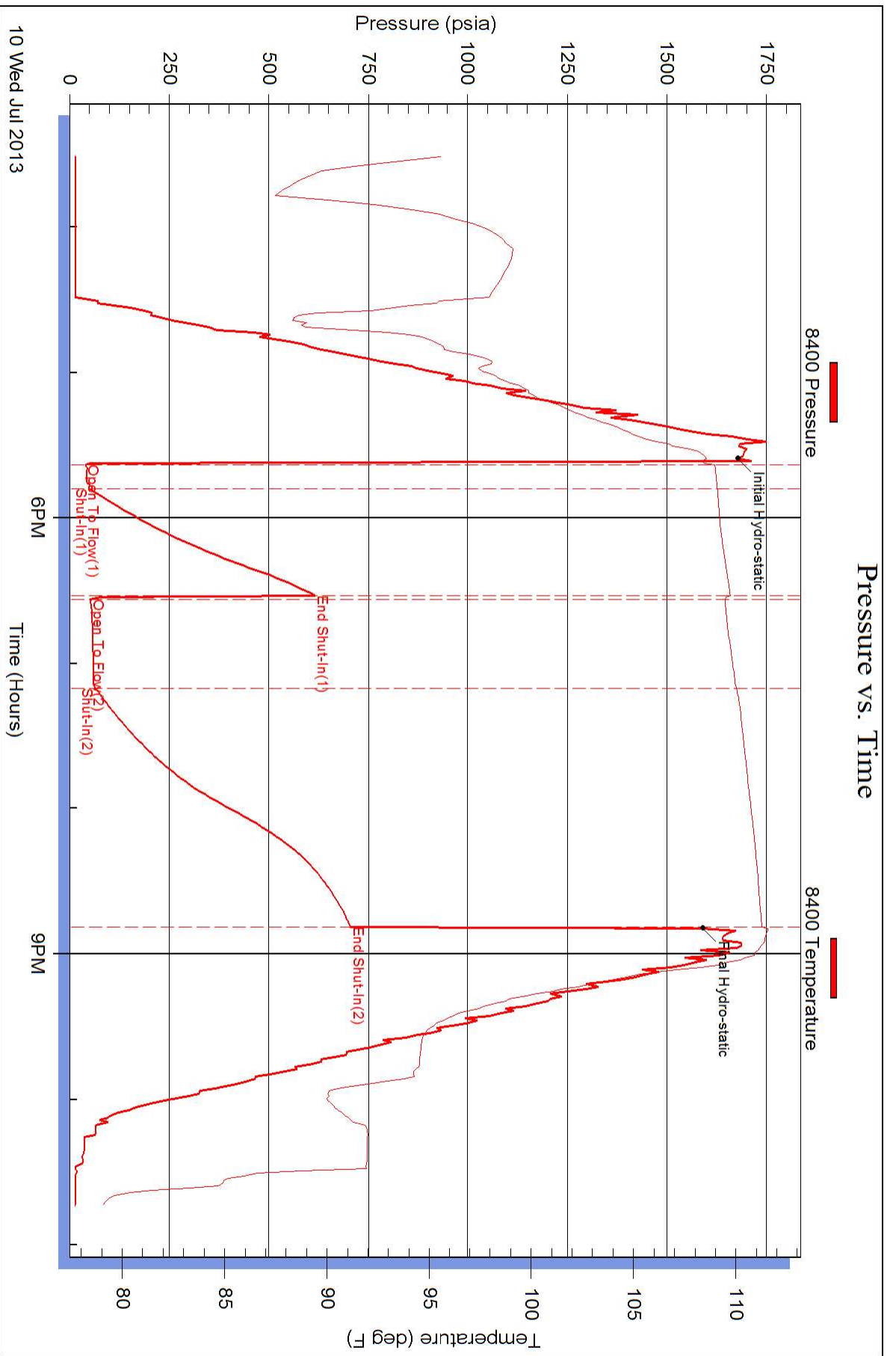
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.12 @ 22:00:00

End Date: 2013.07.13 @ 04:26:30

Job Ticket #: 18411                      DST #: 3

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.12 @ 04:41:16







# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18411

**DST#: 3**

Test Start: 2013.07.12 @ 22:00:00

## Tool Information

Drill Pipe:	Length: 3715.00 ft	Diameter: 3.80 inches	Volume: 52.11 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 52.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3728.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	39.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3700.00	
Shut-In Tool	5.00			3705.00	
Hydroic Tool	5.00			3710.00	
Jars	6.00			3716.00	
Safety Joint	2.00			3718.00	
Packer	5.00			3723.00	29.00 Bottom Of Top Packer
Packer	5.00			3728.00	
Perforations	34.00			3762.00	
Recorder	1.00	8405	Inside	3763.00	
Recorder	1.00	8400	Outside	3764.00	
Bullnose	3.00			3767.00	39.00 Bottom Packers & Anchor

**Total Tool Length: 68.00**





# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18411

DST#: 3

Test Start: 2013.07.12 @ 22:00:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 50.00 sec/qt  
Water Loss: 10.20 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6500.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	60 foot gas.	0.000
30.00	10% oil, 90% mud	0.421

Total Length: 30.00 ft      Total Volume: 0.421 bbl

Num Fluid Samples: 0

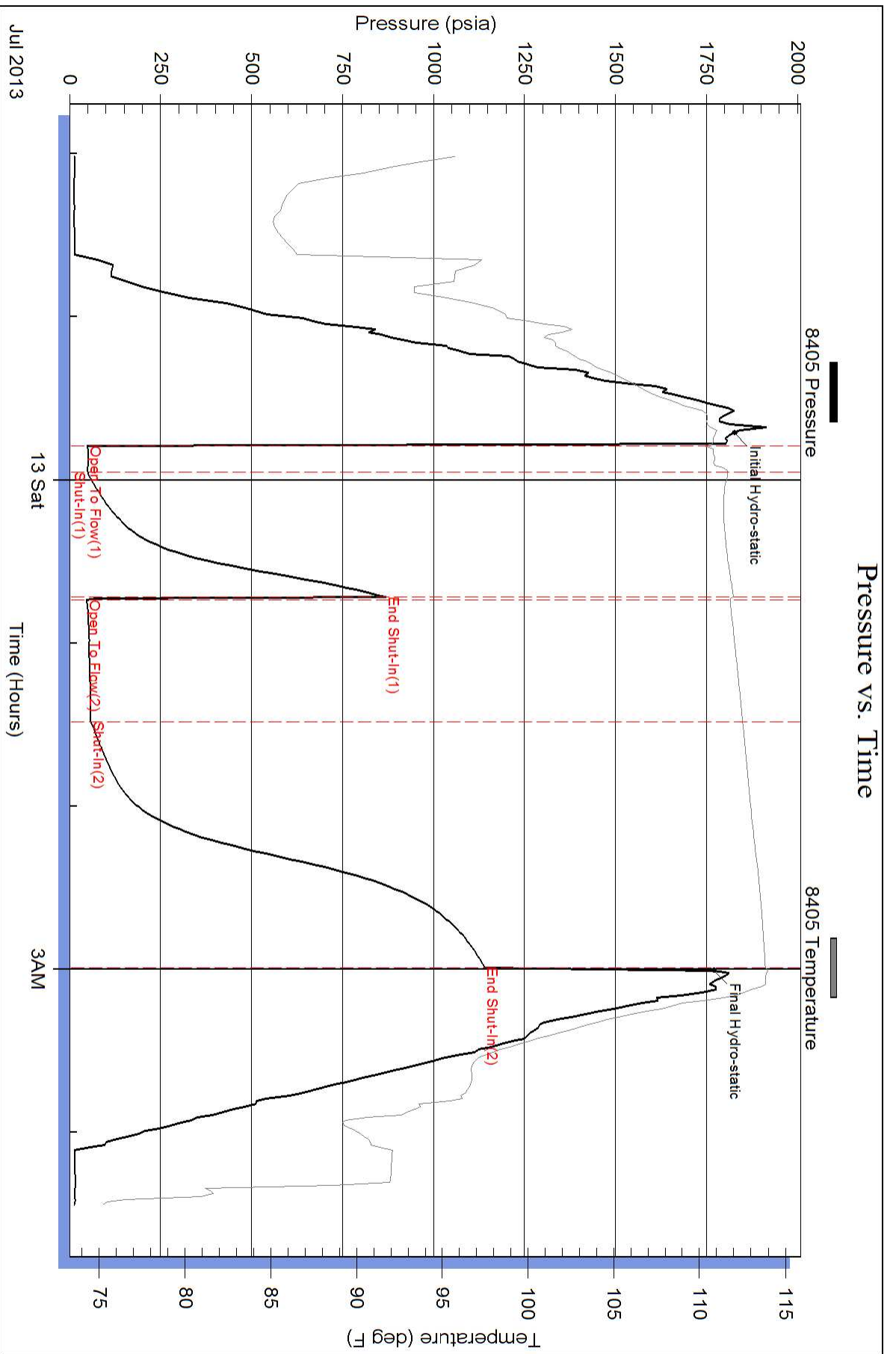
Num Gas Bombs: 0

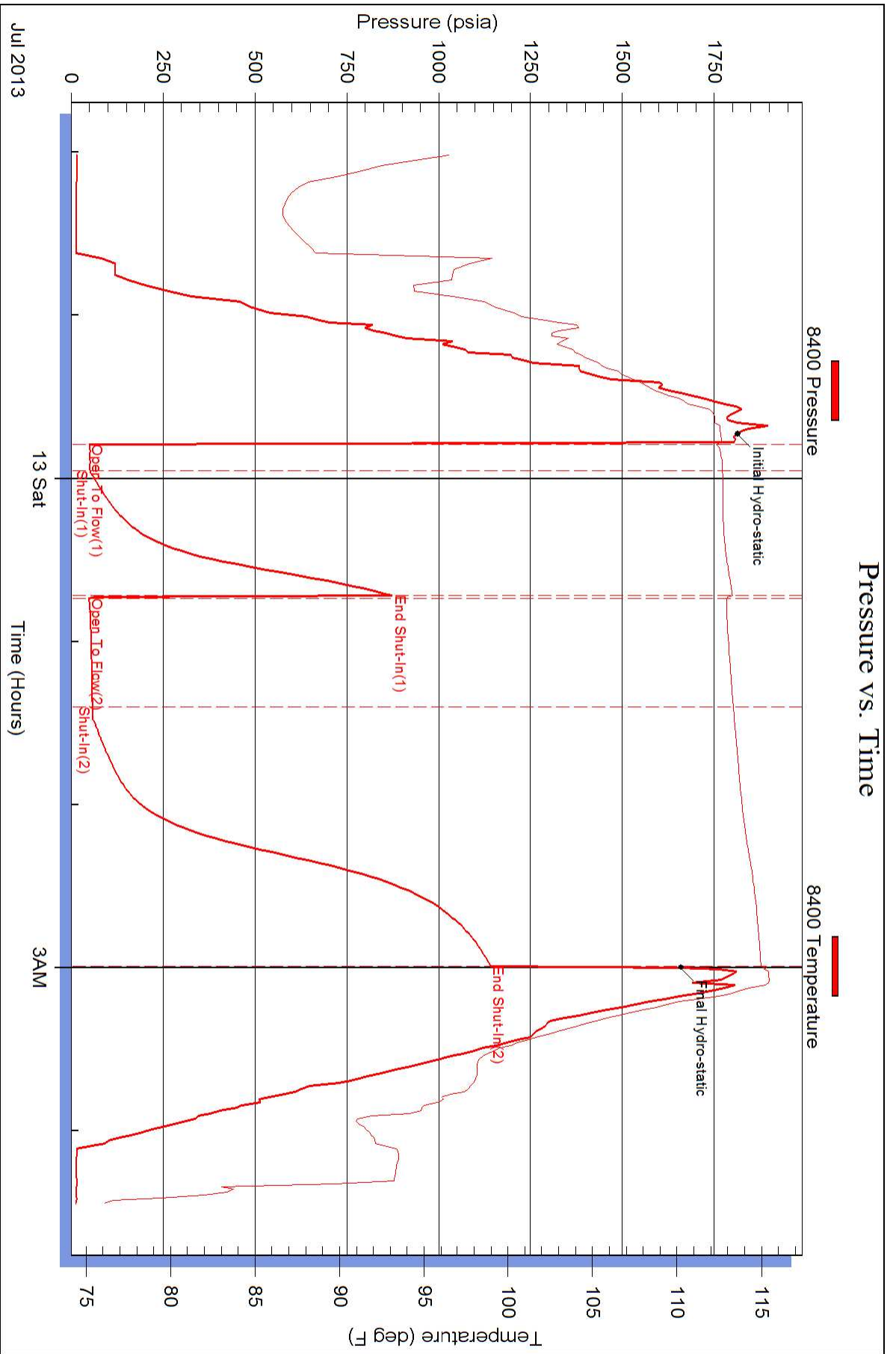
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.12 @ 12:51:00

End Date: 2013.07.12 @ 19:51:00

Job Ticket #: 18412                      DST #: 4

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.12 @ 20:05:29





# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18412

DST#: 4

Test Start: 2013.07.12 @ 12:51:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:07:30

Time Test Ended: 19:51:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: 3330/33/Great Bend

Interval: **3726.00 ft (KB) To 3794.00 ft (KB) (TVD)**

Reference Elevations: 1897.00 ft (KB)

Total Depth: 3794.00 ft (KB) (TVD)

1889.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: **8400** Outside

Press @ RunDepth: 1280.24 psia @ 3791.30 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.07.12

End Date: 2013.07.12

Last Calib.: 2013.07.12

Start Time: 12:51:00

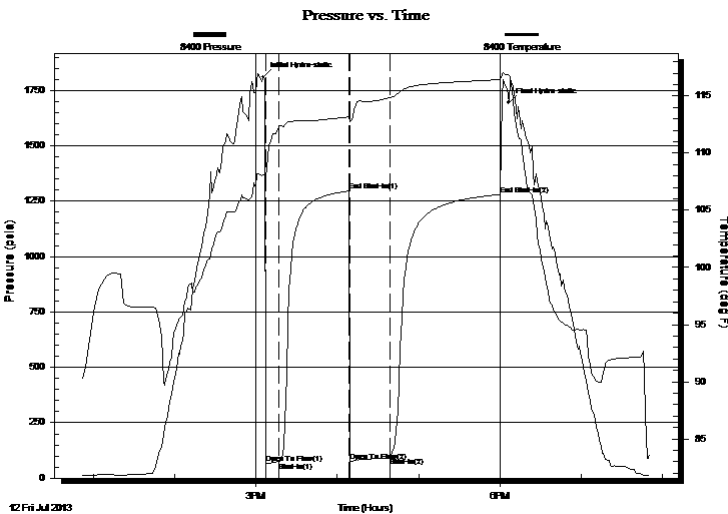
End Time: 19:51:00

Time On Btm: 2013.07.12 @ 15:05:30

Time Off Btm: 2013.07.12 @ 18:06:30

TEST COMMENT: 1st Open/ 10 minutes. Weak blow built to 2 inches in 5 gallon bucket.  
1st Shut In/ 45 Minutes. No blow back.  
2nd Open/ 30 Minutes. Weak blow built to 3 inches in 5 gallon bucket.  
2nd Shut In/ 90 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1811.07	108.08	Initial Hydro-static
2	65.78	107.85	Open To Flow (1)
12	73.55	112.34	Shut-In(1)
63	1295.06	113.17	End Shut-In(1)
64	77.80	112.76	Open To Flow (2)
94	93.02	114.86	Shut-In(2)
175	1280.24	116.45	End Shut-In(2)
181	1694.86	116.76	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	120 foot gas	0.00
70.00	5% Oil,95% Mud	0.98

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18412

**DST#: 4**

Test Start: 2013.07.12 @ 12:51:00

## Tool Information

Drill Pipe:	Length: 3715.00 ft	Diameter: 3.80 inches	Volume: 52.11 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 52.11 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 43000.00 lb
Depth to Top Packer:	3726.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	68.30 ft			
Tool Length:	97.30 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3698.00	
Shut-In Tool	5.00			3703.00	
Hydroic Tool	5.00			3708.00	
Jars	6.00			3714.00	
Safety Joint	2.00			3716.00	
Packer	5.00			3721.00	29.00 Bottom Of Top Packer
Packer	5.00			3726.00	
Perforations	5.00			3731.00	
Change Over Sub	0.75			3731.75	
Drill Pipe	31.80			3763.55	
Change Over Sub	0.75			3764.30	
Perforations	25.00			3789.30	
Recorder	1.00	8405	Inside	3790.30	
Recorder	1.00	8400	Outside	3791.30	
Bullnose	3.00			3794.30	68.30 Bottom Packers & Anchor

**Total Tool Length: 97.30**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18412

DST#: 4

Test Start: 2013.07.12 @ 12:51:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 87.00 sec/qt  
Water Loss: 9.60 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6900.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	120 foot gas	0.000
70.00	5% Oil,95% Mud	0.982

Total Length: 70.00 ft      Total Volume: 0.982 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

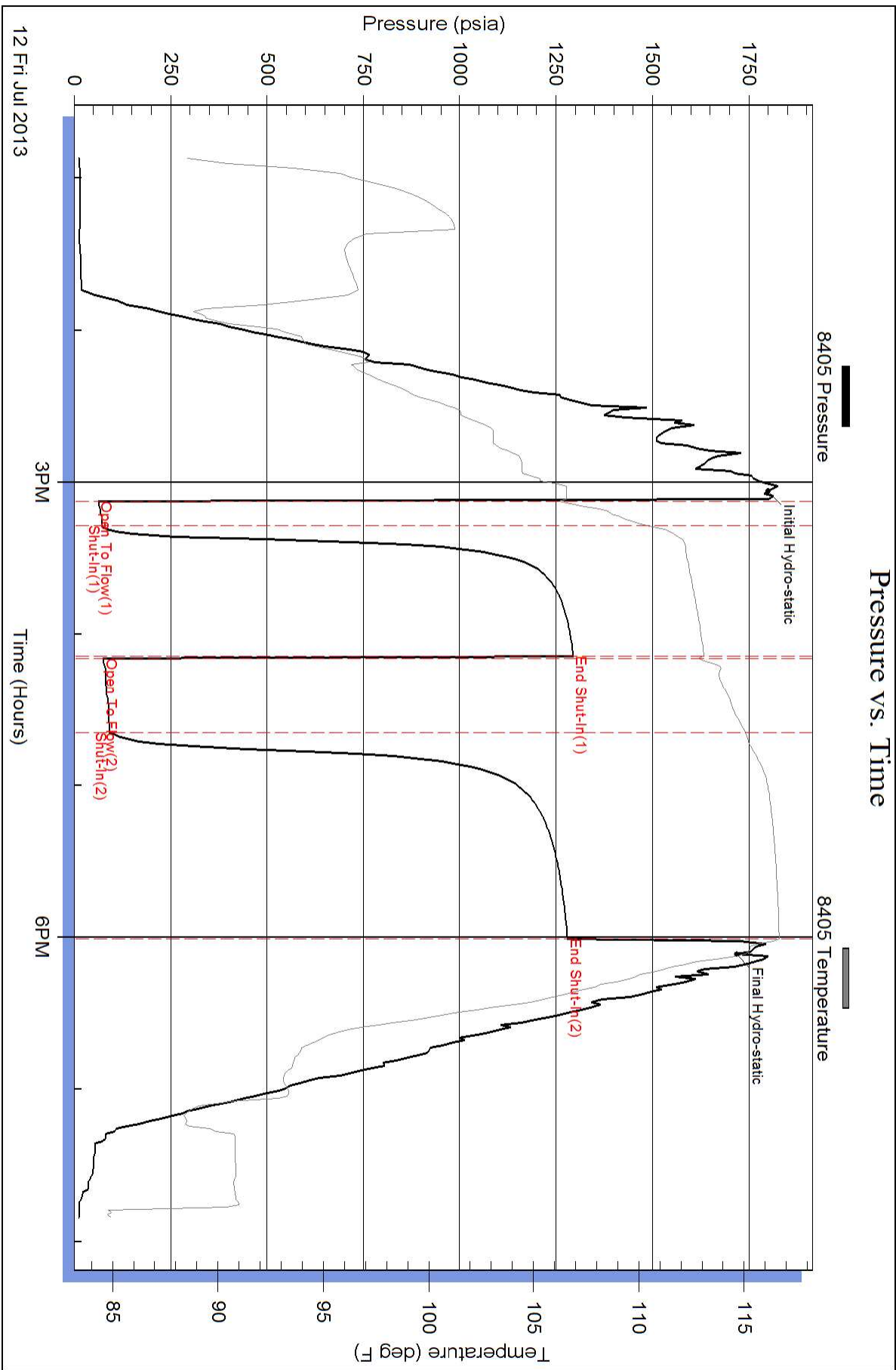
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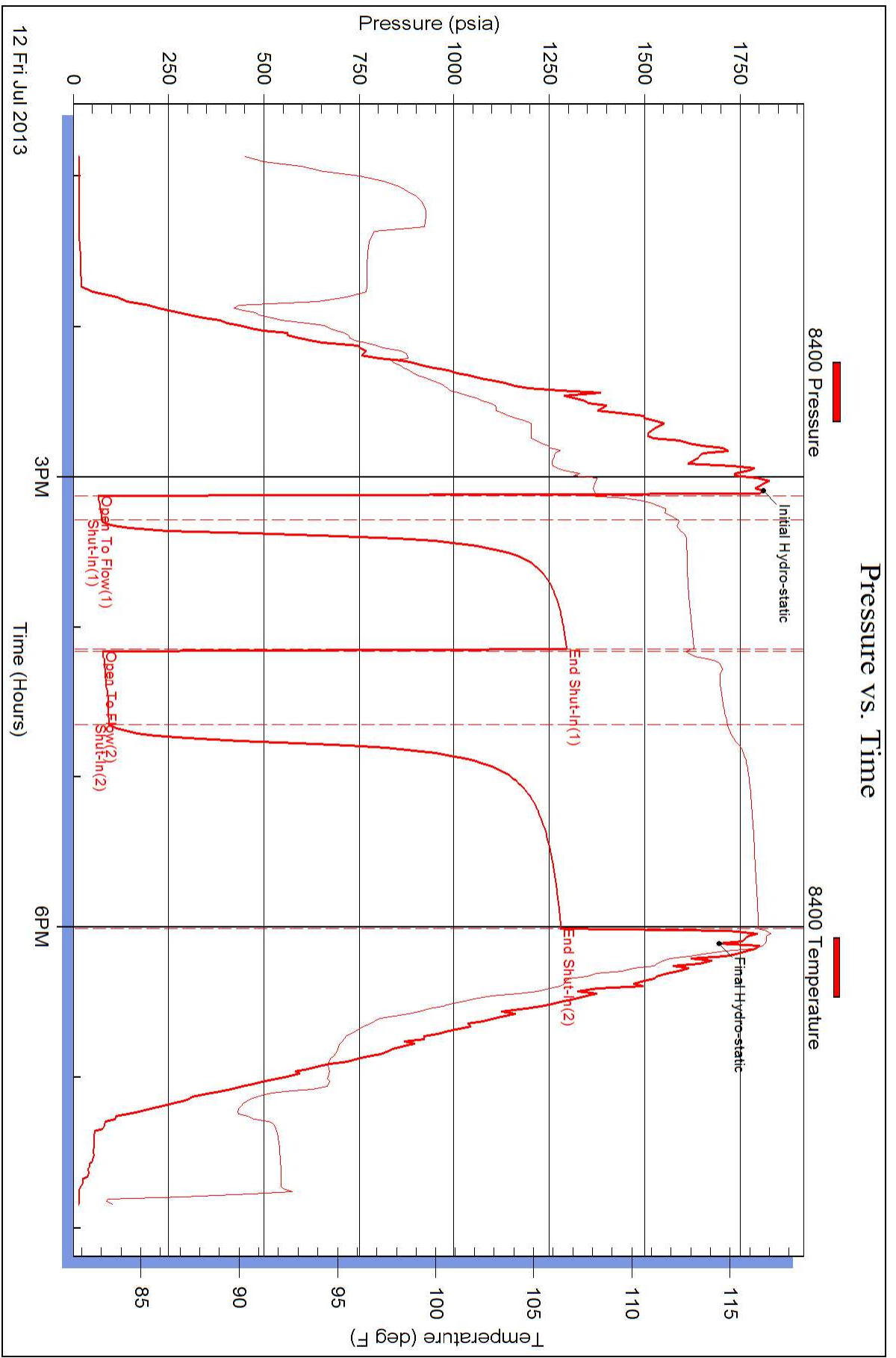
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.13 @ 02:05:00

End Date: 2013.07.13 @ 08:43:30

Job Ticket #: 18413                      DST #: 5

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.13 @ 09:03:19



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18413

DST#: 5

Test Start: 2013.07.13 @ 02:05:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 04:04:30  
 Tester: Shane Konzem  
 Time Test Ended: 08:43:30  
 Unit No: 3330/33/Great Bend  
 Interval: **3793.00 ft (KB) To 3800.00 ft (KB) (TVD)**  
 Reference Elevations: 1897.00 ft (KB)  
 Total Depth: 3800.00 ft (KB) (TVD)  
 1889.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Poor  
 KB to GR/CF: 8.00 ft

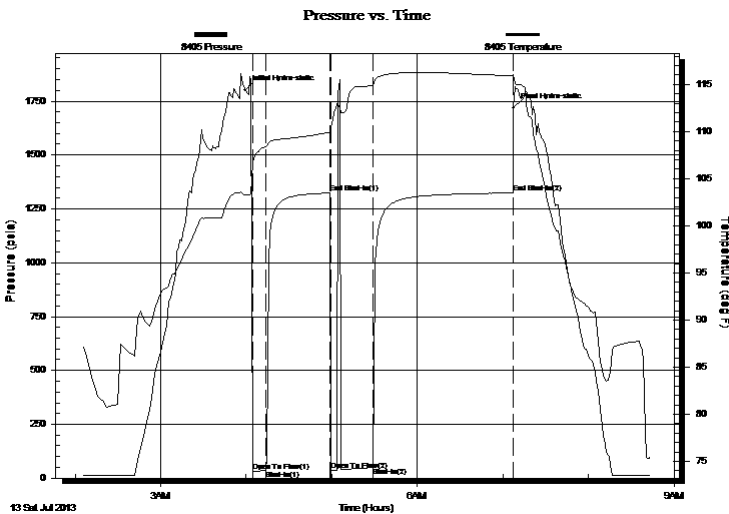
## Serial #: 8405

Inside

Press @ Run Depth: 49.22 psia @ 3796.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.07.13 End Date: 2013.07.13 Last Calib.: 2013.07.13  
 Start Time: 02:05:00 End Time: 08:43:30 Time On Btm: 2013.07.13 @ 03:59:30  
 Time Off Btm: 2013.07.13 @ 07:07:30

TEST COMMENT: 1st Open/ 10 Minutes. Weak blow built to 1 inch in 5 gallon bucket.  
 1st Shut In/ 45 Minutes. No blow back.  
 2nd Open/ 30 Minutes. Weak blow built to 2 inches in 5 gallon bucket.  
 2nd Shut In/ 90 Minutes. No blow back.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1803.45	103.25	Initial Hydro-static
5	34.01	106.73	Open To Flow (1)
15	35.52	108.43	Shut-In(1)
59	1323.53	109.89	End Shut-In(1)
60	36.59	110.38	Open To Flow (2)
89	49.22	114.92	Shut-In(2)
188	1323.63	115.91	End Shut-In(2)
188	1718.80	116.09	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	63 foot gas.	0.00
5.00	10% gas, 50% water, 40% mud.	0.07
0.00	Chloride recov. 27000 ppm	0.00
0.00	Resist recov. .22 at 50 degrees.	0.00

## Gas Rates

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



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18413

**DST#: 5**

Test Start: 2013.07.13 @ 02:05:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:04:30

Time Test Ended: 08:43:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: 3330/33/Great Bend

**Interval: 3793.00 ft (KB) To 3800.00 ft (KB) (TVD)**

Reference Elevations: 1897.00 ft (KB)

Total Depth: 3800.00 ft (KB) (TVD)

1889.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

**Serial #: 8400 Outside**

Press @ Run Depth: 1324.46 psia @ 3797.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.07.13

End Date: 2013.07.13

Last Calib.: 2013.07.13

Start Time: 02:05:00

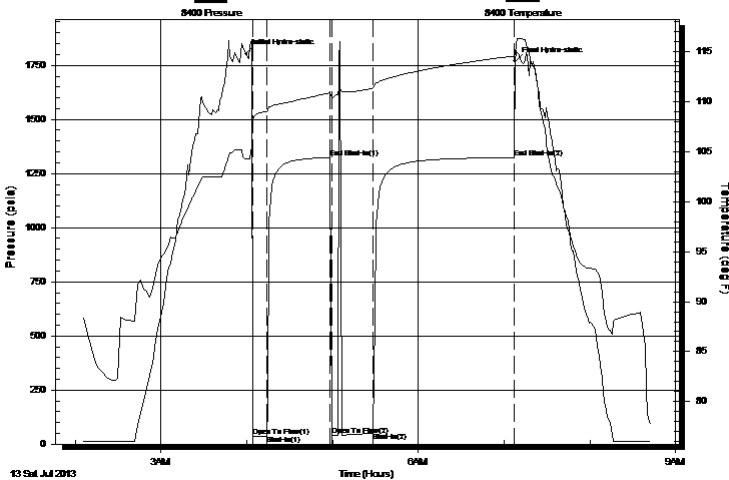
End Time: 08:43:00

Time On Btm: 2013.07.13 @ 03:59:30

Time Off Btm: 2013.07.13 @ 07:07:30

**TEST COMMENT:** 1st Open/ 10 Minutes. Weak blow built to 1 inch in 5 gallon bucket.  
1st Shut In/ 45 Minutes. No blow back.  
2nd Open/ 30 Minutes. Weak blow built to 2 inches in 5 gallon bucket.  
2nd Shut In/ 90 Minutes. No blow back.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1803.55	104.24	Initial Hydro-static
5	35.95	108.29	Open To Flow (1)
15	39.05	109.00	Shut-In(1)
60	1324.13	110.88	End Shut-In(1)
60	38.77	110.43	Open To Flow (2)
89	54.36	111.36	Shut-In(2)
188	1324.46	114.54	End Shut-In(2)
188	1767.48	114.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	63 foot gas.	0.00
5.00	10% gas, 50% water, 40% mud.	0.07
0.00	Chloride recov. 27000 ppm	0.00
0.00	Resist recov. .22 at 50 degrees.	0.00

Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18413

**DST#: 5**

Test Start: 2013.07.13 @ 02:05:00

## Tool Information

Drill Pipe:	Length: 3781.00 ft	Diameter: 3.80 inches	Volume: 53.04 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 53.04 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 43000.00 lb
Depth to Top Packer:	3793.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	36.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3765.00	
Shut-In Tool	5.00			3770.00	
Hydroic Tool	5.00			3775.00	
Jars	6.00			3781.00	
Safety Joint	2.00			3783.00	
Packer	5.00			3788.00	29.00 Bottom Of Top Packer
Packer	5.00			3793.00	
Perforations	2.00			3795.00	
Recorder	1.00	8405	Inside	3796.00	
Recorder	1.00	8400	Outside	3797.00	
Bullnose	3.00			3800.00	7.00 Bottom Packers & Anchor

**Total Tool Length: 36.00**



# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18413

**DST#: 5**

Test Start: 2013.07.13 @ 02:05:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 87.00 sec/qt  
Water Loss: 9.60 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 6900.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	63 foot gas.	0.000
5.00	10% gas, 50% water, 40% mud.	0.070
0.00	Chloride recov. 27000 ppm	0.000
0.00	Resist recov. .22 at 50 degrees.	0.000

Total Length: 5.00 ft      Total Volume: 0.070 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

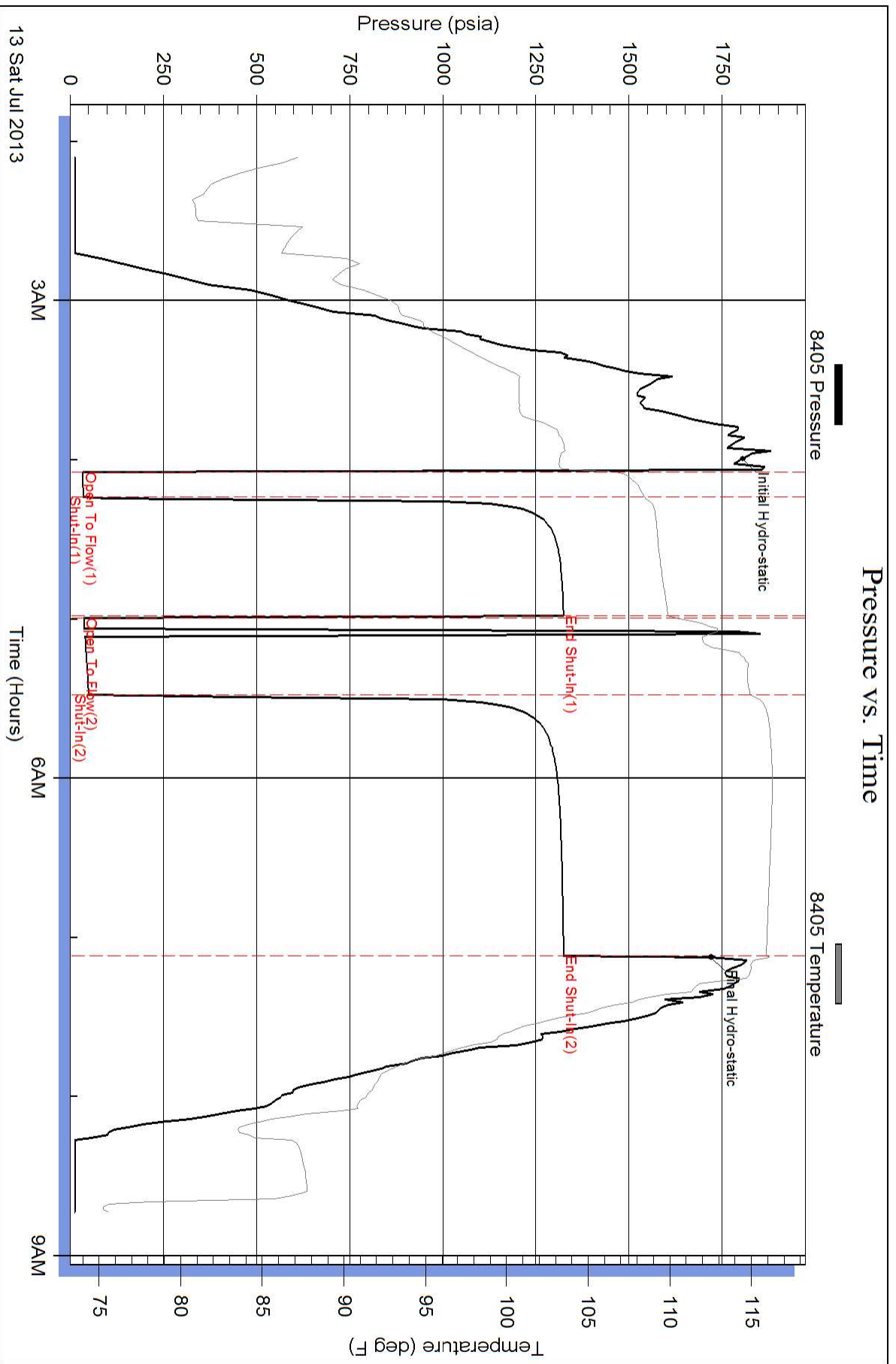
Serial #:

Laboratory Name:

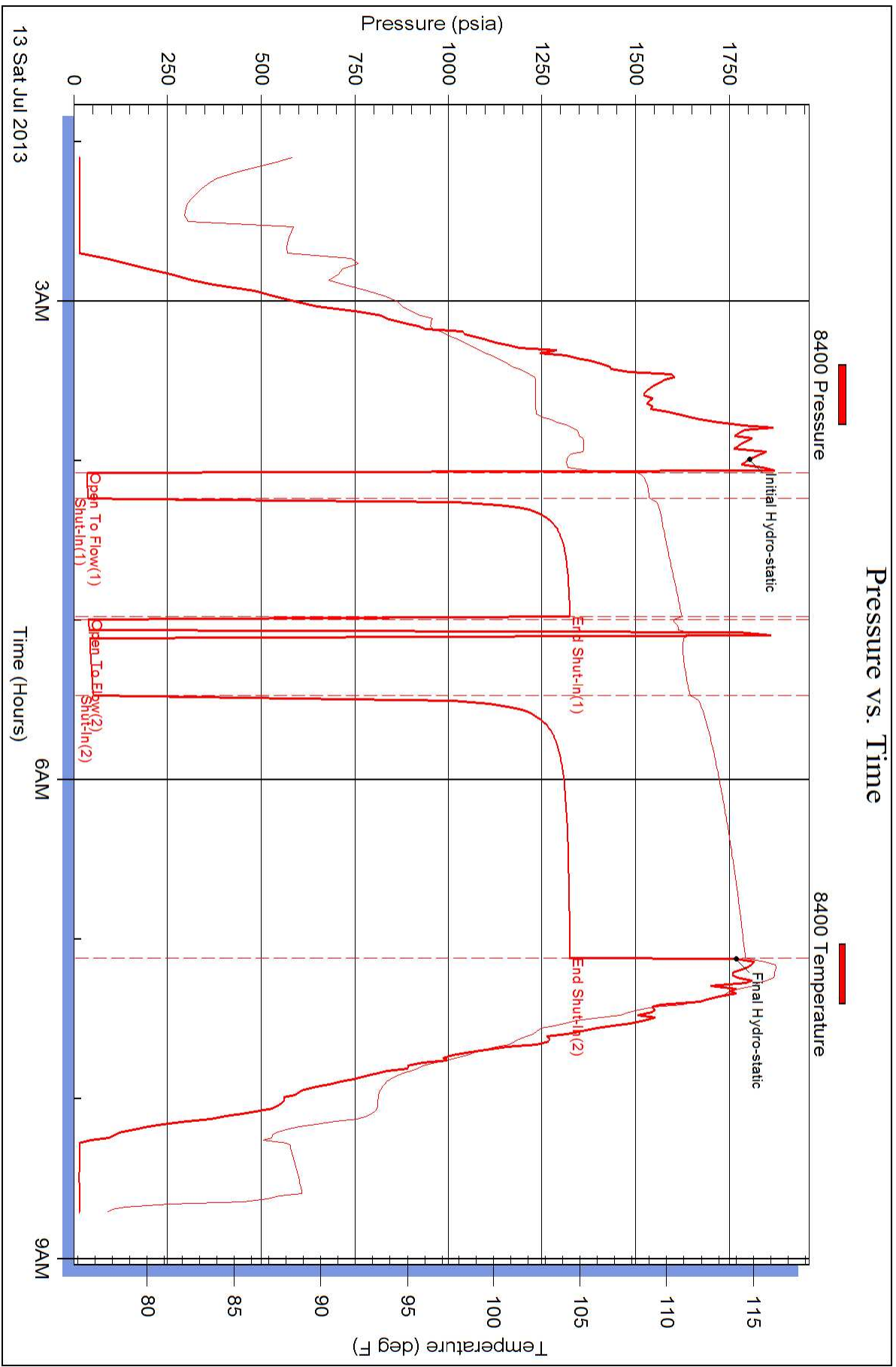
Laboratory Location:

Recovery Comments:

### Pressure vs. Time









## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.13 @ 15:50:00

End Date: 2013.07.13 @ 20:33:00

Job Ticket #: 18414                      DST #: 6

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.13 @ 20:56:26



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18414

DST#: 6

Test Start: 2013.07.13 @ 15:50:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:48:30

Time Test Ended: 20:33:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: 3330/33/Great Bend

Interval: **3799.00 ft (KB) To 3806.00 ft (KB) (TVD)**

Reference Elevations: 1897.00 ft (KB)

Total Depth: 3806.00 ft (KB) (TVD)

1889.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: **8405** Inside

Press @ RunDepth: 51.55 psia @ 3802.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.07.13

End Date: 2013.07.13

Last Calib.: 2013.07.13

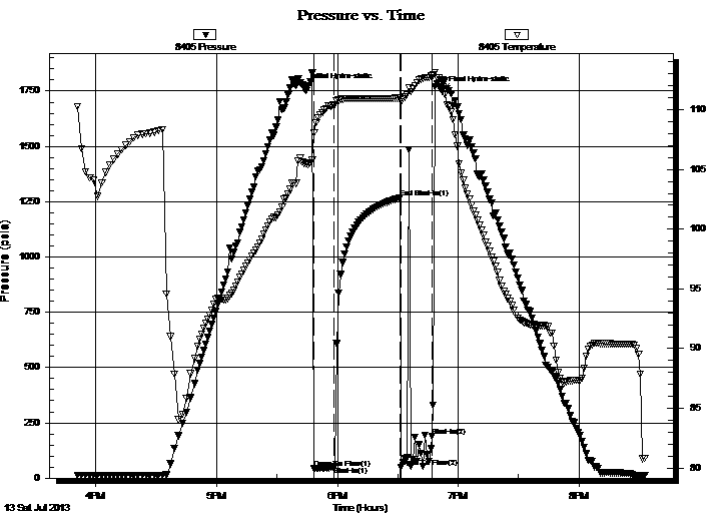
Start Time: 15:50:00

End Time: 20:33:00

Time On Btm: 2013.07.13 @ 17:43:30

Time Off Btm: 2013.07.13 @ 18:52:00

TEST COMMENT: 1st Open/ 10 Weak blow built to 1/4 inch in a 5 gallon bucket.  
1st Shut In/ 30 Minutes. No blow back.  
2nd Open/ 10 Minutes. No blow, flushed tool and had flush blow s and gained no blow. Pulled tool per Geo.  
2nd Shut In/ 0 Minutes. N/A



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1763.94	105.51	Initial Hydro-static
5	42.76	108.05	Open To Flow (1)
15	51.55	110.40	Shut-In(1)
48	1266.58	110.99	End Shut-In(1)
48	49.95	110.62	Open To Flow (2)
64	189.47	112.84	Shut-In(2)
69	1750.69	112.50	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	no gas.	0.00
60.00	5% oil, 95% mud	0.30

## Gas Rates

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





# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
 Suite 1800-2  
 Wichita Ks, 67226  
 ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18414

**DST#: 6**

Test Start: 2013.07.13 @ 15:50:00

## Tool Information

Drill Pipe:	Length: 3722.00 ft	Diameter: 3.80 inches	Volume: 52.21 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 59.42 ft	Diameter: 2.25 inches	Volume: 0.29 bbl	Weight to Pull Loose: 62000.00 lb
		Total Volume: 52.50 bbl		Tool Chased 4.00 ft
Drill Pipe Above KB:	11.42 ft			String Weight: Initial 43000.00 lb
Depth to Top Packer:	3799.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	36.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3771.00	
Shut-In Tool	5.00			3776.00	
Hydroic Tool	5.00			3781.00	
Jars	6.00			3787.00	
Safety Joint	2.00			3789.00	
Packer	5.00			3794.00	29.00 Bottom Of Top Packer
Packer	5.00			3799.00	
Perforations	2.00			3801.00	
Recorder	1.00	8405	Inside	3802.00	
Recorder	1.00	8400	Outside	3803.00	
Bullnose	3.00			3806.00	7.00 Bottom Packers & Anchor

**Total Tool Length: 36.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18414

DST#: 6

Test Start: 2013.07.13 @ 15:50:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 45.00 sec/qt  
Water Loss: 12.40 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 8900.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	no gas.	0.000
60.00	5% oil, 95% mud	0.300

Total Length: 60.00 ft      Total Volume: 0.300 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

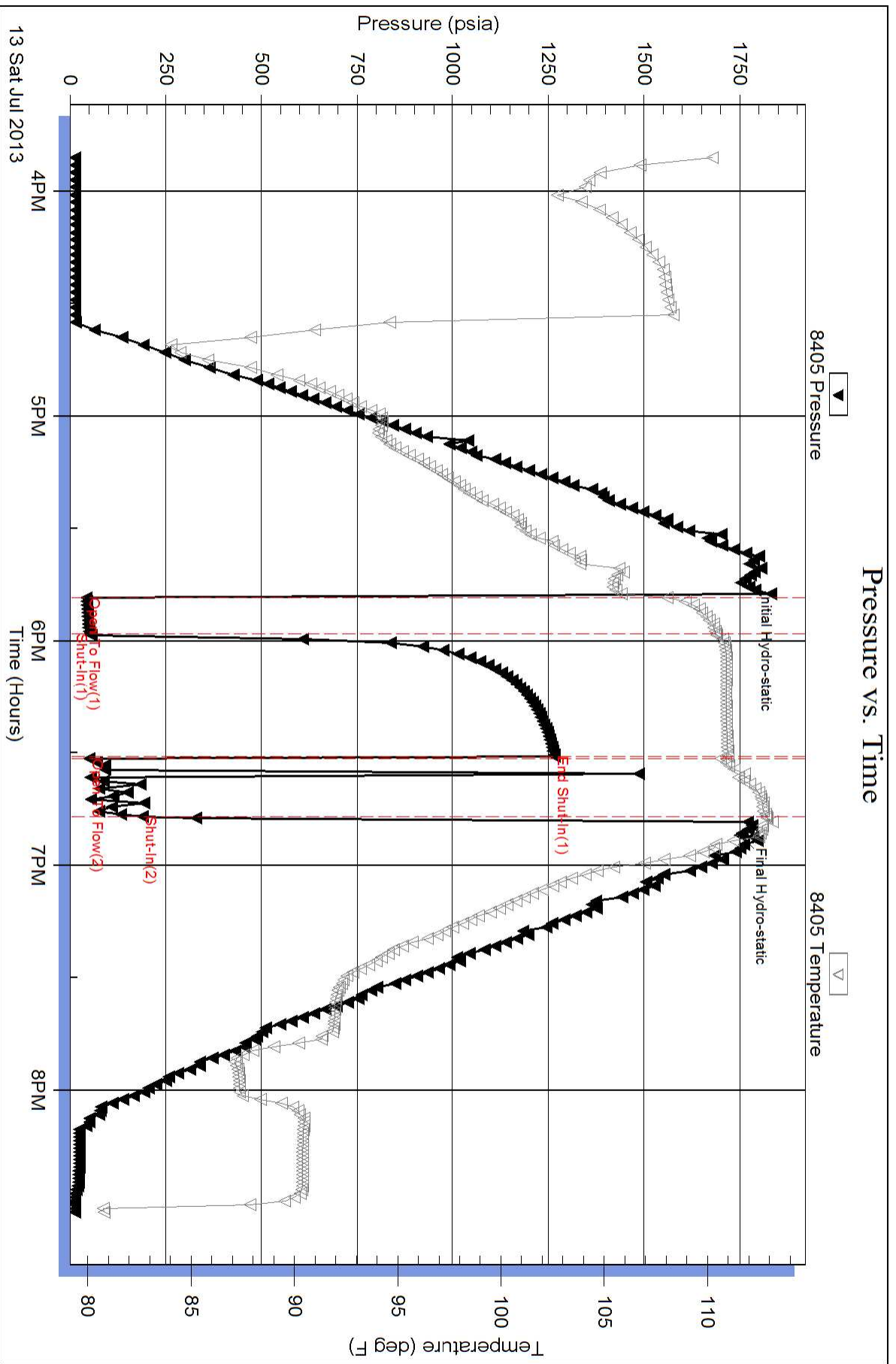
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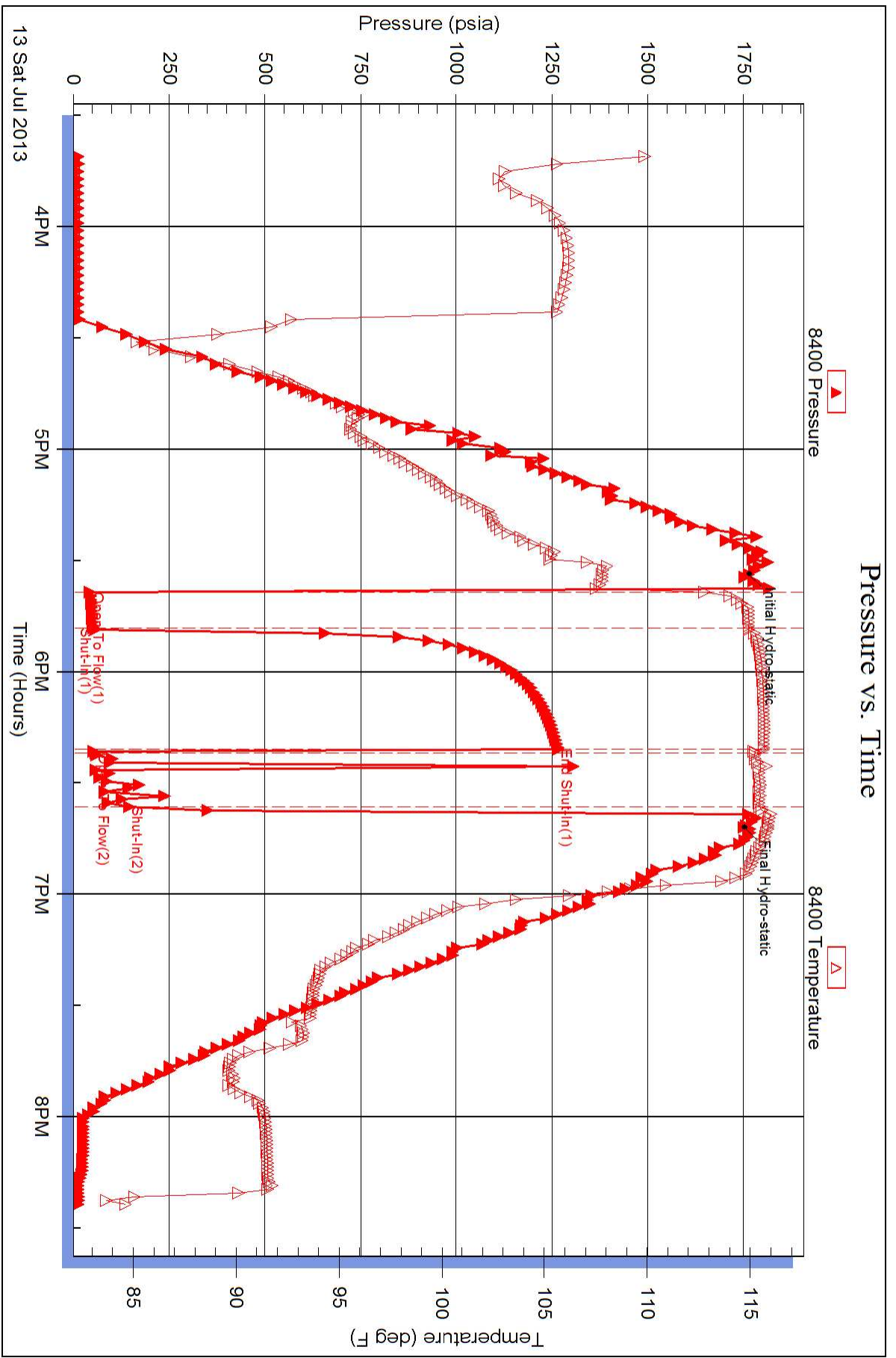
Laboratory Name:

Laboratory Location:

Recovery Comments:

# Pressure vs. Time









## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.14 @ 04:00:00

End Date: 2013.07.14 @ 11:35:00

Job Ticket #: 18415                      DST #: 7

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.14 @ 11:26:26



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18415

DST#: 7

Test Start: 2013.07.14 @ 04:00:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:02:30  
 Time Test Ended: 11:35:00  
 Interval: **3805.00 ft (KB) To 3812.00 ft (KB) (TVD)**  
 Total Depth: 3812.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Shane Konzem  
 Unit No: 3330/33/Great Bend  
 Reference Elevations: 1897.00 ft (KB)  
 1889.00 ft (CF)  
 KB to GR/CF: 8.00 ft

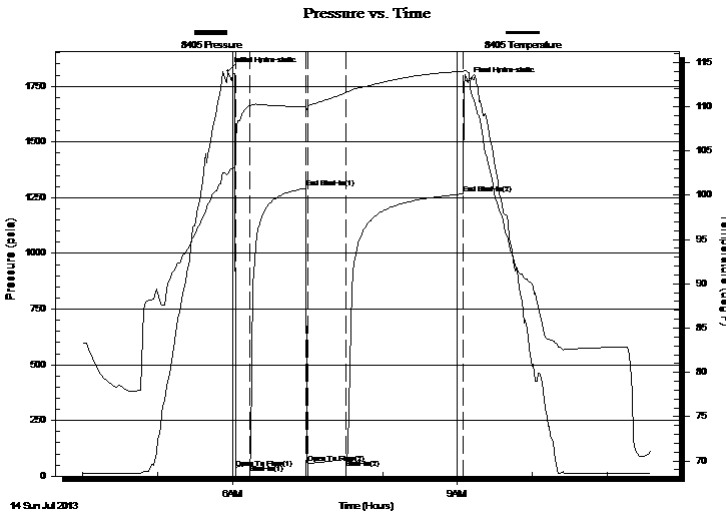
## Serial #: 8405

Inside

Press @ RunDepth: 75.53 psia @ 3808.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.07.14 End Date: 2013.07.14 Last Calib.: 2013.07.14  
 Start Time: 04:00:00 End Time: 11:35:00 Time On Btm: 2013.07.14 @ 05:56:30  
 Time Off Btm: 2013.07.14 @ 09:08:00

TEST COMMENT: 1st Open/ 10 Minutes. Weak blow built to 3 1/2 inches in 5 gallon bucket.  
 1st Shut In/ 45 Minutes. No blow back.  
 2nd Open/ 30 Minutes. Fair blow built to 5 inches in 5 gallon bucket.  
 2nd Shut In/ 90 Minutes. Slight surface blow.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1817.54	102.45	Initial Hydro-static
6	36.51	106.20	Open To Flow (1)
17	52.72	110.14	Shut-In(1)
63	1292.28	110.05	End Shut-In(1)
64	59.23	109.91	Open To Flow (2)
95	75.53	111.62	Shut-In(2)
188	1266.55	114.02	End Shut-In(2)
192	1771.39	113.95	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	no gas	0.00
62.00	60% gas, 40% oil	0.33
62.00	100% Clean oil	0.87
62.00	100% Clean Oil	0.87
0.00	Oil gravity w as 36 corrected.	0.00

## Gas Rates

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



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18415

DST#: 7

Test Start: 2013.07.14 @ 04:00:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 06:02:30  
 Tester: Shane Konzem  
 Time Test Ended: 11:35:00  
 Unit No: 3330/33/Great Bend  
 Interval: **3805.00 ft (KB) To 3812.00 ft (KB) (TVD)**  
 Reference Elevations: 1897.00 ft (KB)  
 Total Depth: 3812.00 ft (KB) (TVD)  
 1889.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Poor  
 KB to GR/CF: 8.00 ft

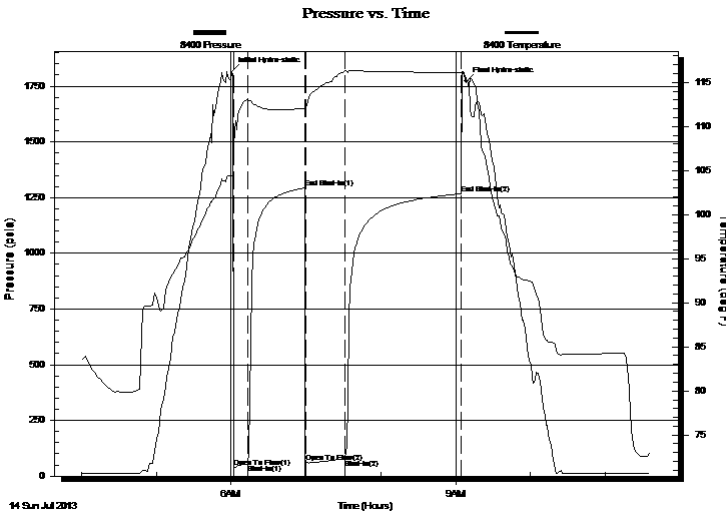
## Serial #: 8400

Outside

Press @ RunDepth: 1265.06 psia @ 3809.00 ft (KB) Capacity: 5000.00 psia  
 Start Date: 2013.07.14 End Date: 2013.07.14 Last Calib.: 2013.07.14  
 Start Time: 04:00:00 End Time: 11:35:30 Time On Btm: 2013.07.14 @ 06:00:30  
 Time Off Btm: 2013.07.14 @ 09:08:00

TEST COMMENT: 1st Open/ 10 Minutes. Weak blow built to 3 1/2 inches in 5 gallon bucket.  
 1st Shut In/ 45 Minutes. No blow back.  
 2nd Open/ 30 Minutes. Fair blow built to 5 inches in 5 gallon bucket.  
 2nd Shut In/ 90 Minutes. Slight surface blow.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1813.69	104.45	Initial Hydro-static
2	38.92	107.97	Open To Flow (1)
13	54.18	113.12	Shut-In(1)
59	1292.96	112.05	End Shut-In(1)
60	60.67	112.19	Open To Flow (2)
91	77.24	116.31	Shut-In(2)
184	1265.06	116.13	End Shut-In(2)
188	1771.39	115.56	Final Hydro-static

## Recovery

## Gas Rates

Length (ft)	Description	Volume (bbl)
0.00	no gas	0.00
62.00	60% gas, 40% oil	0.33
62.00	100% Clean oil	0.87
62.00	100% Clean Oil	0.87
0.00	Oil gravity w as 36 corrected.	0.00

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18415

**DST#: 7**

Test Start: 2013.07.14 @ 04:00:00

## Tool Information

Drill Pipe:	Length: 3750.00 ft	Diameter: 3.80 inches	Volume: 52.60 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 59.42 ft	Diameter: 2.25 inches	Volume: 0.29 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 52.89 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	33.42 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3805.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	36.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3777.00	
Shut-In Tool	5.00			3782.00	
Hydroic Tool	5.00			3787.00	
Jars	6.00			3793.00	
Safety Joint	2.00			3795.00	
Packer	5.00			3800.00	29.00 Bottom Of Top Packer
Packer	5.00			3805.00	
Perforations	2.00			3807.00	
Recorder	1.00	8405	Inside	3808.00	
Recorder	1.00	8400	Outside	3809.00	
Bullnose	3.00			3812.00	7.00 Bottom Packers & Anchor

**Total Tool Length: 36.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18415

DST#: 7

Test Start: 2013.07.14 @ 04:00:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 45.00 sec/qt  
Water Loss: 12.40 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 8900.00 ppm  
Filter Cake: 1.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

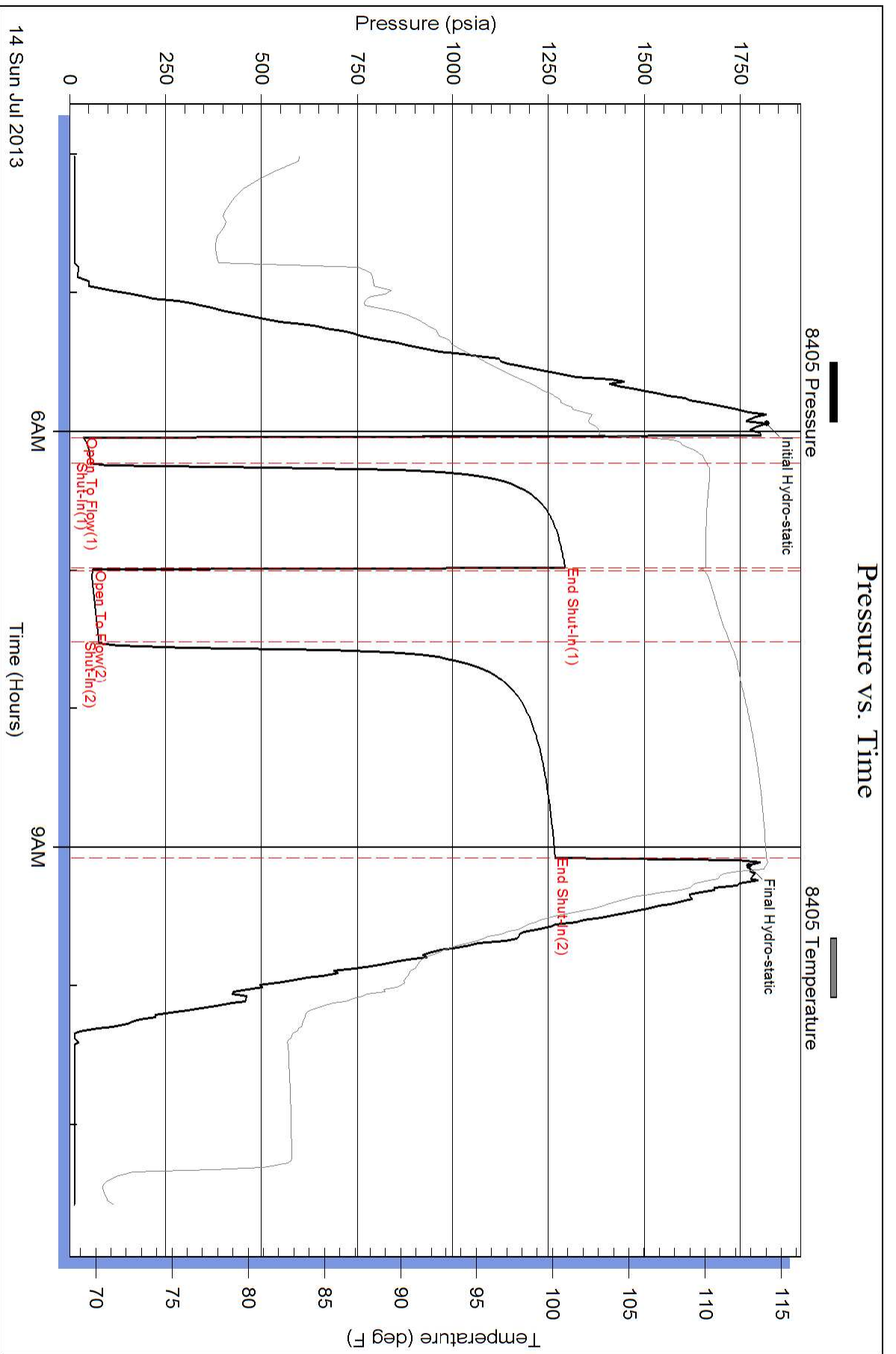
Length ft	Description	Volume bbl
0.00	no gas	0.000
62.00	60% gas, 40% oil	0.328
62.00	100% Clean oil	0.870
62.00	100% Clean Oil	0.870
0.00	Oil gravity was 36 corrected.	0.000

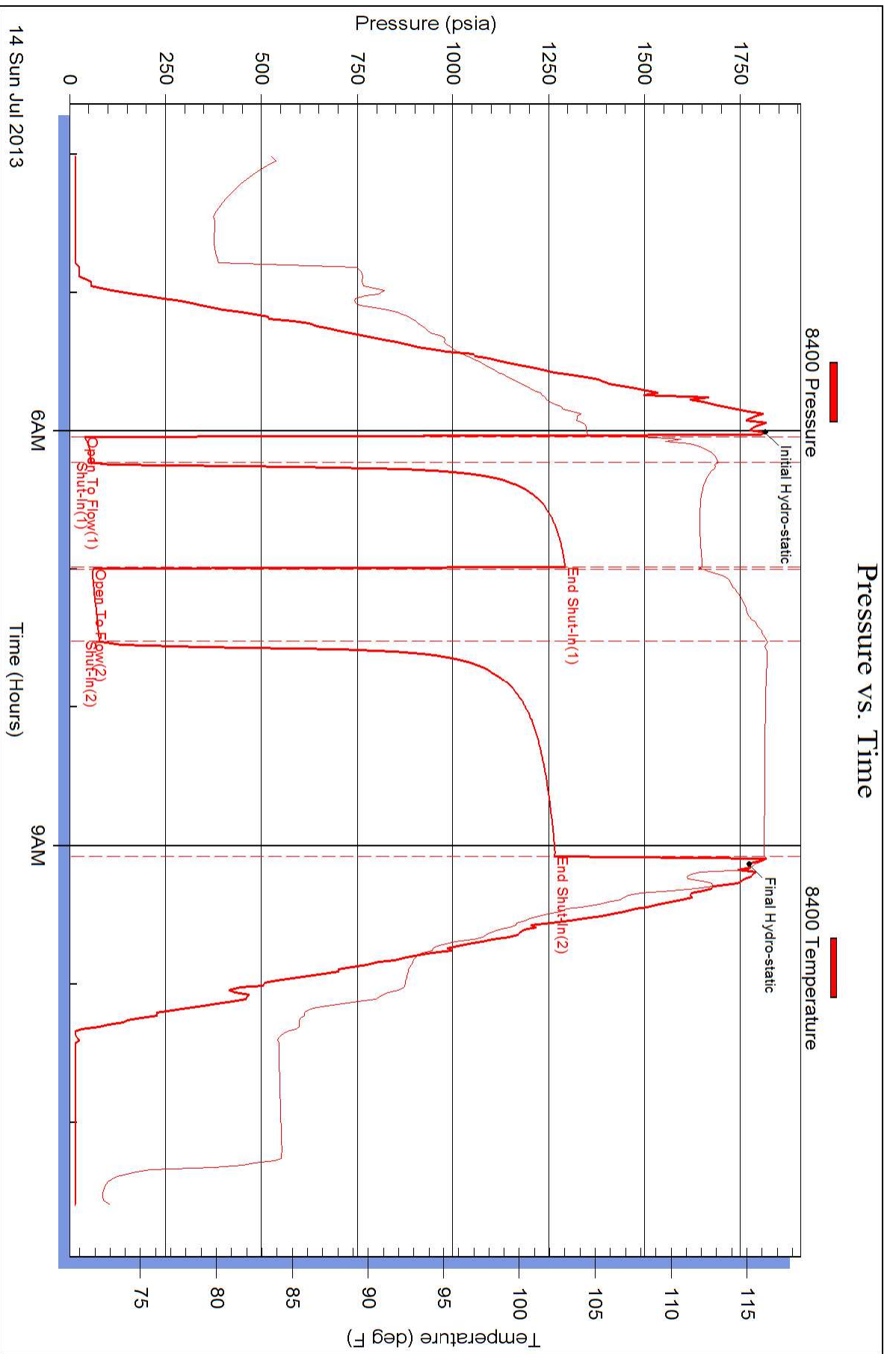
Total Length: 186.00 ft      Total Volume: 2.068 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226

ATTN: Adam Nighswinger

**Hullman #1-15**

**15/22s/13w/Stafford**

Start Date: 2013.07.14 @ 18:30:00

End Date: 2013.07.14 @ 23:01:30

Job Ticket #: 18416                      DST #: 8

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

Printed: 2013.07.14 @ 23:16:53





# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18416

DST#: 8

Test Start: 2013.07.14 @ 18:30:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:13:00

Time Test Ended: 23:01:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: 3330/33/Great Bend

Interval: **3812.00 ft (KB) To 3819.00 ft (KB) (TVD)**

Reference Elevations: 1897.00 ft (KB)

Total Depth: 3819.00 ft (KB) (TVD)

1889.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

**Serial #: 8405 Inside**

Press @ RunDepth: 698.94 psia @ 3815.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.07.14

End Date: 2013.07.14

Last Calib.: 2013.07.14

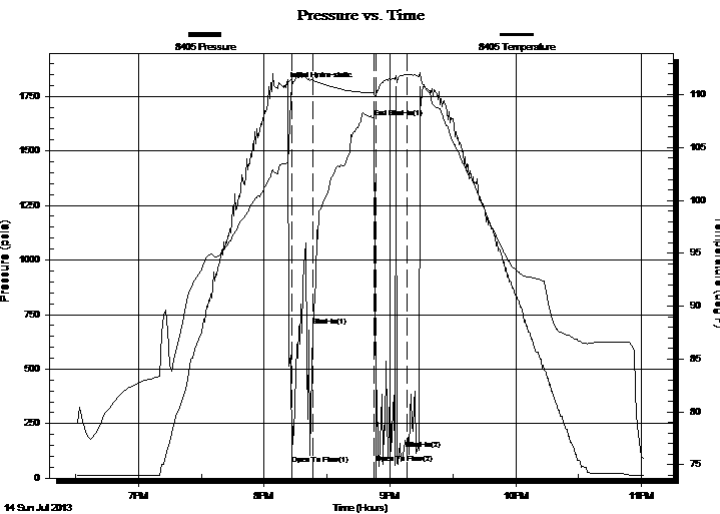
Start Time: 18:30:00

End Time: 23:01:30

Time On Btm: 2013.07.14 @ 20:09:30

Time Off Btm:

**TEST COMMENT:** 1st Open/ 10 Minutes. Weak blow built to 1/2 inch in 5 gallon bucket.  
1st Shut In/ 30 Minutes. No blow back.  
2nd Open/ 15 Minutes. No blow, flushed tool and gained flushed bubbles. Blow died immediately. Test pulled per geo.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1794.61	103.49	Initial Hydro-static
4	64.70	110.74	Open To Flow (1)
14	698.94	111.40	Shut-In(1)
43	1652.61	110.17	End Shut-In(1)
44	65.70	109.92	Open To Flow (2)
59	132.01	111.92	Shut-In(2)

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	No gas	0.00
25.00	100% mud	0.12

## Gas Rates

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



# DRILL STEM TEST REPORT

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18416

DST#: 8

Test Start: 2013.07.14 @ 18:30:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:13:00

Time Test Ended: 23:01:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Shane Konzem

Unit No: 3330/33/Great Bend

Interval: **3812.00 ft (KB) To 3819.00 ft (KB) (TVD)**

Reference Elevations: 1897.00 ft (KB)

Total Depth: 3819.00 ft (KB) (TVD)

1889.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: **8400** Outside

Press @ RunDepth: 1639.08 psia @ 3816.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2013.07.14

End Date:

2013.07.14

Last Calib.:

2013.07.14

Start Time:

18:30:00

End Time:

23:01:00

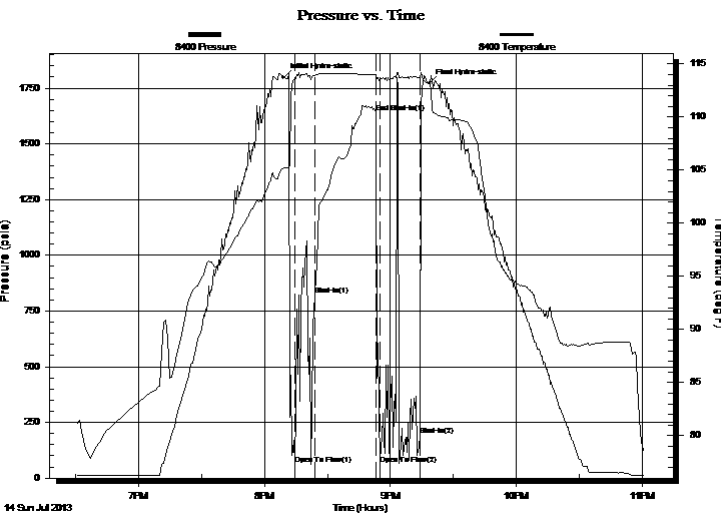
Time On Btm:

2013.07.14 @ 20:09:00

Time Off Btm:

2013.07.14 @ 21:18:30

TEST COMMENT: 1st Open/ 10 Minutes. Weak blow built to 1/2 inch in 5 gallon bucket.  
1st Shut In/ 30 Minutes. No blow back.  
2nd Open/ 15 Minutes. No blow, flushed tool and gained flushed bubbles. Blow died immediately. Test pulled per geo.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1797.63	105.18	Initial Hydro-static
6	63.68	113.46	Open To Flow (1)
15	821.03	113.95	Shut-In(1)
44	1639.08	113.97	End Shut-In(1)
46	63.84	113.53	Open To Flow (2)
65	191.25	113.71	Shut-In(2)
70	1771.11	113.17	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	No gas	0.00
25.00	100% mud	0.12

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Valhalla Exploration LLC

**15/22s/13w/Stafford**

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

**Hullman #1-15**

Job Ticket: 18416

**DST#: 8**

Test Start: 2013.07.14 @ 18:30:00

## Tool Information

Drill Pipe:	Length: 3746.00 ft	Diameter: 3.80 inches	Volume: 52.55 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 59.42 ft	Diameter: 2.25 inches	Volume: 0.29 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 52.84 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	22.42 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3812.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	7.00 ft			
Tool Length:	36.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3784.00	
Shut-In Tool	5.00			3789.00	
Hydroic Tool	5.00			3794.00	
Jars	6.00			3800.00	
Safety Joint	2.00			3802.00	
Packer	5.00			3807.00	29.00 Bottom Of Top Packer
Packer	5.00			3812.00	
Perforations	2.00			3814.00	
Recorder	1.00	8405	Inside	3815.00	
Recorder	1.00	8400	Outside	3816.00	
Bullnose	3.00			3819.00	7.00 Bottom Packers & Anchor

**Total Tool Length: 36.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Valhalla Exploration LLC

15/22s/13w/Stafford

8100 E 22nd St. N  
Suite 1800-2  
Wichita Ks, 67226  
ATTN: Adam Nighswinger

Hullman #1-15

Job Ticket: 18416

DST#: 8

Test Start: 2013.07.14 @ 18:30:00

### Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 44.00 sec/qt  
Water Loss: 14.80 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 10100.00 ppm  
Filter Cake: 3.00 inches

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

Oil API: deg API  
Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	No gas	0.000
25.00	100% mud	0.123

Total Length: 25.00 ft      Total Volume: 0.123 bbl

Num Fluid Samples: 0

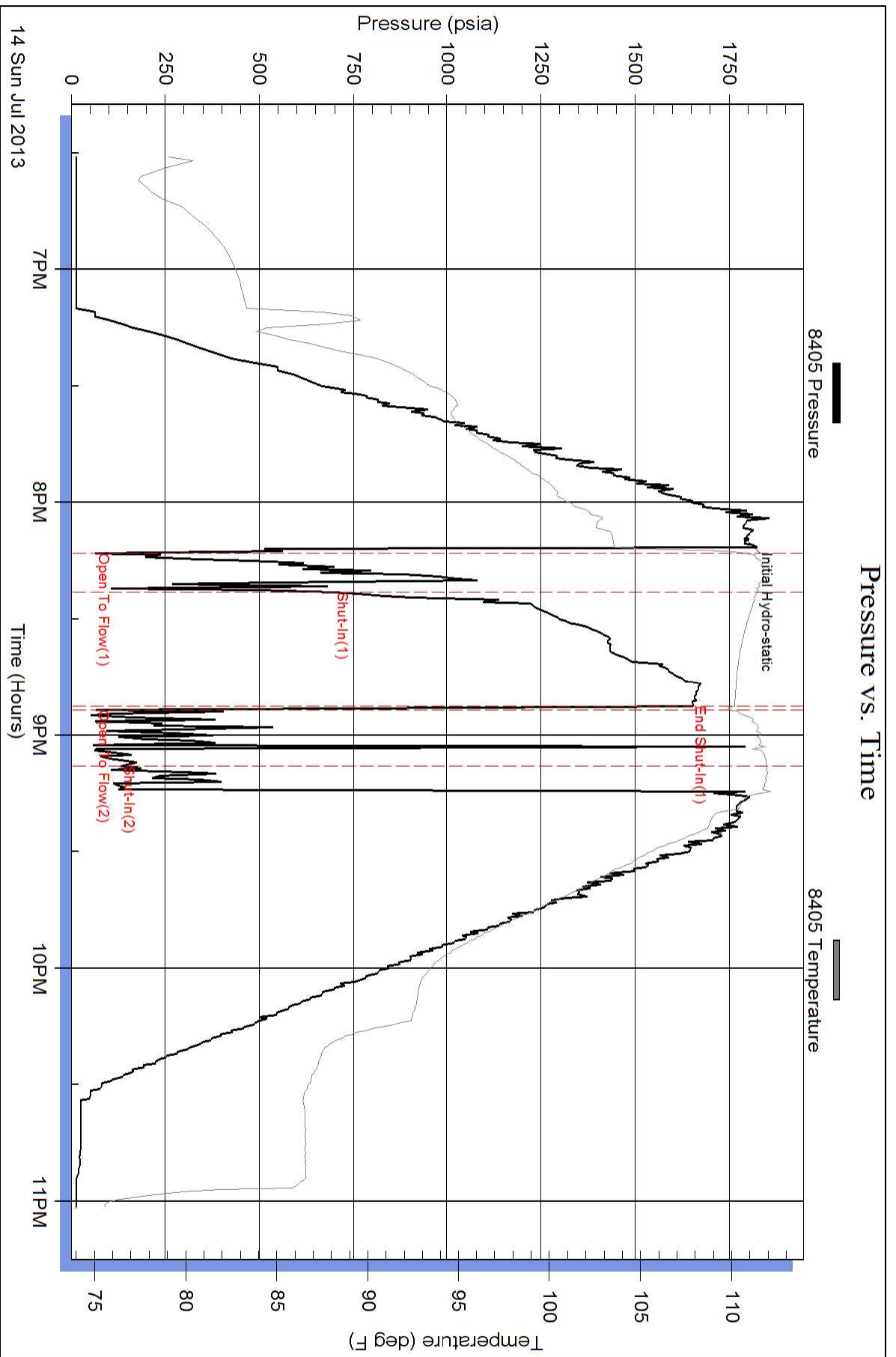
Num Gas Bombs: 0

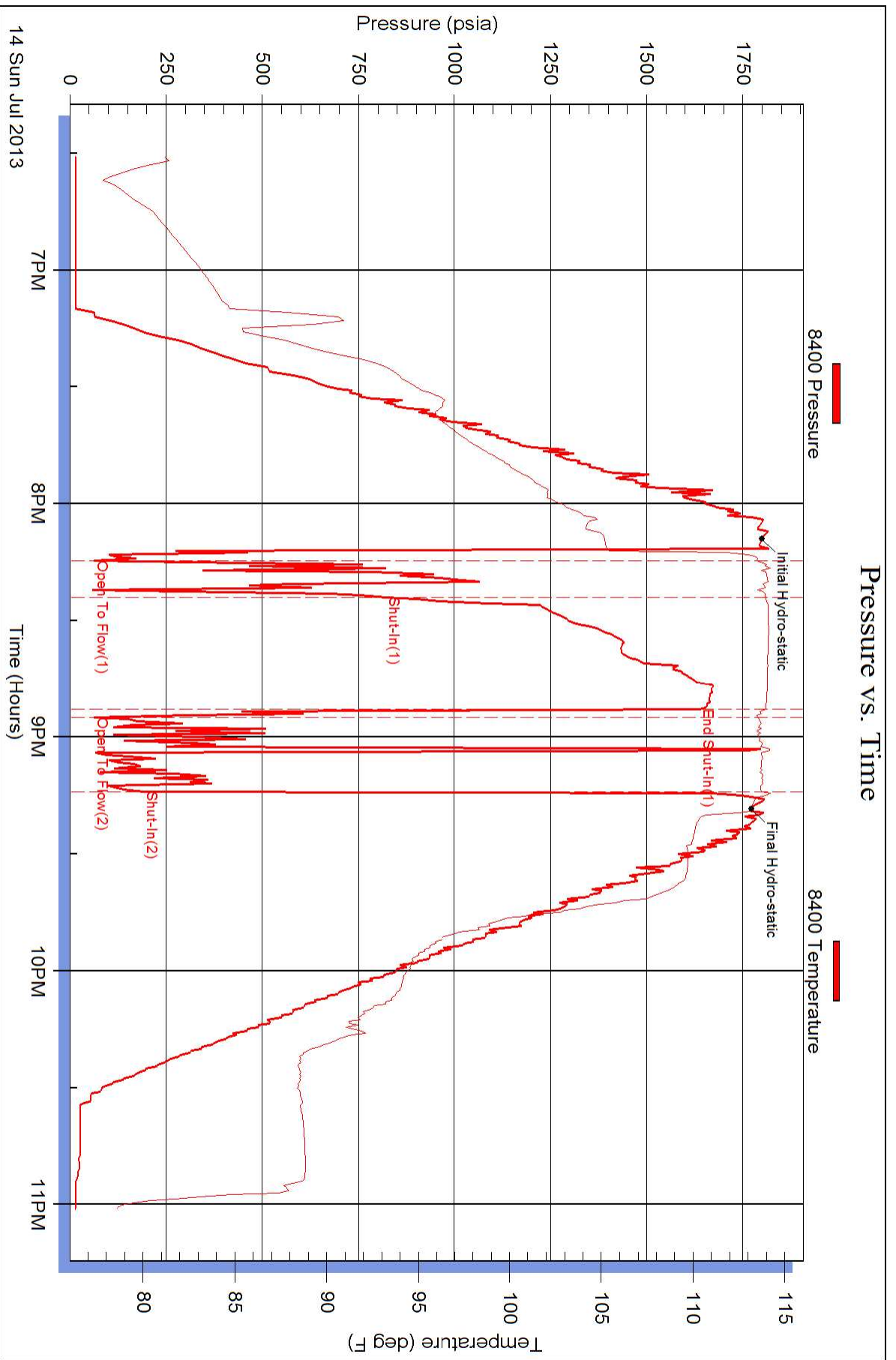
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







**QUALITY OILWELL CEMENTING, INC.**  
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone:785-324-1041 fax:785-483-1087  
 Email: cementing@ruraltel.net

Date: 7/6/2013  
 Invoice # 7924

P.O.#:  
 Due Date: 8/5/2013  
 Division: Russell

# Invoice

*ENTERED*

**Contact:**  
 VALHALLA EXPLORATION  
**Address/Job Location:**  
 VALHALLA EXPLORATION  
 133 N GLENDALE STREET  
 WICHITA, KS 67208

**Reference:**  
 HULLMAN 1-15

**Description of Work:**  
 SURFACE JOB

Services / Items Included:	Quantity	Price	Taxable	Item	Quantity	Price	Taxable
Labor		\$ 1,020.55	No				
Common-Class A	400	\$ 5,606.12	Yes				
Bulk Truck Mat-Material Service Charge	422	\$ 943.28	No				
Calcium Chloride	14	\$ 745.74	Yes				
Flo Seal	200	\$ 447.08	Yes				
Pump Truck Mileage-Job to Nearest Camp	18	\$ 200.77	No				
Premium Gel (Bentonite)	8	\$ 145.56	Yes				
Bulk Truck Mileage-Job to Nearest Bulk Plant	18	\$ 117.49	No				

**Invoice Terms:**

Net 30

SubTotal: \$ 9,226.58  
 Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (1,383.99)

SubTotal for Taxable Items: \$ 5,902.81  
 SubTotal for Non-Taxable Items: \$ 1,939.79

Total: \$ 7,842.59  
 Tax: \$ 430.91

7.30% Stafford County Sales Tax

**Thank You For Your Business!**

**Amount Due: \$ 8,273.50**  
**Applied Payments:**  
**Balance Due: \$ 8,273.50**

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
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# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7724

Date	Sec.	Twp.	Range	County	State	On Location	Finish
7-6-13	15	22	13	Stafford	Ks		5:30 AM

Location: 281 + K-19 Jct, 15, 1E, 13S

Lease	Hullman	Well No.	1-15	Owner	Wrights
Contractor	Southwind		6	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Type Job	Surface			Charge To	Walhalla Exploration
Hole Size	12 1/4"	T.D.	347'	Street	
Csg.	8 5/8"	Depth	347'	City	State
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	
Tool		Depth		Cement Amount Ordered 400 5x Common 3% CC	
Cement Left in Csg.	15'	Shoe Joint	15'	Meas Line Displace 21 BLS 2 1/2 Gal 1/2 # Flow Seal	

**EQUIPMENT**

Pumptrk	16	No.	Cementer		Common	400
			Helper	Lannie	Poz. Mix	
Bulktrk	12	No.	Driver	Billy	Gel.	8
Bulktrk	10	No.	Driver	Pat	Calcium	14

**JOB SERVICES & REMARKS**

Remarks:	Cement did Circulate	Hulls	
Rat Hole		Salt	
Mouse Hole		Flowseal	200#
Centralizers		Koi-Seal	
Baskets		Mud CLR 48	
D/V or Port Collar		CFL-117 or CD110 CAF 38	
		Sand	
		Handling	
		Mileage	

**FLOAT EQUIPMENT**

Guide Shoe	
Centralizer	
Baskets	
AF Inserts	
Float Shoe	
Latch Down	

# Quality Oilwell Cementing

Pumptrk Charge 18  
Mileage 18

X Signature *[Signature]*

Tax	
Discount	
Total Charge	