



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1243832
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

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

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
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

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

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical 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

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____



1243832

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

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 List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

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
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
---	--

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input 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> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Black Diamond Oil, Inc.
Well Name	Glennemeier A 2
Doc ID	1243832

All Electric Logs Run

Micro Log
Gammy Ray Correlation Log
Compensated Density/Neutron Log
Dual Induction Log

Form	ACO1 - Well Completion
Operator	Black Diamond Oil, Inc.
Well Name	Glennemeier A 2
Doc ID	1243832

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	3521-24	250 gal 15% mud acid	
	retreat 3521-24	750 gal 28% NE	
4	3440-43	250 gal 15% mud acid	
	retreat 3440-43	750 gal 28% NE	
4	3391-94	250 gal 15% mud acid	
	retreat 3391-94	750 gal 28% NE	

OPERATOR

Company: BLACK DIAMOND OIL, INC.
 Address: P.O. BOX 641
 HAYS, KS 676-1

Contact Geologist: KENNETH VEHIGE
 Contact Phone Nbr: (785) 625-5891
 Well Name: GLENNEMEIER A #2
 Location: SE SE SW Sec. 21 - 5S - 21W
 API: 15-137-20727-00-00
 Pool:
 State: KANSAS

Field: WEST UNION
 Country: USA

Scale 1:240 Imperial

Well Name: GLENNEMEIER A #2
 Surface Location: SE SE SW Sec. 21 - 5S - 21W
 Bottom Location:
 API: 15-137-20727-00-00
 License Number: 7076
 Spud Date: 12/10/2014 Time: 2:45 PM
 Region: NORTON COUNTY KANSAS
 Drilling Completed: 12/16/2014 Time: 12:57 AM
 Surface Coordinates: 330' FSL & 2310' FWL
 Bottom Hole Coordinates:
 Ground Elevation: 2210.00ft
 K.B. Elevation: 2215.00ft
 Logged Interval: 3000.00ft To: 3650.00ft
 Total Depth: 3650.00ft
 Formation: LANSING - KANSAS CITY; REAGAN (GORHAM SAND)
 Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: -99.6901054
 Latitude: 39.5969729
 N/S Co-ord: 330' FSL
 E/W Co-ord: 2310' FWL

LOGGED BY

Company: BIG CREEK CONSULTING, INC.
 Address: 1909 MAPLE
 ELLIS, KS 67637

Phone Nbr: (785) 259-3737
 Logged By: Geologist Name: JEFF LAWLER

CONTRACTOR

Contractor: WW DRILLING, LLC
 Rig #: 6
 Rig Type: MUD ROTARY
 Spud Date: 12/10/2014 Time: 2:45 PM
 TD Date: 12/16/2014 Time: 12:57 AM
 Rig Release: 12/18/2014 Time: 3:00 PM

ELEVATIONS

K.B. Elevation: 2215.00ft Ground Elevation: 2210.00ft
 K.B. to Ground: 5.00ft

NOTES


AFTER LOG ANALYSIS AND SEVERAL DRILL STEM TESTS DECISION WAS MADE TO CEMENT 5 1/2" PRODUCTION PIPE AND FURTHER EVALUATE ZONES OF INTEREST BY PERFORATION.

RESPECTFULLY SUBMITTED,
 JEFF LAWLER

WELL COMPARISON SHEET

	P&A 8-63								●				■				■												
	D&D DRILLING								BLACK DIAMOND OIL, INC.				HUMMON CORPORATION				D&D DRILLING & LARIO OIL												
	WILLIAMS #1								GLENNEMEIER A #1				WILLIAMS #2				TAZELAAR #1												
	LOGAN NW #1								W2 SE SW SE 21-5-21				NE 28-5-21				NENW 28-5-21												
	KB		2215		GL		2210		KB		2244		KB		2266		KB		2324		KB		2243						
	LOG TOPS				SAMPLE TOPS				LOG				LOG				LOG				LOG								
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	LOG	SMPL.	DEPTH	DATUM	LOG	SMPL.	DEPTH	DATUM	LOG	SMPL.	DEPTH	DATUM	LOG	SMPL.	DEPTH	DATUM	LOG	SMPL.					
ANHYDRITE TOP	1813	402	1815	400	1845	399	+	3	+	1	1864	402	+	0	-	2	1902	422	-	20	-	22	1848	395	+	7	+	5	
BASE	1842	373	1845	370							1892	374	-	1	-	4	1933	391	-	18	-	21							
TOPEKA	3158	-943	3164	-949	3200	-956	+	13	+	7	3213	-947	+	4	-	2						3201	-958	+	15	+	9		
HEEBNER SHALE	3363	-1148	3367	-1152	3397	-1153	+	5	+	1	3415	-1149	+	1	-	3	3469	-1145	-	3	-	7	3399	-1156	+	8	+	4	
TORONTO	3390	-1175	3393	-1178	3424	-1180	+	5	+	2	3441	-1175	+	0	-	3	3497	-1173	-	2	-	5	3428	-1185	+	10	+	7	
LKC	3407	-1192	3415	-1200	3442	-1198	+	6	-	2	3461	-1195	+	3	-	5	3515	-1191	-	1	-	9	3443	-1200	+	8	+	0	
BKC	3593	-1378	3596	-1381	3625	-1381	+	3	+	0	3646	-1380	+	2	-	1	3700	-1376	-	2	-	5							
GORHAM SND/REAGAN			3649	-1434	3678	-1434					3699	-1433					3751	-1427				3685	-1442					+	8
TOTAL DEPTH	3648	-1433	3650	-1435	3680	-1436	+	3	+	1	3700	-1434	+	1	-	1	3755	-1431	-	2	-	4	3688	-1445	+	12	+	10	

DST #1 LKC A 3403' - 3435'



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond 21-5s-21w Norton KS

Po Box 641 Glennemeier A #2
Hays KS, 67601 Job Ticket: 62401 **DST#: 1**

ATTN: Jeff Lawler Test Start: 2014.12.13 @ 20:43:00

GENERAL INFORMATION:

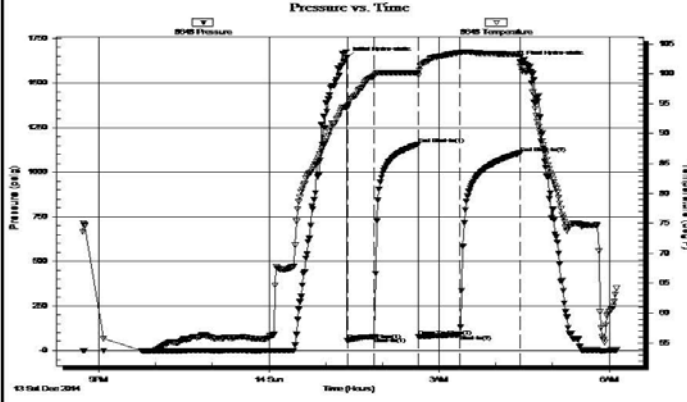
Formation: **LKC "A"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 01:22:45
 Tester: Cody Bloedorn
 Time Test Ended: 06:08:15
 Unit No: 73

Interval: **3403.00 ft (KB) To 3435.00 ft (KB) (TVD)**
 Reference Elevations: 2215.00 ft (KB)
 Total Depth: 3435.00 ft (KB) (TVD)
 2210.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 8648 Inside

Press@RunDepth: 89.44 psig @ 3407.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.12.13	End Date: 2014.12.14
Start Time: 20:43:05	End Time: 06:08:15
	Last Calib.: 2014.12.14
	Time On Btm: 2014.12.14 @ 01:22:15
	Time Off Btm: 2014.12.14 @ 04:25:45

TEST COMMENT: 30 - IF- 6" blow
 45 - IS- No return
 45 - FF- Surface blow
 60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1642.20	94.53	Initial Hydro-static
1	55.09	94.32	Open To Flow (1)
30	76.36	99.61	Shut-In(1)
76	1156.39	100.17	End Shut-In(1)
76	78.48	99.71	Open To Flow (2)
120	89.44	103.50	Shut-In(2)
183	1107.19	103.24	End Shut-In(2)
184	1617.63	103.33	Final Hydro-static

Recovery

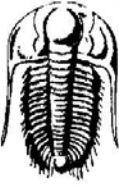
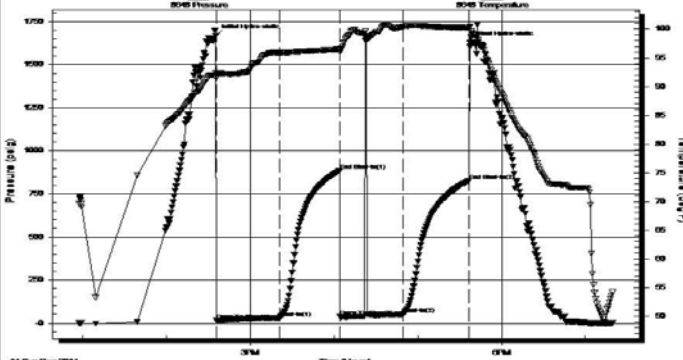
Length (ft)	Description	Volume (bbl)
62.00	MW - Oil spots, 10%M, 90%W	0.30
102.00	Mud - Oil spots, 100%M	0.90

Gas Rates

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

Trilobite Testing, Inc Ref. No: 62401 Printed: 2014.12.14 @ 06:35:13

DST #2 LKC C - D 3434' - 3468'

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT																																						
	Black Diamond Po Box 641 Hays KS, 67601 ATTN: Jeff Lawler	21-5s-21w Norton KS Glennemeier A #2 Job Ticket: 62402 DST#: 2 Test Start: 2014.12.14 @ 12:57:00																																					
GENERAL INFORMATION:																																							
Formation: LKC "C-D" Deviated: No Whipstock ft (KB) Time Tool Opened: 14:35:30 Time Test Ended: 19:20:00		Test Type: Conventional Bottom Hole (Reset) Tester: Cody Bloedorn Unit No: 73																																					
Interval: 3434.00 ft (KB) To 3468.00 ft (KB) (TVD) Total Depth: 3468.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair		Reference Elevations: 2215.00 ft (KB) 2210.00 ft (CF) KB to GR/CF: 5.00 ft																																					
Serial #: 8648 Inside Press@RunDepth: 50.38 psig @ 3438.00 ft (KB) Capacity: 8000.00 psig Start Date: 2014.12.14 End Date: 2014.12.14 Last Calib.: 2014.12.14 Start Time: 12:57:05 End Time: 19:19:59 Time On Btm: 2014.12.14 @ 14:35:15 Time Off Btm: 2014.12.14 @ 17:37:15																																							
TEST COMMENT: 45 - IF- 1.5' blow in 15 minutes, died back to half inch 45 - IS- No return 45 - FF- No blow for 15 minutes, flushed tool, surface blow 45 - FS- No return																																							
Pressure vs. Time		PRESSURE SUMMARY																																					
		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr><td>0</td><td>1668.40</td><td>92.35</td><td>Initial Hydro-static</td></tr> <tr><td>1</td><td>14.91</td><td>91.40</td><td>Open To Flow (1)</td></tr> <tr><td>46</td><td>31.18</td><td>95.96</td><td>Shut-In(1)</td></tr> <tr><td>89</td><td>884.85</td><td>96.52</td><td>End Shut-In(1)</td></tr> <tr><td>89</td><td>38.24</td><td>95.95</td><td>Open To Flow (2)</td></tr> <tr><td>135</td><td>50.38</td><td>100.50</td><td>Shut-In(2)</td></tr> <tr><td>182</td><td>827.88</td><td>100.24</td><td>End Shut-In(2)</td></tr> <tr><td>182</td><td>1628.57</td><td>100.47</td><td>Final Hydro-static</td></tr> </tbody> </table>		Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1668.40	92.35	Initial Hydro-static	1	14.91	91.40	Open To Flow (1)	46	31.18	95.96	Shut-In(1)	89	884.85	96.52	End Shut-In(1)	89	38.24	95.95	Open To Flow (2)	135	50.38	100.50	Shut-In(2)	182	827.88	100.24	End Shut-In(2)	182	1628.57	100.47	Final Hydro-static
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Recovery		Gas Rates																																					
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Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)																																					
<small>* Recovery from multiple tests</small>																																							

Trilobite Testing, Inc

Ref. No: 62402

Printed: 2014.12.14 @ 23:16:06

DST #3 LKC H - I 3507' - 3552'

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT		
	Black Diamond Po Box 641	21-5s-21w Norton KS Glennemeier A #2	



Hays KS, 67601

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

GENERAL INFORMATION:

Formation: LKC "H-I"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:32:15

Time Test Ended: 15:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Total Depth: 3552.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2215.00 ft (KB)

2210.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8648 Inside

Press@RunDepth: 56.20 psig @ 3544.00 ft (KB)

Start Date: 2014.12.15

End Date:

2014.12.15

Start Time: 07:48:05

End Time:

15:06:44

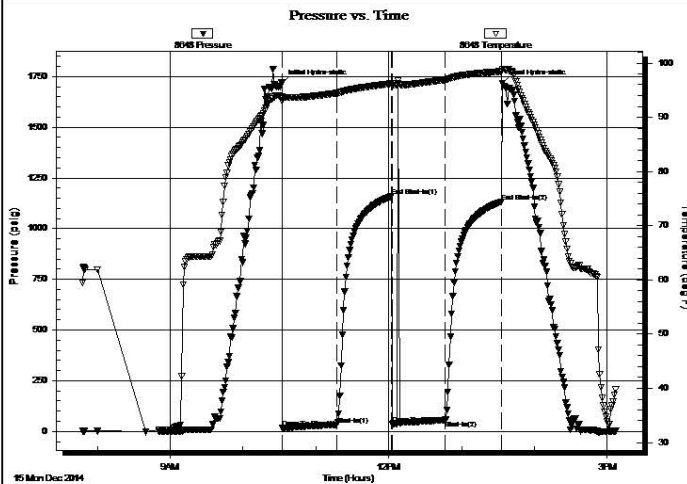
Capacity: 8000.00 psig

Last Calib.: 2014.12.15

Time On Btm: 2014.12.15 @ 10:32:00

Time Off Btm: 2014.12.15 @ 13:33:45

TEST COMMENT: 45 - IF- Surface blow
45 - IS- No return
45 - FF- Surged and died, flushed tool, surged and died
45 - FS- No return



PRESSURE SUMMARY

Table with 4 columns: Time (Min.), Pressure (psig), Temp (deg F), Annotation. Contains data points for initial hydro-static, flow events, shut-ins, and final hydro-static.

Recovery

Table with 3 columns: Length (ft), Description, Volume (bbl). Shows 80.00 ft of mud with oil spots, 100%M, totaling 0.39 bbl.

* Recovery from multiple tests

Gas Rates

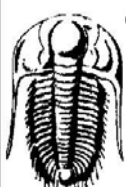
Table with 4 columns: Choke (inches), Pressure (psig), Gas Rate (Mcf/d). Currently empty.

Trilobite Testing, Inc

Ref. No: 62403

Printed: 2014.12.15 @ 16:07:22

DST #4 LKC I - K 3535' - 3587'



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

Po Box 641
Hays KS, 67601

ATTN: Jeff Lawler

21-5s-21w Norton KS

Glennemeier A #2

Job Ticket: 62404

Test Start: 2014.12.15 @ 21:55:00

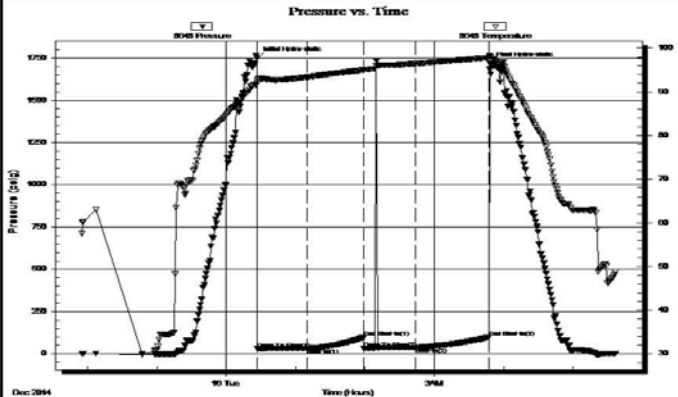
DST#: 4

GENERAL INFORMATION:

Formation: **LKC "I-K"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:27:00
 Time Test Ended: 05:37:30
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 73
 Interval: **3535.00 ft (KB) To 3587.00 ft (KB) (TVD)**
 Total Depth: 3587.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Reference Elevations: 2215.00 ft (KB)
 2210.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8648 Inside
 Press@RunDepth: 38.26 psig @ 3572.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.15 End Date: 2014.12.16 Last Calib.: 2014.12.16
 Start Time: 21:55:05 End Time: 05:37:29 Time On Btm: 2014.12.16 @ 00:26:45
 Time Off Btm: 2014.12.16 @ 03:48:00

TEST COMMENT: 45 - IF- 1.5' blow in 23 minutes, died back to 1" blow
 45 - IS- No return
 45 - FF- Surged and died, flushed tool, surged and died
 60 - FS- No return



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1749.17	92.48	Initial Hydro-static
1	32.03	92.03	Open To Flow (1)
44	33.61	93.39	Shut-In(1)
92	97.94	95.00	End Shut-In(1)
93	33.94	94.99	Open To Flow (2)
137	38.26	96.48	Shut-In(2)
201	99.65	97.82	End Shut-In(2)
202	1719.60	98.08	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
20.00	V SOCM, 2%, 98%M	0.10

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

* Recovery from multiple tests

ROCK TYPES

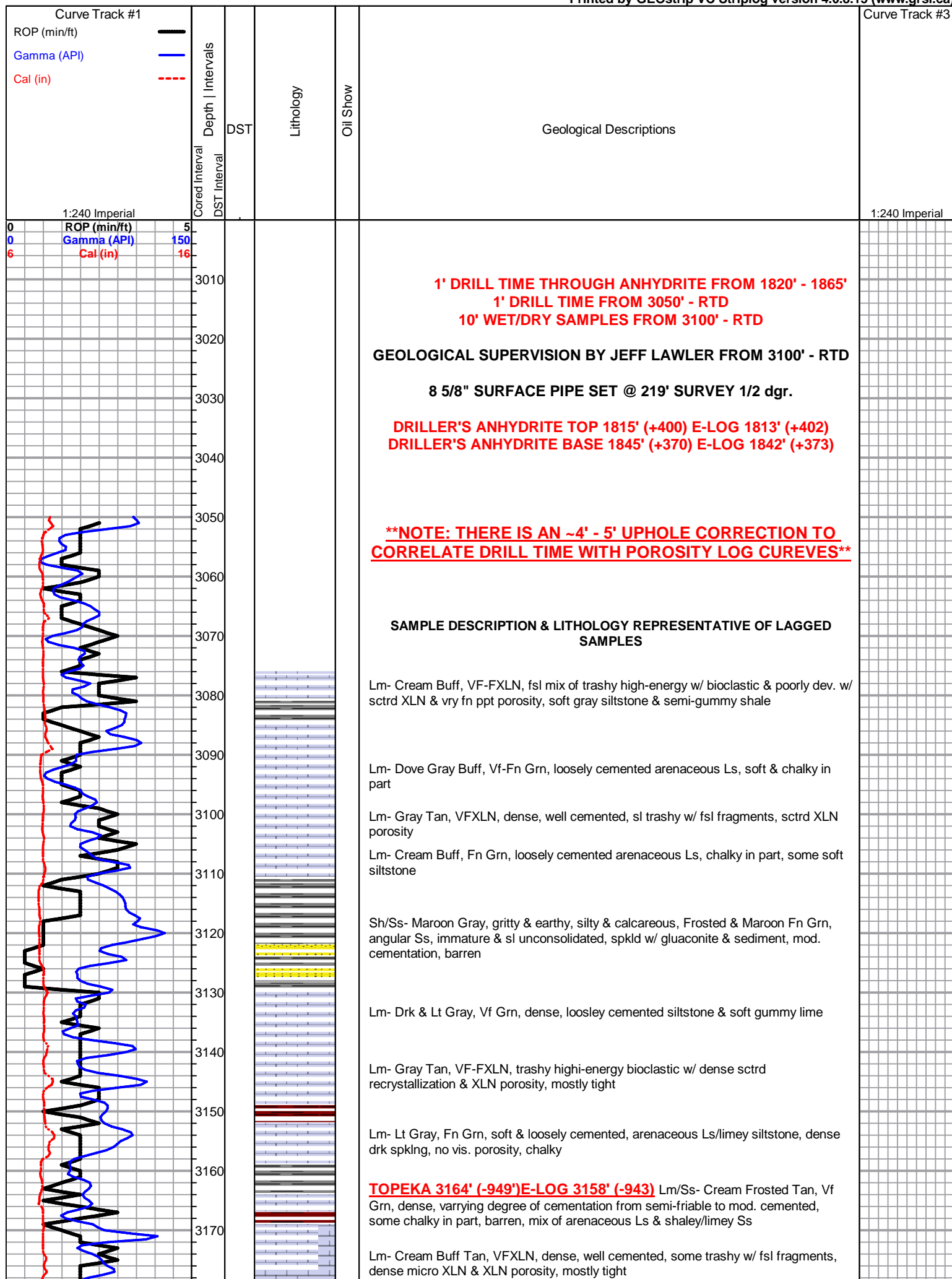
- Cht
- shale, grn
- Shblk
- Lscongl
- Dolsec
- shale, gry
- shale, red
-
- Lmst fw7>
- Carbon Sh
- Ss

ACCESSORIES

- FOSSIL
◇ Oolite
- STRINGER
▬ Dolomite

OTHER SYMBOLS

- MISC
DR Daily Report
- DST
■ DST Int
- Digital Photo
- DST alt
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt



1' DRILL TIME THROUGH ANHYDRITE FROM 1820' - 1865'
1' DRILL TIME FROM 3050' - RTD
10' WET/DRY SAMPLES FROM 3100' - RTD

GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3100' - RTD

8 5/8" SURFACE PIPE SET @ 219' SURVEY 1/2 dgr.

DRILLER'S ANHYDRITE TOP 1815' (+400) E-LOG 1813' (+402)
DRILLER'S ANHYDRITE BASE 1845' (+370) E-LOG 1842' (+373)

****NOTE: THERE IS AN -4' - 5' UPHOLE CORRECTION TO CORRELATE DRILL TIME WITH POROSITY LOG CUREVES****

SAMPLE DESCRIPTION & LITHOLOGY REPRESENTATIVE OF LAGGED SAMPLES

Lm- Cream Buff, VF-FXLN, fsl mix of trashy high-energy w/ bioclastic & poorly dev. w/ sctrd XLN & vry fn ppt porosity, soft gray siltstone & semi-gummy shale

Lm- Dove Gray Buff, Vf-Fn Grn, loosely cemented arenaceous Ls, soft & chalky in part

Lm- Gray Tan, VFXLN, dense, well cemented, sl trashy w/ fsl fragments, sctrd XLN porosity

Lm- Cream Buff, Fn Grn, loosely cemented arenaceous Ls, chalky in part, some soft siltstone

Sh/Ss- Maroon Gray, gritty & earthy, silty & calcareous, Frosted & Maroon Fn Grn, angular Ss, immature & sl unconsolidated, spkld w/ gluaconite & sediment, mod. cementation, barren

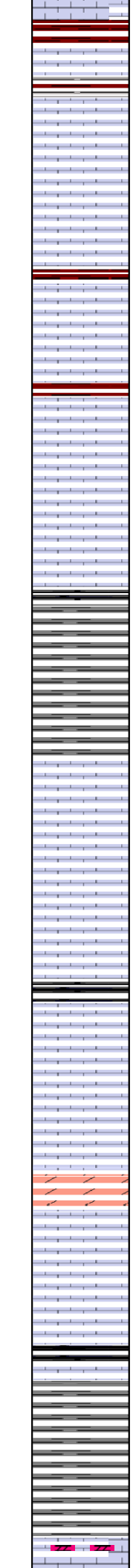
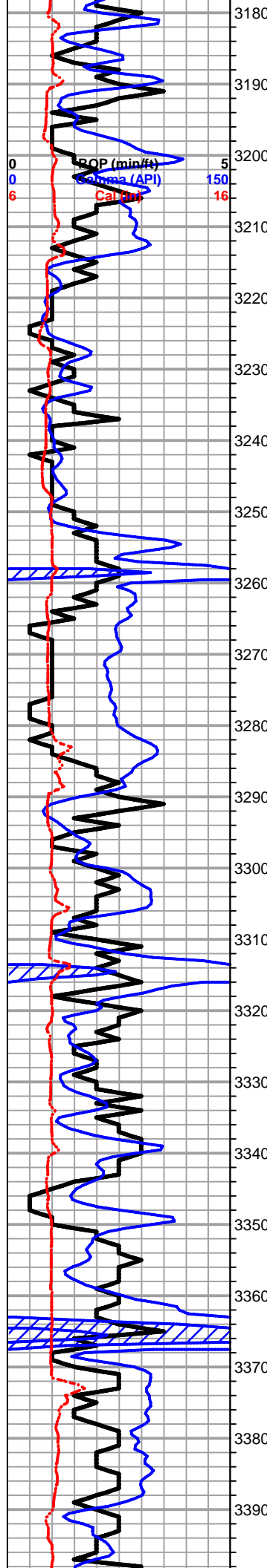
Lm- Drk & Lt Gray, Vf Grn, dense, loosley cemented siltstone & soft gummy lime

Lm- Gray Tan, VF-FXLN, trashy highi-energy bioclastic w/ dense sctrd recrystallization & XLN porosity, mostly tight

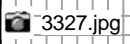
Lm- Lt Gray, Fn Grn, soft & loosely cemented, arenaceous Ls/limey siltstone, dense drk spkng, no vis. porosity, chalky

TOPEKA 3164' (-949')E-LOG 3158' (-943) Lm/Ss- Cream Frosted Tan, Vf Grn, dense, varrying degree of cementation from semi-friable to mod. cemented, some chalky in part, barren, mix of arenaceous Ls & shaley/limey Ss

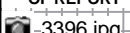
Lm- Cream Buff Tan, VFXLN, dense, well cemented, some trashy w/ fsl fragments, dense micro XLN & XLN porosity, mostly tight

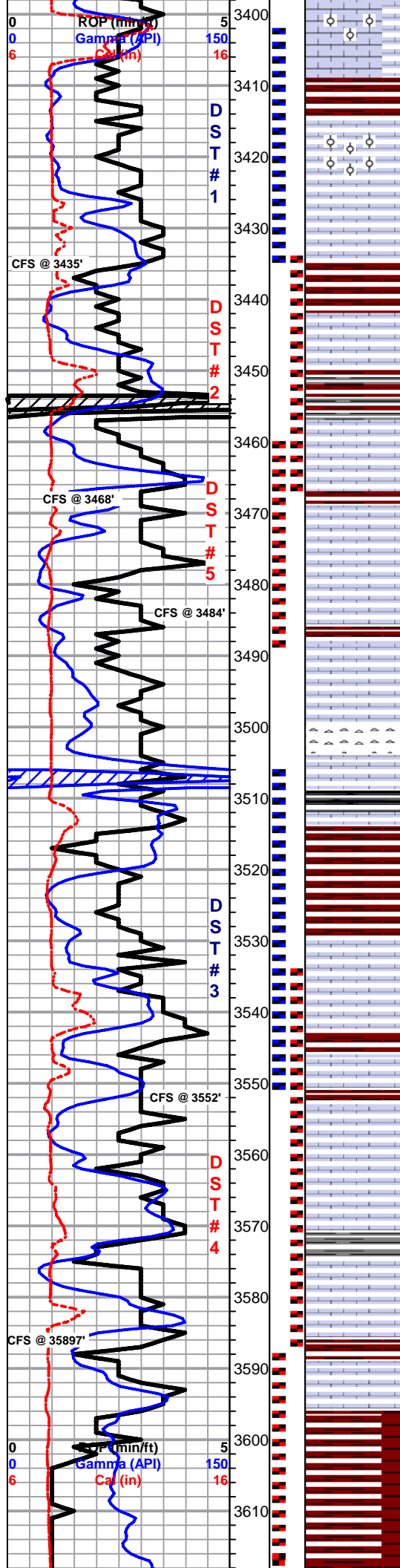


3180 Sh- Maroon Gray, soft & silty, some calcareous, some sl sandy
 Lm- Buff Cream Tan, VFXLN Vf Grn, dense, all mostly tight w/ poor vis. porosity, some chalky siltstone
 3190 Sh- Black Maroon Grayn, silty & soft, gritty & earthy, calcareous
 Lm- Buff Cream, VFXLN, dense, sl trashy w/ fsl fragments, poor vis. porosity, few pcs of golden brown/milky white fresh bedded chert
 Lm- Cream Gray, VFXLN, fsl mix, poorly dev. w/ rare XLN porosity, sl chalky in part & trashy gray FXLN w/ trashy fsl fragments
 3220 Lm- Cream A/A w/ much soft white chalk & milky white fresh bedded chert
 Lm- Cream Off White, VF-FXLN, fsl, massive, some w/ sctrd fn ppt porosity, most w/ clear replacement cementation & apparent porosity, poor effective porosity, some sctrd recrystallization, some soft white chalk & fresh bedded golden brown & white chert
 Lm- A/A w/ incr. in VFXLN, all vry clean & barren
 3260 Sh- Black, fissile & slaty, carbonaceous
 Ss/Sh- Dove Gray Frosted, Fn Grn, consolidated & well sorted, sub-anguar, mature, friable, barren, gummy sandy wash & clumps
 Ss/Sh- A/A w/ silty & calcareous gray & mint green & some maroon & white gummy clumps
 Lm- Cream Buff, VFXLN, sl fsl, mostly tight w/ wk vis. porosity, barren
 Lm- Cream Maroon Mustard, Fn Grn, arenaceous Ls, most well cemented w/ sctrd XLN porosity, barren
 3320 Sh- Black Maroon Gray, silty & carbonaceous, gritty & earthy, silty & calcareous
 Lm- Cream Off White, FXLN, dense, sl fsl, sctrd fn ppt, ppt, & XLN porosity, SCTRDRK STN, WK-FR SFO, MOD. ODR
 Lm- Cream Buff, VF-FXLN, dense, well cemented, mostly tight w/ sctrd micro XLN & XLN porosity, clean & barren
 Lm- Buff, FXLN, dense, well cemented dolomitic Ls w/ consistent micro XLN porosity, barren
 Lm- Cream Lt Gray, VF-FXLN, dense, well cemented, sl fsl, mostly tight w/ poor vis. porosity, barren
HEEBNER 3367' (-1152) E-LOG 3363' (-1148) Sh- Black, fissile & carbonaceous
 Sh- Gray Maroon, sandy lime/shaly Ss, some silty & calcareous
 Sh- A/A w/ gummy maroon clumps/wash
TORONTO 3394' (-1178) E-LOG 3390' (-1175) Lm/Chert- mix of Cream Off White, sl fsl & dolitic Ls w/ sctrd vry fn ppt inter. colite & XLN porosity, sctrd dev. some



SHORT TRIP SURVEY STRAP +1.03'
 DST #1 LKC A 3403' - 3435' 30-45-45-60
 TOOL SLID 10' TO BOTTOM
 102' MUD w/ OIL SPOTS
 62' MW w/ OIL SPOTS (90%W, 10%M)
 CHLOR: 124,000 Rv: .08 @ 58 dgr.
 IFP: 55-76# FFP: 78-89# SIP: 1156-1107#
 SEE PICS AT END OF REPORT





white, silty & oolitic Ls w/ sctrd vry fn ppt inter oolite & XLN porosity, sctrd dev. some sl chalky in part, few pcs of VFXLN dolomitic Ls w/ micro XLN porosity, ALL W/ SCTRD SPOTTY STN, TR FO (1 pc), WK ODR, several pcs of golden brown & white fresh bedded chert & gritty dolomitic chert

LKC 3415' (-1200) E-LOG 3407' (-1192) Lm- Cream Off White, F-Med XLN, mod. well dev. & oolitic w/ sctrd ppt to sub-vuggy inter oolite porosity, SCTRD DRK STN, HVY OILY SHEEN, FR-GD SFO, FR ODR, FR AMOUNT OF FREE OIL FLOATING IN WET CUP

Lm- Cream Off White, VFXLN, tight w/ sctrd micro XLN porosity, some soft white chalk, vry clean, barren, few pcs of mustard colored cryptoXLN oolitic biomicrite w/o vis. porosity & some soft white chalk

Lm- White Off White, FXLN Vf Grn, dense, sl oolitic, sctrd dev, some chalky in part, sctrd XLN & some vry fn ppt inter oolite porosity, WK SPOTTY STN, NSFO, NO ODR, DULL YLW FLOR., NO STRM WET CUT, some pyrite

****PORTION OF SLIP DIE FELL IN HOLE DURING TRIP, ANOMALOMOUS 2' OF DRILL TIME TO KNOCK IT OFF TO SIDE OF WELL BORE****

Lm- White Off White, F-MedXLN, oolitic, sctrd XLN to ppt inter oolite porosity, some sctrd recrystallization w/in porosity, few pcs of detrital appearing chert/cherty Ls, ALL W/ SCTRD DRK STN, TR FO, WK-FR ODR

Lm- Cream Tan, VF-FXLN, dense, well cemented, mostly tight w/ poor vis. porosity, barren, several pcs of tan/white frsh bedded chert

Lm/Chert- White Cream, VF-FXLN Vf Grn, dense, mostly tight, some sl oolitic, poorly dev. w/ vry sctrd vry fn ppt inter oolite porosity, some soft white chalk, several pcs of oolitic fresh bedded chert, all vry clean & barren

Lm- Tan Cream VF-FXLN, fsl & oolitic, sctrd vry fn ppt to ppt inter oolite, crse. XLN recrystallization porosity, vry well cemented, SCTRD DRK STN, FR SFO UPON CRUSH, GD SULFURIC ODR

Lm/Chert- Cream Tan, VFXLN, dense tight mix, poor vis. porosity, some soft crumbly & semi-chalky, much bone white/buff/tan fresh bedded chert

Sh- Black Maroon Green, fissile & carbonaceous, gritty & earthy, dense & semi-waxy

Sh- Maroon Lm Green Gray, gritty & earthy, gummy wash & clumps

Lm- Cream Off White, FXLN, oolitic w/ sctrd XLN & fn ppt inter oolite porosity, well cemented, SCTRD LT STN, TR FO, GD SULFURIC ODR

Lm- Lt Gray, Vf Grn VFXLN, dense tight mix w/ poor vis. porosity

Lm- Cream Maroon, VFXLN, dense, well cemented, some sl unconsolidated, poor vis. porosity, barren

Lm- Cream Off White, VF-FXLN, fsl & sl oolitic, well cemented, sctrd dev. w/ micro XLN & some sctrd fn ppt inter oolite porosity, LT BRWN STN, TR FO, SEMI-FLAKEY, FR ODR

Sh- Gray Maroon, silty & soft, some sl sandy, gritty & earthy

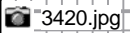
Lm- White Off White Tan, mix of oolitic FXLN, mod. well dev. w/ sctrd-consistent ppt inter oolite porosity, & VFXLN, dense w/o vis. matrix, sctrd ppt to sub-vuggy porosity, ALL W/ DRK CONSISTENT STN, WK-FR SFO, FR ODR

Sh- Maroon, gummy argillaceous clumps

Lm- Tan, FXLN, fsl & sl oolitic w/ few loose fusulinids & crinoids, poorly dev, most well cemented, some sl chalky, poor vis. porosity & barren

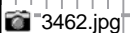
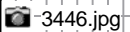
BKC 3596' (-1381) E-LOG 3593' (-1378) Sh- Maroon Brown Gray, gritty & earthy, gummy argillaceous clumps, soft & silty

Sh- A/A w/ sandy white/maroon lime & sl sandy gray slivers, few sl pebbly



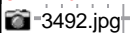
DST #2 LKC C - D
3434' - 3468'
45-45-45-45

60' HOCM (30%O)
15' VSOCM (5%O)
IFP: 14-31#
FFP: 38-50#
SIP: 884-827#



DST #6 LKC F-G
(STRADDLE)
30-45-45-60

125' TOTAL FLUID
60' WM w/ OIL
SPOTS
(10%W, 90%M)
65' VSOCM
(5%O)
IFP: 14-48#
FFP: 54-72#
SIP: 1146-1142#

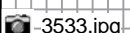


SHORT TRIP
SURVEY 3/4 dgr.

DST #3 LKC H - I
3507' - 3552'
45-45-45-45

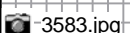
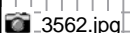
80' MUD w/ OIL
SPOTS

IFP: 16-32#
FFP: 37-56#
SIP: 1159-1133#

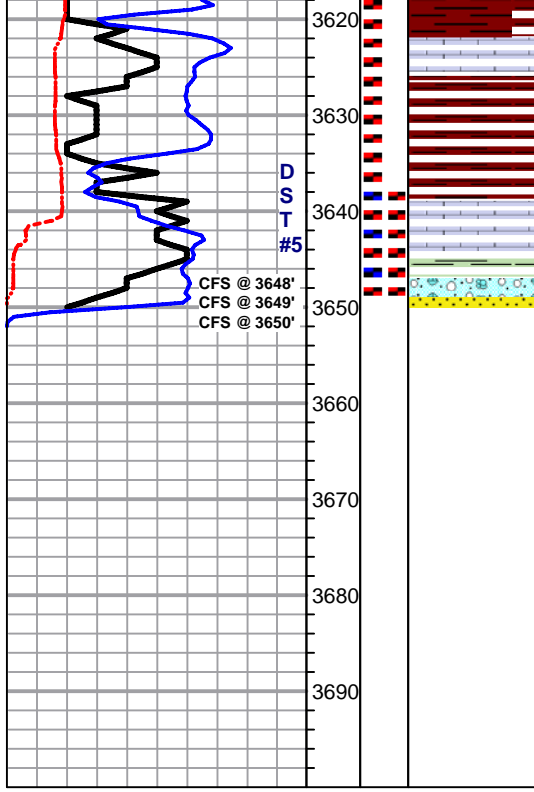


DST #4 LKC I - K
3535' - 3587'
45-45-45-60

20' VSOCM (2%O)
IFP: 32-33#
FFP: 33-38#
SIP: 97-99#



DST #5
GORHAM SAND



Lm- Cream Off White, FXLN, sl fsl & oolitic, mix of loosely cemented w/ dense XLN porosity, some chalky in part, some soft mud supported matrix w/ poor vis. porosity, all clean & barren

Sh- Maroon Gray Lm Green, gritty & earthy, gummy argillaceous clumps

Lm- White Cream, Vf-Fn Grn FXLN, dense chalky mix, poorly dev. mix of loosely-well cemented, poor vis. porosity, barren

3648'- Sh- Gray Lm Green Maroon, silty & calcareous, some limey Ss, gritty & earthy 1-2 pcs of Ca maxtrix/cementation w/ sub-rounded fn-med qtz inclusions, well cemented, barren

3649'- Lm- White, Ca matrix, loosley cemented w/ sub-rounded to angular fn grn qtz. inclusions, SCTRDRK STN, NSFO, TR ODR

3650'- **GORHAM SAND 3649' (-1434)** Sand- Clear, Fn-Med Grn, angular to sub-rounded, consolidated & well sorted, loosely cemented, SAT DRK STN, SOME BLEEDING FO, FR SFO, GD SULFURIC ODR


RTD 3650' (-1435) LTD 3648' (-1433) @ 10:57 12/16/2014


-  DST 5.jpg
-  DST 6.jpg
-  DST 6_BTMPKR.jpg
-  DST 7.jpg
-  DST 8.jpg


3638' - 3650'
30-45-45-60

244' TOTAL FLUID
75' GSY OIL
(5% G, 95% O)
169' OCMW
(20% O, 50% W, 30% M)

IFP: 19-65#
FFP: 71-102#
SIP: 1029-1016#

 3648.jpg

 3649.jpg

 3650.jpg

DST #7
GORHAM SAND
3638' - 3650'
MISRUN

DST #8
GORHAM SAND
3588' - 3650'
60-30-60-60

5' MCO
(30% M, 70% O)
186' SOCM
(10% O, 90% M)
124' VSLOCWM
(5% O, 10% W, 85% M)

SIP: 973-1000#





0.5 mm

3396' X 20



0.5 mm

3420' X 20



0.5 mm

3446' X 25



0.5 mm

3462' X 25







0.5 mm

3562' X 20



0.5 mm

3583' X 20



0.2 mm


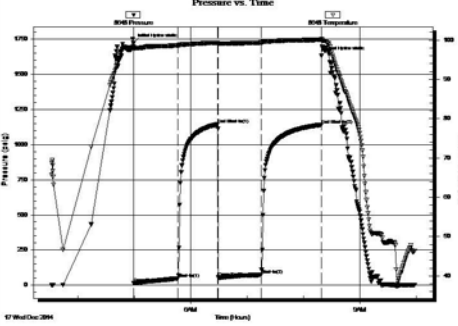
3648' x 55



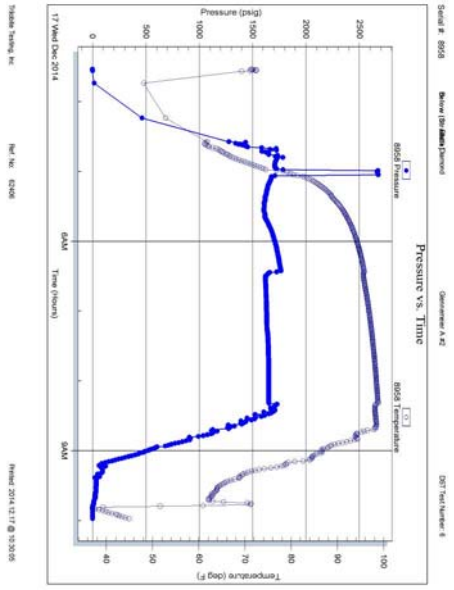
0.5 mm



3650' x 25

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT																																											
Black Diamond PO Box 641 Hays KS 67801 ATTN: Jeff Lawler	21-5s-21w Norton KS Glennemeier A #2 Job Ticket: 62406 DST#: 6 Test Start: 2014.12.17 @ 03:32:00																																											
GENERAL INFORMATION: Formation: LKC "F-G" Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Reset) Time Tool Opened: 04:59:15 Tester: Cody Bloedorn Time Test Ended: 09:58:15 Unit No: 73 Interval: 3460.00 ft (KB) To 3490.00 ft (KB) (TVD) Reference Elevations: 2215.00 ft (KB) Total Depth: 3650.00 ft (KB) (TVD) 2210.00 ft (CF) Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft																																												
Serial #: 8648 Inside Press@RunDepth: 72.94 psig @ 3461.00 ft (KB) Capacity: 8000.00 psig Start Date: 2014.12.17 End Date: 2014.12.17 Last Calib.: 2014.12.17 Start Time: 03:32:05 End Time: 09:58:14 Time On Btm: 2014.12.17 @ 04:59:00 Time Off Btm: 2014.12.17 @ 08:19:15																																												
TEST COMMENT: 45 - IF- 3" blow 45 - IS- No return 45 - FF- Surface blow 60 - FS- No return																																												
	PRESSURE SUMMARY																																											
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DST 6_BTMPKR.jpg



DST 8.jpg

TRILOBITE TESTING, INC.		DRILL STEM TEST REPORT																																					
		Black Diamond Po Box 641 Hays KS, 67601 ATTN: Jeff Lawler	21-5s-21w Norton KS Glennemeier A #2 Job Ticket: 62408 DST#: 8 Test Start: 2014.12.17 @ 18:09:00																																				
GENERAL INFORMATION:																																							
Formation: Gorham Sand Deviated: No Whipstock: ft (KB) Time Tool Opened: 19:34:15 Time Test Ended: 01:31:45		Test Type: Conventional Bottom Hole (Reset) Tester: Cody Bloedorn Unit No: 73																																					
Interval: 3588.00 ft (KB) To 3650.00 ft (KB) (TVD) Total Depth: 3650.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair		Reference Elevations: 2215.00 ft (KB) 2210.00 ft (CF) KB to GR/CF: 5.00 ft																																					
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Press@RunDepth: 179.48 psig @ 3627.00 ft (KB)		Capacity: 8000.00 psig																																					
Start Date: 2014.12.17 End Date: 2014.12.18		Last Calib.: 2014.12.18																																					
Start Time: 18:09:05 End Time: 01:31:44		Time On Btm: 2014.12.17 @ 19:34:00																																					
		Time Off Btm: 2014.12.17 @ 23:11:30																																					
TEST COMMENT: 60 - IF- B.O.B. in 35 minutes 30 - IS- surface return 60 - FF- B.O.B. in 48 minutes 60 - FSI- Surface return																																							
Pressure vs. Time 		PRESSURE SUMMARY																																					
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1773.85</td> <td>94.87</td> <td>Initial Hydro-static</td> </tr> <tr> <td>1</td> <td>38.90</td> <td>94.17</td> <td>Open To Flow (1)</td> </tr> <tr> <td>60</td> <td>124.56</td> <td>98.61</td> <td>Shut-In(1)</td> </tr> <tr> <td>91</td> <td>973.90</td> <td>99.12</td> <td>End Shut-In(1)</td> </tr> <tr> <td>92</td> <td>135.51</td> <td>98.81</td> <td>Open To Flow (2)</td> </tr> <tr> <td>150</td> <td>179.48</td> <td>99.77</td> <td>Shut-In(2)</td> </tr> <tr> <td>217</td> <td>1000.52</td> <td>100.96</td> <td>End Shut-In(2)</td> </tr> <tr> <td>218</td> <td>1750.03</td> <td>101.19</td> <td>Final Hydro-static</td> </tr> </tbody> </table>		Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation	0	1773.85	94.87	Initial Hydro-static	1	38.90	94.17	Open To Flow (1)	60	124.56	98.61	Shut-In(1)	91	973.90	99.12	End Shut-In(1)	92	135.51	98.81	Open To Flow (2)	150	179.48	99.77	Shut-In(2)	217	1000.52	100.96	End Shut-In(2)	218	1750.03	101.19	Final Hydro-static
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Choke (inches)	Pressure (psig)	Gas Rate (Mcft)																																					
<small>Recovery from multiple tests</small>																																							

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

No. 984

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

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

Date	12-10-14	Sec.	21	Twp.	5	Range	21	County	Norton	State	KS	On Location		Finish	7:15pm
Lease								Well No.		Owner					

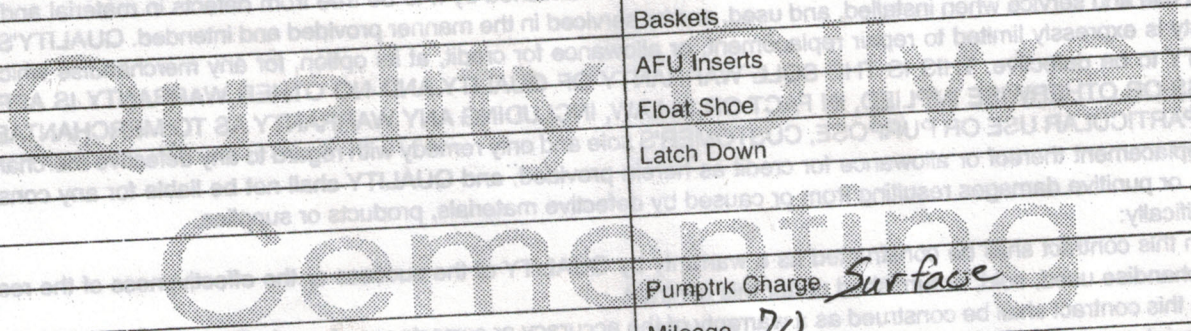
Lease <u>Glennemeier</u>								Well No. <u>A #2</u>		Owner To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Contractor <u>WW#6</u>										Charge To <u>Black Diamond</u>					
Type Job <u>Surface</u>										Street					
Hole Size <u>12 1/4</u>								T.D. <u>220</u>		City					
Csg. <u>8 5/8</u>								Depth <u>219</u>		State					
Tbg. Size								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Tool								Depth		Cement Amount Ordered <u>150 LBS 3 1/2 2 1/2 GEL</u>					
Cement Left in Csg. <u>15</u>								Shoe Joint							
Meas Line								Displace <u>13 BCL</u>		Common <u>150</u>					

EQUIPMENT				Common			
Pumptrk	No.	Cementer	Helper	Poz. Mix			
Bulktrk	No.	Driver	Driver	Gel.	<u>3</u>		
Bulktrk	No.	Driver	Driver	Calcium	<u>5</u>		

JOB SERVICES & REMARKS				Hulls			
Remarks:				Salt			
Rat Hole				Flowseal			
Mouse Hole				Kol-Seal			
Centralizers				Mud CLR 48			
Baskets				CFL-117 or CD110 CAF 38			
D/V or Port Collar				Sand			
<u>8 5/8 on bottom. Est. Circulation</u>				Handling <u>158</u>			
<u>Mix 150 LBS & Displace.</u>				Mileage			

Cement Circulated				FLOAT EQUIPMENT			
				Guide Shoe			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			

Pumptrk Charge <u>Surface</u>				Tax			
Mileage <u>70</u>				Discount			
				Total Charge			
Signature <u>Mark Bege</u>							





DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.13 @ 20:43:00

End Date: 2014.12.14 @ 06:08:15

Job Ticket #: 62401 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:54:41



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62401

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.13 @ 20:43:00

GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:22:45

Time Test Ended: 06:08:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3403.00 ft (KB) To 3435.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3435.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 89.44 psig @ 3407.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.13

End Date:

2014.12.14

Last Calib.:

2014.12.14

Start Time: 20:43:05

End Time:

06:08:15

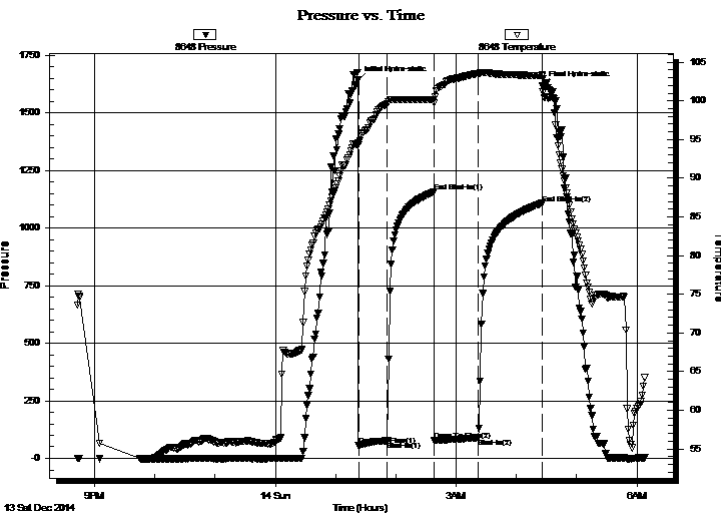
Time On Btm:

2014.12.14 @ 01:22:15

Time Off Btm:

2014.12.14 @ 04:25:45

TEST COMMENT: 30 - IF- 6" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1642.20	94.53	Initial Hydro-static
1	55.09	94.32	Open To Flow (1)
30	76.36	99.61	Shut-In(1)
76	1156.39	100.17	End Shut-In(1)
76	78.48	99.71	Open To Flow (2)
120	89.44	103.50	Shut-In(2)
183	1107.19	103.24	End Shut-In(2)
184	1617.63	103.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	MW - Oil spots, 10%M, 90%W	0.30
102.00	Mud - Oil spots, 100%M	0.90

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62401

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.13 @ 20:43:00

Tool Information

Drill Pipe:	Length: 3273.00 ft	Diameter: 3.80 inches	Volume: 45.91 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 46.50 bbl</u>	Tool Chased	10.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3403.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	32.00 ft				
Tool Length:	53.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3383.00	
Shut In Tool	5.00			3388.00	
Hydraulic tool	5.00			3393.00	
Packer	5.00			3398.00	21.00 Bottom Of Top Packer
Packer	5.00			3403.00	
Stubb	1.00			3404.00	
Perforations	3.00			3407.00	
Recorder	0.00	8648	Inside	3407.00	
Recorder	0.00	8940	Outside	3407.00	
Perforations	25.00			3432.00	
Bullnose	3.00			3435.00	32.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62401

DST#: 1

ATTN: Jeff Lawler

Test Start: 2014.12.13 @ 20:43:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

124000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
62.00	MW - Oil spots, 10%M, 90%W	0.305
102.00	Mud - Oil spots, 100%M	0.902

Total Length: 164.00 ft Total Volume: 1.207 bbl

Num Fluid Samples: 0

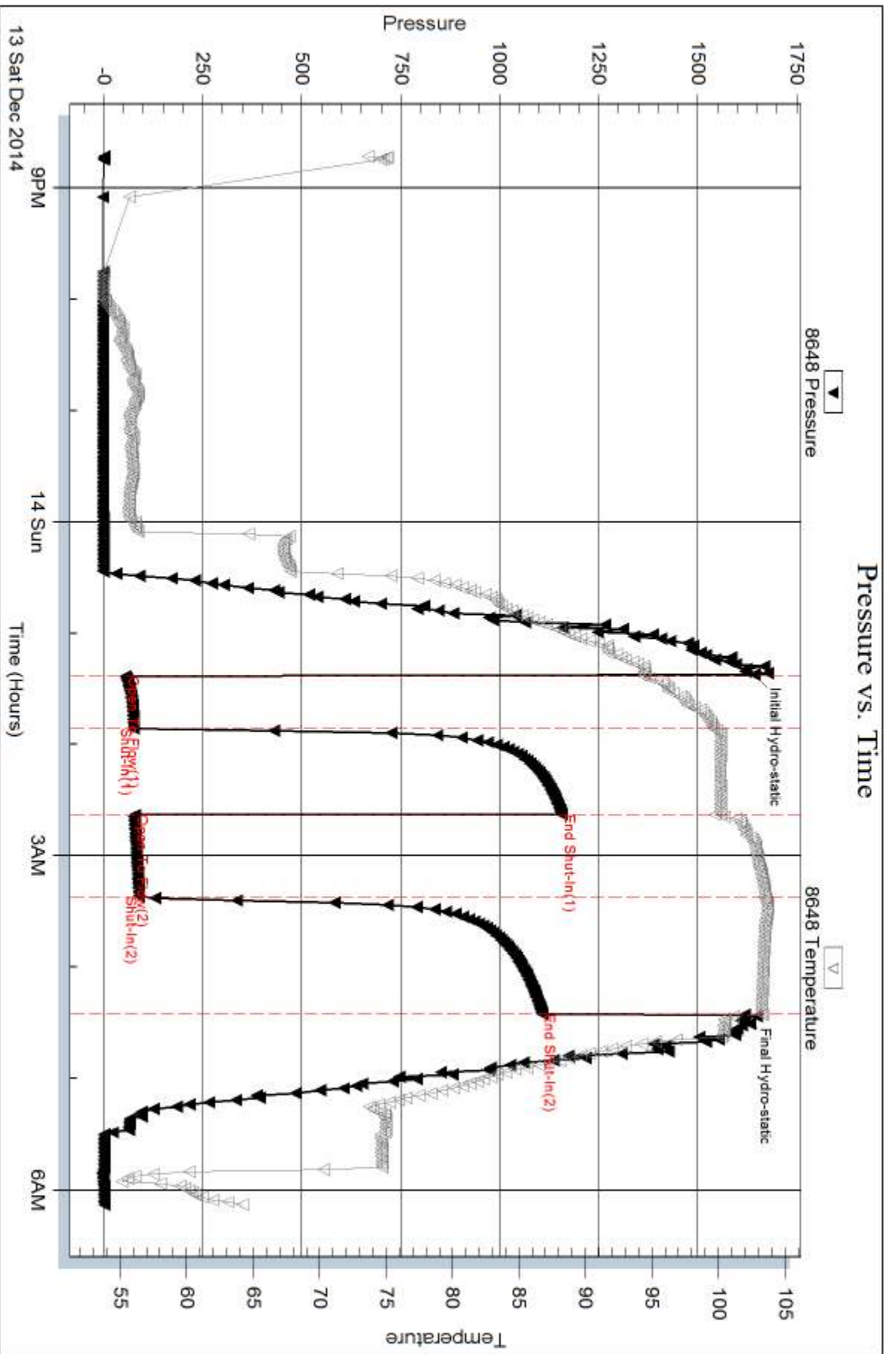
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Salinity: .08 @ 58 Degrees = 124,000

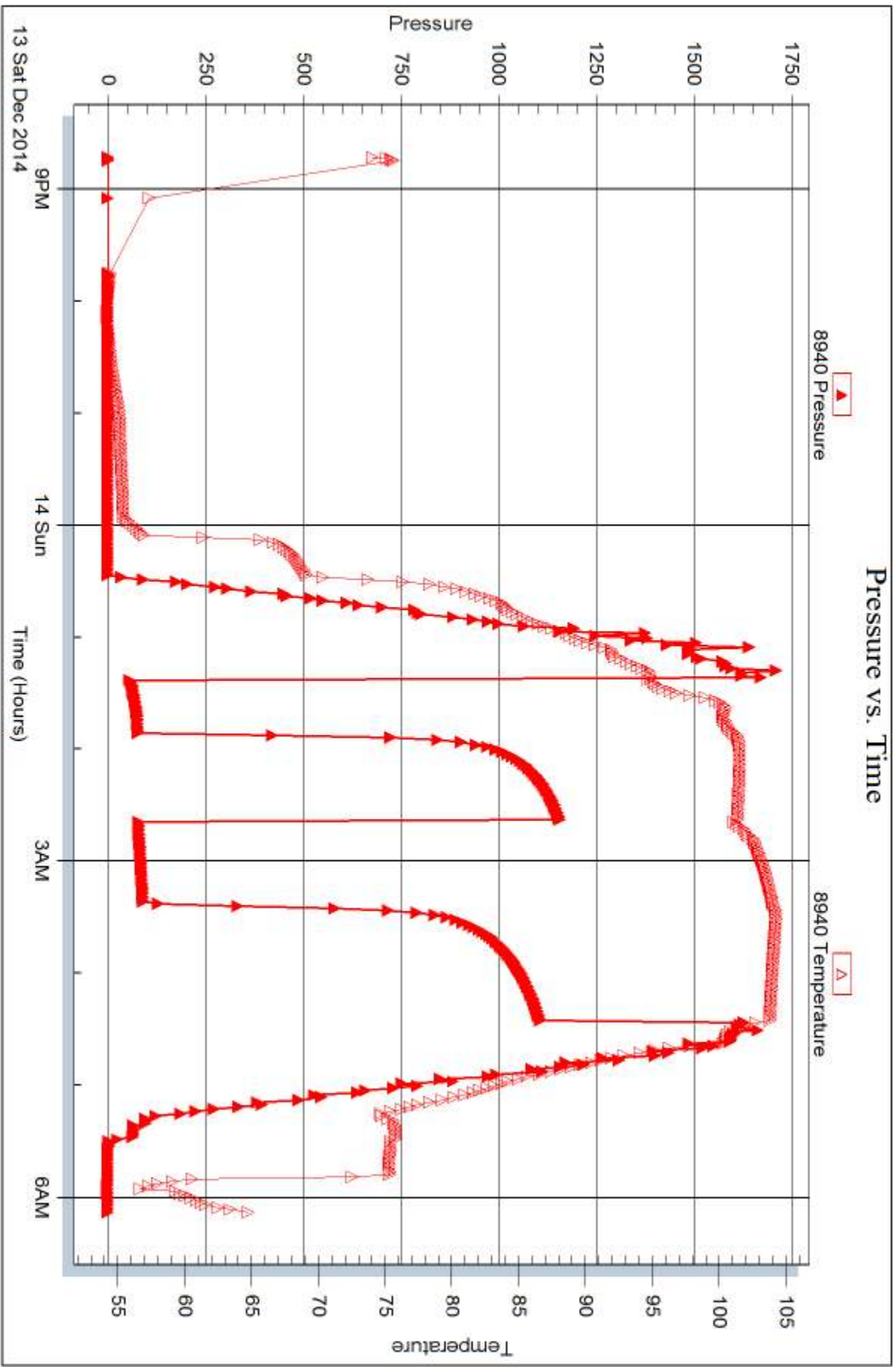


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 62401

Printed: 2014, 12, 23 @ 10:54:42



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.14 @ 12:57:00

End Date: 2014.12.14 @ 19:20:00

Job Ticket #: 62402 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:54:19



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62402

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.14 @ 12:57:00

GENERAL INFORMATION:

Formation: **LKC "C-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:35:30

Time Test Ended: 19:20:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3434.00 ft (KB) To 3468.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3468.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 50.38 psig @ 3438.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.14

End Date:

2014.12.14

Last Calib.: 2014.12.14

Start Time: 12:57:05

End Time:

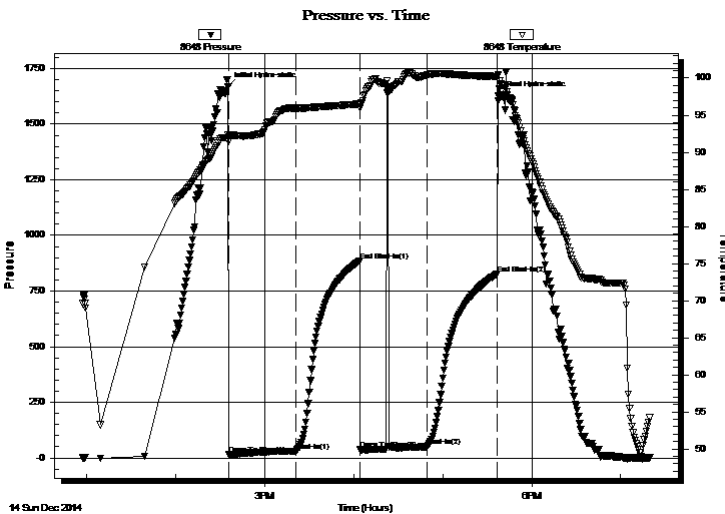
19:19:59

Time On Btm: 2014.12.14 @ 14:35:15

Time Off Btm: 2014.12.14 @ 17:37:15

TEST COMMENT: 45 - IF- 1.5" blow in 15 minutes, died back to half inch
45 - IS- No return
45 - FF- No blow for 15 minutes, flushed tool, surface blow
45 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1668.40	92.35	Initial Hydro-static
1	14.91	91.40	Open To Flow (1)
46	31.18	95.96	Shut-In(1)
89	884.85	96.52	End Shut-In(1)
89	38.24	95.95	Open To Flow (2)
135	50.38	100.50	Shut-In(2)
182	827.88	100.24	End Shut-In(2)
182	1628.57	100.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	HOCM, 30% O, 70%M	0.30
15.00	VSOCM, 5%O, 95%M	0.07

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62402 **DST#: 2**

ATTN: Jeff Lawler

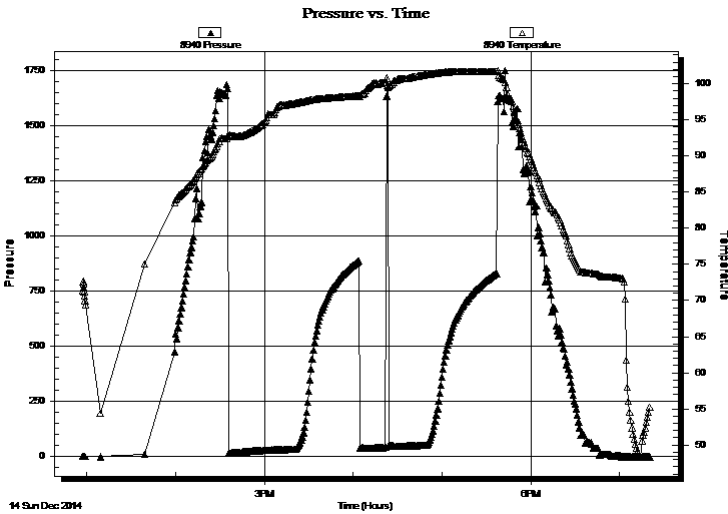
Test Start: 2014.12.14 @ 12:57:00

GENERAL INFORMATION:

Formation:	LKC "C-D"				
Deviated:	No Whipstock:	ft (KB)		Test Type:	Conventional Bottom Hole (Reset)
Time Tool Opened:	14:35:30			Tester:	Cody Bloedorn
Time Test Ended:	19:20:00			Unit No:	73
Interval:	3434.00 ft (KB) To 3468.00 ft (KB) (TVD)			Reference Elevations:	2215.00 ft (KB)
Total Depth:	3468.00 ft (KB) (TVD)				2210.00 ft (CF)
Hole Diameter:	7.88 inches	Hole Condition:	Fair	KB to GR/CF:	5.00 ft

Serial #: 8940	Outside				
Press@RunDepth:	psig @ 3438.00 ft (KB)	Capacity:	8000.00 psig		
Start Date:	2014.12.14	End Date:	2014.12.14	Last Calib.:	2014.12.14
Start Time:	12:57:05	End Time:	19:20:14	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 45 - IF- 1.5" blow in 15 minutes, died back to half inch
 45 - ISI- No return
 45 - FF- No blow for 15 minutes, flushed tool, surface blow
 45 - FSI- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
60.00	HOCM, 30% O, 70%M	0.30
15.00	VSOCM, 5%O, 95%M	0.07

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62402

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.14 @ 12:57:00

Tool Information

Drill Pipe:	Length: 3305.00 ft	Diameter: 3.80 inches	Volume: 46.36 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	42000.00 lb
			<u>Total Volume: 46.95 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3434.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	55.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3414.00	
Shut In Tool	5.00			3419.00	
Hydraulic tool	5.00			3424.00	
Packer	5.00			3429.00	21.00 Bottom Of Top Packer
Packer	5.00			3434.00	
Stubb	1.00			3435.00	
Perforations	3.00			3438.00	
Recorder	0.00	8648	Inside	3438.00	
Recorder	0.00	8940	Outside	3438.00	
Perforations	27.00			3465.00	
Bullnose	3.00			3468.00	34.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62402

DST#: 2

ATTN: Jeff Lawler

Test Start: 2014.12.14 @ 12:57:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
60.00	HOCM, 30% O, 70%M	0.295
15.00	VSOCM, 5%O, 95%M	0.074

Total Length: 75.00 ft Total Volume: 0.369 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

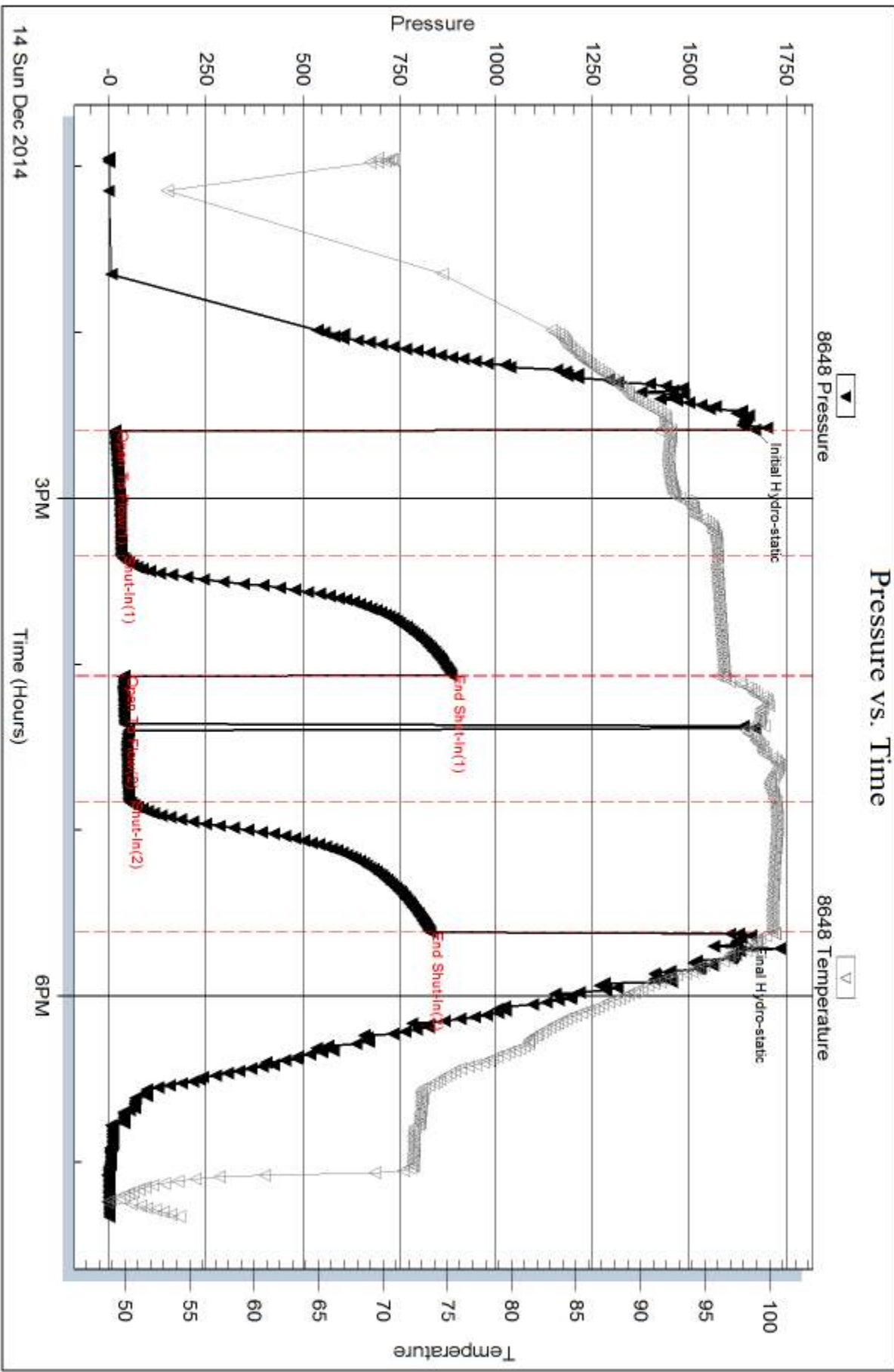
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 62402

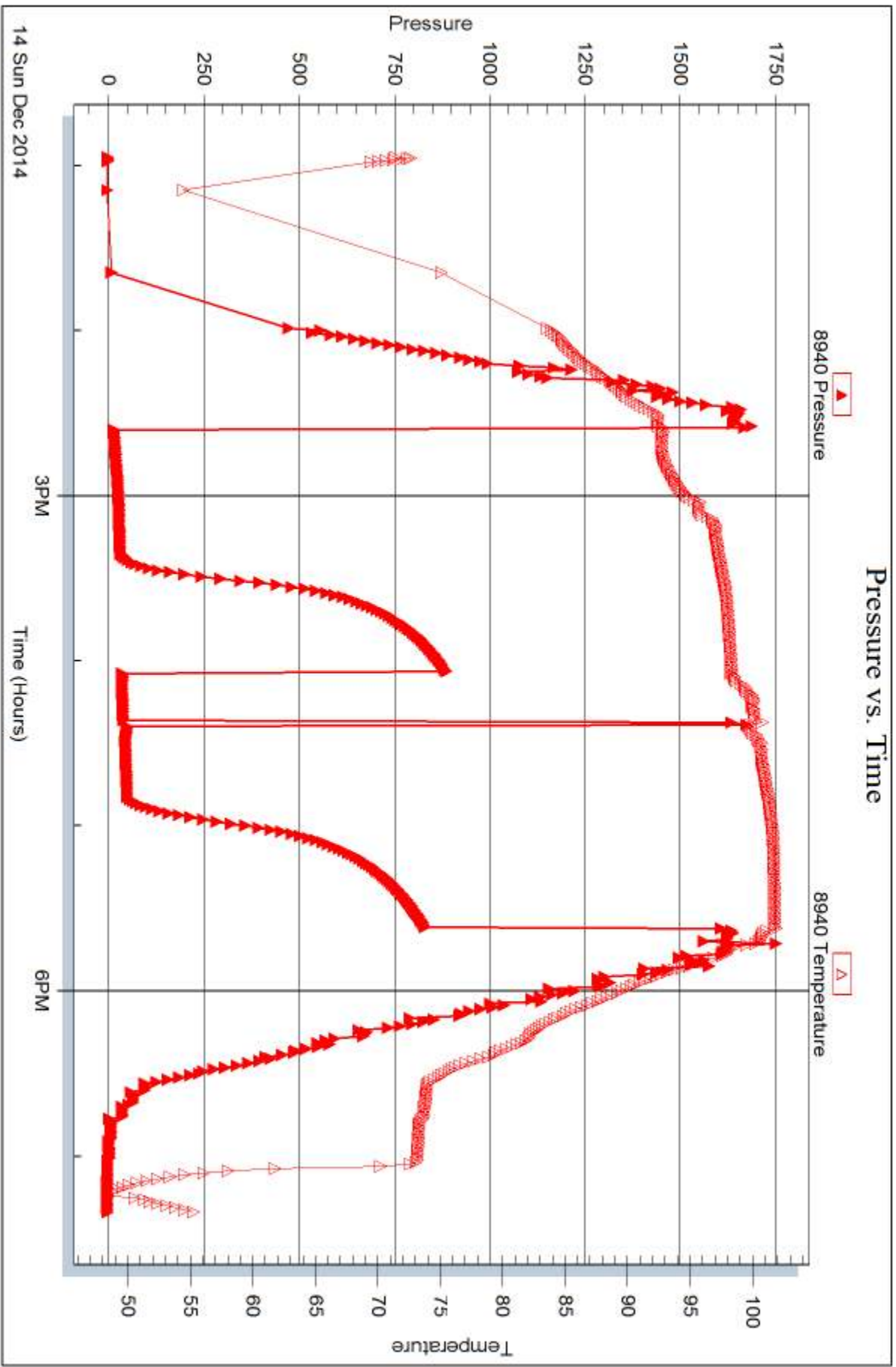
Printed: 2014, 12, 23 @ 10:54:20

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 62402

Printed: 2014, 12, 23 @ 10:54:20



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.15 @ 07:48:00

End Date: 2014.12.15 @ 15:06:45

Job Ticket #: 62403 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:53:54



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62403

DST#: 3

Test Start: 2014.12.15 @ 07:48:00

GENERAL INFORMATION:

Formation: **LKC "H-I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:32:15

Time Test Ended: 15:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3552.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 56.20 psig @ 3544.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15

End Date:

2014.12.15

Last Calib.:

2014.12.15

Start Time: 07:48:05

End Time:

15:06:44

Time On Btm:

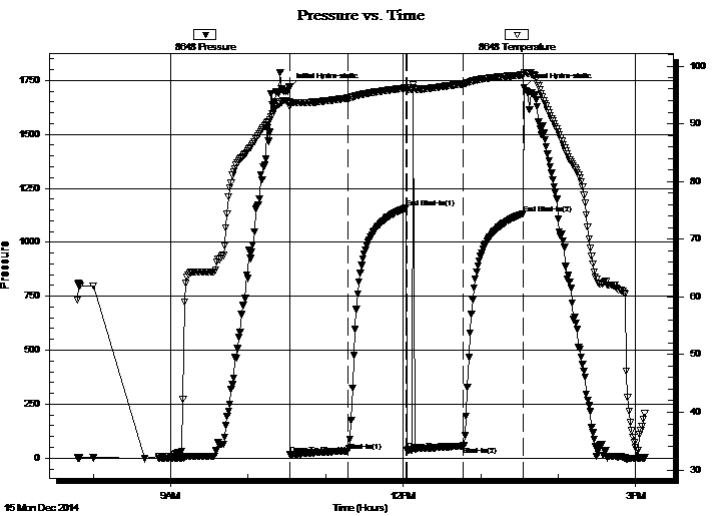
2014.12.15 @ 10:32:00

Time Off Btm:

2014.12.15 @ 13:33:45

TEST COMMENT:

- 45 - IF- Surface blow
- 45 - IS- No return
- 45 - FF- Surged and died, flushed tool, surged and died
- 45 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.90	93.80	Initial Hydro-static
1	16.09	92.94	Open To Flow (1)
45	32.43	94.43	Shut-In(1)
91	1159.23	96.23	End Shut-In(1)
91	37.50	95.87	Open To Flow (2)
135	56.20	96.90	Shut-In(2)
181	1133.14	98.45	End Shut-In(2)
182	1716.64	98.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mud - Oil spots, 100%M	0.39

* Recovery from multiple tests

Gas Rates

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



DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

GENERAL INFORMATION:

Formation: **LKC "H-I"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:32:15

Time Test Ended: 15:06:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3507.00 ft (KB) To 3552.00 ft (KB) (TVD)

Total Depth: 3552.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2215.00 ft (KB)

2210.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3544.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15 End Date: 2014.12.15

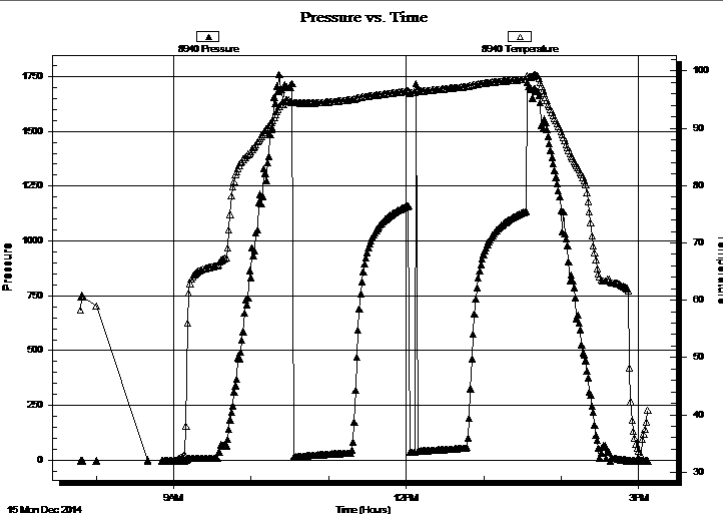
Last Calib.: 2014.12.15

Start Time: 07:48:05 End Time: 15:06:44

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF- Surface blow
 45 - IS- No return
 45 - FF- Surged and died, flushed tool, surged and died
 45 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
80.00	Mud - Oil spots, 100%M	0.39

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

Tool Information

Drill Pipe:	Length: 3399.00 ft	Diameter: 3.80 inches	Volume: 47.68 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	48000.00 lb
			<u>Total Volume: 48.27 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3507.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	45.00 ft				
Tool Length:	66.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3487.00	
Shut In Tool	5.00			3492.00	
Hydraulic tool	5.00			3497.00	
Packer	5.00			3502.00	21.00 Bottom Of Top Packer
Packer	5.00			3507.00	
Stubb	1.00			3508.00	
Perforations	3.00			3511.00	
Change Over Sub	1.00			3512.00	
Drill Pipe	31.00			3543.00	
Change Over Sub	1.00			3544.00	
Recorder	0.00	8648	Inside	3544.00	
Recorder	0.00	8940	Outside	3544.00	
Perforations	5.00			3549.00	
Bullnose	3.00			3552.00	45.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62403

DST#: 3

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 07:48:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
80.00	Mud - Oil spots, 100%M	0.393

Total Length: 80.00 ft Total Volume: 0.393 bbf

Num Fluid Samples: 0

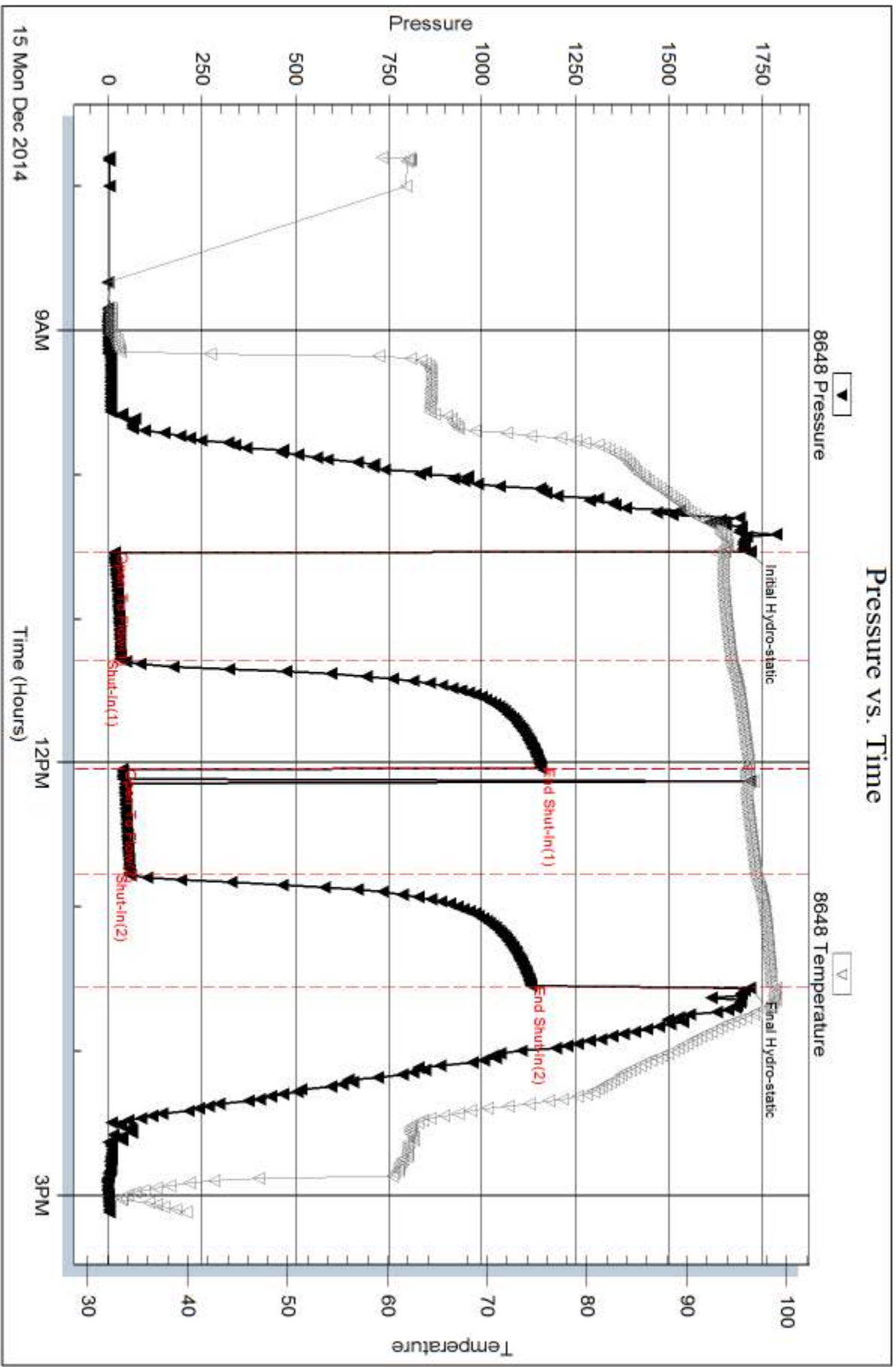
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



15 Mon Dec 2014

9AM

12PM

12PM

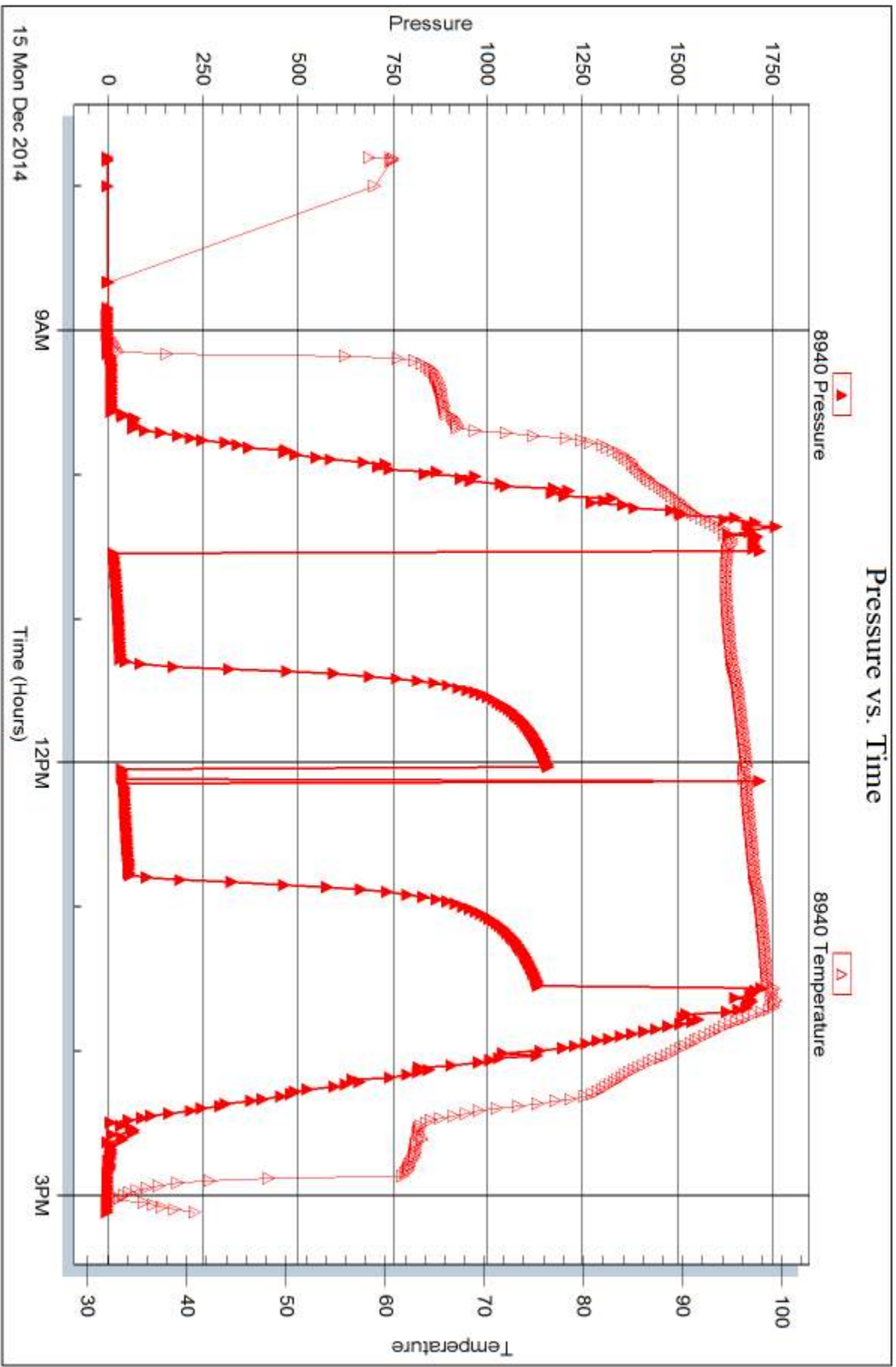
3PM

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 62403

Printed: 2014, 12, 23 @ 10:53:56



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.15 @ 21:55:00

End Date: 2014.12.16 @ 05:37:30

Job Ticket #: 62404 DST #: 4

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:53:30



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

GENERAL INFORMATION:

Formation: **LKC "I-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:27:00

Time Test Ended: 05:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3535.00 ft (KB) To 3587.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3587.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 38.26 psig @ 3572.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15

End Date:

2014.12.16

Last Calib.:

2014.12.16

Start Time: 21:55:05

End Time:

05:37:29

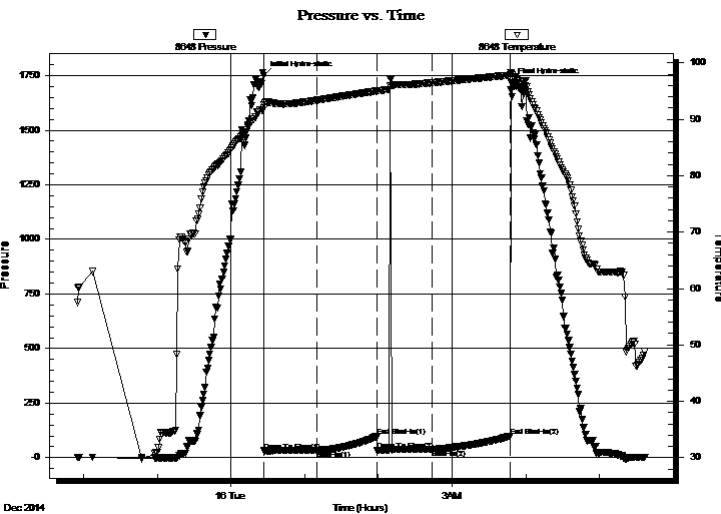
Time On Btm:

2014.12.16 @ 00:26:45

Time Off Btm:

2014.12.16 @ 03:48:00

TEST COMMENT: 45 - IF- 1.5" blow in 23 minutes, died back to 1" blow
45 - IS- No return
45 - FF- Surged and died, flushed tool, surged and died
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1749.17	92.48	Initial Hydro-static
1	32.03	92.03	Open To Flow (1)
44	33.61	93.39	Shut-In(1)
92	97.94	95.00	End Shut-In(1)
93	33.94	94.99	Open To Flow (2)
137	38.26	96.48	Shut-In(2)
201	99.65	97.82	End Shut-In(2)
202	1719.60	98.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	VSOCM, 2%, 98%M	0.10

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62404

DST#: 4

Test Start: 2014.12.15 @ 21:55:00

GENERAL INFORMATION:

Formation: **LKC "I-K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:27:00

Time Test Ended: 05:37:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: **3535.00 ft (KB) To 3587.00 ft (KB) (TVD)**

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3587.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3572.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.15

End Date: 2014.12.16

Last Calib.: 2014.12.16

Start Time: 21:55:05

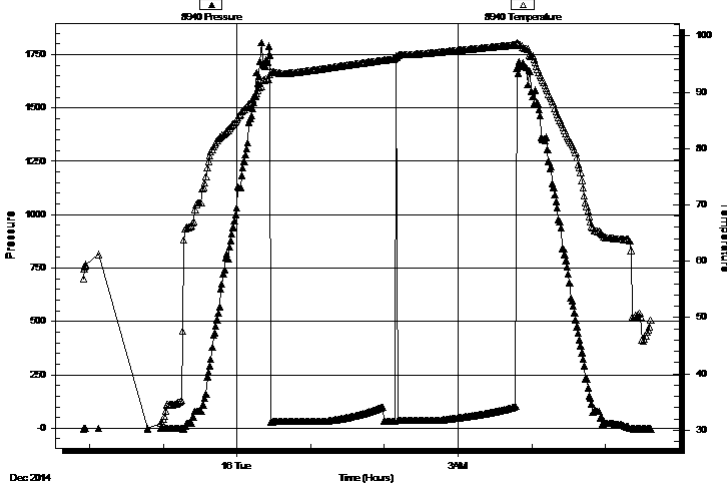
End Time: 05:37:29

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF- 1.5" blow in 23 minutes, died back to 1" blow
45 - IS- No return
45 - FF- Surged and died, flushed tool, surged and died
60 - FS- No return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
20.00	VSOCM, 2%, 98%M	0.10

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

Tool Information

Drill Pipe:	Length: 3401.00 ft	Diameter: 3.80 inches	Volume: 47.71 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 48.30 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3535.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	52.00 ft				
Tool Length:	73.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3515.00	
Shut In Tool	5.00			3520.00	
Hydraulic tool	5.00			3525.00	
Packer	5.00			3530.00	21.00 Bottom Of Top Packer
Packer	5.00			3535.00	
Stubb	1.00			3536.00	
Perforations	3.00			3539.00	
Change Over Sub	1.00			3540.00	
Drill Pipe	31.00			3571.00	
Change Over Sub	1.00			3572.00	
Recorder	0.00	8648	Inside	3572.00	
Recorder	0.00	8940	Outside	3572.00	
Perforations	12.00			3584.00	
Bullnose	3.00			3587.00	52.00 Bottom Packers & Anchor

Total Tool Length: 73.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62404

DST#: 4

ATTN: Jeff Lawler

Test Start: 2014.12.15 @ 21:55:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbf

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
20.00	VSOCM, 2%, 98%M	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbf

Num Fluid Samples: 0

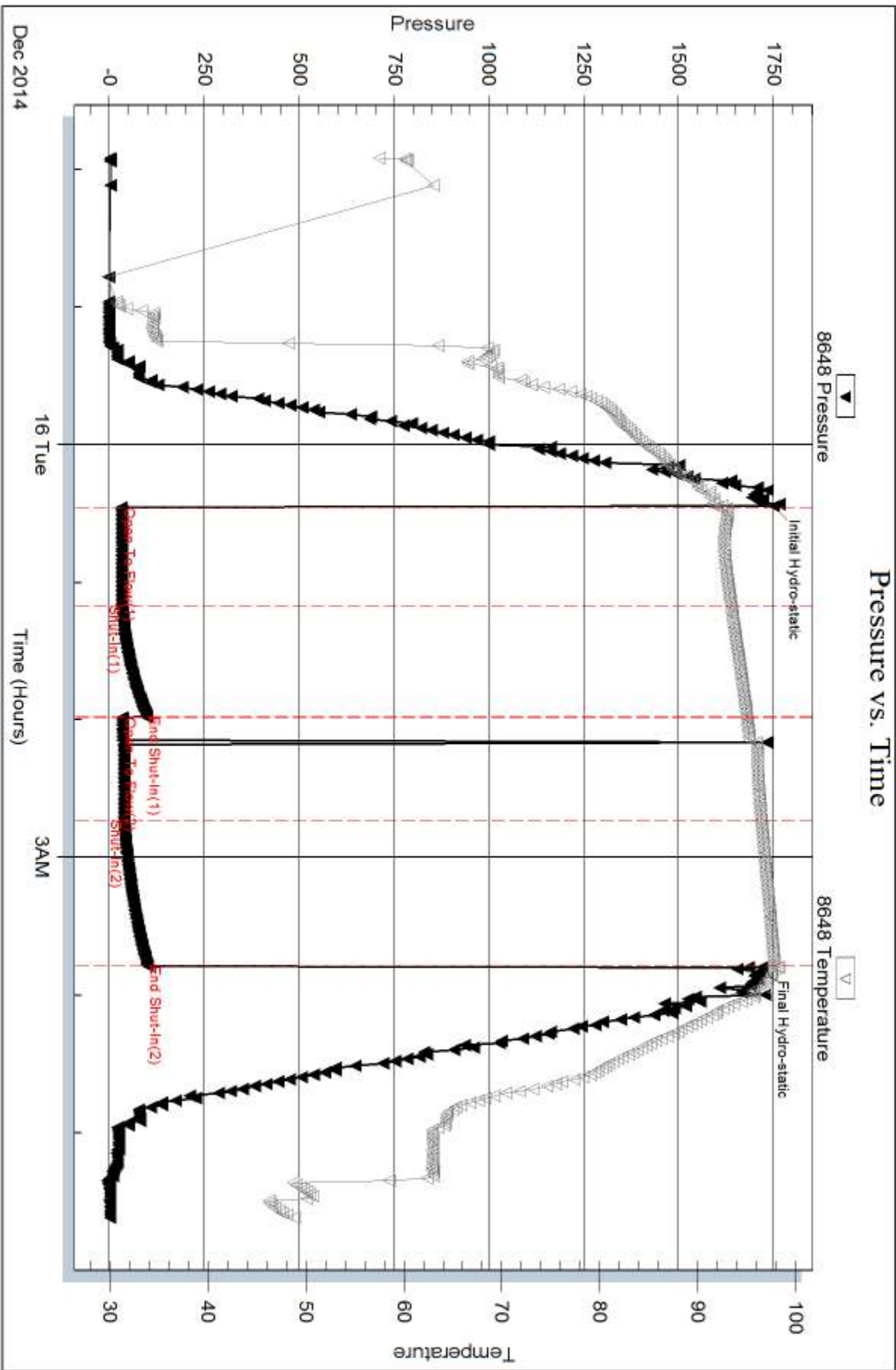
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

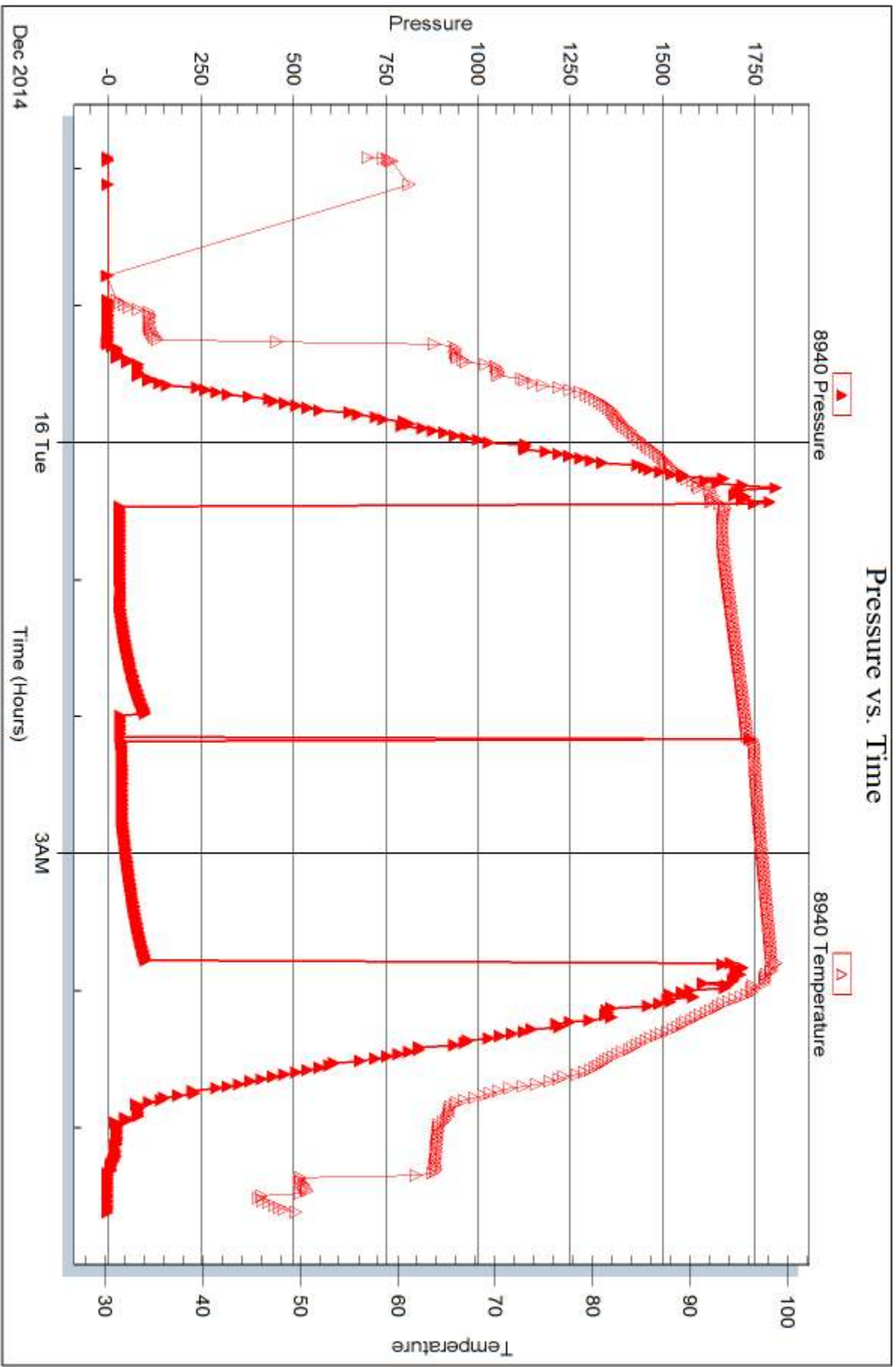


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 62404

Printed: 2014, 12, 23 @ 10:53:31



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.16 @ 17:53:00

End Date: 2014.12.17 @ 02:59:45

Job Ticket #: 62405 DST #: 5

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:52:52



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62405

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.16 @ 17:53:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:26:00

Time Test Ended: 02:59:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3638.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 102.49 psig @ 3642.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.16

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 17:53:05

End Time:

02:59:45

Time On Btm:

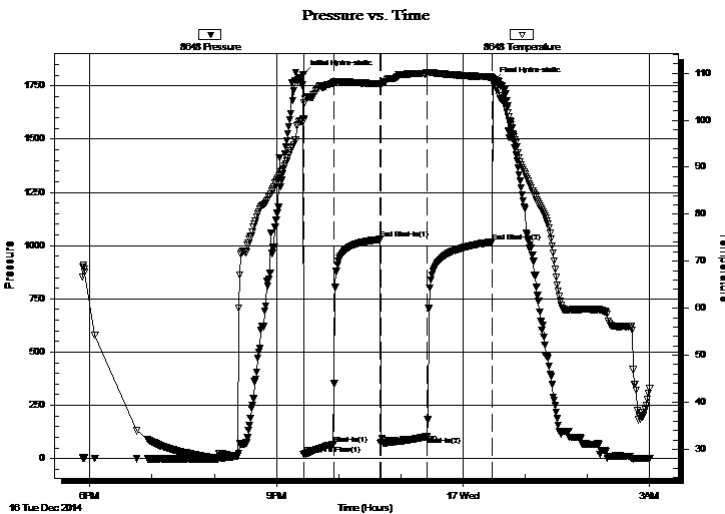
2014.12.16 @ 21:25:45

Time Off Btm:

2014.12.17 @ 00:28:30

TEST COMMENT: 30 - IF- 5" blow
45 - IS- Surface return
45 - FF- 4" return
60 - FS- No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1803.08	100.37	Initial Hydro-static
1	19.45	100.00	Open To Flow (1)
30	65.49	107.94	Shut-In(1)
74	1029.90	107.71	End Shut-In(1)
75	71.59	107.39	Open To Flow (2)
120	102.49	110.00	Shut-In(2)
182	1016.91	109.14	End Shut-In(2)
183	1768.01	108.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
169.00	OCMW, 20%O, 30%M, 50%W	1.28
75.00	GO, 5%G, 95%O	1.05

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62405

DST#: 5

Test Start: 2014.12.16 @ 17:53:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:26:00

Time Test Ended: 02:59:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3638.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3642.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.16

End Date:

2014.12.17

Last Calib.:

2014.12.17

Start Time: 17:53:05

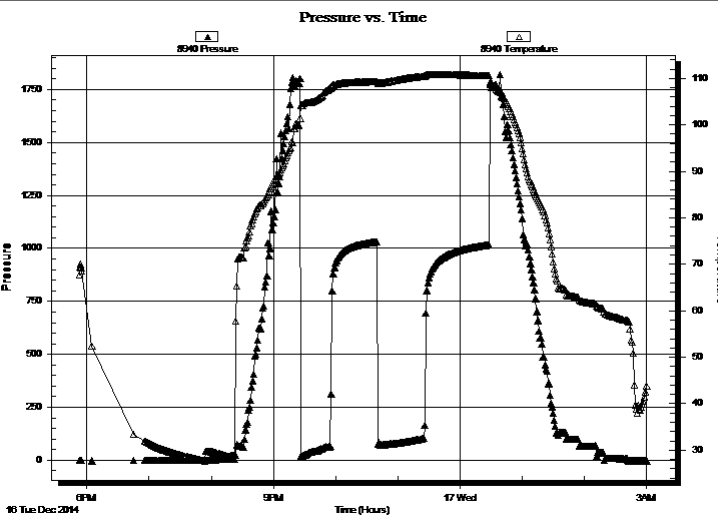
End Time:

02:59:45

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF- 5" blow
45 - IS- Surface return
45 - FF- 4" return
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
169.00	OCMW, 20%O, 30%M, 50%W	1.28
75.00	GO, 5%G, 95%O	1.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62405

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.16 @ 17:53:00

Tool Information

Drill Pipe:	Length: 3525.00 ft	Diameter: 3.80 inches	Volume: 49.45 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 50.04 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3638.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	12.00 ft				
Tool Length:	33.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3618.00	
Shut In Tool	5.00			3623.00	
Hydraulic tool	5.00			3628.00	
Packer	5.00			3633.00	21.00 Bottom Of Top Packer
Packer	5.00			3638.00	
Stubb	1.00			3639.00	
Perforations	3.00			3642.00	
Recorder	0.00	8648	Inside	3642.00	
Recorder	0.00	8940	Outside	3642.00	
Perforations	5.00			3647.00	
Bullnose	3.00			3650.00	12.00 Bottom Packers & Anchor

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62405

DST#: 5

ATTN: Jeff Lawler

Test Start: 2014.12.16 @ 17:53:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
169.00	OCMW, 20%O, 30%M, 50%W	1.277
75.00	GO, 5%G, 95%O	1.052

Total Length: 244.00 ft Total Volume: 2.329 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

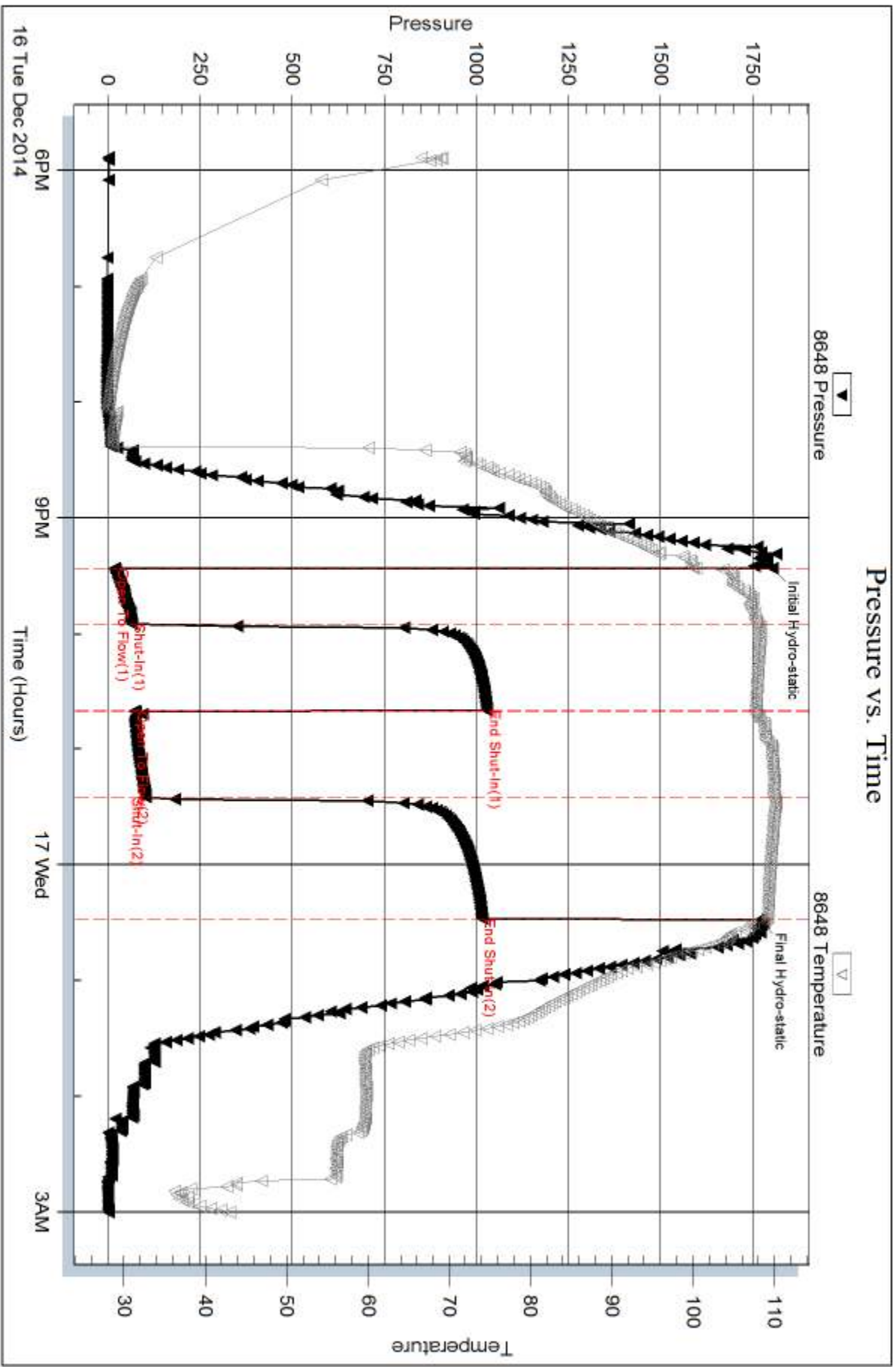
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 5



Triobite Testing, Inc

Ref. No: 62405

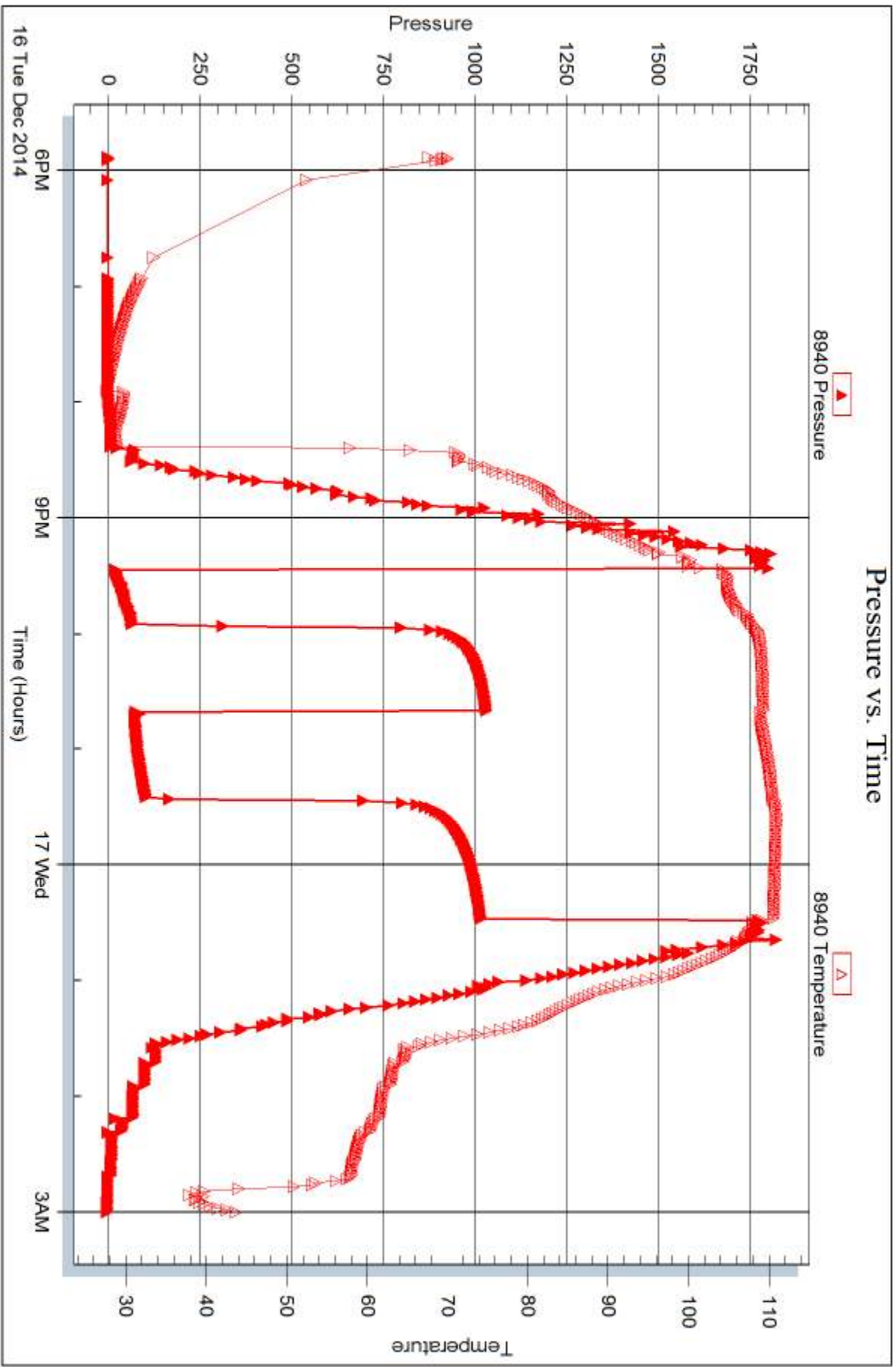
Printed: 2014, 12, 23 @ 10:52:53

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 5





DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.17 @ 03:32:00

End Date: 2014.12.17 @ 09:58:15

Job Ticket #: 62406 DST #: 6

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:52:26



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:59:15

Time Test Ended: 09:58:15

Test Type: Conventional Straddle (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3460.00 ft (KB) To 3490.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 72.94 psig @ 3461.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.17

Last Calib.: 2014.12.17

Start Time: 03:32:05

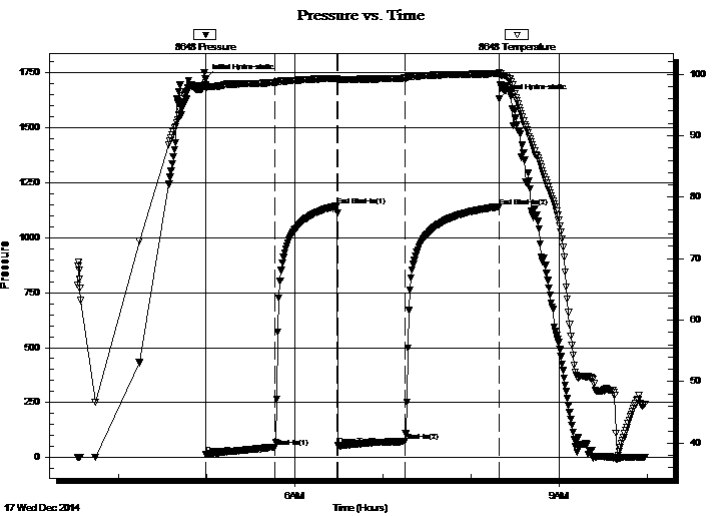
End Time:

09:58:14

Time On Btm: 2014.12.17 @ 04:59:00

Time Off Btm: 2014.12.17 @ 08:19:15

TEST COMMENT: 45 - IF- 3" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1722.44	98.22	Initial Hydro-static
1	14.45	97.74	Open To Flow (1)
48	48.23	98.62	Shut-In(1)
90	1146.49	99.34	End Shut-In(1)
91	54.82	98.96	Open To Flow (2)
136	72.94	99.37	Shut-In(2)
200	1142.08	100.08	End Shut-In(2)
201	1631.09	100.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM - Oil spots, 10%W, 90%M	0.30
65.00	VSOCM, 5%O, 95%M	0.37

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

21-5s-21w Norton KS

Glennemeier A #2

Job Ticket: 62406

DST#: 6

Test Start: 2014.12.17 @ 03:32:00

GENERAL INFORMATION:

Formation: **LKC "F-G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:59:15

Time Test Ended: 09:58:15

Test Type: Conventional Straddle (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3460.00 ft (KB) To 3490.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8940 Outside

Press@RunDepth: psig @ 3461.00 ft (KB)

Start Date: 2014.12.17

End Date:

2014.12.17

Start Time: 03:32:05

End Time:

09:58:14

Capacity: 8000.00 psig

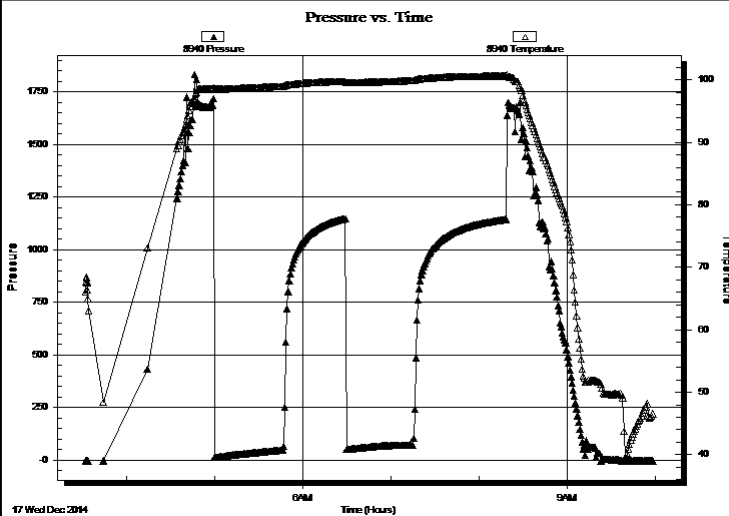
Last Calib.:

2014.12.17

Time On Btm:

Time Off Btm:

TEST COMMENT: 45 - IF- 3" blow
45 - IS- No return
45 - FF- Surface blow
60 - FS- No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WM - Oil spots, 10%W, 90%M	0.30
65.00	VSOCM, 5%O, 95%M	0.37

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

Tool Information

Drill Pipe:	Length: 3337.00 ft	Diameter: 3.80 inches	Volume: 46.81 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 47.40 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3460.00 ft			Final 35000.00 lb
Depth to Bottom Packer:	3490.00 ft			
Interval between Packers:	30.00 ft			
Tool Length:	215.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3440.00	
Shut In Tool	5.00			3445.00	
Hydraulic tool	5.00			3450.00	
Packer	5.00			3455.00	21.00 Bottom Of Top Packer
Packer	5.00			3460.00	
Stubb	1.00			3461.00	
Recorder	0.00	8648	Inside	3461.00	
Recorder	0.00	8940	Outside	3461.00	
Perforations	28.00			3489.00	
Blank Off Sub	1.00			3490.00	30.00 Tool Interval
Packer	5.00			3495.00	
Change Over Sub	1.00			3496.00	
Recorder	0.00	8958	Below	3496.00	
Drill Pipe	158.00			3654.00	164.00 Bottom Packers & Anchor

Total Tool Length: 215.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62406

DST#: 6

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 03:32:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	WM - Oil spots, 10%W, 90%M	0.295
65.00	VSOCM, 5%O, 95%M	0.365

Total Length: 125.00 ft

Total Volume: 0.660 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

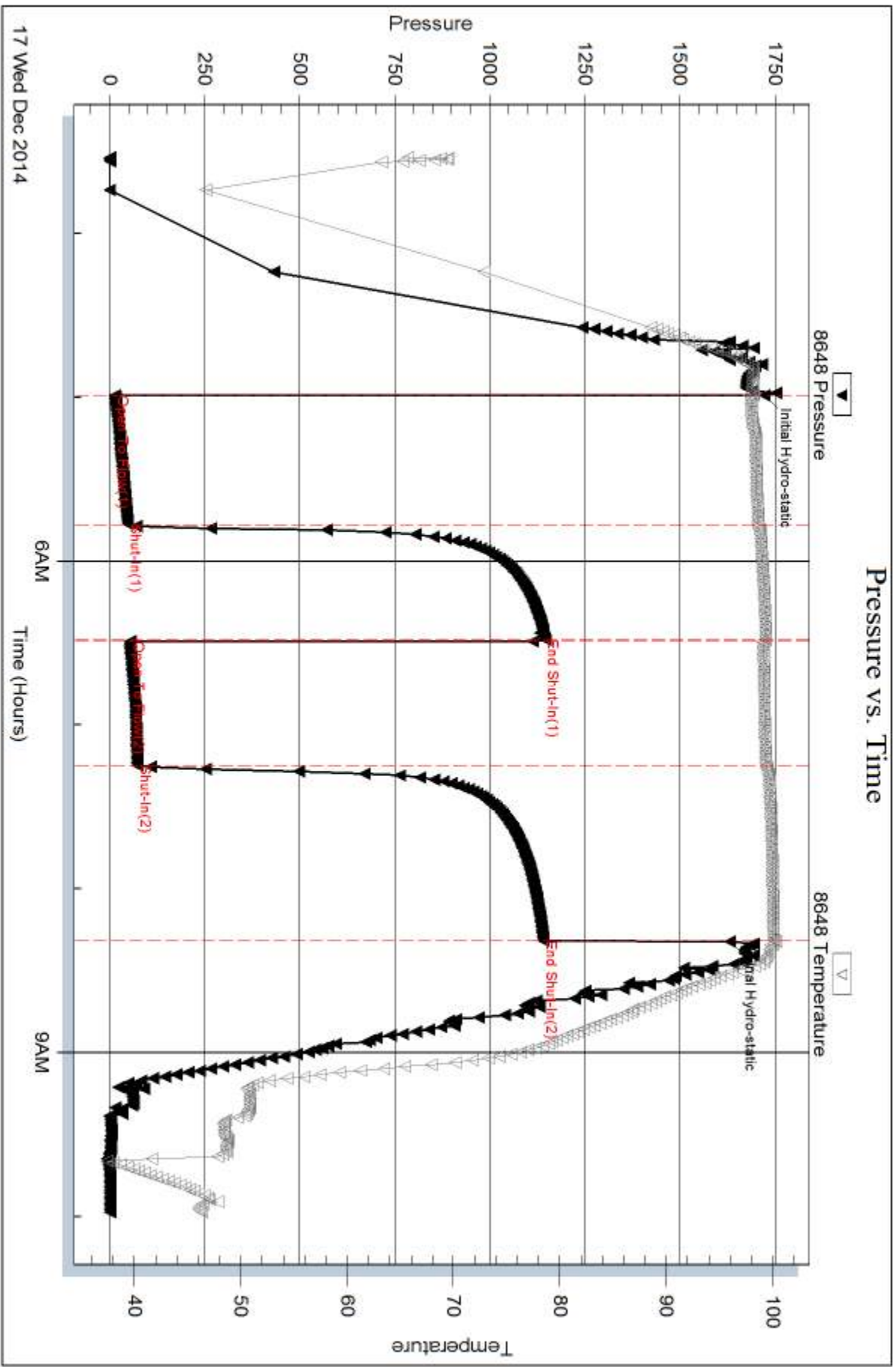
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 62406

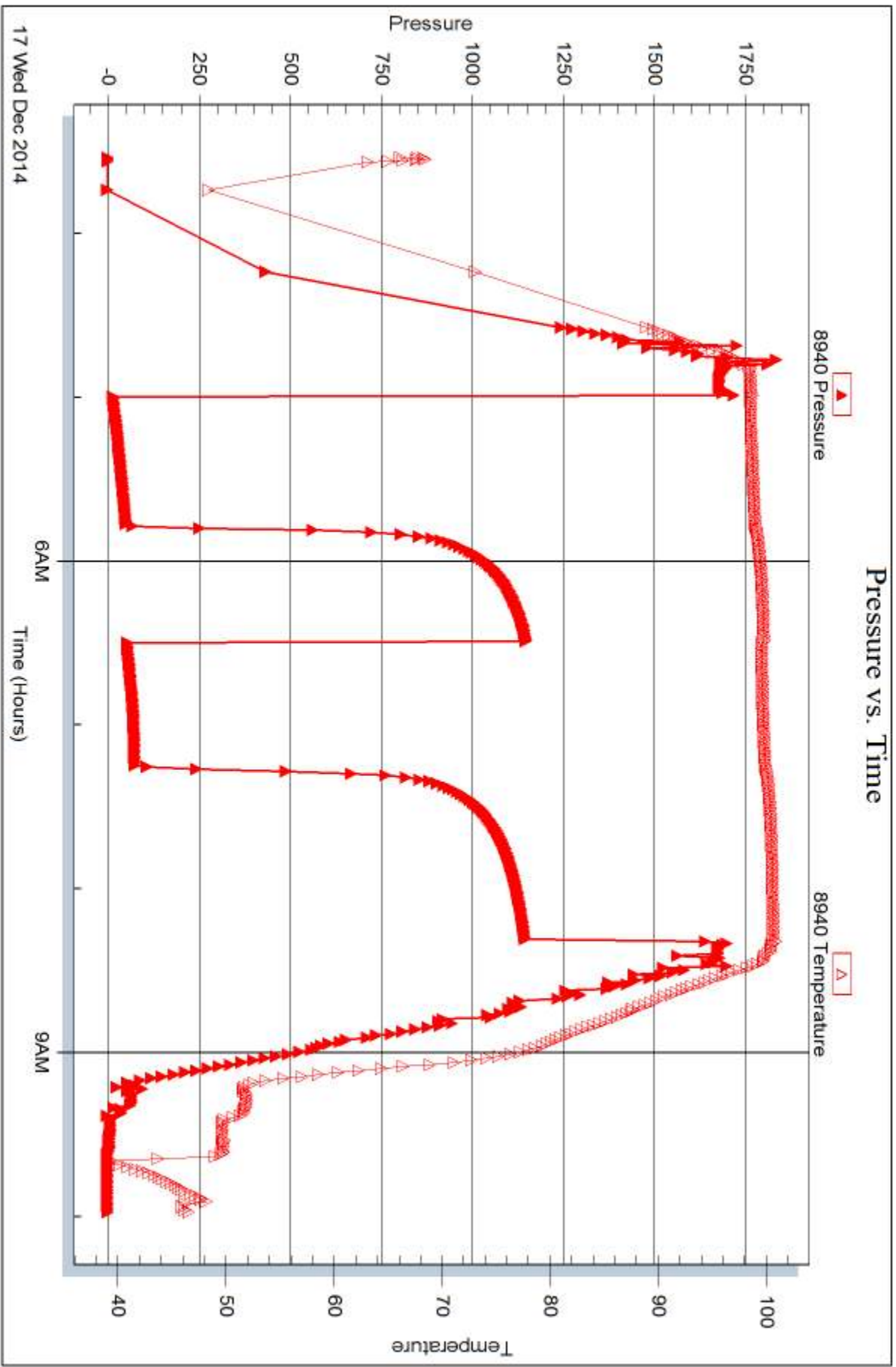
Printed: 2014, 12, 23 @ 10:52:27

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

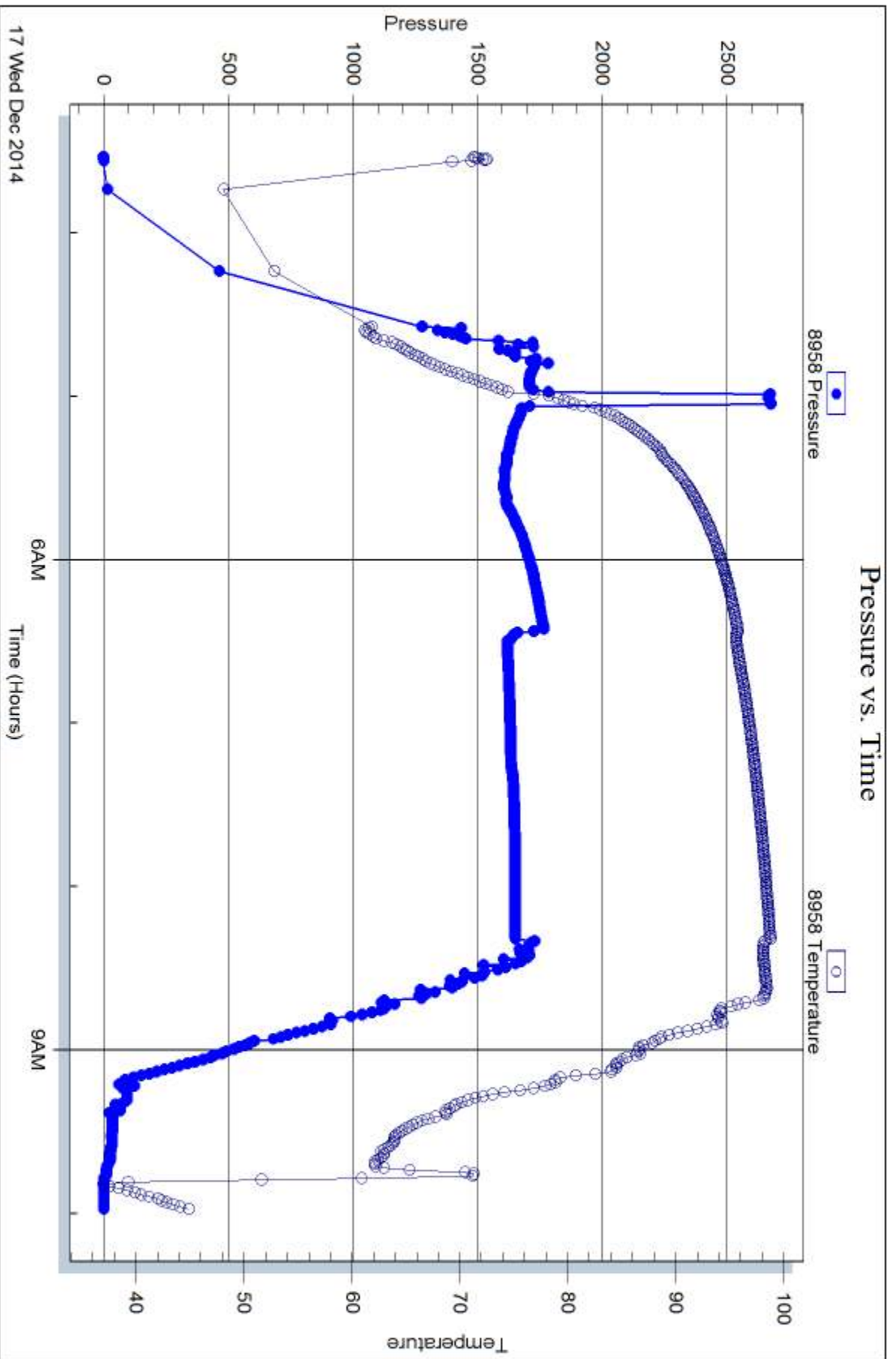
DST Test Number: 6



Triobite Testing, Inc

Ref. No: 62406

Printed: 2014, 12, 23 @ 10:52:27





DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.17 @ 14:53:05

End Date: 2014.12.17 @ 17:56:15

Job Ticket #: 62407 DST #: 7

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:51:35



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

ATTN: Jeff Lawler

Job Ticket: 62407

DST#: 7

Test Start: 2014.12.17 @ 14:53:05

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended: 17:56:15

Interval: 3638.00 ft (KB) To 3650.00 ft (KB) (TVD)

Total Depth: 3650.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Reference Elevations: 2215.00 ft (KB)

2210.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: psig @ 3642.00 ft (KB)

Start Date: 2014.12.17

End Date: 2014.12.17

Start Time: 14:53:05

End Time: 17:56:15

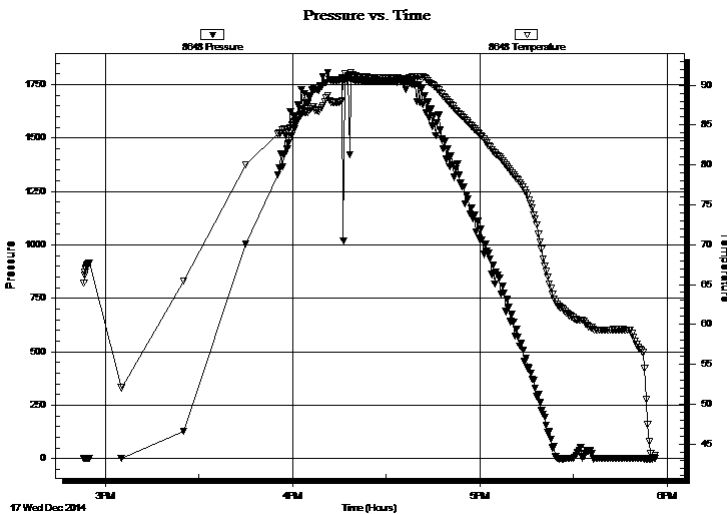
Capacity: 8000.00 psig

Last Calib.: 2014.12.17

Time On Btm:

Time Off Btm:

TEST COMMENT: Opened tool, packer failure, pulled up, bled pressure off and tried again. Packer failure, come out of hole.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud	0.15

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

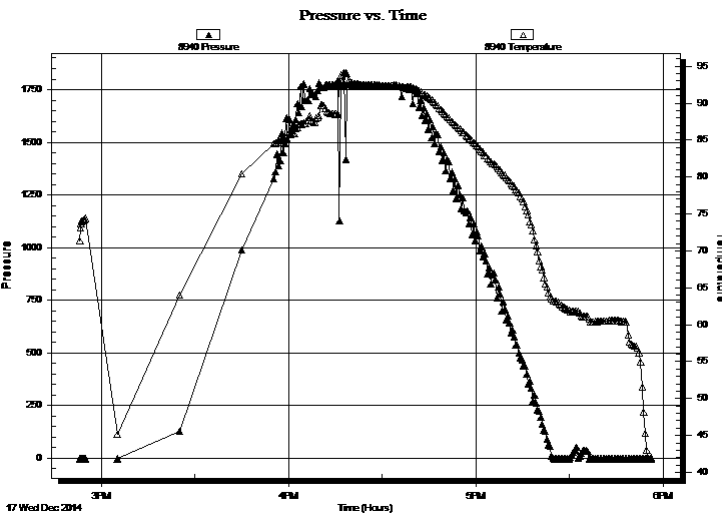
Test Start: 2014.12.17 @ 14:53:05

GENERAL INFORMATION:

Formation: **Gorham Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened:
 Time Test Ended: 17:56:15
 Interval: **3638.00 ft (KB) To 3650.00 ft (KB) (TVD)**
 Total Depth: 3650.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 73
 Reference Elevations: 2215.00 ft (KB)
 2210.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8940 **Outside**
 Press@RunDepth: psig @ 3642.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.17 End Date: 2014.12.17 Last Calib.: 2014.12.17
 Start Time: 14:53:05 End Time: 17:56:15 Time On Btm:
 Time Off Btm:

TEST COMMENT: Opened tool, packer failure, pulled up, bled pressure off and tried again. Packer failure, come out of hole.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Mud	0.15

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 14:53:05

Tool Information

Drill Pipe:	Length: 3525.00 ft	Diameter: 3.80 inches	Volume: 49.45 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	35000.00 lb
			<u>Total Volume: 50.04 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3638.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	12.00 ft				
Tool Length:	33.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		
Tool Comments:					

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3618.00	
Shut In Tool	5.00			3623.00	
Hydraulic tool	5.00			3628.00	
Packer	5.00			3633.00	21.00 Bottom Of Top Packer
Packer	5.00			3638.00	
Stubb	1.00			3639.00	
Perforations	3.00			3642.00	
Recorder	0.00	8648	Inside	3642.00	
Recorder	0.00	8940	Outside	3642.00	
Perforations	5.00			3647.00	
Bullnose	3.00			3650.00	12.00 Bottom Packers & Anchor

Total Tool Length: 33.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62407

DST#: 7

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 14:53:05

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Mud	0.148

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

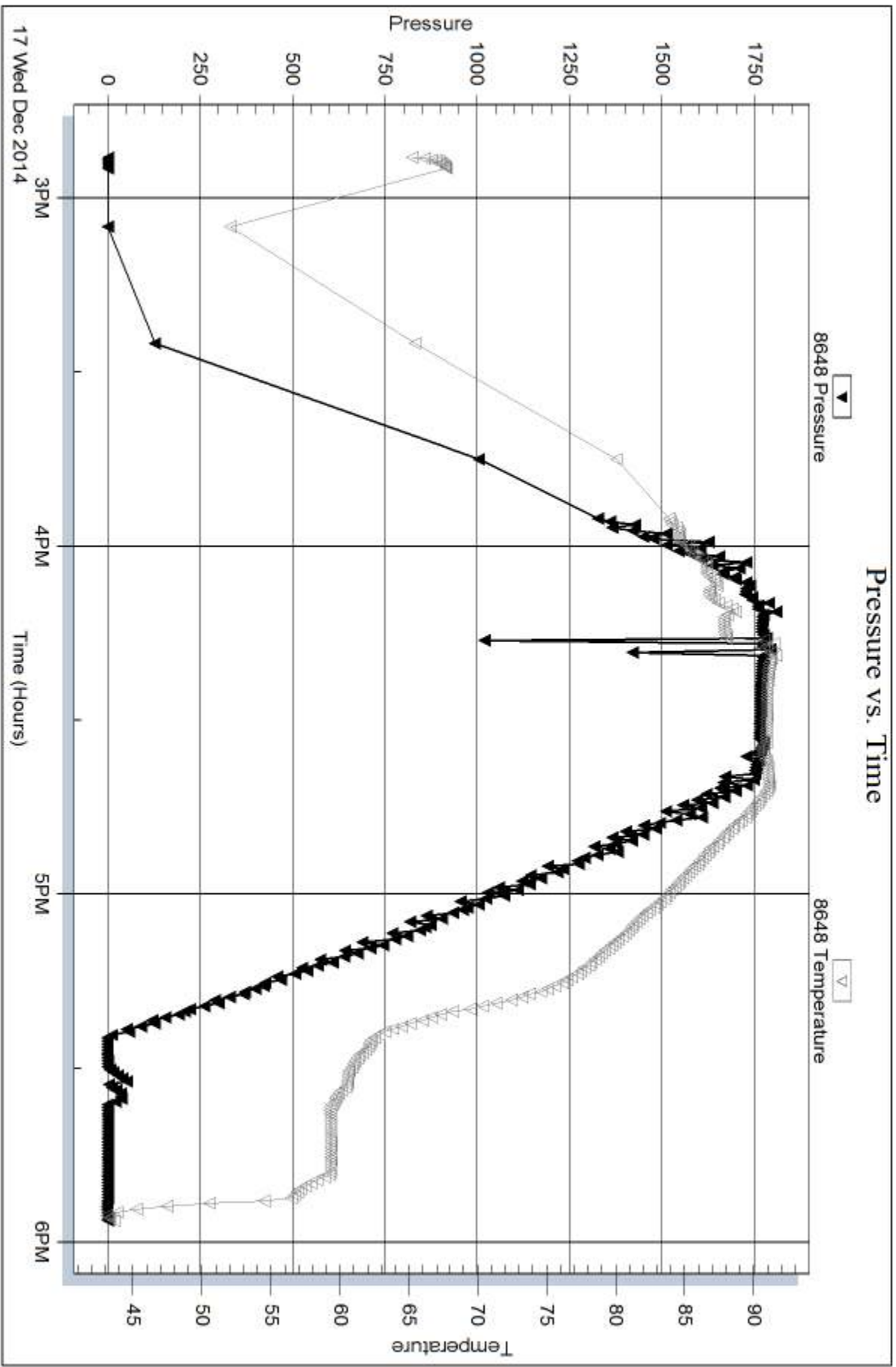
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 7

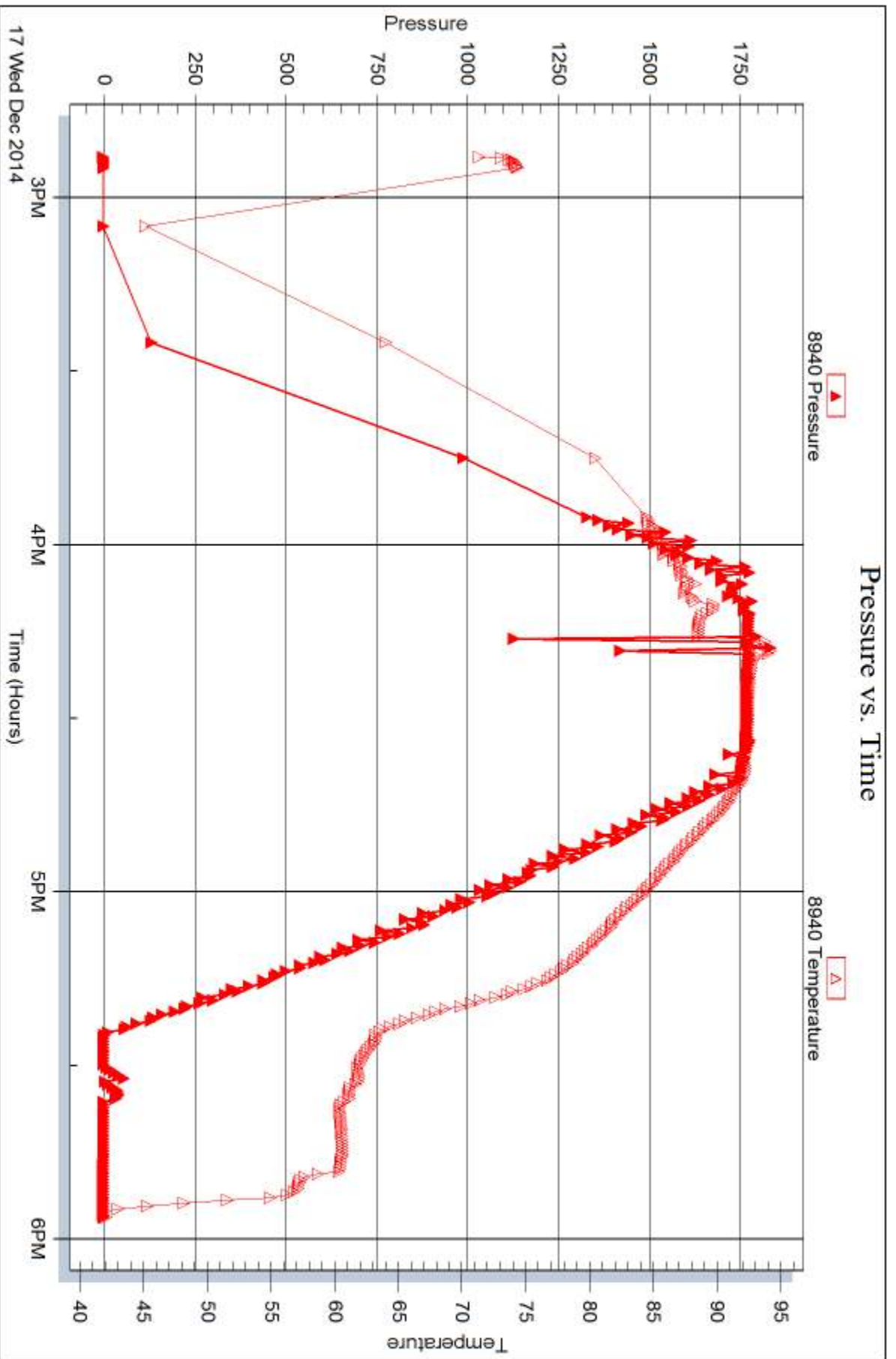


Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 7



Triobite Testing, Inc

Ref. No: 62407

Printed: 2014, 12, 23 @ 10:51:36



DRILL STEM TEST REPORT

Prepared For: **Black Diamond**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Glennemeier A #2

21-5s-21w Norton KS

Start Date: 2014.12.17 @ 18:09:00

End Date: 2014.12.18 @ 01:31:45

Job Ticket #: 62408 DST #: 8

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.23 @ 10:50:56



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

GENERAL INFORMATION:

Formation: **Gorham Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:34:15

Time Test Ended: 01:31:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 73

Interval: 3588.00 ft (KB) To 3650.00 ft (KB) (TVD)

Reference Elevations: 2215.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8648

Inside

Press@RunDepth: 179.48 psig @ 3627.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.18

Last Calib.:

2014.12.18

Start Time: 18:09:05

End Time:

01:31:44

Time On Btm:

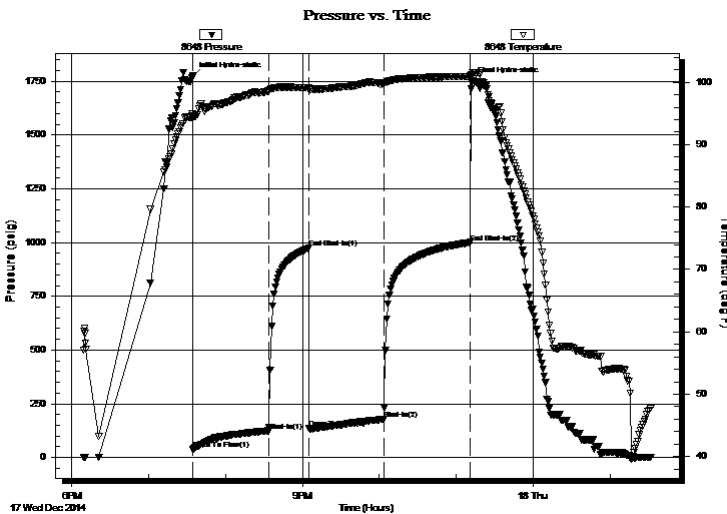
2014.12.17 @ 19:34:00

Time Off Btm:

2014.12.17 @ 23:11:30

TEST COMMENT: 60 - IF- B.O.B. in 35 minutes
30 - IS- surface return
60 - FF- B.O.B. in 48 minutes
60 - FS- Surface return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1773.85	94.87	Initial Hydro-static
1	38.90	94.17	Open To Flow (1)
60	124.56	98.61	Shut-In(1)
91	973.90	99.12	End Shut-In(1)
92	135.51	98.81	Open To Flow (2)
150	179.48	99.77	Shut-In(2)
217	1000.52	100.96	End Shut-In(2)
218	1750.03	101.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	VSOCWM, 5%O, 10%W, 85%M	0.65
186.00	SOCM, 10%O, 90%M	2.61
5.00	MCO, 30%M, 70%O	0.07

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

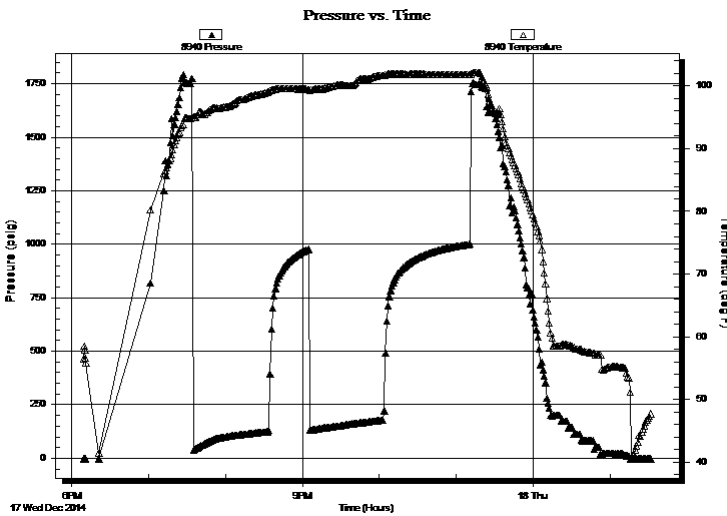
GENERAL INFORMATION:

Formation: **Gorham Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:34:15
 Time Test Ended: 01:31:45
 Interval: **3588.00 ft (KB) To 3650.00 ft (KB) (TVD)**
 Total Depth: 3650.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Cody Bloedorn
 Unit No: 73
 Reference Elevations: 2215.00 ft (KB)
 2210.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8940 Outside
 Press@RunDepth: psig @ 3627.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.17 End Date: 2014.12.18 Last Calib.: 2014.12.18
 Start Time: 18:09:05 End Time: 01:31:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: 60 - IF- B.O.B. in 35 minutes
 30 - IS- surface return
 60 - FF- B.O.B. in 48 minutes
 60 - FS- Surface return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
124.00	V SOCWM, 5%O, 10%W, 85%M	0.65
186.00	SOCM, 10%O, 90%M	2.61
5.00	MCO, 30%M, 70%O	0.07

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

Tool Information

Drill Pipe:	Length: 3463.00 ft	Diameter: 3.80 inches	Volume: 48.58 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	30000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	36000.00 lb
			<u>Total Volume: 49.17 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial	35000.00 lb
Depth to Top Packer:	3588.00 ft			Final	35000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	62.00 ft				
Tool Length:	83.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3568.00	
Shut In Tool	5.00			3573.00	
Hydraulic tool	5.00			3578.00	
Packer	5.00			3583.00	21.00 Bottom Of Top Packer
Packer	5.00			3588.00	
Stubb	1.00			3589.00	
Perforations	5.00			3594.00	
Change Over Sub	1.00			3595.00	
Drill Pipe	31.00			3626.00	
Change Over Sub	1.00			3627.00	
Recorder	0.00	8648	Inside	3627.00	
Recorder	0.00	8940	Outside	3627.00	
Perforations	20.00			3647.00	
Bullnose	3.00			3650.00	62.00 Bottom Packers & Anchor

Total Tool Length: 83.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond

21-5s-21w Norton KS

PO Box 641
Hays KS 67601

Glennemeier A #2

Job Ticket: 62408

DST#: 8

ATTN: Jeff Lawler

Test Start: 2014.12.17 @ 18:09:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 1.50 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	VSOCWM, 5%O, 10%W, 85%M	0.646
186.00	SOCM, 10%O, 90%M	2.609
5.00	MCO, 30%M, 70%O	0.070

Total Length: 315.00 ft

Total Volume: 3.325 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

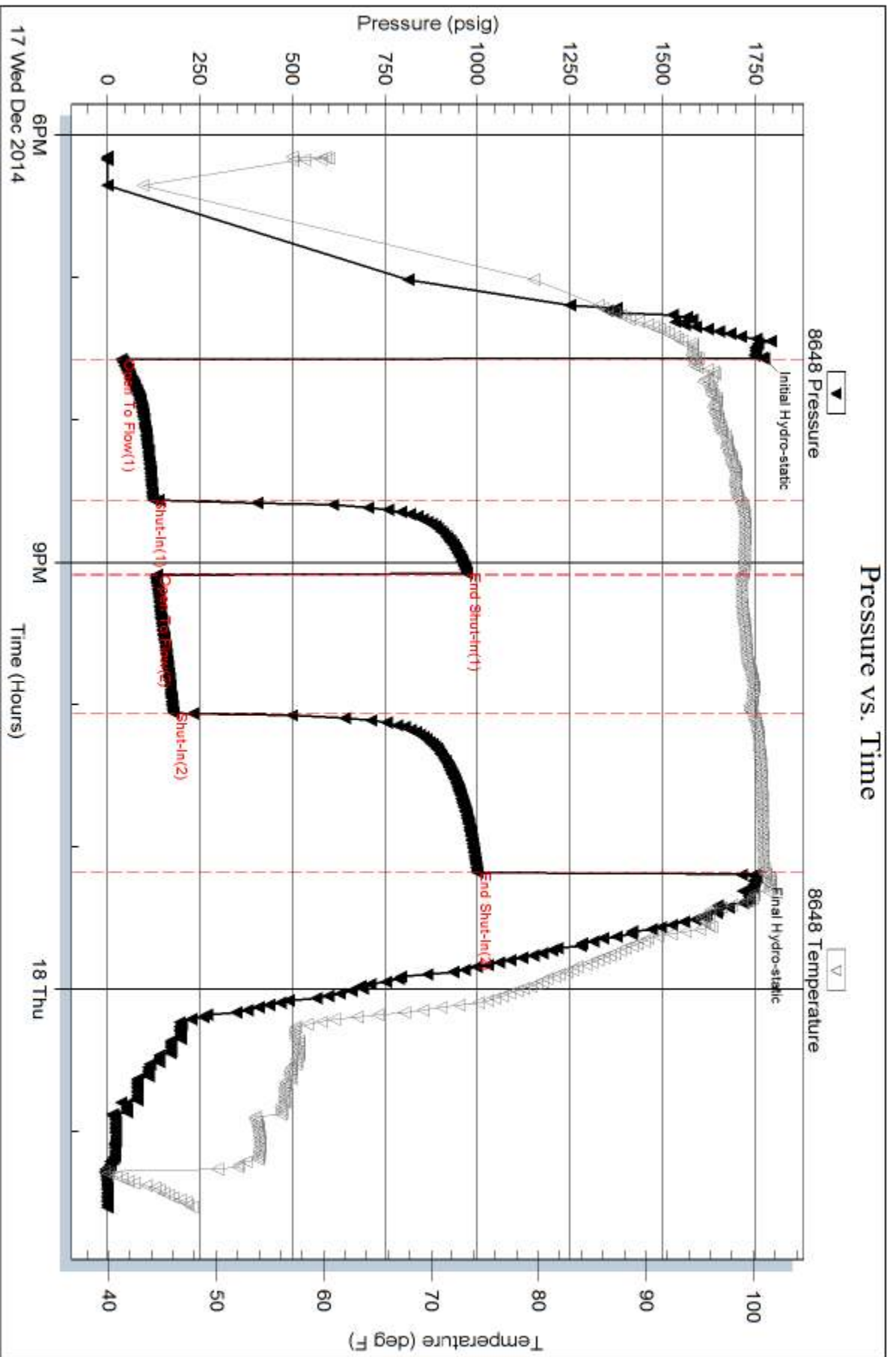
Serial #: 8648

Inside

Black Diamond

Glennmeier A #2

DST Test Number: 8



Trilobite Testing, Inc

Ref. No: 62408

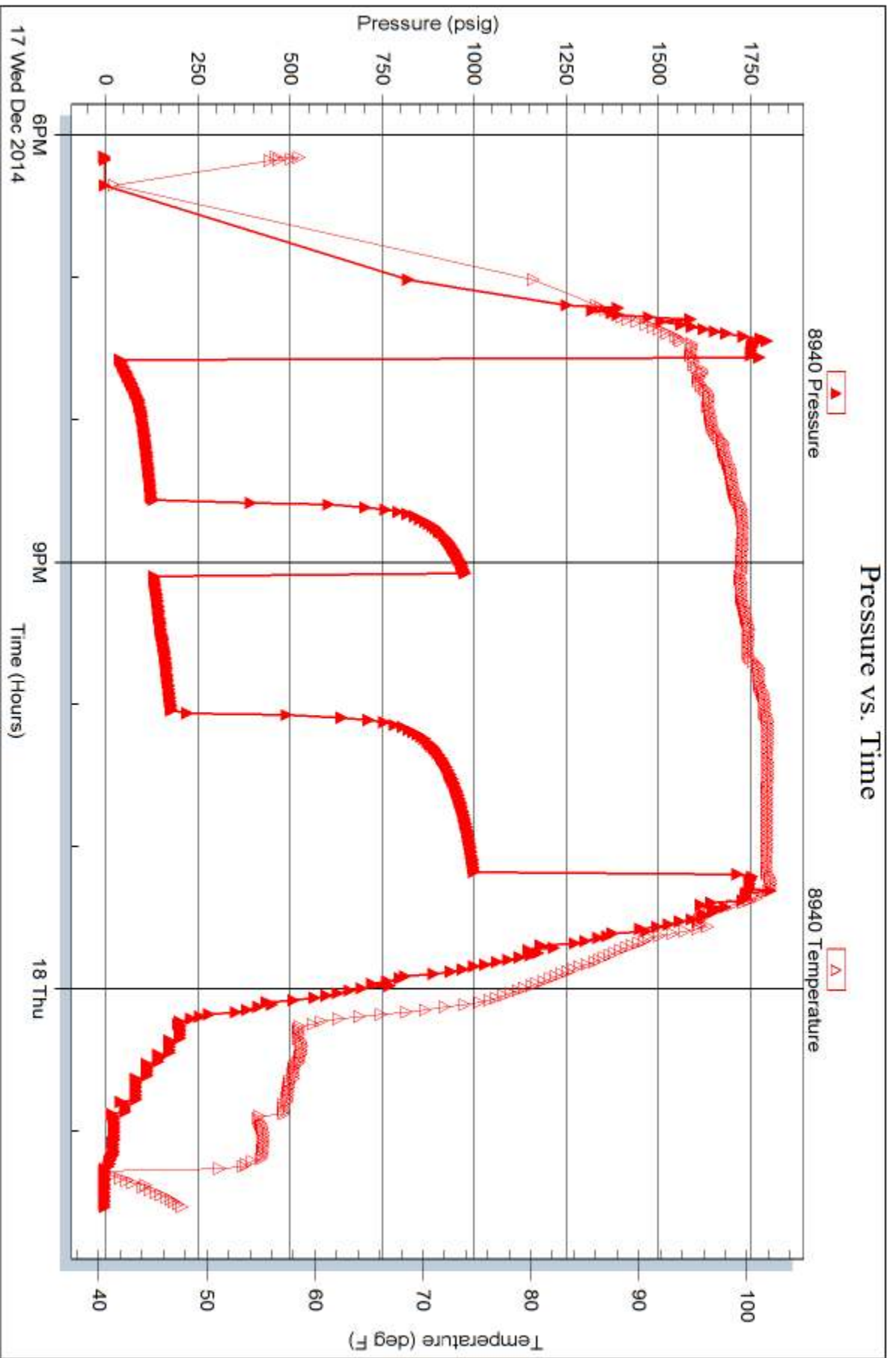
Printed: 2014, 12, 23 @ 10:50:57

Serial #: 8940

Outside Black Diamond

Glennmeier A #2

DST Test Number: 8



Trilobite Testing, Inc

Ref. No: 62408

Printed: 2014, 12, 23 @ 10:50:58



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62401

Well Name & No. Glennemeier A #2 Test No. 1 Date 12-13-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 5s Rge. 21w Co. Norton State KS

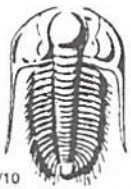
Interval Tested 3403-3435 Zone Tested LKL "A"
 Anchor Length 32' Drill Pipe Run _____ Mud Wt. 8.8
 Top Packer Depth 3378 Drill Collars Run 120' Vis 54
 Bottom Packer Depth 3403 Wt. Pipe Run Ø - WL 7.6
 Total Depth 3435 Chlorides 500 ppm System LCM 1#
 Blow Description IF - 6" blow - slid 10'
ISI - No return
FF - Surface return
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>MW - oil spots</u>		<u>90</u>	<u>10</u>	
<u>102</u>	<u>Mud - oil spots</u>			<u>100</u>	
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____
Rec _____	Feet of _____	%gas _____	%oil _____	%water _____	%mud _____

Rec Total 164' BHT 103° Gravity — API RW 109 @ 58 °F Chlorides 124,000 ppm
 (A) Initial Hydrostatic 1642 Test 1150 T-On Location 2010
 (B) First Initial Flow 55 Jars _____ T-Started 2043
 (C) First Final Flow 76 Safety Joint _____ T-Open 0123
 (D) Initial Shut-In 1156 Circ Sub _____ T-Pulled 0423
 (E) Second Initial Flow 78 Hourly Standby _____ T-Out 0609
 (F) Second Final Flow 89 Mileage 148RT 132rt 204.60 Comments _____
 (G) Final Shut-In 1107 Sampler _____
 (H) Final Hydrostatic 1617 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1354.60
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1354.60

Approved By _____ Our Representative Cody B [Signature]

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62402

Well Name & No. Glennemeier A # 2 Test No. 2 Date 12-14-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW 6
 Location: Sec. 21 Twp. 5s Rge. 2/w Co. Norton State KS

Interval Tested 3434 - 3468 Zone Tested LKC "C-D"
 Anchor Length 34' Drill Pipe Run 3305' Mud Wt. 9.2
 Top Packer Depth 3429 Drill Collars Run 120' Vis 48
 Bottom Packer Depth 3434 Wt. Pipe Run — WL 8
 Total Depth 3468 Chlorides 500 ppm System LCM 1.5
 Blow Description IF - 1 1/2" blow in 15 died back to 1/2"
ISI - No return
FF - No blow for 15 minutes, flushed tool, surface blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>HOCM</u>	<u>30</u>	<u>—</u>	<u>70</u>	<u>—</u>
<u>15</u>	<u>USOCM</u>	<u>5</u>	<u>—</u>	<u>95</u>	<u>—</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 75' BHT 100° Gravity — API RW — @ — ° F Chlorides — ppm
 (A) Initial Hydrostatic 1668 Test 1150 T-On Location 1246
 (B) First Initial Flow 14 Jars — T-Started 1257
 (C) First Final Flow 31 Safety Joint — T-Open 1335
 (D) Initial Shut-In 884 Circ Sub — T-Pulled 1735
 (E) Second Initial Flow 38 Hourly Standby — T-Out 1920
 (F) Second Final Flow 50 Mileage 148 RT 204.60 Comments —
 (G) Final Shut-In 827 Sampler —
 (H) Final Hydrostatic 1628 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Initial Open 45 Extra Recorder — Sub Total 0
 Initial Shut-In 45 Day Standby — Total 1354.60
 Final Flow 45 Accessibility — MP/DST Disc't —
 Final Shut-In 45 Sub Total 1354.60

Approved By _____ Our Representative Cody Black

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62403

Well Name & No. Glennemeier A #2 Test No. 3 Date 12-15-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW 6
 Location: Sec. 21 Twp. 5S Rge. 21W Co. Norton State KS

Interval Tested 3507-3552 Zone Tested LKC "H-I"
 Anchor Length 45' Drill Pipe Run 3399' Mud Wt. 9.2
 Top Packer Depth 3502 Drill Collars Run 120' Vis 48
 Bottom Packer Depth 3507 Wt. Pipe Run — WL 8
 Total Depth 3552 Chlorides 500 ppm System LCM 1.5
 Blow Description IF - Surface blow
ISI - No return
FF - Surged & died, Flushed tool, Surged & died
FBI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>80</u>	<u>Mud - oil spots</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 80' BHT 98° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1715 Test 1150 T-On Location 0733
 (B) First Initial Flow 16 Jars — T-Started 0748
 (C) First Final Flow 32 Safety Joint — T-Open 10:32
 (D) Initial Shut-In 1159 Circ Sub — T-Pulled 13:32
 (E) Second Initial Flow 37 Hourly Standby — T-Out 1506
 (F) Second Final Flow 56 Mileage 148 RT 204.60 Comments —
 (G) Final Shut-In 1133 Sampler —
 (H) Final Hydrostatic 1716 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —
 Extra Packer — Extra Copies —
 Initial Open 45 Extra Recorder — Sub Total 0
 Initial Shut-In 45 Day Standby — Total 1354.60
 Final Flow 45 Accessibility — MP/DST Disc't —
 Final Shut-In 45 Sub Total 1354.60

Approved By _____ Our Representative Cody Bell

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62404

Well Name & No. Glennemeier A # 2 Test No. 4 Date 12-15-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 5s Rge. 21w Co. Norton State KS

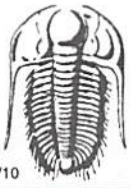
Interval Tested 3535 - 3587 Zone Tested LKC "I-K"
 Anchor Length 52' Drill Pipe Run 3401' Mud Wt. 9.2
 Top Packer Depth 3530 Drill Collars Run 120' Vis 51
 Bottom Packer Depth 3535 Wt. Pipe Run — WL 8
 Total Depth 3587 Chlorides 600 ppm System LCM 1.5
 Blow Description IF - 1 1/2" blow in 23 minutes, died back to 1"
ISI - No return
FF - No blow for 10 minutes, flushed tool, surged & died
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>NSOCM</u>	<u>2</u>		<u>98</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20' BHT 97° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1749</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2142</u>
(B) First Initial Flow <u>32</u>	<input type="checkbox"/> Jars	T-Started <u>2155</u>
(C) First Final Flow <u>33</u>	<input type="checkbox"/> Safety Joint	T-Open <u>1227</u>
(D) Initial Shut-In <u>97</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0343</u>
(E) Second Initial Flow <u>33</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0537</u>
(F) Second Final Flow <u>38</u>	<input checked="" type="checkbox"/> Mileage <u>148 RT</u> 204.60	Comments
(G) Final Shut-In <u>99</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1719</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1354.60</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1354.60</u>	

Approved By _____ Our Representative Cody B...
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62405

Well Name & No. Glennemeier A #2 Test No. 5 Date 12-16-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 55 Rge. 21W Co. Norton State Ks

Interval Tested 3638-3650 Zone Tested Gorham Sand
 Anchor Length 12' Drill Pipe Run 3525' Mud Wt. 9.2
 Top Packer Depth 3633 Drill Collars Run 120' Vis 53
 Bottom Packer Depth 3638 Wt. Pipe Run — WL 8
 Total Depth 3650 Chlorides 660 ppm System LCM 1.5
 Blow Description IF-5" blow
ISI - Surface return
FF-4" blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>169</u>	<u>OCMW</u>	<u>20</u>	<u>50</u>	<u>30</u>	
<u>75</u>	<u>60</u>	<u>5</u>	<u>95</u>		

Rec Total 244' BHT 109° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1803 Test 1150 T-On Location 1730
 (B) First Initial Flow 19 Jars — T-Started 1753
 (C) First Final Flow 65 Safety Joint — T-Open 2126
 (D) Initial Shut-In 1029 Circ Sub — T-Pulled 1226
 (E) Second Initial Flow 71 Hourly Standby — T-Out 0300
 (F) Second Final Flow 102 Mileage 148RT 204.60 Comments Told to be here @ 5:30pm
 (G) Final Shut-In 1016 Sampler —
 (H) Final Hydrostatic 1768 Straddle [Signature]
 Shale Packer —
 Shale Packer —
 Extra Packer —
 Extra Recorder —
 Day Standby —
 Accessibility —
 Sub Total 1354.60

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Ruined Shale Packer —
 Ruined Packer —
 Extra Copies —
 Sub Total 0
 Total 1354.60
 MP/DST Disc't —

Approved By _____ Our Representative Cody [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62406

Well Name & No. Glennemeier #2 Test No. 6 Date 12-16-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 5s Rge. 21w Co. Norton State KS

Interval Tested 3460-3490 3650 Zone Tested LKC "F-6"
 Anchor Length 30' 160' tail Drill Pipe Run 3337' Mud Wt. 9.2
 Top Packer Depth 3455 Drill Collars Run 120' Vis 53
 Bottom Packer Depth 3460 Wt. Pipe Run — WL 8
 Total Depth 3490 Chlorides 600 ppm System LCM 1.5
 Blow Description IF - 3" blow
ISI - No return
FF - Surface return
FSS - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>WM - oil spots</u>		<u>10</u>	<u>90</u>	
<u>65</u>	<u>USOCM</u>		<u>5</u>	<u>95</u>	

Rec Total 125' BHT 100° Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>1722</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1730</u>
(B) First Initial Flow <u>14</u>	<input type="checkbox"/> Jars	T-Started <u>0332</u>
(C) First Final Flow <u>48</u>	<input type="checkbox"/> Safety Joint	T-Open <u>0500</u>
(D) Initial Shut-In <u>1146</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0815</u>
(E) Second Initial Flow <u>54</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0958</u>
(F) Second Final Flow <u>72</u>	<input checked="" type="checkbox"/> Mileage <u>204.60</u>	Comments
(G) Final Shut-In <u>1142</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1631</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby	Total <u>1954.60</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1954.60</u>	

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60

Approved By _____ Our Representative Cody Bledsoe

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62408

Well Name & No. Glenn Meier A #2 Test No. 8 Date 12-17-14
 Company Black Diamond Elevation 2215 KB 2210 GL
 Address Po Box 641, Hays KS, 67601
 Co. Rep / Geo. Jeff Lawler Rig WW6
 Location: Sec. 21 Twp. 55 Rge. 21w Co. Norton State KS

Interval Tested 3588-3650 Zone Tested Gorham Sand
 Anchor Length 62' Drill Pipe Run 3463 Mud Wt. 9.2
 Top Packer Depth 3583 Drill Collars Run 120 Vis 53
 Bottom Packer Depth 3588 Wt. Pipe Run --- WL 8
 Total Depth 3650 Chlorides 600 ppm System LCM 1.5

Blow Description IF - B.O.B. in 35 minutes
ISI - surface return
FF - B.O.B. in 48 minutes
FSI - surface return

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>VSOCWM</u>	<u>5</u>	<u>10</u>	<u>85</u>	<u>---</u>
<u>186</u>	<u>SOCM</u>	<u>10</u>	<u>---</u>	<u>90</u>	<u>---</u>
<u>5</u>	<u>MCO</u>	<u>70</u>	<u>---</u>	<u>30</u>	<u>---</u>
<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>

Rec Total 315' BHT 100° Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic 1773 Test 1150 T-On Location 1440
 (B) First Initial Flow 38 Jars --- T-Started 1809
 (C) First Final Flow 124 Safety Joint --- T-Open 1934
 (D) Initial Shut-In 973 Circ Sub --- T-Pulled 2304
 (E) Second Initial Flow 135 Hourly Standby --- T-Out 0132
 (F) Second Final Flow 179 Mileage 148RT Comments ---
 (G) Final Shut-In 1000 Sampler ---
 (H) Final Hydrostatic 1750 Straddle --- Ruined Shale Packer ---
 Shale Packer --- Ruined Packer ---
 Extra Packer --- Extra Copies ---
 Extra Recorder --- Sub Total 0
 Day Standby --- Total 1150
 Accessibility --- MP/DST Disc't ---
 Sub Total 1150

Approved By _____

Our Representative Cody B...

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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 747

Cell 785-324-1041

Date	12-18-14	Sec.	21	Twp.	5	Range	21	County	Morton	State	KS	On Location		Finish	1:00 PM
------	----------	------	----	------	---	-------	----	--------	--------	-------	----	-------------	--	--------	---------

Location Logan W to E 12 15 1W 2 1/4 SW

Lease	Glennemeier "A"	Well No.	#2	Owner	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.
Contractor	WW #6			Charge To	Black Diamond
Type Job	Production String	Hole Size	7 1/8	T.D.	3650
Csg.	5 1/2	Depth	3649	Street	
Tbg. Size		Depth		City	
Tool		Depth		State	
Cement Left in Csg.	20.18	Shoe Joint	20.18	The above was done to satisfaction and supervision of owner agent or contractor.	
Meas Line		Displace	86 1/4 bbl	Cement Amount Ordered	150 com 10% Salt 5% Gilsco

EQUIPMENT

Pumptrk	5	No.	Cementer	Brett	David	Common	150
			Helper			Poz Mix	450 QMDC
Bulktrk	15	No.	Driver	Tyson		Gel.	
Bulktrk	21	No.	Driver	Lonnie M.		Calcium	

JOB SERVICES & REMARKS

Remarks:		Hulls	
Rat Hole	- 30	Salt	13
Mouse Hole	-	Flowseal	112#
Centralizers	- 1,3,5,7,9,11,13, 43	Kol-Seal	750#
Baskets	- 2,4,6,8,10 + 44	Mud CLR 48	- 500 Gal
D/V or Port Collar		CFL-117 or CD110 CAF 38	
		Sand	
		Handling	620
		Mileage	5 1/2

FLOAT EQUIPMENT

Mix	500 Gal Mud Flush	Guide Shoe	
Plug Rat	with 30 sr	Centralizer	- 8
Mixed	420 QMDC 1/4 flt	Baskets	- 6
Mixed	150 com 10% Salt 5% Gilsco	AFU Inserts	
Displaced	86 1/4 bbl	Float Shoe	- 1
Lift pressure	1100 lbs	Latch Down	- 1
Landed @	2000 lbs		
Plug held			

Cement circulated!!

Pumptrk Charge	prod string	Tax	
Mileage	70	Discount	
		Total Charge	

X Signature *Brett Pohler*
Mal Besse

Limited Service and/or Used Materials are sold "as is, without warranty either expressed or implied.

Conservation Division
266 N. Main St., Ste. 220
Wichita, KS 67202-1513



Phone: 316-337-6200
Fax: 316-337-6211
<http://kcc.ks.gov/>

Shari Feist Albrecht, Chair
Jay Scott Emler, Commissioner
Pat Apple, Commissioner

Sam Brownback, Governor

April 28, 2015

Kenneth Vehige
Black Diamond Oil, Inc.
PO BOX 641
HAYS, KS 67601-0641

Re: ACO-1
API 15-137-20727-00-00
Glennemeier A 2
SW/4 Sec.21-05S-21W
Norton County, Kansas

Dear Kenneth Vehige:

K.A.R. 82-3-107 provides for all completion information to be filed within 120 days of the spud date. Subsection(e)(2) of that regulation states "All rights to confidentiality shall be lost if the filings are not timely."

The above referenced well was spudded on 12/10/2014 and the ACO-1 was received on April 28, 2015 (not within the 120 days timely requirement).

Therefore, your request for confidential treatment of data contained within the ACO-1 filing cannot be granted at this time.

If you should have any questions, please do not hesitate to contact me at (316)337-6200.

Sincerely,

Production Department