M. Bradford Rine
Consulting Geologist, Licensed and Certified

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: CWA "D" #1-32 - Murfin Drilling Company, Inc.
Location: , Section 32-02S-36W
License Number: API: 15-153-20935
Region: Rawlins County,Kansas
Spud Date: August 21, 2013
Drilling Completed: August 31, 2013
Surface Coordinates: 440' FSL & 2170' FWL, of Section
P & A
Bottom Hole Coordinates: Vertcal Wellbore
Apache Field
Ground Elevation (ft): 3359 Ft.
K.B. Elevation (ft): 3364 Ft.
Logged Interval (ft): 3620 Ft To: 5060 Ft.
Total Depth (ft): RTD 5060 Ft. LTD 5061 Ft.
Formation: Mississippi
Type of Drilling Fluid: Chemical

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

Operator

Company: Murfin Drilling Company, Inc.
Address: 250 North Water, Suite 300
Wichita, Kansas 67202

Geologist

Name: M. Bradford Rine
Company: Consulting Geologist, Kansas Lic. #204, Wyo #189, AAPG Cert. #2647
Address: 100 South Main, Suite #415
Wichita, Kansas 67202

Remarks

Based on sample observations, drill stem test results, and electric log evaluation, it was the decision of the Operator, to plug and abandon the CWA "D" #1-32, on September 01, 2013.

Respectfully submitted,
M. Bradford Rine

Drilling Information

Rig: Murfin #3
Pump: Emsco D-375 6x14
Drawworks: Ideco H35
Collars: 505' 2-1/4 x 6-1/4
Drillpipe: 4-1/2" 16.6# XH
Toolpusher: Keith Van Pelt

Mud: Morgan Mud (Dave Lines)
Gas Detector: None
Drill Stem Tests: Trilobite (Kevin Mack)
Logs: Pioneer (D. Schmidt)
Water: supply well on adjacent location
Company Representatives:
Office: Michel Runnion
Field: John Turner

Daily Drilling Status

Date:	Operations/Depth/Comments
08-21-13	MIRT, RU, Spud @ 0'
08-22-13	Drilling @ 450'
08-23-13	Drilling @ 2040'
08-24-13	Drilling @ 3020'
08-25-13	Drilling @ 3730'
08-26-13	Drilling @ 4225'
08-27-13	TOOH/DST 1 @ 4375'
08-28-13	TIH/DST 3 @ 4430'
08-29-13	Drilling @ 4530'
08-30-13	TIH/DST 5 @ 4745'
08-31-13	Drilling @ 4930'
09-01-13	Prepare to P & A @ 5060', P&A 10:15 AM

Casing Record, Bit Record, Deviation Surveys

CASING:

Conductor: None

Surface:
Ran 9 jts, 8-5/8" 23#, set @ 388 ft. (Allied) cement with 350 sx Common, 03% CC 02% gel. Cement did circulate.

Production: P & A as follows: (Allied) 100 sx @ 2520' 60/40 Poz, 4%Gel, ¼#Floseal, 25sxs @ 3250', 40sxs @ 425', 10sxs @ 40', 30sxs RH, 15sxs MH. Job Completed 10:15 AM, 09-01-13.

BITS:

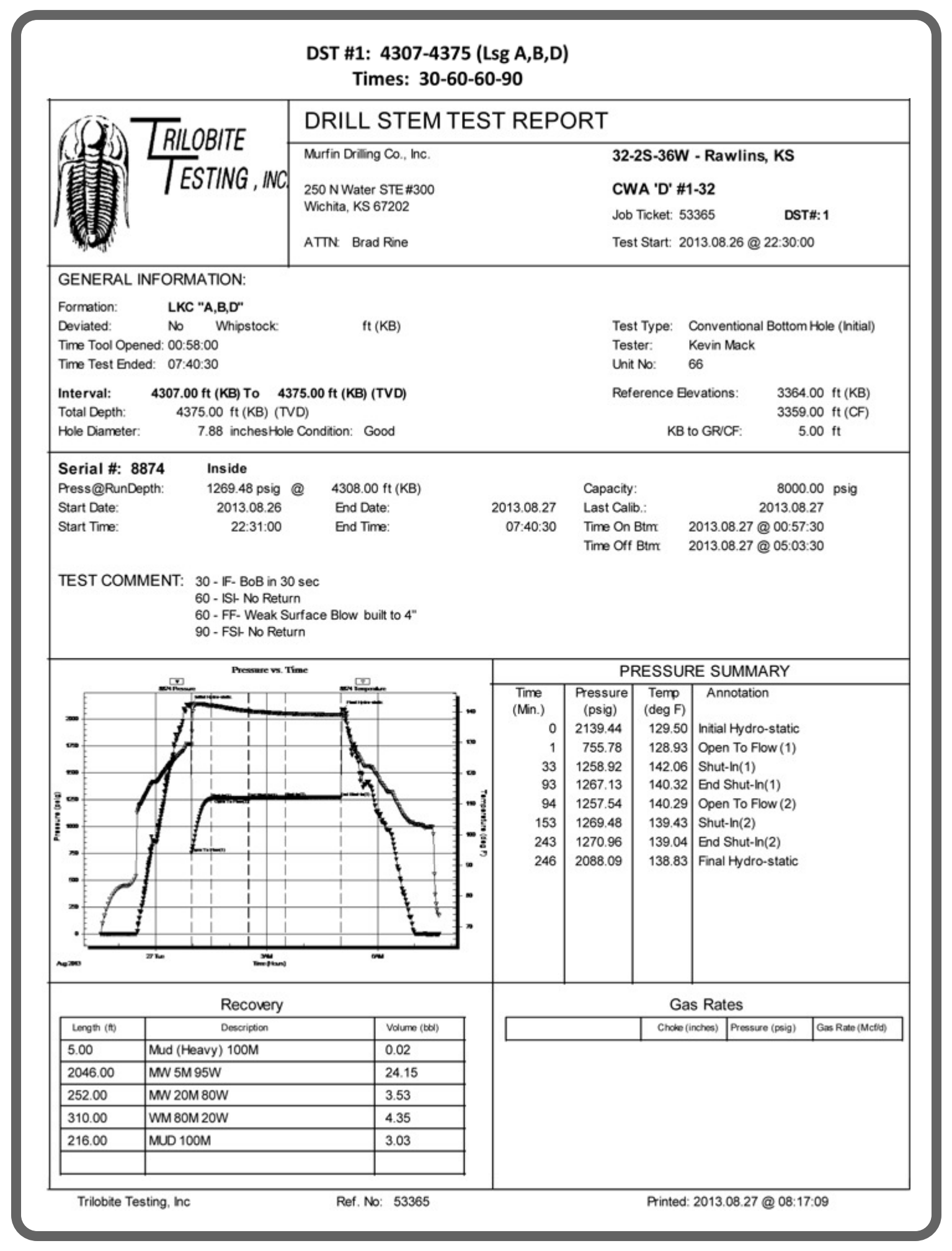
No.	Size	Make	Model	Depth In	Depth Out	Hours
1	12-1/4	HTC	RR	0	388	4.5
2	7-7/8	Smith	F12Y	388	5060	143.25

DEVIATION SURVEYS:

Deviation:	Depth:	Deviation:	Depth:
0.25*	388'	0.20*	4375'
0.50*	1107'	0.80*	5060'
1.20*	2975'		

	Murfin Drilling Co., Inc.			Murfin	(Well A)	
	CWA "D" #1-32			CWA "B" #1-5		
	440'FSL & 2170'FWL			330'FNL & 2310'FWL		
	Sec. 32-02S-36W			Sec. 05-03S-36W		
	3364 Ft. KB			3369 Ft. KB		Well A
Formations	Sample	E-Log	Datum	E-Log	Datum	Comp.
Anhydrite	3226	3226	138	3228	141	-3
B/Anhydrite	3262	3261	103	3262	107	-4
Neva	3730	3727	-363	3728	-359	-4
Red Eagle	3790	3790	-426	3791	-422	-4
Foraker	3846	3847	-483	3848	-479	-4
Stotler	4006	4008	-644	4010	-641	-3
Topeka	4090	4089	-725	4090	-721	-4
LeCompton	4149	4149	-785	4151	-782	-3
Oread	4208	4209	-845	4211	-842	-3
Heebner Sh	4243	4245	-881	4247	-878	-3
Lansing	4294	4296	-932	4298	-929	-3
Muncie Creek	4441	4441	-1077	4439	-1070	-7
Stark Sh	4520	4522	-1158	4521	-1152	-6
B/Kansas City	4568	4569	-1205	4568	-1199	-6
Marmaton	4606	4606	-1242	4604	-1235	-7
Pawnee	4692	4694	-1330	4696	-1327	-3
Lwr Pawnee	4726	4730	-1366	4728	-1359	-7
Ft. Scott	4749	4750	-1386	4752	-1383	-3
Cherokee Sh	4767	4766	-1402	4769	-1400	-2
Mississippi	4972	4972	-1608	4958	-1589	-19
Total Depth	5060	5061	-1697	5102	-1733	36

DST #1: 4307-4375 (Lsg A,B,D)
Times: 30-60-60-90


DRILL STEM TEST REPORT

Trilobite Testing, Inc
Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Brad Rine

32-2S-36W - Rawlins, KS
CWA 'D' #1-32
Job Ticket: 53365 DST#: 1
Test Start: 2013.08.26 @ 22:30:00

GENERAL INFORMATION:
Formation: LKC "A,B,D"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:58:00
Time Test Ended: 07:40:30
Interval: 4307.00 ft (KB) To 4375.00 ft (KB) (TVD)
Total Depth: 4375.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3364.00 ft (KB)
3359.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8874 Inside
Press@RunDepth: 1269.48 psig @ 4308.00 ft (KB)
Start Date: 2013.08.26 End Date: 2013.08.27
Start Time: 22:31:00 End Time: 07:40:30
Capacity: 8000.00 psig
Last Calib.: 2013.08.27
Time On Btm: 2013.08.27 @ 00:57:30
Time Off Btm: 2013.08.27 @ 05:03:30

TEST COMMENT: 30 - IF- BoB in 30 sec
60 - ISI- No Return
60 - FF- Weak Surface Blow built to 4"
90 - FSI- No Return

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2139.44	129.50	Initial Hydro-static
1	755.78	128.93	Open To Flow (1)
33	1258.92	142.06	Shut-In(1)
93	1267.13	140.32	End Shut-In(1)
94	1257.54	140.29	Open To Flow (2)
153	1269.48	139.43	Shut-In(2)
243	1270.96	139.04	End Shut-In(2)
246	2088.09	138.83	Final Hydro-static

Recovery

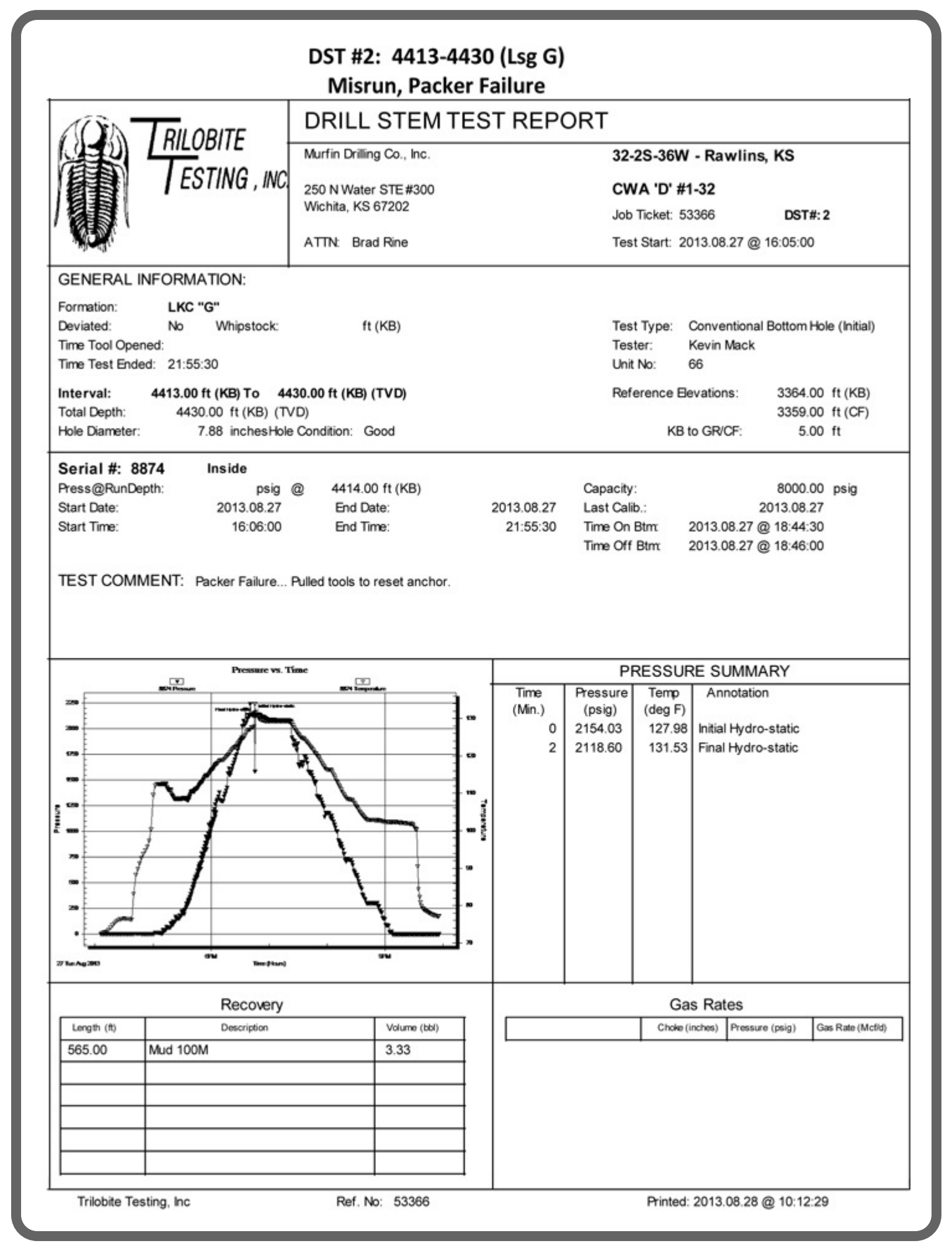
Length (ft)	Description	Volume (bbl)
5.00	Mud (Heavy) 100M	0.02
2046.00	MW 5M 95W	24.15
252.00	MW 20M 80W	3.53
310.00	WM 80M 20W	4.35
216.00	MUD 100M	3.03

Gas Rates

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

Trilobite Testing, Inc Ref. No: 53365 Printed: 2013.08.27 @ 08:17:09

DST #2: 4413-4430 (Lsg G)
Misrun, Packer Failure


DRILL STEM TEST REPORT

Trilobite Testing, Inc
Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Brad Rine

32-2S-36W - Rawlins, KS
CWA 'D' #1-32
Job Ticket: 53366 DST#: 2
Test Start: 2013.08.27 @ 16:05:00

GENERAL INFORMATION:
Formation: LKC "G"
Deviated: No Whipstock: ft (KB)
Time Tool Opened:
Time Test Ended: 21:55:30
Interval: 4413.00 ft (KB) To 4430.00 ft (KB) (TVD)
Total Depth: 4430.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3364.00 ft (KB)
3359.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8874 Inside
Press@RunDepth: psig @ 4414.00 ft (KB)
Start Date: 2013.08.27 End Date: 2013.08.27
Start Time: 16:06:00 End Time: 21:55:30
Capacity: 8000.00 psig
Last Calib.: 2013.08.27
Time On Btm: 2013.08.27 @ 18:44:30
Time Off Btm: 2013.08.27 @ 18:46:00

TEST COMMENT: Packer Failure... Pulled tools to reset anchor.

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2154.03	127.98	Initial Hydro-static
2	2118.60	131.53	Final Hydro-static

Recovery

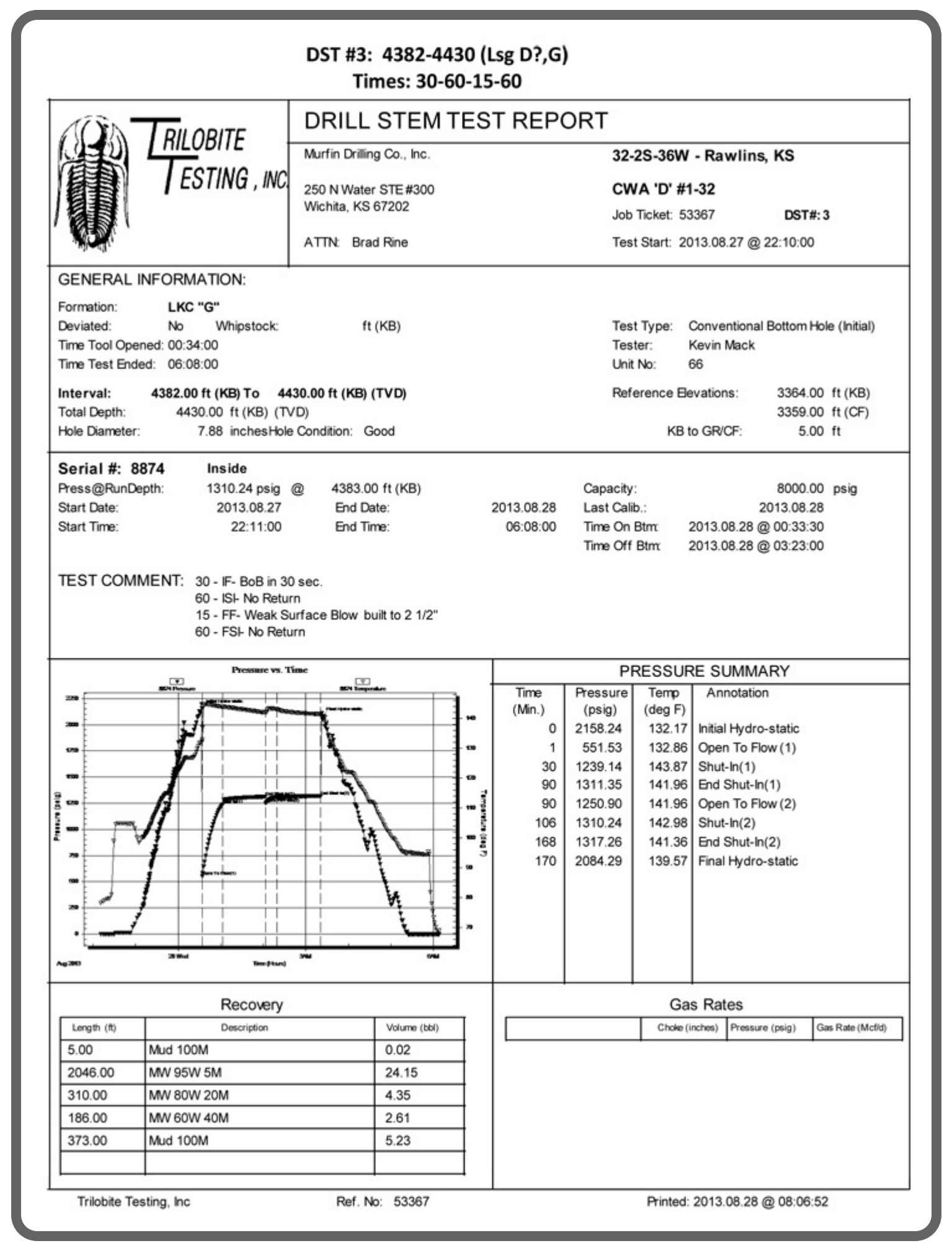
Length (ft)	Description	Volume (bbl)
565.00	Mud 100M	3.33

Gas Rates

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

Trilobite Testing, Inc Ref. No: 53366 Printed: 2013.08.28 @ 10:12:29

DST #3: 4382-4430 (Lsg D?,G)
Times: 30-60-15-60


DRILL STEM TEST REPORT

Trilobite Testing, Inc
Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Brad Rine

32-2S-36W - Rawlins, KS
CWA 'D' #1-32
Job Ticket: 53367 DST#: 3
Test Start: 2013.08.27 @ 22:10:00

GENERAL INFORMATION:
Formation: LKC "G"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:34:00
Time Test Ended: 06:08:00
Interval: 4382.00 ft (KB) To 4430.00 ft (KB) (TVD)
Total Depth: 4430.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3364.00 ft (KB)
3359.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8874 Inside
Press@RunDepth: 1310.24 psig @ 4383.00 ft (KB)
Start Date: 2013.08.27 End Date: 2013.08.28
Start Time: 22:11:00 End Time: 06:08:00
Capacity: 8000.00 psig
Last Calib.: 2013.08.28
Time On Btm: 2013.08.28 @ 00:33:30
Time Off Btm: 2013.08.28 @ 03:23:00

TEST COMMENT: 30 - IF- BoB in 30 sec.
60 - ISI- No Return
15 - FF- Weak Surface Blow built to 2 1/2"
60 - FSI- No Return

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2158.24	132.17	Initial Hydro-static
1	551.53	132.86	Open To Flow (1)
30	1239.14	143.87	Shut-In(1)
90	1311.35	141.96	End Shut-In(1)
90	1250.90	141.96	Open To Flow (2)
106	1310.24	142.98	Shut-In(2)
168	1317.26	141.36	End Shut-In(2)
170	2084.29	139.57	Final Hydro-static

Recovery

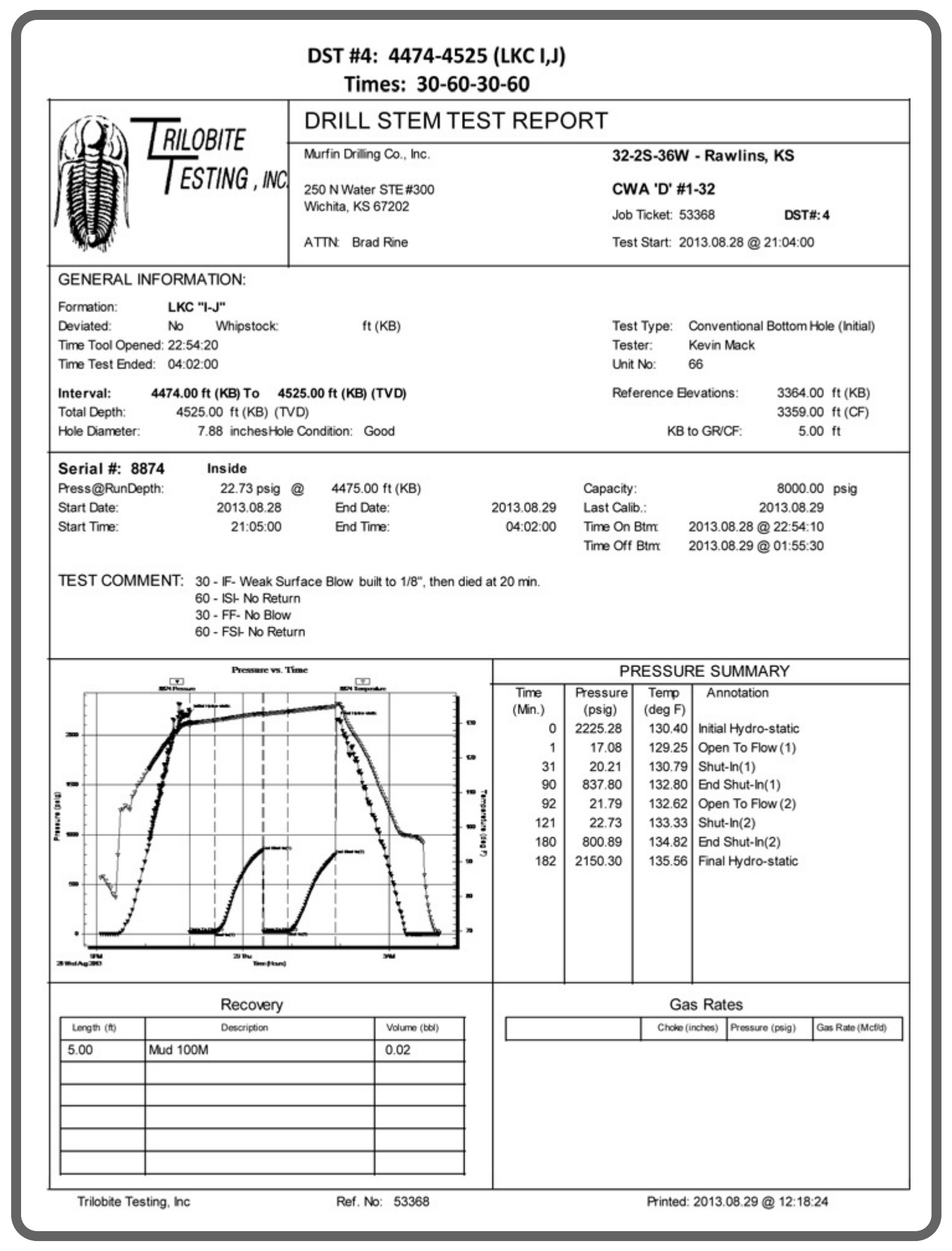
Length (ft)	Description	Volume (bbl)
5.00	Mud 100M	0.02
2046.00	MW 95W 5M	24.15
310.00	MW 80W 20M	4.35
186.00	MW 60W 40M	2.61
373.00	Mud 100M	5.23

Gas Rates

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

Trilobite Testing, Inc Ref. No: 53367 Printed: 2013.08.28 @ 08:06:52

DST #4: 4474-4525 (LKC I,J)
Times: 30-60-30-60


DRILL STEM TEST REPORT

Trilobite Testing, Inc
Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Brad Rine

32-2S-36W - Rawlins, KS
CWA 'D' #1-32
Job Ticket: 53368 DST#: 4
Test Start: 2013.08.28 @ 21:04:00

GENERAL INFORMATION:
Formation: LKC "I-J"
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 22:54:20
Time Test Ended: 04:02:00
Interval: 4474.00 ft (KB) To 4525.00 ft (KB) (TVD)
Total Depth: 4525.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3364.00 ft (KB)
3359.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8874 Inside
Press@RunDepth: 22.73 psig @ 4475.00 ft (KB)
Start Date: 2013.08.28 End Date: 2013.08.29
Start Time: 21:05:00 End Time: 04:02:00
Capacity: 8000.00 psig
Last Calib.: 2013.08.29
Time On Btm: 2013.08.28 @ 22:54:10
Time Off Btm: 2013.08.29 @ 01:55:30

TEST COMMENT: 30 - IF- Weak Surface Blow built to 1/8", then died at 20 min.
60 - ISI- No Return
30 - FF- No Blow
60 - FSI- No Return

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2225.28	130.40	Initial Hydro-static
1	17.08	129.25	Open To Flow (1)
31	20.21	130.79	Shut-In(1)
90	837.80	132.80	End Shut-In(1)
92	21.79	132.62	Open To Flow (2)
121	22.73	133.33	Shut-In(2)
180	800.89	134.82	End Shut-In(2)
182	2150.30	135.56	Final Hydro-static

Recovery

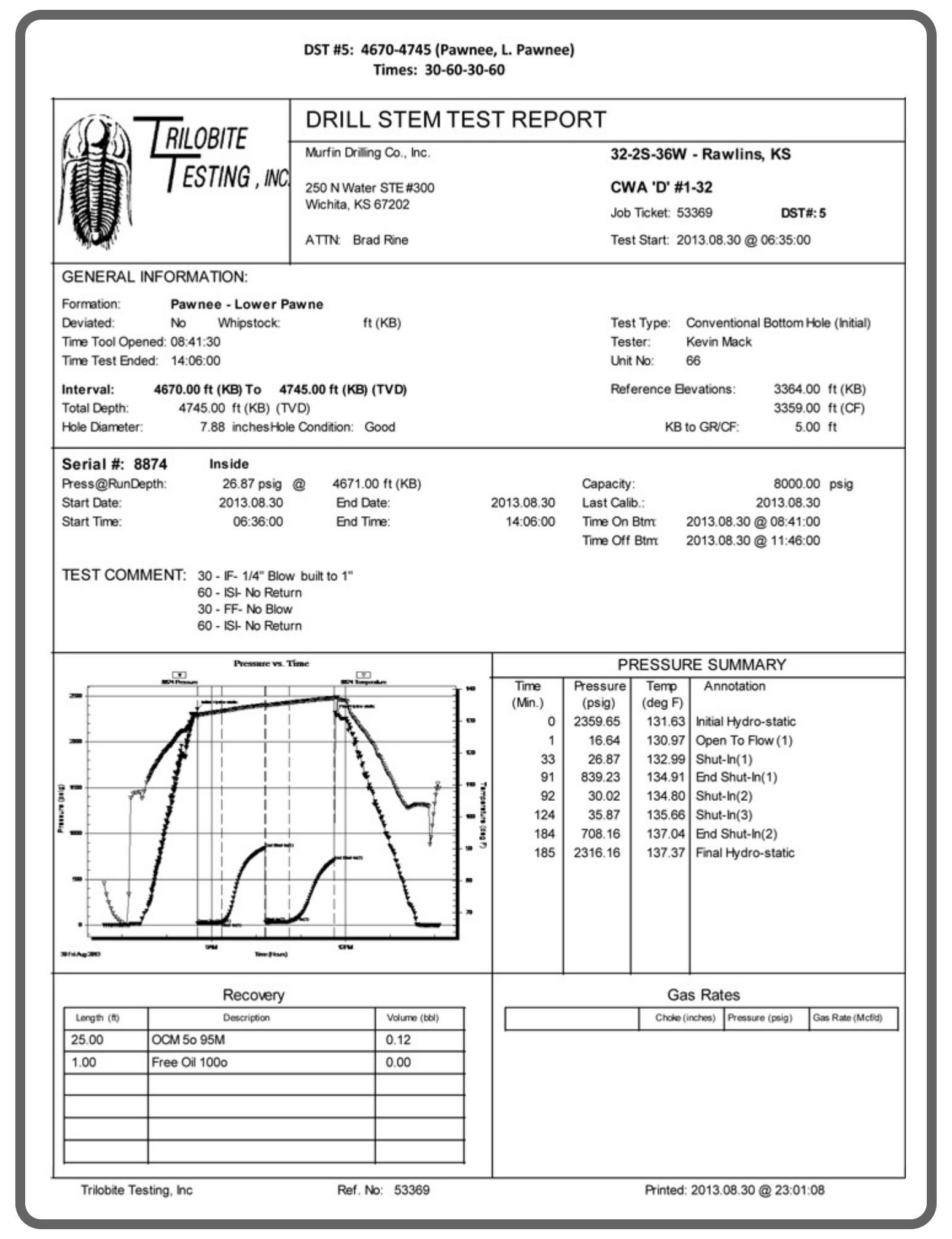
Length (ft)	Description	Volume (bbl)
5.00	Mud 100M	0.02

Gas Rates

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

Trilobite Testing, Inc Ref. No: 53368 Printed: 2013.08.29 @ 12:18:24

DST #5: 4670-4745 (Pawnee, L. Pawnee)
Times: 30-60-30-60


DRILL STEM TEST REPORT

Trilobite Testing, Inc
Murfin Drilling Co., Inc.
250 N Water STE #300
Wichita, KS 67202
ATTN: Brad Rine

32-2S-36W - Rawlins, KS
CWA 'D' #1-32
Job Ticket: 53369 DST#: 5
Test Start: 2013.08.30 @ 06:35:00

GENERAL INFORMATION:
Formation: Pawnee - Lower Pawne
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:41:30
Time Test Ended: 14:06:00
Interval: 4670.00 ft (KB) To 4745.00 ft (KB) (TVD)
Total Depth: 4745.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Kevin Mack
Unit No: 66
Reference Elevations: 3364.00 ft (KB)
3359.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8874 Inside
Press@RunDepth: 26.87 psig @ 4671.00 ft (KB)
Start Date: 2013.08.30 End Date: 2013.08.30
Start Time: 06:36:00 End Time: 14:06:00
Capacity: 8000.00 psig
Last Calib.: 2013.08.30
Time On Btm: 2013.08.30 @ 08:41:00
Time Off Btm: 2013.08.30 @ 11:46:00

TEST COMMENT: 30 - IF- 1/4" Blow built to 1"
60 - ISI- No Return
30 - FF- No Blow
60 - ISI- No Return

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2359.65	131.63	Initial Hydro-static
1	16.64	130.97	Open To Flow (1)
33	26.87	132.99	Shut-In(1)
91	839.23	134.91	End Shut-In(1)
92	30.02	134.80	Shut-In(2)
124	35.87	135.66	Shut-In(3)
184	708.16	137.04	End Shut-In(2)
185	2316.16	137.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	OCM 5o 95M	0.12
1.00	Free Oil 100o	0.00

Gas Rates

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

Trilobite Testing, Inc Ref. No: 53369 Printed: 2013.08.30 @ 23:01:08

Rock Types

Anhy, Bent, Brec, Cht, Clyst
Coal, Congl, Dol, Gyp, Igne
Lmst, Meta, Mrlst, Salt, Shale
Shcol, Shgy, Sltst, Ss, Till
Sltysh, Shlysiltst, Sandyls

Accessories

MINERAL: Anhy, Arggrn, Arg, Bent, Bit, Brecfrag, Calc, Carb, Chtdk, Chtlt, Dol, Feldspar, Ferrpel, Ferr, Glau, Gyp, Hvymin, Kaol, Marl, Minxl, Nodule, Phos, Pyr, Salt, Sandy, Silt, Sil, Sulphur, Tuff

FOSSIL: Algae, Amph, Belm, Bioclst, Brach, Bryozoa, Cephal, Coral, Crin, Echin, Fish, Foram, Fossil, Gastro, Oolite, Ostra, Pelec, Pellet, Pisolite, Plant, Strom

STRINGER: Anhy, Arg, Bent, Coal, Dol, Gyp, Ls, Mrst, Sltstrg, Ssstrg

TEXTURE: Boundst, Chalky, CryxIn, Earthy, FinexIn, Grainst, Lithogr, MicroxIn, Mudst, Packst, Wackest

Other Symbols

OIL SHOW: Gas show, Even, Spotted, Trace/quest., Dead, Gas

INTERVAL: Core, Dst

ROP (min/ft)	Depth	Lithology	Shows	Geological Descriptions	Remarks

<----------------------------------- 3226 (+138)

Anhydrite based on drill time only

<----------------------------------- 3262 (+102)

* Mudup @ 3315 Ft.!

Silty Shale to shaley siltstone, mostly red, some pl grn, Rr dns pale Ls pcs

Some silty in pt with more argil-earthy text

<----------------------------------- 3730 (-366)

7:00 AM, August 25, 2013

3740' spl: (1st flood of Limestone) Ls wh-cr- v pl gy, fn xln, ool in pt (well -cem) scatt pr xln por & pp por
[No Show]

90% Shales & silty shale, mostly brick red-maroon, silty to earthy, soft (washes red), 10% Ls wh, fn xln, dns

Incr in pl grn-gy silty shale

<----------------------------------- 3790 (-426)

Ls wh-pl gy, fn xln, soft and chalky to firm & silty in pt,
[No Show]

Sh red with some grnish, silty-argil-earthy

Mud Check, Drlg @ 3844':
Vis Wt WL LCM PV YP
52 8.7 5.6 1.5 16 17
Chl Hd pH Solids
600 10 12.0 2.9

<----------------------------------- 3846 (-482)

Ls wh, fn xln, dns & firm to soft and chalky, Rr foss
[No Show]

Ls cr-tan, fn-md xln, dns, foss-abund foss

Sh red-gy

Ls tan-gy-dk gy, fn xln, dns, abund foss

Sh red-gy-grn, silty in pt, sdy in pt

60% Ls cr-gy, fn xln, dns, foss; 40% Shale gy-red

60% Sh red-gy-grn, silty in pt; 40% Ls wh fn xln, abund re-cem pores of calcite, foss-ool

60% Ls wh-cr-gy, vfn-fn xln, mostly dns, abund foss & ool with scatt interfoss pores; 40% Sh red-gy-grn, silty in pt

80% Shale, pink, red, gy, grn, soft to firm, silty in pt

50% Ls cr-gy, fn xln, dns, foss in pt; 50% shale gy-red, subsilty-silty in pt

<----------------------------------- 4006 (-642)

Ls cr-tan, fn xln, dns, some subsucrosic text (dolom) foss
[No Show]

Ls cr-tan, fn xln, dns, foss-abund foss; some vc shales

Ls wh-cr, fn xln, packed ool & foss, mostly well-cem with scatt interool pores

Silty Sh - Shaley Siltstone, red-gy-pl grn

Ls wh, fn xln, pr xln por, foss-abund foss

<----------------------------------- 4090 (-726)

Ls wh-cr, fn xln, dns-pr xln por,foss in pt
[No Odor, No Fluor, Moderate am't of spotty blk asphaltic/resid stn, NSFO]

Ls wh-cr, fn xln, packed ool, mix of well-cem to scatt interool pores
[No Show]

Sh red-gy-grn, silty to sdy in pt

<----------------------------------- 4149 (-785)

Ls wh-cr, vfn-fn xln, dns,some silty/sdy text, foss in pt
[No Show]

Sh red-gy-grn, silty to calc in pt, firm

Sh gy-red-grn, calc to silty in pt

<----------------------------------- 4208 (-844)

Ls wh-cr, vfn-fn xln, mostly dns, Rr scatt pr xln por
[No Odor, No fluor, V Rr pcs with blk spotty resid/asph stn]

7:00 AM, August 26, 2013

Ls wh-cr-tan, vfn xln ,dns

Sh brn-blk. subcarb-sli carb

<----------------------------------- 4243 (-879)

Sd wh-cr-tan, fn grn, gd sort, subrd, fr-gd fri, abund calc cem, shaley in pt

Sh red-gy-grn-tan, silty to sdy in pt

<----------------------------------- 4294 (-930)

Pipe Strap @ 4375 ft
Long .50 ft.

4310' & 4315' spl: Ls wh-cr, vfn-fn xln, dns, some red shale-filled faces & seams, vitreous text in pt
[No Show in 4310' & 4315' spl]

Ls wh-cr, vfn xln, dns, vitreous text in pt
[No Show]

Mud Check, Drlg @ 4313':
Vis Wt WL LCM PV YP
52 9.1 6.0 1 16 18
Chl Hd pH Solids
600 10 11.0 5.7

Ls mostly as above;

Some clusters of Sd fn grn, subang, good sort, pr-gd fri, well-cem in great pt, some intergrnlr por, glauc, shaley in pt, red-gy-grnish
[No Odor, No fluor, sli-fr show of a mix of oily film-DO-NVL brn oil]

DST #1: 4307-4375 (LSG A,B,D)
Times: 30-60-60-90
Initial Open: Stg, b.o.b. 30 sec.
Final Open: Fr, built to 4" i.b.
Rec: 2829' Total Fluid
216' mud: 100% m
310' WCM: 20%w 80%m
252' MCW: 80%w 20%m
2046' SMCW: 95%w 05%m
5' Hvy Mud: 100%m
(Chl/Wtr 23000ppm, Chl/mud 600ppm)
IHP: 2139 FHP: 2088
IFP: 755-1258 FFP: 1257-1269
ISIP: 1267 FSIP: 1270
BHT: 139°F

Sh gy-red-grn, subwaxy-subsilty-sdy; minor % of dns ls

Ls wh-cr, fn xln, pr xln por, abund patches & pcs with pp & vug porosity, foss & ool with scatt interfoss pores, scatt pyr patches
[No Odor, No fluor, Abund Dk brn-blk stn in pores with fr-gd show dk brn hvy DO & NVL oil, Sli show of hvy FO]

Ls wh, vfn-fn xln, dns, some subchalky, foss in pt, Rr scatt pp por & vugs
[Trace shows with depth in D zn]

4375' 20-min: 80& vc shales; 20% dns wh ls

7:00 AM, August 27, 2013

Sh red-gy-grn

Mud Check, CTCH @ 4375':
Vis Wt WL LCM PV YP
69 9.2 6.0 1 20 24
Chl Hd pH Solids
1200 10 10.5 6.4

Ls wh, vfn-fn xln, dns

Silty Ls to calc siltst, red-gy-grn & shales

Ls wh-cr, fn xln, dns to scatt pr xln por, scatt patches of pp & vug por, foss
[No Odor, Rr v dull fluor, scatt patches of brn-dk brn stn, sli shows of DO-NVL oil-FO, few pcs with Fr show FO]]

DST #2: 4413-4430 (Lsg G)
Packers Failed, Misrun

Ls wh-cr-tan, fn xln, dns, foss, scatt calcite patches

7:00 AM, August 28, 2013

4440'spl: 90% vc shales

4450' spl: 80% Ls wh-cr, fn xln, dns, sli foss

<----------------------------------- 4441 (-1077)

DST #3: 4382-4430 (Lsg G)
Times: 30-60-15-60
Initial Open: Stg, b.o.b. 30 sec
Final Open: Wk, built to 2-1/2"
Rec: 2920' Total Fluid
373' Mud
186' MCW: 60%w 40%m
310' MCW: 80%w 20%m
2046' SMCW: 95%w 05%m
05' Hvy mud: 100% mud
IHP: 2158 FHP: 2084
IFP: 551-1239 FFP: 1250-1310
ISIP: 1311 FSIP: 1317
BHT: 141°F

4460' spl: 50% Shale, red-gy-grn-blk; 50% Ls cr-tan, fn xln, dns, foss

Sh red-gy-grn

Ls cr-tan, fn xln, subchalky in pt, dns & firm in pt, scatt pr xln por, foss & ool in pt
[No Show]

Ls wh-cr-gy, fn xln, dns, scatt calcite patches, foss in pt, abund vc shales in spls
[No Show]

Mud Check, Drlg @ 4460':
Vis Wt WL LCM PV YP
56 9.1 5.2 1 18 18
Chl Hd pH Solids
1200 10 11.5 5.7

4500' spl: 85% vc shales, silty-sdy in pt; 15% Ls gy, dns

Ls wh-cr, fn xln, mostly pr xln por, some fr xln por, scatt pp por, foss-abund foss with scatt interfoss pores, Rr sm vugs, fr-gd crush, becomes dns with depth
[No Odor, Rr dull spotty fluor, Moderate am't of pcs with sli-fr show NVL Oil & FO, spotty to patchy to even stn]

DST #4: 4474-4525 (Lsg I,J)
Times: 30-60-30-60
Initial Open: Wk, built to 1/8", died
Final Open: None
Rec: 5' OSM: 100%m
IHP: 2225 FHP: 2150
IFP: 17-20 FFP: 21-22
ISIP: 837 FSIP: 800
BHT: 135°F

<----------------------------------- 4520 (-1156)

Silty Sd, wh-gy, calc cem to shaley

7:00 AM, August 29, 2013

Sh red-gy-grn

Ls wh-cr, vfn-fn xln, dns, foss & ool, scatt re-cemented pores with transl calcite
[No Show]

Mud Check, Drlg @ 4538':
Vis Wt WL LCM PV YP
54 9.1 5.6 1 17 18
Chl Hd pH Solids
1200 10 11.0 5.7

Sh black, carb

Sh gy-red-pink-grn

Ls wh-cr-pl gy, vfn-fn xln, dns, foss & ool in pt
[No Show]

<----------------------------------- 4568 (-1204)

Sh red-gy-grn slitly to sdy in pt, earthy in pt

Ls wh-cr-gy, fn xln, dns, foss, scatt calcite patches

Sh red-grn-gy

<----------------------------------- 4606 (-1242)

Ls wh-cr-gy, vfn-fn xln, dns
[No Show]

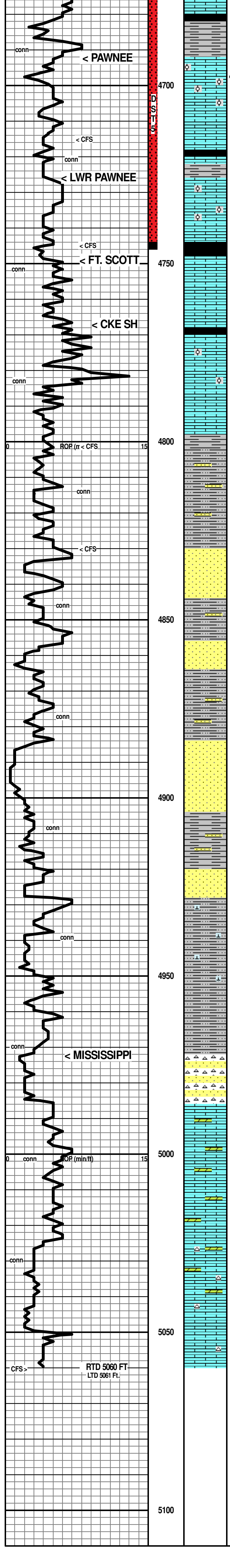
Sh red-gy-grn-yel-purple, sdy-silty in pt, calc in pt

70% vc shales, silty in pt, calc in pt

30% Ls wh-pl gy, dns, shaley in pt

Ls wh-cr, fn vfn xln, dns, packed foss & sm ool in pt, pr-fr crush
[No Show]

Ls cr-tan-gy, fn xln, grainy to subsucr text



Sh black, carb

Sh red-gy-grn, calc in pt

<------------------------------- 4692 (-1328)

Ls wh-cr, fn xln, scatt pr xln por, scatt pp por, scatt interool & interfoss pores, pr-fr crush, packed foss & ool in pt

[No Odor, Rr Dull fluor, low % pcs with patchy-spotty brn-dk brn stn, mix of sli-fr show of oily film-NVL oil & FO]

Ls wh fn xln, dns to chalky, foss

Sh black, carb

<------------------------------- 4726 (-1362)

Ls wh-cr-gy, vfn-fn xln, packed ool in pt (mostly well-cem) some pyritic, pr-fr crush

[No Show]

Ls cr, vfn xln, dns, foss

Sh black, carb

<------------------------------- 4749 (-1385)

Ls cr-tan, vfn-fn xln, dns, foss-abund foss

[No Show]

<------------------------------- 4767 (-1403)

Sh black, carb

Ls cr-gy, vfn xln dns, foss, some chalky pcs

Ls wh-cr-tan, vfn-fn xln, dns, foss in pt, sli ool in pt, subchalky in pt, scatt calcite filled pores

[No Show]

Ls cr-gy, vfn-fn xln, dns, foss in pt, some sli sdy text in pt with grnish glauc patches & specks

Sh red-brn-gy-grn, silty to sdy in pt, subwaxy in pt

Sd wh-gy-grn, fn-md grn with scatt crs grains, pr-fr sort, subrd-anglr, subquartzitic-qrtzitic in pt, pr-fr fri,

[No Show]

50% Shales red-gy-grn, waxy to sdy to silty; 30% Ls wh-cr-gy, vfn xln, dns; 20% Sd wh-gy-grn, fn-md grn, anglr-subrd, glauc in pt, pr-fr fri, some md-crs calcite sd

70% Shales red-gy-grn, waxy to silty to sdy; 25% Ls wh-gy, vfn-fn xln, dns; 05% Sd as above

90% Shale red-purple-gy-dk gy-grn, silty, sdy, earthy, subwaxy; 10% Ls cr-gy, fn xln, dns; tr sd

Sd md-crs, quartz frags & grains, subrd-angular, well-packed, v friable, pr sort

[No Show]

90% shale, red-gy-grn-brn-purp, silty in pt, sdy in pt, waxy in pt, earthy in pt

95% Shales red-gy-grn-yel-purple, silty in pt, earthy in pt, calc in pt, foss in pt; 05% Ls wh-cr, fnxln, dns; Tr sd

99% Shales red-gy-grn-yel-purple, silty in pt, earthy in pt, calc in pt, foss in pt

99% Shales red-gy-grn-yel-purple, silty in pt, earthy in pt, calc in pt, subsilty in pt

<------------------------------- 4972 (-1608)

95% Shale, vc as above; 05% Sd fn-md grn, subang-subrd, pr-fr sort, gd fri, cem in pt, scatt glauc; trace of weathered wh chert, grny text, crushable

5000' spl: Mix of: Ls wh-cr-gy vnf-fn xln, dns, sli foss in pt & Dol cr-tan, fn xln, sucrosic text, fr xln por, fr-gd crush; Dolom Ls, foss

[No Show]

Ls (dolom in pt) fn-md xln, some re-cem Ls fragments, mostly dns with scatt xln por, foss-abund foss

Dol, cr-gy, fn xn, subsucrosic-sucrosic, pr-fr xln por, chert: wh-cr-gy, some vareg, opaq-subtransl, fresh to grainy, foss/spiculitic in pt, Aslo Dolom Chert

[No Show]

Ls cr, vfn xln, dns, foss, cherty

DST #5: 4670-4745 (Paw, L. Paw)
Times: 30-60-30-60
Initial Open: Wk, built to 1" in bucket
Final Open: None
Rec: 26 ft Total Fluid
1' FO
25' SOCM: 05%o 95%m
IHP: 2359 FHP: 2316
IFP: 16-26 FFP: 30-35
ISIP: 839 FSIP: 708
BHT: 137*F

7:00 AM, August 30, 2013

Mud Check, O.B./DST @ 4745':

Vis	Wt	WL	LCM	PV	YP
75	9.2	5.2	5	20	25

Chl	Hd	pH	Solids
1200	10	11.5	6.4

7:00 AM, August 31, 2013

Mud Check, Drlg @ 4945':

Vis	Wt	WL	LCM	PV	YP
59	9.1	6.0	4	18	20

Chl	Hd	pH	Solids
1100	10	11.0	5.7

RTD 5060 ft at 3:45 PM,
August 31, 2013