

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 5144
 Name: Mull Drilling Company, Inc.
 Address 1: 1700 N WATERFRONT PKWY
 Address 2: BLDG 1200
 City: WICHITA State: KS Zip: 67206 + _____
 Contact Person: Mark Shreve
 Phone: (316) 264-6366
 CONTRACTOR: License # 33575
 Name: WW Drilling, LLC
 Wellsite Geologist: Phil Askey
 Purchaser: N/A

Designate Type of Completion:
 New Well Re-Entry Workover
 Oil WSW SWD SIOW
 Gas D&A ENHR SIGW
 OG GSW Temp. Abd.
 CM (Coal Bed Methane)
 Cathodic Other (Core, Expl., etc.): _____

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

Well Name: _____
 Original Comp. Date: _____ Original Total Depth: _____
 Deepening Re-perf. Conv. to ENHR Conv. to SWD
 Conv. to GSW
 Plug Back: _____ Plug Back Total Depth _____
 Commingled Permit #: _____
 Dual Completion Permit #: _____
 SWD Permit #: _____
 ENHR Permit #: _____
 GSW Permit #: _____

<u>6/21/2010</u>	<u>6/27/2010</u>	<u>6/28/2010</u>
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-135-25079-00-00

Spot Description: _____
NW SE NW NW Sec. 5 Twp. 17 S. R. 23 East West
950 Feet from North / South Line of Section
832 Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:
 NE NW SE SW

County: Ness

Lease Name: Harkness Trust Well #: 1-5

Field Name: _____

Producing Formation: N/A

Elevation: Ground: 2489 Kelly Bushing: 2494

Total Depth: 4640 Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: 223 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: 11200 ppm Fluid volume: 900 bbls

Dewatering method used: Evaporated

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Letter of Confidentiality Received
 Date: 10/04/2010
 Confidential Release Date: 10/10/2012
 Wireline Log Received
 Geologist Report Received
 UIC Distribution
 ALT I II III Approved by: NAOMI JAMES Date: 10/05/2010

Operator Name: Mull Drilling Company, Inc. Lease Name: Harkness Trust Well #: 1-5

Sec. 5 Twp. 17 S. R. 23 [] East [x] West County: Ness

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken [x] Yes [] No (Attach Additional Sheets)
Samples Sent to Geological Survey [x] Yes [] No
Cores Taken [] Yes [x] No
Electric Log Run [x] Yes [] No
Electric Log Submitted Electronically [x] Yes [] No (If no, Submit Copy)
List All E. Logs Run: Log CDL/CNL/PE; DIL; MEL; Sonic
[x] Log Formation (Top), Depth and Datum [] Sample
Name Attached Top Attached Datum Attached

CASING RECORD [x] New [] Used
Report all strings set-conductor, surface, intermediate, production, etc.
Table with columns: 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.
Row 1: Surface, 12.250, 8.6250, 20, 223, Common, 3% gel, 2% cc

ADDITIONAL CEMENTING / SQUEEZE RECORD
Table with columns: Purpose (Perforate, Protect Casing, Plug Back TD, Plug Off Zone), Depth Top Bottom, Type of Cement, # Sacks Used, Type and Percent Additives.

PERFORATION RECORD - Bridge Plugs Set/Type
Specify Footage of Each Interval Perforated
Table with columns: Shots Per Foot, PERFORATION RECORD, Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used), Depth.

TUBING RECORD: Size: Set At: Packer At: Liner Run: [] Yes [] No
Date of First, Resumed Production, SWD or ENHR. Producing Method: [] Flowing [] Pumping [] Gas Lift [] Other (Explain)
Estimated Production Per 24 Hours: Oil Bbls., Gas Mcf, Water Bbls., Gas-Oil Ratio, Gravity

DISPOSITION OF GAS: [] Vented [] Sold [] Used on Lease (If vented, Submit ACO-18.)
METHOD OF COMPLETION: [] Open Hole [] Perf. [] Dually Comp. (Submit ACO-5) [] Commingled (Submit ACO-4) [] Other (Specify)
PRODUCTION INTERVAL:

Form	ACO1 - Well Completion
Operator	Mull Drilling Company, Inc.
Well Name	Harkness Trust 1-5
Doc ID	1044895

Tops

Anhydrite	1830	+664
B/Anhydrite	1864	+630
Heebner Shale	3885	-1391
B/KC	4220	-1726
Marmaton	4280	-1786
Pawnee	4331	-1837
Ft. Scott	4419	-1925
Cherokee Shale	4442	-1948
Cherokee Sand	4522	-2028
Mississippian	4600	-2106



*Mark Parkinson, Governor
Thomas E. Wright, Chairman
Joseph F. Harkins, Commissioner
Ward Loyd, Commissioner*

October 04, 2010

Mark Shreve
Mull Drilling Company, Inc.
1700 N WATERFRONT PKWY
BLDG 1200
WICHITA, KS 67206

Re: ACO1
API 15-135-25079-00-00
Harkness Trust 1-5
NW/4 Sec.05-17S-23W
Ness County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Mark Shreve

CONSERVATION DIVISION

Finney State Office Building, 130 S. Market, Room 2078, Wichita, KS 67202-3802
(316) 337-6200 • Fax: (316) 337-6211 • <http://kcc.ks.gov/>

PUMP TRUCK CEMENTER 17101 CV
 # 386-281 HELPER Lorene
 BULK TRUCK
 # 377 DRIVER Jerry
 BULK TRUCK
 # _____ DRIVER _____

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
HANDLING <u>292 sks</u>	@ <u>2/80</u>	<u>700.80</u>
MILEAGE <u>10.5 sk/mile</u>		<u>438.00</u>
TOTAL		<u>503.40</u>

REMARKS:

50 sks @ 1830'
80 sks @ 1110'
50 sks @ 600'
50 sks @ 240'
20 sks @ 60'
30 sks Ret hole

thank you

CHARGE TO: Muell Drilling company
 STREET _____
 CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB	<u>1830'</u>	
PUMP TRUCK CHARGE		<u>1017.00</u>
EXTRA FOOTAGE	@	_____
MILEAGE <u>15 miles</u>	@ <u>7.00</u>	<u>105.00</u>
MANIFOLD	@	_____
_____	@	_____
_____	@	_____
TOTAL		<u>1122.00</u>

PLUG & FLOAT EQUIPMENT

_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
_____	@	_____
TOTAL		_____

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

SALES TAX (If Any) _____
 TOTAL CHARGES _____

PRINTED NAME MAAX H2R Route DISCOUNT _____ IF PAID IN 30 DAYS
 SIGNATURE [Signature]

QUALITY OILWELL CEMENTING, INC.

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

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

No. 4046

Date	6-21-10	Sec.	5	Twp.	17	Range	23	County	Ness	State	Kansas	On Location		Finish	4:30pm
Lease	Harkness Trust	Well No.	15	Location		Hwy 283 & R425 1/4 E									
Contractor	W.W. Drilling	Rig	10	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.									
Type Job	Surface	Hole Size		T.D.		294		Charge To		Mull Drilling					
Csg.	200	Depth		223		Tbg. Size		Depth		Street					
Tool		Depth				City		State							
Cement Left in Csg.	10-15	Shoe Joint				The above was done to satisfaction and supervision of owner agent or contractor.									
Meas Line		Displace		13 1/2 Bbl		Cement Amount Ordered		150 Com Fall 26 bbl							

EQUIPMENT

Pumptrk	9	No.	Cementor	Steve	1/4	Common	150
Bulktrk	8	No.	Helper	Brandon	4	Poz. Mix	
Bulktrk		No.	Driver	Doug	4	Gel.	3
			Driver			Calcium	5

JOB SERVICES & REMARKS

Remarks:		Hulls	
Rat Hole		Salt	
Mouse Hole		Flowseal	
Centralizers		Kol-Seal	
Baskets		Mud CLR 48	
D/V or Port Collar		CFL-117 or CD110 CAF 38	
		Sand	
		Handling	158
		Mileage	73

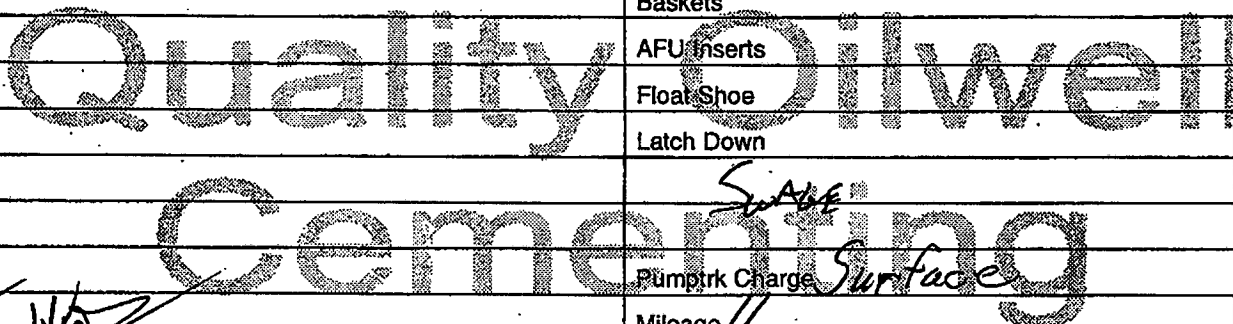
FLOAT EQUIPMENT

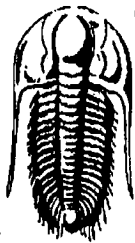
Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	11

(Signature)
X Signature *Mark Dech...*

(Russell)

Tax	
Discount	
Total Charge	





**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Mull
1700 N Waterfront PKWY
Wichita, KS 67206
ATTN: Phil Askey

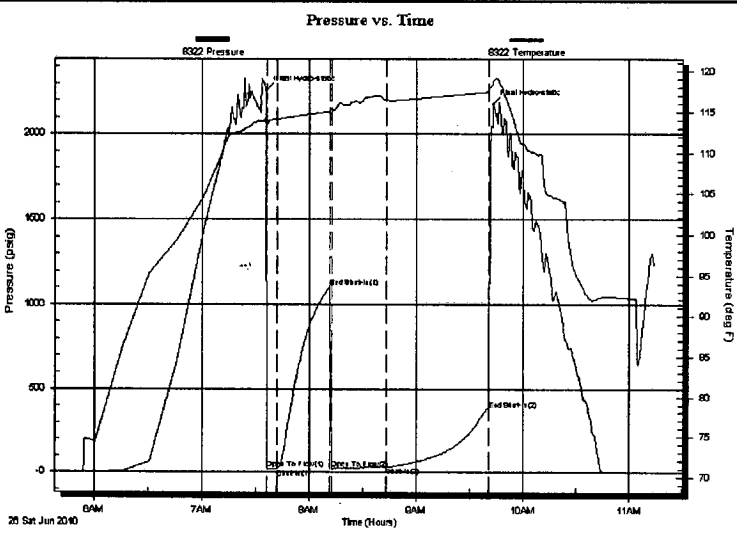
Harkness Trust #1-5
5-17s-23w Ness
Job Ticket: 39177 DST#: 1
Test Start: 2010.06.26 @ 05:54:05

GENERAL INFORMATION:

Formation: **Ft Scott**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: 07:36:15
 Time Test Ended: 11:14:44
 Interval: **4400.00 ft (KB) To 4450.00 ft (KB) (TVD)**
 Total Depth: **4450.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 Test Type: **Conventional Bottom Hole**
 Tester: **Brandon Domsch**
 Unit No: **48**
 Reference Elevations: **2494.00 ft (KB)**
2489.00 ft (CF)
 KB to GR/CF: **5.00 ft**

Serial #: 8322 **Inside**
 Press@RunDepth: **30.89 psig @ 4401.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2010.06.26** End Date: **2010.06.26** Last Calib.: **2010.06.26**
 Start Time: **05:54:05** End Time: **11:14:44** Time On Btm: **2010.06.26 @ 07:36:00**
 Time Off Btm: **2010.06.26 @ 09:43:15**

TEST COMMENT: IF: Built to 1/4 inch.
 -IS: No return.
 FF: Surface blow for 6 mins.
 FS: No return.



PRESSURE SUMMARY

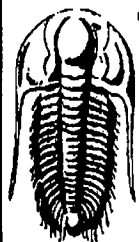
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2258.13	114.13	Initial Hydro-static
1	17.49	113.28	Open To Flow (1)
7	19.53	114.12	Shut-In(1)
36	1100.95	115.04	End Shut-In(1)
37	21.11	115.01	Open To Flow (2)
67	30.89	116.48	Shut-In(2)
125	377.67	117.48	End Shut-In(2)
128	2175.15	118.71	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3.00	M w / O spots 100% m	0.01
0.00	GIP = 0	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull
1700 N Waterfront PKWY
Wichita, KS 67206
ATTN: Phil Askey

Harkness Trust #1-5
5-17s-23w Ness
Job Ticket: 39177 **DST#: 1**
Test Start: 2010.06.26 @ 05:54:05

Mud and Cushion Information

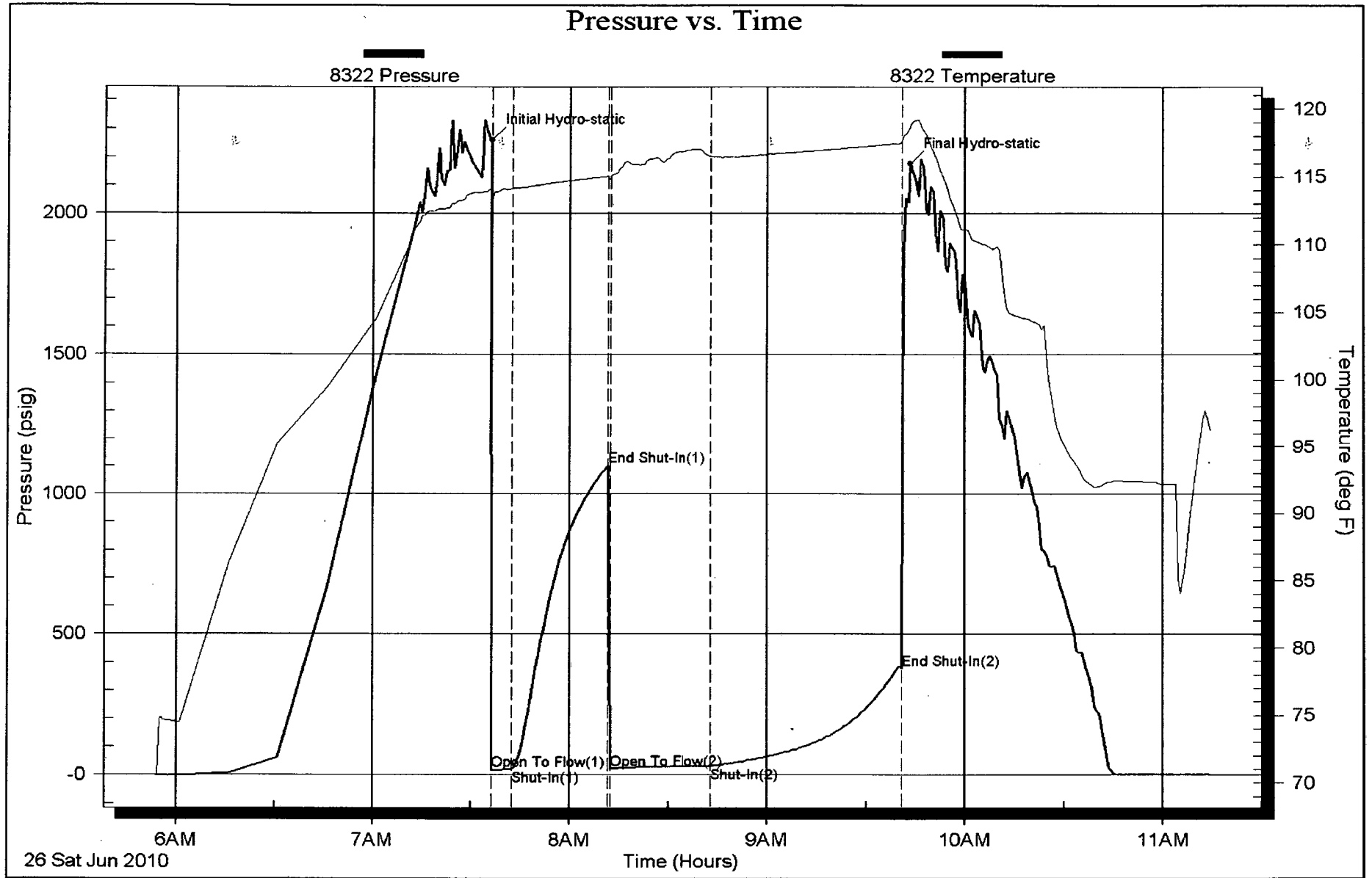
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 13.58 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 7300.00 ppm			
Filter Cake: 2.00 inches			

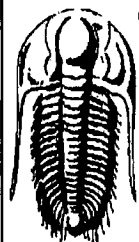
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3.00	Mw / O spots 100%m	0.015
0.00	GIP = 0	0.000

Total Length: 3.00 ft Total Volume: 0.015 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:





**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Mull
1700 N Waterfront PKWY
Wichita, KS 67206
ATTN: Phil Askey

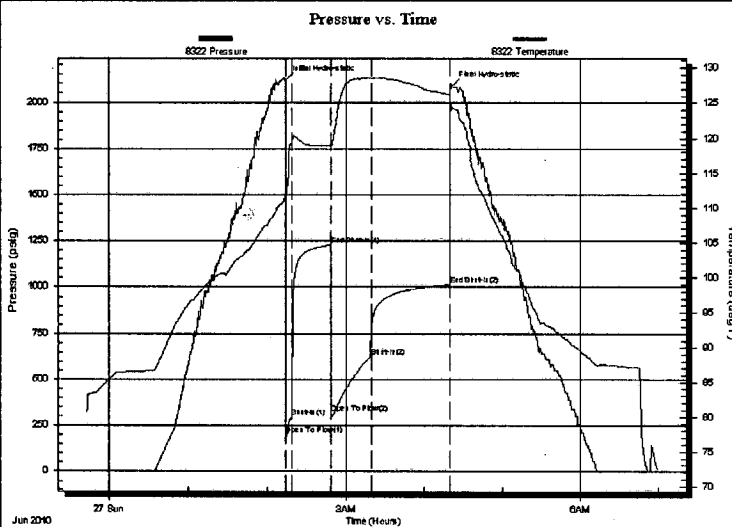
Harkness Trust #1-5
5-17s-23w Ness
Job Ticket: 39178 **DST#: 2**
Test Start: 2010.06.26 @ 23:43:05

GENERAL INFORMATION:

Formation: **Cherokee Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:14:15
Time Test Ended: 06:59:59
Interval: **4437.00 ft (KB) To 4525.00 ft (KB) (TVD)**
Total Depth: 4525.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: Brandon Domsch
Unit No: 48
Reference Elevations: 2494.00 ft (KB)
2489.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8322 Inside
Press@RunDepth: 628.35 psig @ 4438.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2010.06.26 End Date: 2010.06.27 Last Calib.: 2010.06.27
Start Time: 23:43:05 End Time: 06:59:59 Time On Btm: 2010.06.27 @ 02:14:00
Time Off Btm: 2010.06.27 @ 04:21:00

TEST COMMENT: IF: BOB in 1 1/2 mins.
IS: Surface blow for 5 mins.
FF: BOB in 2 mins.
FS: Surface blow for 12 mins.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2120.78	111.65	Initial Hydro-static
1	199.13	111.32	Open To Flow (1)
5	295.04	119.53	Shut-In(1)
35	1228.66	118.82	End Shut-In(1)
35	318.01	118.55	Open To Flow (2)
66	628.35	128.54	Shut-In(2)
126	1013.06	126.20	End Shut-In(2)
127	2086.17	124.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	M 100%m	0.15
591.00	CW 100%w	7.43
124.00	MCW 80%w 20%m	1.74
375.00	SO&WCM 5%o 35%w 60%m	5.26
90.00	M 100%m	1.26
0.00	GIP = 0	0.00

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull
1700 N Waterfront PKWY
Wichita, KS 67206
ATTN: Phil Askey

Harkness Trust #1-5
5-17s-23w Ness
Job Ticket: 39178 **DST#: 2**
Test Start: 2010.06.26 @ 23:43:05

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:	42000 ppm
Viscosity: 61.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.57 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 6000.00 ppm			
Filter Cake: 2.00 inches			

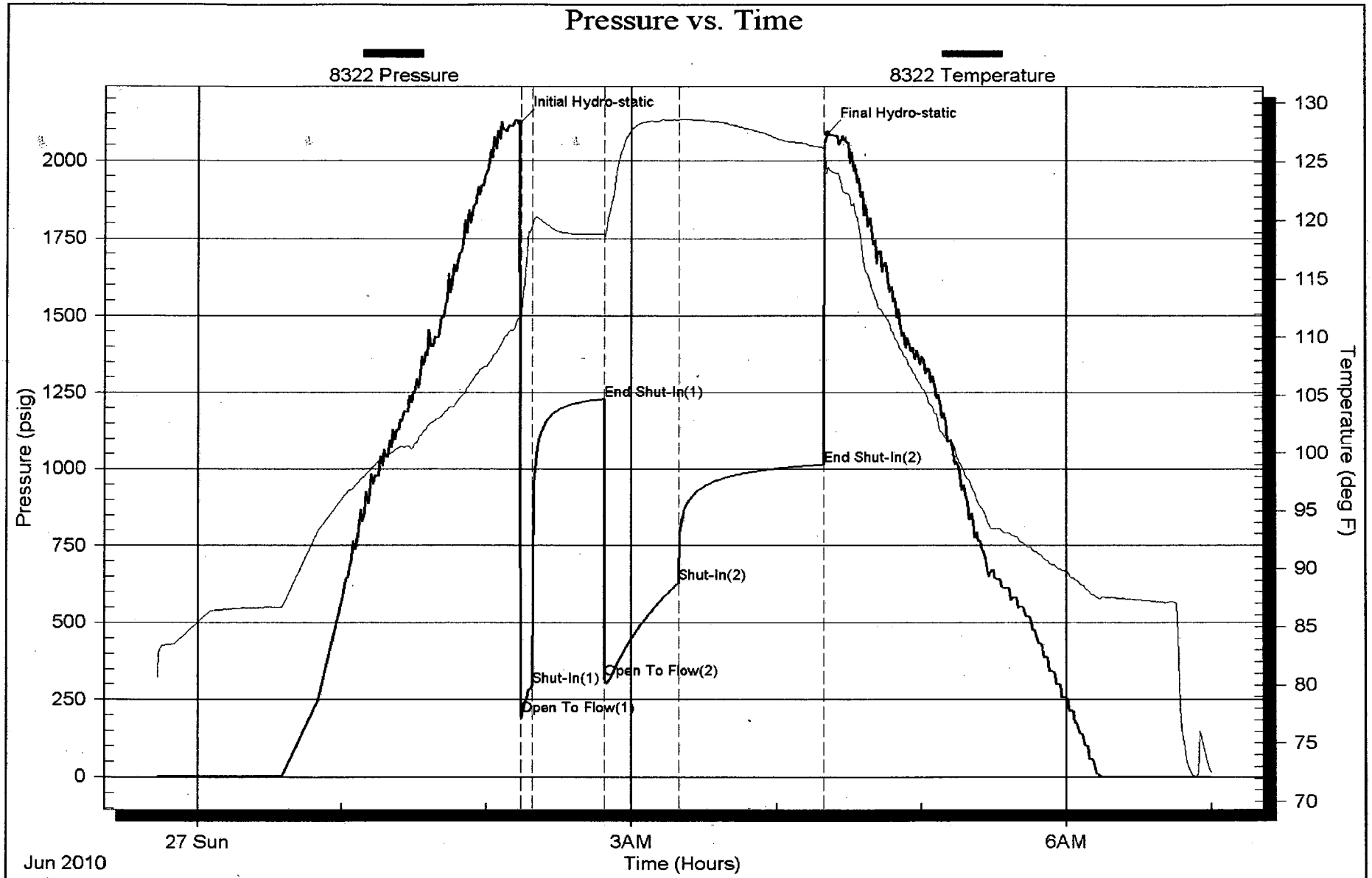
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	M 100%m	0.148
591.00	CW 100%w	7.434
124.00	MCW 80%w 20%m	1.739
375.00	SO&WCM 5%o 35%w 60%m	5.260
90.00	M 100%m	1.262
0.00	GIP = 0	0.000
0.00	RW = .165@78F = 42000ppm	0.000

Total Length: 1210.00 ft Total Volume: 15.843 bbl

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





PHIL ASKEY
PETROLEUM GEOLOGIST



GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY <u>Mull Drilling Company, Inc.</u>	ELEVATIONS
LEASE <u>Harkness Trust #1-5</u>	KB <u>2494'</u>
FIELD <u>Wildcat</u>	DF <u>2492'</u>
LOCATION <u>950' FNL & 832' FWL</u>	GL <u>2489'</u>
SEC <u>5</u> TWSP <u>17 S</u> RGE <u>23 W</u>	Measurements Are All From <u>KB</u>
COUNTY <u>Ness</u> STATE <u>Kansas</u>	
CONTRACTOR <u>WW Drilling Rig #10</u>	CASING SURFACE <u>8 5/8" @ 224' w/ 11"</u>
SPUD <u>6/21/10</u> COMP <u>6/27/10</u>	PRODUCTION _____
RTD <u>4640'</u> LTD <u>4644'</u>	ELECTRICAL SURVEYS <u>Superior Well Services:</u> <u>CNL/CDL; DIL; Micro; Son</u>
MUD UP <u>3395'</u> TYPE MUD <u>Chemical - mud-co</u>	
SAMPLES SAVED FROM <u>3700'</u> TO <u>RTD</u>	
DRILLING TIME KEPT FROM <u>1700'-1900'; 3700'</u> TO <u>RTD</u>	
SAMPLES EXAMINED FROM <u>3700'</u> TO <u>RTD</u>	
GEOLOGICAL SUPERVISION FROM <u>4000'</u> TO <u>RTD</u>	
GEOLOGIST ON WELL <u>Phil Askey, P.G.</u>	

FORMATION TOPS	LOG	SAMPLES	
<u>Anhydrite</u>	<u>1830 +667</u>	<u>1827</u>	<u>Plot</u>
<u>Heekner</u>	<u>3885 -1391</u>	<u>3882</u>	<u>+4' H.</u>
<u>Casing</u>	<u>3929 -1435</u>	<u>3927</u>	<u>+4'</u>

Reference Well:
 Mull Drilling Co
 Klitzke #1-6

REMARKS

75GS

The main target formation the Cherokee Sand, contained a good sample show but was tested with negative results, mainly due to a thickened shale-conglomerate section above the sandstone that developed.

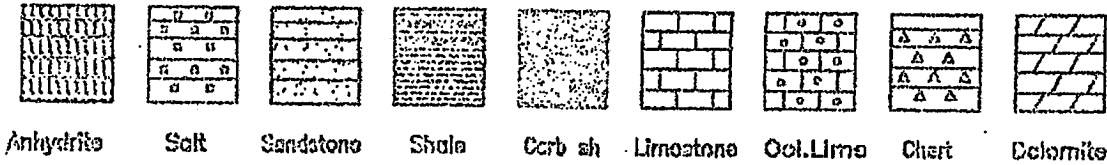
The other sample shows were tested in DST #1 with negative results.

After review of the e-logs, it was decided to plug and abandon the well.

Phil Oskey, P. G.

Well API # 15-135-25079

LEGEND



SCALE " = 100'

LOG 7702

DEPTH

1800

DRILLING TIME IN MINUTES PER FOOT
Rate of Penetration Increases

5" 10" 15" 20" 25"

LITHOLOGY

SAMPLE DESCRIPTIONS

REMARKS

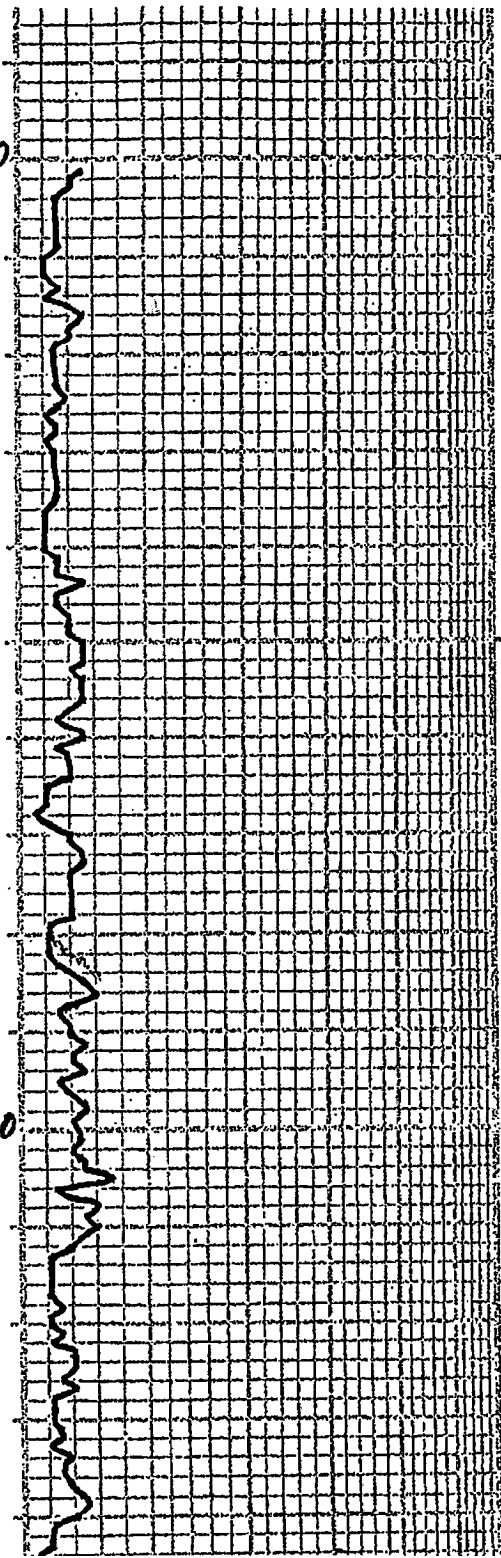
Anhy 1827 (+667)

E-log 1830 (+664)

3700

50

3800



LS, tan qy qb, fm, das, etc, etc,
for, fr, etc, etc, etc, etc, etc, etc

LS, rpa, SH, ay

LS, tan con, etc, etc, etc, etc,
fm, etc, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc, etc, etc

SH, blk, fs, carb

LS, qy, tan, etc, etc, etc,
etc, etc, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc

LS, con, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc

LS, tan con, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc

etc, qy, tan, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc,
SH, blk, fs, carb

LS, tan, fm, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc

LS, tan, etc, etc, etc, etc, etc,
etc, etc, etc, etc, etc, etc

Samples: 10' wet & dry
3700'-RTD good samples

Rig data

WOB 38K IP 1000 #

RPM 75-80 SPM 60

Bit data

Smith 7 7/8" 224'-RTD
92 hrs

Dev Surveys

3/4° @ 224'

1 1/4° @ 4450'

DST's: 2 by Trilobite Testing

mud-co data @ 3814'

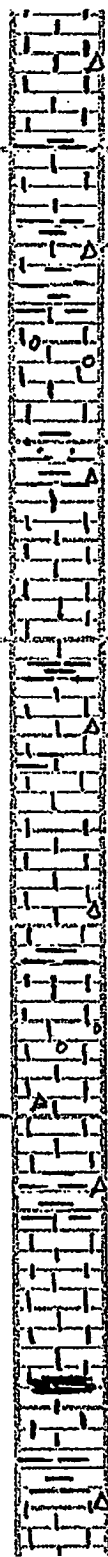
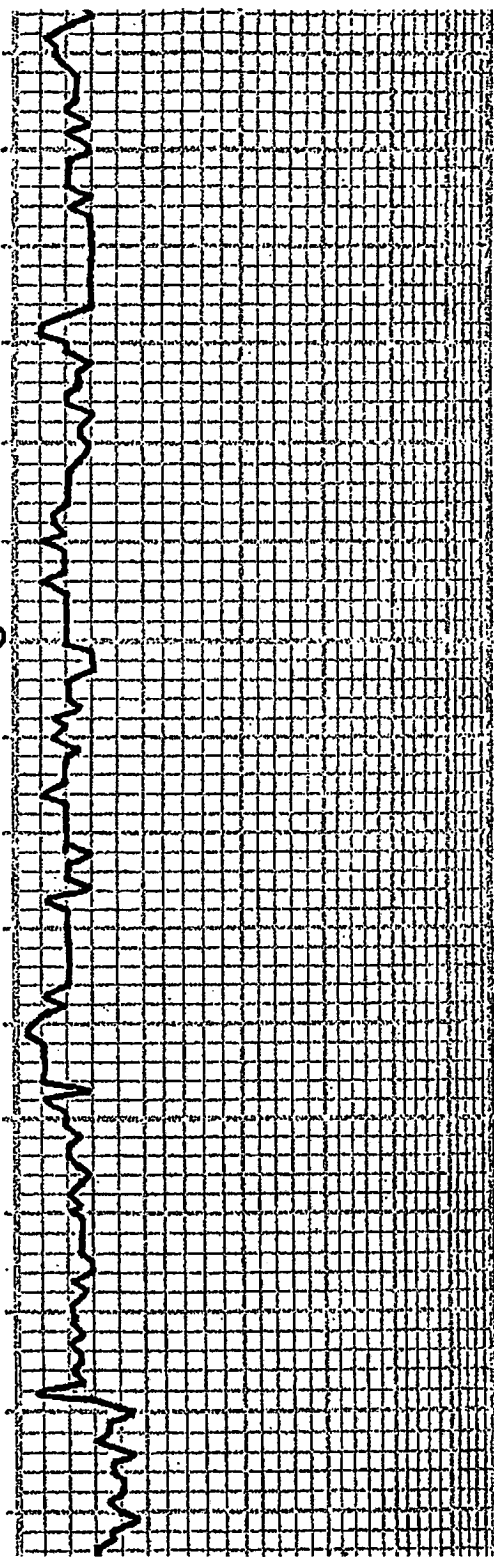
WT 9.0 VIS 62 WL 9.6

pH 10.5 CL 5,200 ppm LCM T[#]

50

4000

50



v. x. l. n. - f. x. l. n., seat x. l. n. ϕ , NS
 seat wh. tan. Hgg, sal, ch. t., fresh

 LS, tan bed, q. y. brn., mostly dns,
 micro- ϕ x. l. n., some dk. nodules,
 fr. wh. shaly-chky, at var. ϕ , NS
 sh. q. y. - q. y. gen. rd. brn., fr. blk
 fr. ch. t., tan. Hgg
 LS, con., brn., dolo?, ool.,
 fr. ool. ϕ , NS

 LS, tan con., brn., v. f. x. l. n.
 f. x. l. n., seat fr. - ph. ϕ , NS
 much wh. shaly, shaly-chky
 fr. Hgg. ch. t.
 sh. dk. q. y. rd. brn. q. y. gen.

 LS, tan con. q. y., brn. dns.
 fr. brn. dns-chky, fr. wh. chky,
 micro- ϕ x. l. n., fr. x. l. n. - ph. ϕ , NS
 fr. q. y. wh. tan. ch. t., fresh

 LS, con. tan., brn., v. f. x. l. n. dolo?
 3 p. ool. v. l. fr. ool. ϕ , NS
 some chky-chky, fr. sh.
 seat v. q. y. - ph. ϕ , NS
 seat ch. t., q. y. tan. brn., sandst.

 LS, tan brn. Hgg, brn. dns
 micro- ϕ x. l. n., sh. t., fr. wh. shaly
 much wh. shaly-chky,
 ph. - v. q. y. ϕ , NS
 sh. blk., conch.

 LS, tan q. y. brn., dns-chky,
 sandst. NS

4200

B/KC 4218 (-1724)

E-log 4220 (-1726)

50

Marmaton 4278 (-1784)

E-log 4280 (-1786)

4300

Pawnee 4328 (-1834)

E-log 4331 (-1837)

sand, clay, gy. tan, some red, sil.
 am. ss, to 1000
 SH, blk, fine sand
 LS, offwh Htan, fine sand,
 micaceous, platy, to 1/2 in. chky,
 to 1/2 in. to 1/2 in. of sil, dms, soap, NS
 some wh-chky
 SH, cal, var
 LS, tan, cream colored, fine med, k,
 platy, micaceous, to 1/2 in.
 some wh-chky, to 1/2 in. soap, NS
 3 pc amber chky - to 1/2 in. chky
 SH, blk, fine, sand
 SH, gy, dkgy, 1/4 in. red, cal
 sand, clay, red, red, tan, amber, fine
 LS, offwh Htan, dk, dms, blk,
 some platy, micaceous, to 1/2 in. chky,
 micaceous, NS soap, clay, red, red
 H. H. H. H.
 SH, gy, blk, gy, red, red, red
 sand, clay, red, red, NS
 LS, offwh wh. gy, fine sand,
 v. fine sil, some wh-chky, sand, sil, soap,
 NS, much chky, tan, amber, red
 LS, offwh tan Hgy, mostly dms,
 chky-chky, micaceous, sil,
 some chky, some sil, NS

