KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1080963

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 30717
Name: Downing-Nelson Oil Co Inc
Address 1: PO BOX 1019
Address 2:
City: HAYS State: KS Zip: 67601 + __ __ __ __
Contact Person: Ron Nelson
Phone: (785) 621-2610
CONTRACTOR: License # 31548
Name: Discovery Drilling
Wellsite Geologist: Ron Nelson
Purchaser: Coffeyville

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [x] 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 #:

05/02/2012	05/06/2012	05/07/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-195-22777-00-00
Spot Description:
E2 - W2 - W2 - SW Sec. 14 Twp. 13 S. R. 21 [ ] East [x] West
1320 Feet from [ ] North / [x] South Line of Section
585 Feet from [ ] East / [x] West Line of Section
Footages Calculated from Nearest Outside Section Corner:
[ ] NE [ ] NW [ ] SE [x] SW
County: Trego
Lease Name: Muhlheim AC Well #: 1-14
Field Name:
Producing Formation: Arbuckle
Elevation: Ground: 2229 Kelly Bushing: 2237
Total Depth: 3979 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 221 Feet
Multiple Stage Cementing Collar Used? [x] Yes [ ] No
If yes, show depth set: 1592 Feet
If Alternate II completion, cement circulated from: 1592
feet depth to: 0 w/ 150 sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 18000 ppm Fluid volume: 400 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:
- [ ] **Confidential Release Date:**
- [x] **Wireline Log Received**
- [x] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [ ] I [x] II [ ] III **Approved by:** Deanna Garrisor **Date:** 09/07/2012

Side Two

1080963

Operator Name: Downing-Nelson Oil Co Inc Lease Name: Muhlheim AC Well #: 1-14

Sec. 14 Twp. 13 S. R. 21 ☐ East ☑ West County: Trego

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 ☑ Yes ☐ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No
Electric Log Run ☑ Yes ☐ No
Electric Log Submitted Electronically ☑ Yes ☐ No
(If no, Submit Copy)

List All E. Logs Run:

Micro
Dual Induction
Compensated Density / Neutron

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Attached	Attached	Attached

CASING RECORD ☑ New ☐ 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
Surface pipe	12.25	8.625	23	221.32	Common	150	2% Gel & 3% CC
Production Casing	7.8750	5.5	14	3975.36	EA/2	150	

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone	-			
	-			

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth
4	3858' to 3868'	750 gallons 15% Mud Acid	3858' to 3868
		2000 gallons 15% INS Acid	3858' to 3868

TUBING RECORD: Size: 2.375 Set At: 3852.60 Packer At:

Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 06/28/2012

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	7	0	240		

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:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Downing-Nelson Oil Co Inc
Well Name	Muhlheim AC 1-14
Doc ID	1080963

Tops

Name	Top	Datum
Top Anhydrite	1596'	+644
Base Anhydrite	1636'	+604
Topeka	3264'	-1024
Heebner	3496'	-1253
Toronto	3514'	-1274
LKC	3531'	-1291
BKC	3772'	-1532
Marmaton	3842'	-1602
Cherokee Shale	3880'	-1640
Arbuckle	3896'	-1656

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 **Home Office P.O. Box 32 Russell, KS 67665** **No.** 381

Cell 785-324-1041

	Sec.	Twp.	Range	County	State	On Location	Finish
Date 4-28-12	14	13	21	TREGO	KANSAS		6:45 PM

Lease MUELHEIM Well No. 1-14 Location RICE S TO FED 1¼E - N INTO

Contractor DISCOVERY #3

Type Job 5-SURFACE

Hole Size 12¼" T.D. 225

Csg. 8⅝" Depth 221.32

Tbg. Size Depth

Tool Depth

Cement Left in Csg. Shoe Joint 15'

Meas Line Displace 13 BLS

Owner DOWNING & NELSON

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.

Charge To DOWNING & NELSON

Street PO BOX 1019

City HAYS State KANSAS, 67601

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 150 com 3%cc 2%gel

EQUIPMENT

Pumptrk #9 No. Cementer Helper RICK

Bulktrk #14 No. Driver Driver NICK

Bulktrk P/U No. Driver Driver CISCO

JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

CEMENT DID CIRCULATE

THANK YOU

Common	150
Poz. Mix	
Gel.	3
Calcium	5
Hulls	
Salt	
Flowseal	
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	158
Mileage	
FLOAT EQUIPMENT	
Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	23
Tax	
Discount	
Total Charge	

X Signature Michael Russell

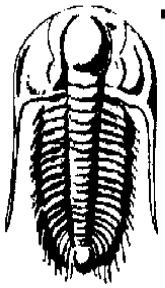
JOB LOG

SWIFT Services, Inc.

DATE 4 MAY 12 | PAGE NO.

CUSTOMER	WELL NO.	LEASE	JOB TYPE	TICKET NO.
DOWNING & NELSON		MUHLHEIM AC 1-14	5 1/2 LONGSTRING	22148

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS T	PUMPS C	PRESSURE (PSI) TUBING	PRESSURE (PSI) CASING	DESCRIPTION OF OPERATION AND MATERIALS
	1030							ON LOCATION
	1315							START PIPE 5 1/2 - 14#
								RTD @ 3979 SET @ 3975
								SHOE JT. 42.43'
								CENTRALIZERS 1,3,5,7,9,11,59
								BASKET 60
								DV TOOL JT # 60 @ 1592
	1454							DROP BALL CIRCULATE
1522	~~1554~~	4	12		✓		400	Pump 500 gal MUD FLUSH
		4	20		✓		400	Pump 20 Bbl KCL FLUSH
	1528	6	36		✓			MIX 150 sx EA2
	1537							WASH OUT PUMPING LINES
	1540	6			✓			START DISPLACING PLUG
	1556	Ø	98		✓		1500	PLUG DOWN PSI UP LATCH PLUG IN
	1559							DROP DV OPENING TOOL
	1609						1000	OPEN DV - CIRCULATE
	1628	6	20		✓			Pump 20 BBL KCL FLUSH
	1632		75					PLUG RH - MH (30 sx - 20 sx)
	1639	6	83		✓		350	MIX 150 sx SMD
	1658							WASH OUT PUMPING LINES.
	1700	6			✓			START DISPLACING CLOSING TOOL / PLUG
	1706	Ø	39		✓		1500	CLOSE DV TOOL
	1708							RELEASE PSI - DRY
	1710							WASH TRUCK
	1730							JOB COMPLETE
								THANKS # 110
								JASON JEFF TJ



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Downing-Nelson Oil Co Inc**

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

Muhlheim AC #1-14

14-13s-21w Trego,KS

Start Date: 2012.05.03 @ 09:18:55
End Date: 2012.05.03 @ 16:44:55
Job Ticket #: 44786 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2012.05.07 @ 14:55:39

DRILL STEM TEST REPORT

Downing-Nelson Oil Co Inc

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

14-13s-21w Trego,KS

Muhlheim AC #1-14

Job Ticket: 44786 **DST#: 1**

Test Start: 2012.05.03 @ 09:18:55

GENERAL INFORMATION:

Formation: **Marmaton**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:15:25
Time Test Ended: 16:44:55

Test Type: Conventional Bottom Hole (Initial)
Tester: Jeff Brown
Unit No: 59

Interval: 3856.00 ft (KB) To 3881.00 ft (KB) (TVD)
Total Depth: 3881.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

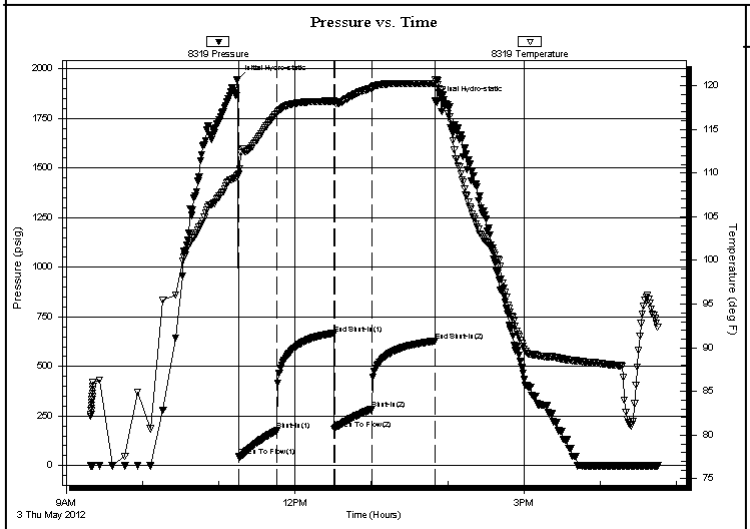
Reference Elevations: 2240.00 ft (KB)
2234.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8319 **Outside**

Press@RunDepth: 284.15 psig @ 3858.00 ft (KB)
Start Date: 2012.05.03 End Date: 2012.05.03
Start Time: 09:19:00 End Time: 16:45:54

Capacity: 8000.00 psig
Last Calib.: 2012.05.03
Time On Btm: 2012.05.03 @ 11:14:55
Time Off Btm: 2012.05.03 @ 13:50:25

TEST COMMENT: IFP-Strong blow BOB in 2 1/2 min
ISI-Good blow back BOB in 33 min
FFP-Strong blow BOB in 4 min
FSI-Fair blow back built to 5 in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1946.54	109.75	Initial Hydro-static
1	46.32	109.86	Open To Flow (1)
31	176.55	116.81	Shut-In(1)
76	663.50	118.24	End Shut-In(1)
76	184.67	118.14	Open To Flow (2)
106	284.15	119.75	Shut-In(2)
155	627.09	120.26	End Shut-In(2)
156	1838.47	120.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	MCGO 20%G 25%M 55%O	0.28
736.00	Gassy Oil 45%G 55%O	10.32
0.00	704 GIP-	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Downing-Nelson Oil Co Inc

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

14-13s-21w Trego,KS

Muhlheim AC #1-14

Job Ticket: 44786 **DST#: 1**

Test Start: 2012.05.03 @ 09:18:55

GENERAL INFORMATION:

Formation: **Marmaton**
Deviated: No Whipstock: ft (KB)
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Time Test Ended: 16:44:55

Test Type: Conventional Bottom Hole (Initial)
Tester: Jeff Brown
Unit No: 59

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Total Depth: 3881.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good

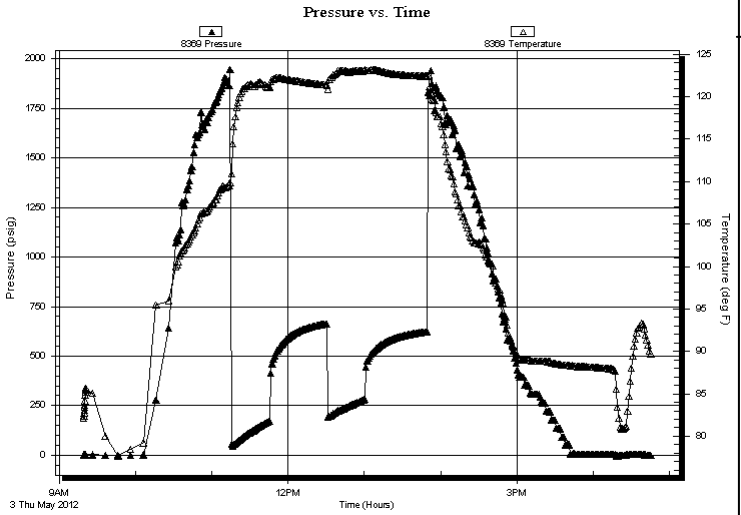
Reference Elevations: 2240.00 ft (KB)
2234.00 ft (CF)
KB to GR/CF: 6.00 ft

Serial #: 8369 **Inside**

Press@RunDepth: psig @ 3858.00 ft (KB)
Start Date: 2012.05.03 End Date: 2012.05.03
Start Time: 09:19:00 End Time: 16:45:54

Capacity: 8000.00 psig
Last Calib.: 2012.05.03
Time On Btm:
Time Off Btm:

TEST COMMENT: IFP-Strong blow BOB in 2 1/2 min
ISI-Good blow back BOB in 33 min
FFP-Strong blow BOB in 4 min
FSI-Fair blow back built to 5 in



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
40.00	MCGO 20%G 25%M 55%O	0.28
736.00	Gassy Oil 45%G 55%O	10.32
0.00	704 GIP-	0.00

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Dow ning-Nelson Oil Co Inc

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

14-13s-21w Trego,KS

Muhlheim AC #1-14

Job Ticket: 44786 **DST#: 1**

Test Start: 2012.05.03 @ 09:18:55

Tool Information

Drill Pipe:	Length:	3825.00 ft	Diameter:	3.80 inches	Volume:	53.65 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.70 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	31.00 ft	Diameter:	2.25 inches	Volume:	0.15 bbl	
					Total Volume:	53.80 bbl	

Drill Pipe Above KB:	21.00 ft
Depth to Top Packer:	3856.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	25.00 ft
Tool Length:	46.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2000.00 lb
Weight set on Packer:	20000.00 lb
Weight to Pull Loose:	74000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	59000.00 lb
Final	62000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3836.00		
Shut In Tool	5.00			3841.00		
Hydraulic tool	5.00			3846.00		
Packer	5.00			3851.00	21.00	Bottom Of Top Packer
Packer	5.00			3856.00		
Stubb	1.00			3857.00		
Perforations	1.00			3858.00		
Recorder	0.00	8369	Inside	3858.00		
Recorder	0.00	8319	Outside	3858.00		
Perforations	20.00			3878.00		
Bullnose	3.00			3881.00	25.00	Bottom Packers & Anchor
Total Tool Length:	**46.00**					

DRILL STEM TEST REPORT

FLUID SUMMARY

Dow ning-Nelson Oil Co Inc

PO Box 1019
Hays KS 67601

ATTN: Ron Nelson

14-13s-21w Trego,KS

Muhlheim AC #1-14

Job Ticket: 44786 **DST#: 1**

Test Start: 2012.05.03 @ 09:18:55

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	36 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	56.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	8.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2500.00 ppm				
Filter Cake:	inches				

Recovery Information

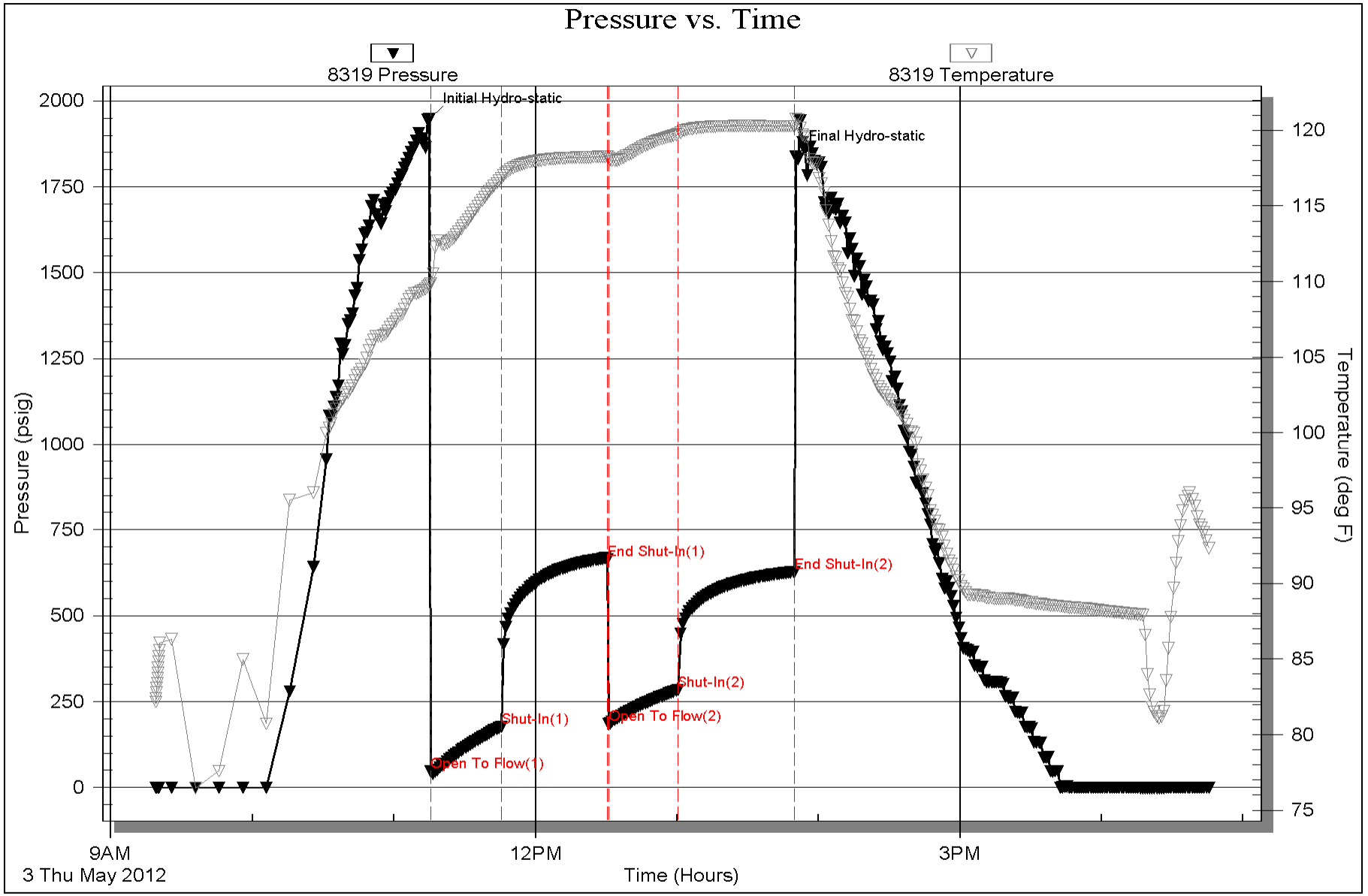
Recovery Table

Length ft	Description	Volume bbl
40.00	MCGO 20%G 25%M 55%O	0.279
736.00	Gassy Oil 45%G 55%O	10.324
0.00	704 GIP-	0.000

Total Length: 776.00 ft Total Volume: 10.603 bbl

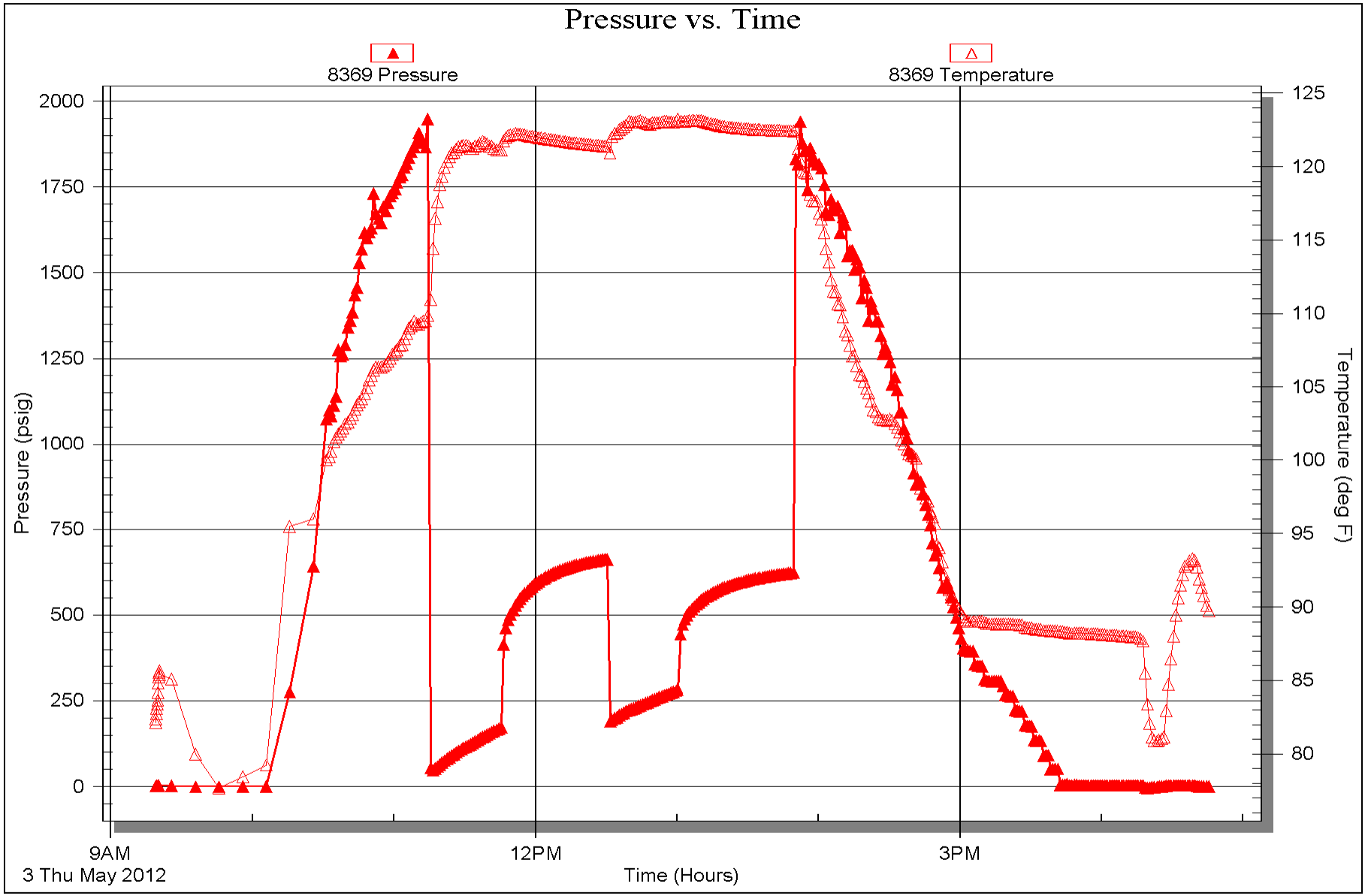
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8319 **Outside** Dow ning-Nelson Oil Co Inc Muhlheim AC #1-14 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 44786 Printed: 2012.05.07 @ 14:55:41

Serial #: 8369 **Inside** Dow ning-Nelson Oil Co Inc Muhlheim AC #1-14 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 44786 Printed: 2012.05.07 @ 14:55:41

TRILOBITE TESTING INC.
P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 44786

Well Name & No. Muhlheim AC 1-14 Test No. 1 Date 5-3-12
Company Downing-Nelson Oil Co Inc Elevation 2241 KB 2234 GL
Address Po Box 1019 Hays KS 67601
Co. Rep / Geo. Ron Nelson Rig Discovery #4
Location: Sec. 14 Twp. 13 S Rge. 21 W Co. Trego State KS

Interval Tested 3856 - 3881 Zone Tested Marmaton
Anchor Length 25 Drill Pipe Run 3825 Mud Wt. 8.9
Top Packer Depth 3851 Drill Collars Run 31 Vis 56
Bottom Packer Depth 3856 Wt. Pipe Run 0 WL 8.8
Total Depth 3881 Chlorides 2800 ppm System LCM 2½

Blow Description 1st: Strong Blow BOB IN 2½ min
1st-Good Blow Back BOB IN 33 min
2nd-Strong Blow BOB IN 4 min
2nd-Fair Blow Back Built To 5 IN

Rec 40	Feet of MCGO	20 %gas	55 %oil	%water	25 %mud
Rec 730	Feet of Cassy Oil	45 %gas	55 %oil	%water	%mud
Rec	Feet of 704-GIP	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 770 BHT 120 Gravity 36 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic	1947	☒ Test 1150	T-On Location 8:48
(B) First Initial Flow	46	☐ Jars	T-Started 9:18
(C) First Final Flow	177	☐ Safety Joint	T-Open 11:14
(D) Initial Shut-In	1064	☐ Circ Sub	T-Pulled 13:44
(E) Second Initial Flow	185	☐ Hourly Standby	T-Out 16:44
(F) Second Final Flow	284	☒ Mileage 42 RT 100	Comments
(G) Final Shut-In	1027	☐ Sampler	
(H) Final Hydrostatic	1838	☐ Straddle	☐ Ruined Shale Packer
		☐ Shale Packer	☐ Ruined Packer
Initial Open	30	☐ Extra Packer	☐ Extra Copies
Initial Shut-In	45	☐ Extra Recorder	Sub Total 0
Final Flow	30	☐ Day Standby	Total 1215.10
Final Shut-In	45	☐ Accessibility	MP/DST Disc't
		Sub Total 1215.10	

Approved By Our Representative Jeff Brown

RON NELSON

CONSULTING PETROLEUM GEOLOGIST
3322 LINCOLN DRIVE
HAYS, KANSAS 67601
PHONE: 785-628-3449

GEOLOGIC REPORT LOG

COMPANY Downing-Nelson Oil Co., Inc.

WELL Muhlheim AC #1-14

FIELD

LOCATION 1320' FSL & 585' FWL

SEC 14 TWP. 13S RGE 21W

COUNTY Trego

STATE Kansas

OPERATOR Duo Co.

CONTRACTOR Discovery Drilling Rig #4

COMM: 4-28-12 COMP: 5-4-12

CASING RECORD

SURF: 8⅝" @ 221' PROD: 5½" @ 3978'

TOTAL DEPTH DRILLERS: 3979'

TOTAL DEPTH LOG 3980'

PRODUCTION Arb-Miss-LKC

ELEVATION KB 2240'
DF
GL 2232'

Drilling Measured From: KB

Samples Saved From 3500 To: TD

Drilling Time From 3200 To: TD

Samples Examined From: 3500 To: TD

Geological Supervision From 3500 To Total Depth

Wellsite Geologist Al Daniels / Ron Nelson

Electrical Surveys Superior Well Svc.
Dual Induction
Density-Neutron
Micro

FORMATION TOPS AND STRUCTURAL POSITION

FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION
TOP ANHYDRITE		1596	+644	-1
BASE ANHYDRITE		1636	+604	+1
TOPEKA	3265	3264	-1024	-3
HEEBNER	3494	3493	-1253	-2
TORONTO	3515	3514	-1274	-3
LKC	3532	3531	-1291	-4
BKC	3773	3772	-1532	-1
MARMATON	3893	3842	-1602	+5
CHEROKEE SHALE	3881	3880	-1640	+7
ARBUCKLE	3897	3896	-1656	+13

REFERENCE WELL FOR STRUCTURE Muhlheim AE #1 @ NE-SW-SW

DAILY PENETRATION		BIT RECORD						
DATE	DEPTH	NO	SIZE	MAKE	TYPE	DEPTH OUT	FEET	HOURS

FORMATION	INTERVAL	DESCRIPTION OF SHOW	LOG ANALYSIS O / S W

DRILL STEM TESTS

No.	Interval	IFP/Time	ISIP/Time	FFP/Time	FSIP/Time	HH-FHH	RECOVERY

REMARKS AND RECOMMENDATIONS Based on samples, DST #1, & Log Evaluation, & Structural Comparisons, Ran 5½" Production Pipe For Completion: Arbuckle 3902'-06'
Marmaton 3858-66'
LKC "K" 3730'-34'
LKC "I" 3688'-92'
LKC "H" 3666-70'
Before abandonment, perforate LKC "E" @ 3603'-08'
"C" @ 3556'-60'
"A" @ 3532'-38'

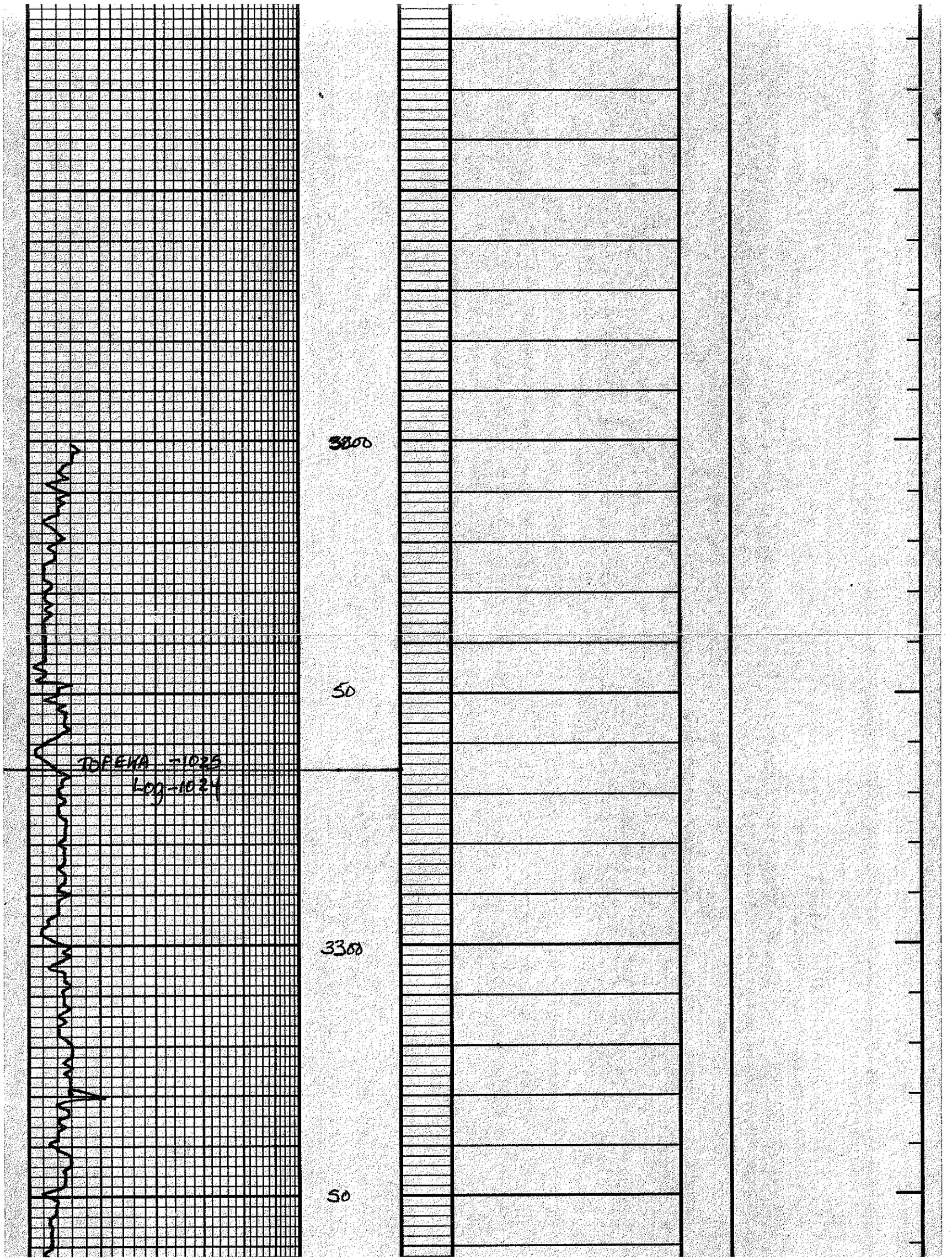
Ken McClean

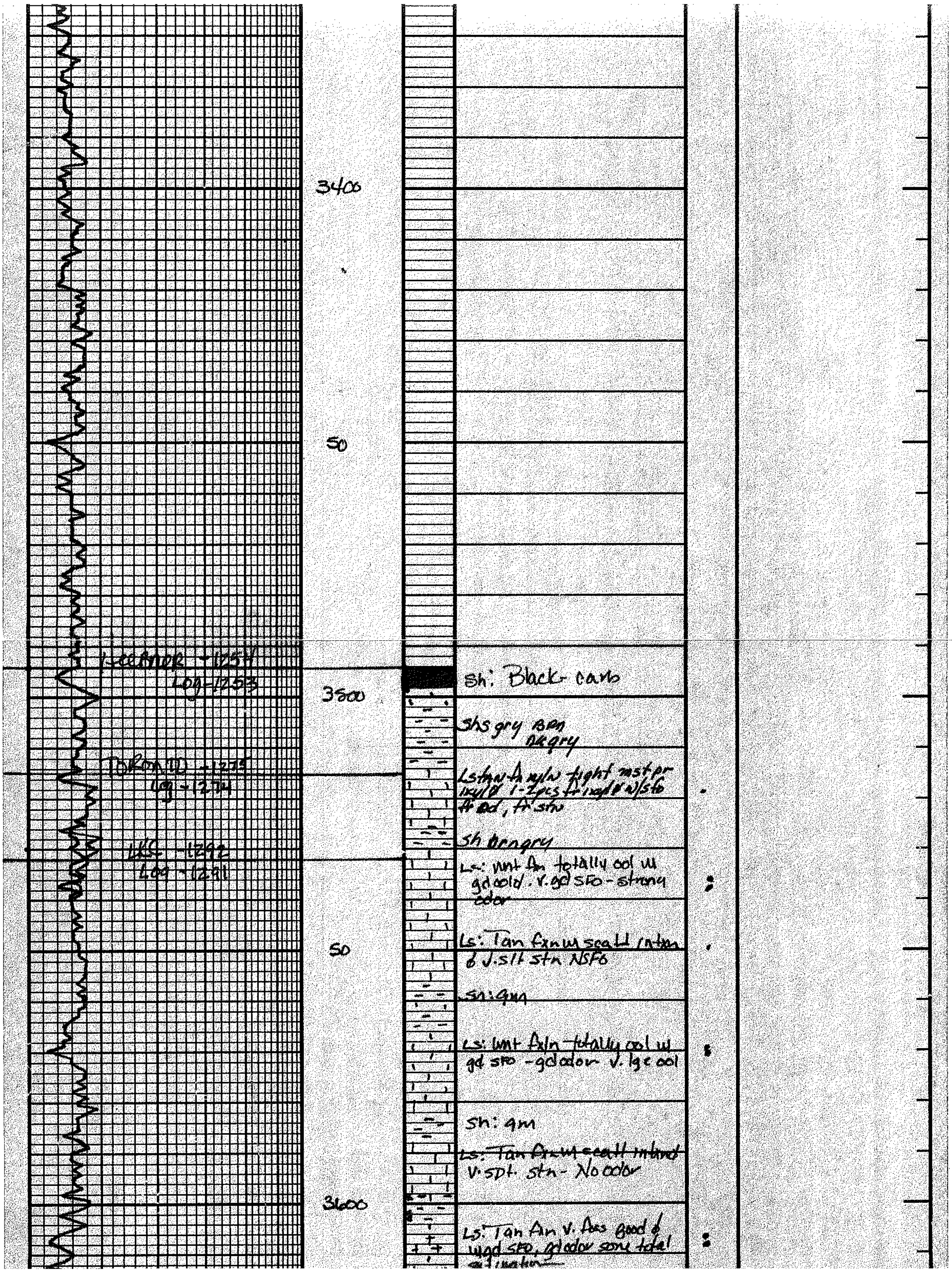
LEGEND

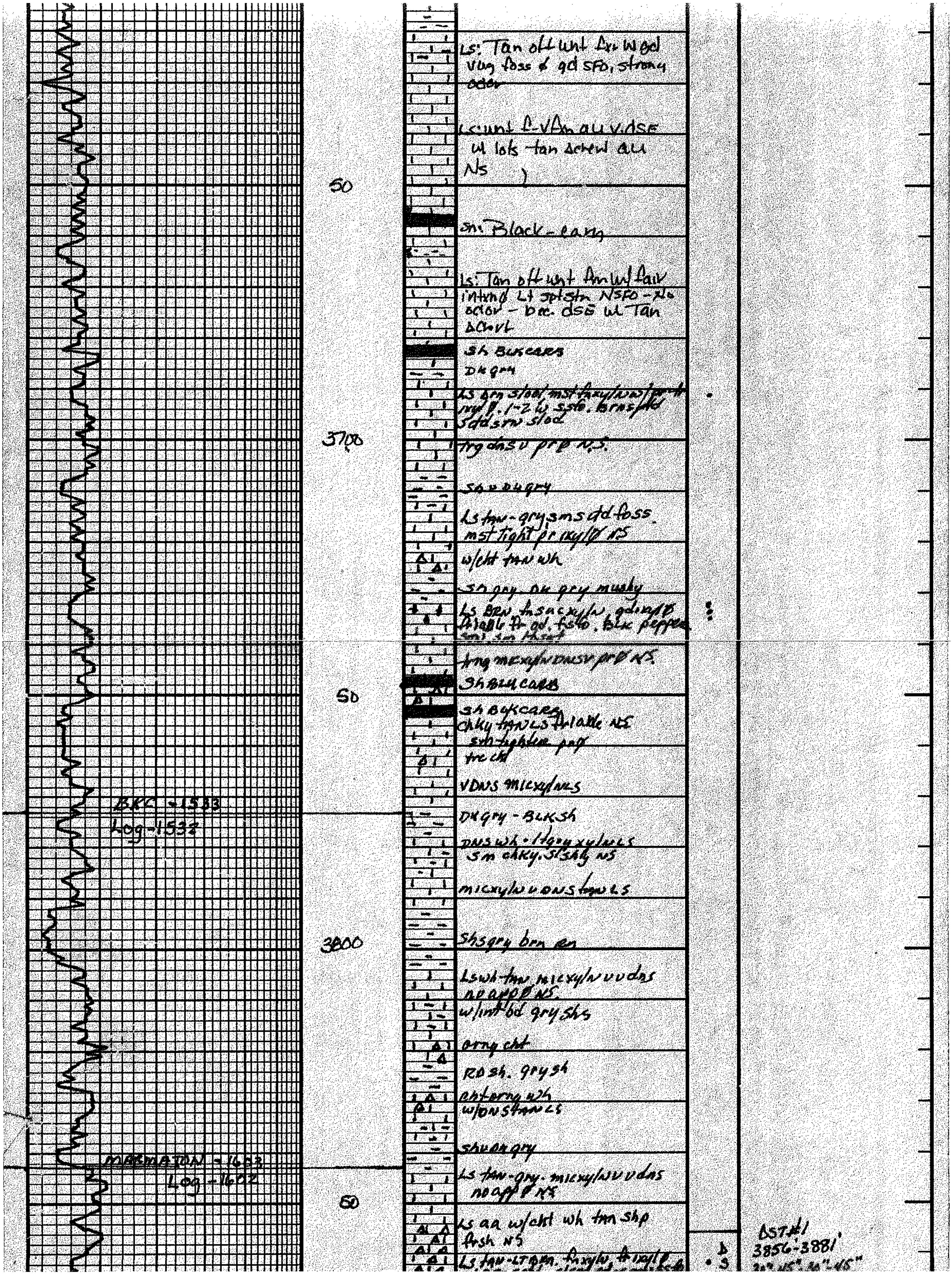
Dolomite
Chert
Ool.Lime
Limestone
Carb sh
Shale
Sandstone
Salt
Anhydrite

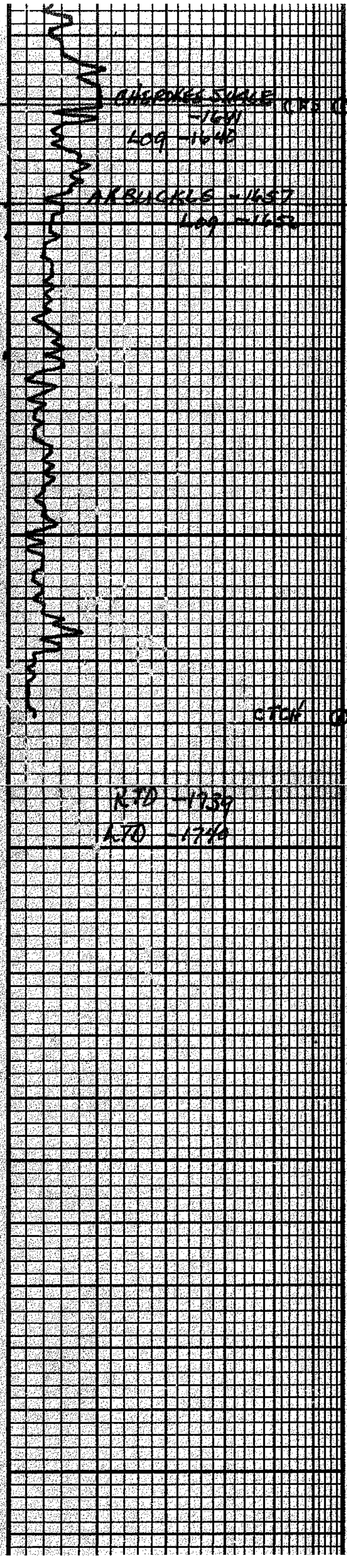
REMARKS
OIL SHOWS
SAMPLE DESCRIPTIONS
LITHOLOGY
DEPTH
DRILLING TIME IN MINUTES PER FOOT
Rate of Penetration Decreases
5" 10" 15" 20" 25"

NELSON-8


3800
50
DFEHA =1025
Log=1024
3300
50


3400
50
3500
50
3600
Heebner -1254
Log -1253
Toronto -1275
Log -1274
LKC -1292
Log -1291
Sh: Black carb
Shs gry brn dk gry
Sh brn gry
Ls: Tan fxln sca tl intxtal
Sh: gm
Sh: gm
Ls: Tan fxln scatt intxtal
v. spt. stn - No odor


Ls: Tan off wht fn w gd Vug foss & gd SFO, strong odor
Ls wht f-VFn alu vdse w lots tan achew alu NS
50
Sh: Black - carb
Ls: Tan off wht fn w/ fair intxtl Lt spt stn NSFO - No odor - bec. dse w Tan
Sh Blk carb
Dk gry
3700
Sh dk gry
Ls tan - gry sms gd foss mst tight pr xyl Ø NS
w/cht tan wh
50
Sh Blk carb
Sh Blk carb
VDns micxyl NS
BKC - 1533
Log - 1532
Dk gry - Blk sh
micxyl v dns tan LS
3800
Shs gry brn rd
Lswh tan micxyl v v dns no app Ø NS
w/ int bd gry shs
orng cht
Rd sh. gry sh
shdk gry
MARMATON - 1633
Log - 1602
Ls tan - gry micxyl v v dns no app Ø NS
50
Ls aa w/ cht wh tan shp frsh NS
DST #1
3856 - 3881'



3900

50

4000

5l od, w/ cht gd opp tracy, sm sty stn, Brn, SSFO slat

vous trucs w/ abdnt multi-color cht NS

Sh Blk CARB

sh dk gry no brn

Dolo tan fn suc xyln, Arg mgl & slad. Brn LT sat stn. Sm tight

sm tight frag mo rhomxyln w/ fr SFO. Bet dol xyl, sdt friable, sm tight frag gd - ud od in 3890 gd blk SFO. Fr rhomb mo rhom xyl

sm gd sat brn stn, sm shale tight

Dolo brn - tan, fn rhom xyln, w/ cmtd tight mat barren, sm w/ sctd gd brn stn & SSFO

Dolo Brn - tan - f-gr n med - crs rhom xyln, fr gd xyl BLK tarry & gls stn, rare SFO

Dolo wh. Hary Barren fr od sm blk scld stn pr to tight

Dolo tan - wh mo - crs rhom xyln w/ cht wh shp frsh

Dolo & cht aq

Dolo gry - tan - wh mo rhom xyln Barren NS

[signature]

#1

1st op BOB 2½
1st SI. BOB 38"
2nd op BOB 4"
2nd SI. 5"
IFP 46-177
FFP 195-284
SIP 664-637
HP 1947-1838
BHT 120°
Gravity 36°
Rec 40' MCGO
736' VGO

5" 10" 15" 20" 25" DRILLING TIME Minutes/Foot Rate of Penetration Decreases	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS

OPERATOR Downing-Nelson Oil Co. Inc.
LOCATION 1320'FSL & 585'FWL
LEASE Mullhelm AC #1-14 IP
SEC 14 TWP 13S RNG 21W
ELEVATION 2240' KB RTD 3980'
COUNTY TREGO STATE Kansas
Log Incorrect Datum