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SPECIAL SERVICES

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~~RELEASED~~

~~JUN 04 2000~~

~~FROM CONFIDENTIAL~~

STAR RESOURCES, LLC
CURRIER NO. 20-9
SECTION 20, T32S, R18W
COMANCHE COUNTY, KANSAS
MAY, 1999

ORIGINAL

CONFIDENTIAL

RELEASED

MAY 07 2001

FROM CONFIDENTIAL

Wellsite Geologist: Peter Debenham
330 Hideaway Circle
Evergreen, CO 80439
303/674-0633

ORIGINAL

JUN 09 1999

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WELL DATA

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Operator: Star Resources, LLC, 1125 17th St., #2360, Denver, CO 80202
Company Geologist: Ken Roberts
Prospect Geologist: Peter Moreland

Well Name: Currier No. 20-9, API No.: 15 - 033 - 210070000

Location: 2150' FSL & 660' FEL, Section 20, T32S, R18W,
Comanche County, Kansas - 2 1/2 mile E/SE of Coldwater

Elevation: K.B. 2131' G.L. 2139'

Contractor: Duke Drilling Rig No. 1: Double jackknife, double stand
Toolpusher Mike Godfrey

Surface Casing: 20" conductor pipe set at 48', 10 joints of new 25 Lbs/ft. set
at 429' with 100 sacks Midcon II (2%cc, 2%gel). Cement did not
circulate. Recemented with 135 sacks Midcon II PP, 50 sacks
PP and 260 sacks Premium (2%cc)

Spud Date: 4/29/99

Total Depth: 5/18/99, Driller 6300', Ordovician Arbuckle Formation

Wellsite Geologist: Peter Debenham with mudlogging trailer. Call depth 4100'.
330 Hideaway Circle, Evergreen, CO 80439 303/674-0633

Drilling Consultant: DNR - Denver, CO - Engineer Charles B. Davis

Drillstem Testing: Trilobite Testing LLC., Engineer Darren Amerine
DST No. 1 (5099' - 5136'), Pawnee
DST No. 2 (5207' - 5263'), Mississippi/Warsaw
DST No. 3 (5724' - 5743'), Viola

Mud Program: Service Mud Inc - Engineer Jim Wiesner, Displaced at 2718'.
Type: Chemical Gel/LCM

Electric Logs: ELI Wireline Services - Hays, Kansas Engineer Dan Gottshalk
1) Dual Induction 2) Compensated Neutron/Density 3) Micro Log
4) Sonic, Driller TD depth 5955', Logger depth 5950' - lower
section of hole (5955' - 6300') not logged.

RELEASE

MAY 07 2001

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JUN 06 2000

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Samples: One set dry cut stored with Star Resources - Denver
One set dry cut(5900'-TT) sent to Kansas sample log library

Status: No hydrocarbon production established. 5 1/2" casing run to the Arbuckle on 5/19/99 for a salt water disposal well.

WELL SUMMARY

The Currier No. 20-9 was drilled to a total depth of 6300' in the Arbuckle Formation without unusual problems. Lost circulation occurred at 423' and surface casing became stuck at 429' and landed short of the planned TD. Cement did not circulate to surface and necessitated a squeeze job. Minor lost circulation occurred at 1300' and at 3816'.

The nearest offset to which logs were available was the Conely P. Smith Operating Company, Currier No. 20-1 - 2470' to the North. This well drilled in November of 1996 established gas production from the Viola and encountered numerous potentially productive zones from the Toronto on down.

The Stone Corral came in 10' low relative to this offset. Thickening occurred and formation tops from the Topeka to the Mississippi ran consistently 19' to 25' low. Further thickening occurred in the Mississippi and the Osage, Viola and Upper Simpson Dolomite ran 37', 40' and 41' low respectively.

The Currier No. 20-1 did not penetrate the Arbuckle but the Acres No. 21-5, 1/2 mile to the E/NE did. The Upper Simpson Sandstone, Simpson Shale, Basal Simpson Sandstone and Arbuckle ran 65', 54', 61' and 59' low respectively, relative to this well.

Several noteworthy hydrocarbon shows were documented during the drilling of this test. The Pawnee(5119'-5129') consists of a Limestone - Light brown, buff, biomicrite, microcrystalline, microsucrosic, brittle, clean, subchalky, fossiliferous with moldic and fenestral porosity, fair intercrystalline porosity, bright goldbrown hydrocarbon fluorescence in 5% of the samples, fair streaming cut, trace mottled brown oil stain. A trace of formation gas was recorded on the hotwire.

This interval was drillstem tested(5099'-5137') and recovered 60' of slightly gas and oil cut mud.

An excellent show occurred in the Mississippi Warsaw(5234'-5260') and consists of a Dolomite - Light to medium brown, mottled graygreen, coarsely crystalline, sucrosic to granular in part, clean, glauconitic, sandy, good intercrystalline and occasional vuggy porosity, bright yellowgold hydrocarbon fluorescence in 25% of the samples, matrix oil stain and trace live oil. A trace of formation gas was recorded.

This interval tested tight(5207'-5263') and recovered 80' of slightly gas cut mud.

The Viola(5725'-5740') consists of a Dolomite - Medium brown, coarsely crystalline, sucrosic to granular in texture, brittle, clean, good intercrystalline and

trace vuggy porosity, bright yellowblue hydrocarbon fluorescence in 12% of the samples - majority of the dolomite, good streaming cut, slight gas odor, show dissipates when dried, with abundant Chert in 10% of the samples and with slight show. A 25 Unit gas increase occurred on the hotwire.

This interval was drillstem tested(5724'-5743') and recovered 120' of gas in the pipe, 115' of gas and mud cut water with a trace of oil and 100' of saltwater.

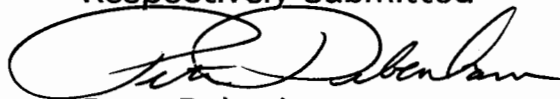
Minor shows occurred in the Toronto, Cherokee and Warsaw(enclosed striplog) and should be closely watched in future wells in the area.

5 1/2" casing was run to the Arbuckle on the Currier No. 20-9 to convert it into a saltwater disposal well.

The Numerous hydrocarbon show and close proximity to production should encourage further exploration.

Appreciation goes to Duke Drilling rig hands for their efficient manner of operation during the drilling of this test.

Respectively Submitted



Peter Debenham

DAILY DRILLING CHRONOLOGY

<u>DATE</u>	<u>MIDNIGHT DEPTH</u>	<u>24 HOUR FOOTAGE</u>	<u>RIG ACTIVITY</u>
4/29	158	158'	Move to location and rig up rotary tools - use cat to move in. Pump water and mix spud mud. Drill rathole and mousehole. Pick up collars and drill pipe. Drill cement plug(20" conductor previously set to 48') and drill 12 1/4" surface hole to 158'.
4/30	734'	576'	Drill 12 1/4" surface hole to 423' and lost circulation. Wait on water and mix mud and LCM - no returns. Dry drill to 734' and trip out for surface casing. Run 10 joints of new 8 5/8" surface casing. Casing stuck at 429' and last 4 joints would not run. Try rotating casing down - would not go. Call state for approval to cement and cement casing set at 429' - did not circulate.
5/1	920'	186'	Recement surface casing through 1" down backside and wait on cement. Cement reached conductor pipe. Mix mud

and LCM. Trip in and drill cement and plug and drill new 7 7/8" hole to 920'. Work on pump. Run survey(3°).

5/2	1045'	125'	Run temperature log. Perforate surface casing from 325' to 330' and circulate cement to surface. Wait on cement. Nipple up and pressure test BOP. Drill plug and cement. Trip in collars and drill pipe and circulate. Drill to 1045'. Lost circulation at 1300'. Mix LCM.
5/3	2135	1090'	Drill to 2135' Run surveys(1°). Jet pits and service rig.
5/4	2787'	652'	Drill to 2787'. Displace mud system at 2718'.
5/5	3348'	561'	Drill to 3348'. Run survey(1°) and hook up flowline.
5/6	3850'	502'	Drill to 3850'. Service mud pump - change pistons. Repair rotary chain. Jet and clean pits and service rig. Lost circulation at 3816'(50 bbls).
5/7	4360'	510'	Drill to 4360'. Run survey(1/2°). Jet pits and service rig.
5/8	4780'	420'	Drill to 4768'. Circulate for samples at 4437', 4600'. 4634', 4724' and 4764'.
5/9	5019'	239'	Circulate for samples at 4877'. Drill to 4965'. Drop survey(1/2°) and strap out for Bit No. 3 - 2' uphole correction. Trip to bottom, break circulation and drill to 5019'.
5/10	5137'	118'	Drill to 5137' and circulate for samples. Trip out for DST No. 1(5099'-5137'), Pawnee Fm. Run test.
5/11	5263'	126'	Run test and pull tool. Trip to bottom and circulate bottoms up. Drill to 5263'. Circulate for samples at 5190', 5245' and 5263'. Drop survey(1°) and trip out for DST No. 2(5207'-5263'), Mississippi.
5/12	5400'	137'	Run test and pull tool. Trip in with Bit No. 3 and circulate hole clean. Drill to 5391'. Circulate for samples at 5288'.
5/13	5630'	230'	Service rig and mud pumps. Replace rotary chain and jet pits. Drill to 5630'.

5/14	5743'	113'	Drill to 5743'. Circulate for samples at 5715', 5739' and 5743'. Drop survey(1°) and strap out for DST No. 3(5724'-5743'), Viola Fm. - no depth correction. Make up tool and trip in.
5/15	5903'	160'	Run test. Trip out tool and lay down same. Trip in with Bit No. 3 and drill to 5892'
5/16	5991'	88'	Drill to 5955' and circulate hole clean. Drop survey(3/4°) and trip out for logs and run E-logs. Trip to bottom, break circulation and drill to 5974'.
5/17	6205'	214'	Drill to 6205'.
5/18	6300'TD	95'	Drill to 6300'TD and circulate. Trip out laying down. Pulled tight at 5200'. Run 5 1/2" casing to the Arbuckle and cement. Rig down.

MUD PROPERTIES

<u>DATE</u>	<u>DEPTH</u>	<u>WT</u>	<u>VIS</u>	<u>YP</u>	<u>WL</u>	<u>PH</u>	<u>CL</u>	<u>LCM#/bbl</u>
5/3	1570'	8.9	29	--	n/c	7.0	36,000	.5
5/4	2485'	9.4	35	20	102	7.0	92,000	3
5/5	3030'	8.9	36	17	48.0	7.0	14,000	3
5/6	3585'	9.6	35	16	60.0	7.0	20,000	1
5/7	4030'	9.0	40	13	11.2	10.5	6,000	2
5/8	4580'	9.0	46	19	14.4	10.0	5,500	.5
5/9	4960'	9.1	45	17	10.4	11.0	6,000	1
5/10	5115'	9.1	41	20	12.8	11.0	9,000	.5
5/11	5185'	9.1	44	25	12.8	10.5	10,000	tr
5/12	5263'	9.1	43	18	11.2	10.5	8,000	1
5/13	5505'	9.1	44	19	12.8	10.5	11,000	2
5/14	5705'	9.1	50	22	9.6	9.5	7,000	4
5/15	5780'	9.1	43	14	10.4	9.5	12,000	3
5/16	5955'	9.2	46	17	10.4	10.5	13,000	4
5/17	6080'	9.2	60	24	10.4	10.5	12,000	5
5/18	6264'	9.2	46	14	10.0	12.8	9,000	4

BIT RECORD

NO.	SIZE	MAKE	TYPE	OUT	FOOTAGE	HOURS
1	12 1/4"	RD	11B	607'	557'	6
2	7 7/8"	WM	51F	4965'	4358'	135 1/2
3	7 7/8"	WM	62CFJ	6300'	1335'	107 1/2
Total Rotating Hours:						249
Average:						25.1 Ft/Hr

DEVIATION RECORD

920' 3°, 1509' 1 3/4°, 2135' 1°, 3037' 1°, 4030' 1 1/2°, 4965' 1 1/2°, 5263' 1°, 5743' 1°, 5955' 3/4°, 6300' 1°

DRILL STEM TEST DATA

DST NO. 1; (5099' - 5137'), Pawnee

Type: Conventional Bottom Hole, Times: 15 - 30 - 30 - 60

<u>PERIOD</u>	<u>PSI</u>
IH	2526
IF	20 - 22
ISI	327
FF	27 - 31
FSI	1361
FH	2453

BHT 124° F

BLOWS: IF - Weak surface blow.

FF - Built to 3" in 20 minutes and slowly died to surface blow.

I & FSI - No blowback.

RECOVERY: 60' slightly gas and oil cut mud(10% gas, trace oil and trace water).

SAMPLE CHAMBER: 450 PSI, 2000 ml gas, 2000 ml mud, trace oil

COMMENTS: No problems occurred during test. Charts were clean.

DST NO. 2: (5207' - 5263'), Mississippi Spargen/Warsaw Formation

Type: Conventional Bottom Hole, Times: 30 - 60 - 15 - 45

<u>PERIOD</u>	<u>PSI</u>
IH	2609
IF	23 - 32
ISI	690
FF	39 - 45
FSI	437
FH	2546

BHT 124° F

BLOWS:IF - Opened weak and built to 6" in 12 minutes and slowly died to surface blow.

FF - Weak surface to 1/2" blow throughout.

I & FSI - No blowback.

RECOVERY: 80' of slightly gas cut mud(10% gas)

Sample Chamber: 500 PSI, 2500 ml gas, 1500 ml mud

Comments: No problems occurred during test - Charts were clean.

DST NO 3: (5724' - 5743'), Viola Formation

Type: Conventional Bottom Hole, Times 15-30-60-120

<u>PERIOD</u>	<u>PSI</u>
IH	2823
IF	14 - 38
ISI	1899
FF	52 - 153
FSI	1930
FH	1818

BHT 140° F

BLOWS:IF - Steadily increases to the bottom of the bucket in 2.5 minutes.

FF - Built to 8" in 6 minutes and slowly decreased to 4".

I & FSI - No blowback.

RECOVERY: 120' of gas in pipe. 90' of slightly gas and mud cut water with a trace of oil(18% gas, 28% water, 52% mud, trace oil), 125' of slightly mud cut gassy water(4% gas, 28% water, trace oil) and 100' of saltwater.

Sample Chamber: 125 PSI, 1000 ml gas, 3000 ml water, trace oil.

water - Rw 0.06 Ohms at 69° F - 140,000 ppm Cl

mud pit water - Rw 0.8 Ohms at 75° F - 7,000 ppm Cl

COMMENTS: No problems occurred during test. Packers set and pulled loose properly and charts were clean.

ELECTRIC LOG FORMATION TOPS - KB Elevation 2139'

<u>FORMATION</u>	<u>DEPTH</u>	<u>DATUM</u>
Stone Corral	1098'	+1041'
Hutchenson Salt	1890'	+249'
Foraker	3295'	-1156'
Wabaunsee	3510'	-1371'
Stotler	3644'	-1505'
Howard	3713'	-1574'
Topeka	3857'	-1718'
Lecompton	4034'	-1895'
Elgin	4160'	-2021'
Heebner	4352'	-2213'
Toronto	4369'	-2230'
Brown Limestone	4530'	-2391'
Lansing	4560'	-2421'
B Zone	4576'	-2437'
H Zone, Drum	4746'	-2607'
Stark SH	4851'	-2712'
Swoop	4858'	-2719'
BKC	4942'	-2803'
Marmaton	5058'	-2919'
Altamont	5071'	-2932'
Pawnee	5103'	-2964'
Cherokee	5152'	-3013'
Mississippi/Spergen	5206'	-3067'
Warsaw	5234'	-3095'
Osage	5318'	-3179'
Kinderhook	5638'	-3499'
Viola	5722'	-3583'
Upper Simpson Dolomite	5910'	-3771'
Upper Simpson SS-spl	6011'	-3872'
Simpson Shale-spl pick	6023'	-3884'
Basal Simpson SS-spl	6068	-3929'
Ordovician Arbuckle-spl	6096'	-3957'
TD	6300'	-4161'

STRUCTURAL CONSIDERATION - Datum Depths

<u>FORMATION</u>	<u>*CURRIER NO. 20-1</u>	<u>CURRIER NO. 20-9</u>	<u>POSITION</u>
Stone Corral	+1051'	+1041'	-10'
Wabaunsee	-1357'	-1371'	-14'
Stotler	-1490'	-1505'	-15'
Topeka	-1693'	-1718'	-25'
Heebner	-2190'	-2213'	-23'
Lansing	-2402'	-2421'	-19'
Drum	-2584'	-2607'	-23'
Stark Shale	-2687'	-2712'	-25'
Marmaton	-2892'	-2919'	-27'
Pawnee	-2941'	-2964'	-23'
Cherokee	-2989'	-3013'	-24'
Mississippi	-3043'	-3067'	-24'
Warsaw	-3082'	-3095'	-13'
Osage	-3142'	-3179'	-37'
Viola	-3543'	-3583'	-40'
Upper Simpson Dolomite	-3730'	-3771'	-41'

*Conley P. Smith, Currier No. 20-1, NE NE Section 20, T32S, R18W - 2470' to the North, KB Elevation 2140'

<u>FORMATION</u>	<u>CURRIER NO. 20-1</u>	<u>* ACRES NO. 21-5</u>	<u>CURRIER NO. 20-9</u>
Stone Corral	+1051'	+1053'	+1041'
Stotler	-1490'	-1470'	-1505'
Heebner	-2190'	-2174'	-2213'
Lansing	-2402'	-2380'	-2421'
Stark Shale	-2687'	-2668'	-2712'
Marmaton	-2892'	-2878'	-2919'
Pawnee	-2941'	-2918'	-2964'
Cherokee	-2989'	-2974'	-3013'
Mississippi	-3043'	-3029'	-3067'
Kinderhook	-3468'	-3445'	-3499'
Viola	-3543'	-3527'	-3583'
Upper Simpson Dolomite	-3730'	-3718'	-3771'
Upper Simpson SS	---	-3807'	-3872'
Simpson SH	---	-3830'	-3884'
Basal Simpson SS	---	-3868'	-3929'
Arbuckle	---	-3898'	-3957'

*Conley P. Smith, Acres No. 21-5, 3300' FSL & 4080' FEL, Sec. 21, T32S, R18W - KB Elev. 2124'

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WELL NAME: Carrier#20-9
LOCATION : Sec.20
TICKET No. 11474    D.S.T. No. 1    DATE 05/10/199
TOTAL TOOL TO BOTTOM OF TOP PACKERS ..... 30
INTERVAL TOOL .....
BOTTOM PACKERS AND ANCHOR ..... 38
TOTAL TOOL ..... 68
DRILL COLLAR ANCHOR IN INTERVAL .....
D.C. ANCHOR STND.Stands      Single      Total
D.P. ANCHOR STND.Stands      Single      Total
TOTAL ASSEMBLY ..... 68
D.C. ABOVE TOOLS.Stands      Single      Total
D.P. ABOVE TOOLS.Stands82    Single      Total 5073
TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5141
TOTAL DEPTH ..... 5137
TOTAL DRILL PIPE ABOVE K.B. .... 4

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REMARKS :

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Fluid sampler data
sampler recovery      pit mud
gas-----2000ml.      Chlorides---9000
trace-----oil        vis. 41
mud-----2000ml.      wt. 9.1
pressure 450 psi      WL 12.8
total-----4000.      LCM 112#

```

P.O. SUB	Top of tool @	5069
C.O. SUB		5070
S.I. TOOL		5075
3'sample chamber		5078
HMV		5083
JARS		5088
SAFETY JOINT		5090
PACKER		5094
PACKER		5099
DEPTH	5099	
STUBB 1' to		5100
ANCHOR 5' of perfs.to		5105
Alpine rec.@ 5110		
		5105
		5105
T.C.		
DEPTH		
30'of perfs.to		5135
Ak-1 rec.@ 5134		
BULLNOSE 2'bullnose to		5137
T.D.		

OPERATOR : Star resources,L.L.C.
WELL NAME: Currier#20-9
LOCATION : Sec.20
INTERVAL : 5099.00 To 5137.00 ft

DATE 05/10/199
KB 2143.00 ft
GR 2135.00 ft
TD 5137.00 ft
TICKET NO: 11474 DST #1
FORMATION: Pawnee
TEST TYPE: CONVENTIONAL

RECORDER DATA

mins	Field	1	2	3	4	TIME DATA
15	Rec.	10332	10332	2357		FF Fr. 1750 to 1805 hr
30	Range(Psi)	4025.0	4025.0	4995.0	0.0	IS Fr. 1805 to 1835 hr
30	Clock(hrs)	12hr	12hr	elec.		SF Fr. 1835 to 1905 hr
60	Depth(ft)	5134.0	5134.0	5110.0	0.0	FS Fr. 1905 to 2005 hr

	Field	1	2	3	4	
A. Init Hydro	2539.0	0.0	2526.0	0.0	0.0	T STARTED 1515 hr
US. First Flow	152.0	0.0	29.0	0.0	0.0	T ON BCTM 1712 hr
US. Final Flow	152.0	0.0	22.0	0.0	0.0	T OPEN 1715 hr
C. In Shut-in	304.0	0.0	327.0	0.0	0.0	T PULLED 2005 hr
DE. Init Flow	81.0	0.0	27.0	0.0	0.0	T OUT 2215 hr
DE. Final Flow	81.0	0.0	31.0	0.0	0.0	
F. El Shut-in	1337.0	0.0	1361.0	0.0	0.0	
G. Final Hydro	2498.0	0.0	2453.0	0.0	0.0	
Inside/Outside	0		I			

RECOVERY

Tot Fluid 60.00 ft of 0.00 ft in DC and 60.00 ft in DP
60.00 ft of SG&OCM 10% gas trace of oil 1% water 88% mud
120.00 ft of gas in pipe
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of
0.00 ft of
SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

IF:Weak surface blow.

ISI:No blow back.

FF:Fair blow built to 3" in H2O slowly-
died off to weak surface blow.

FSI:No blow back.

SAMPLES:

SENT TO:

Test Successful: Y

TOOL DATA

Tool Wt.	2100.00	lb
Wt Set On Packer	20000.00	lb
Wt Pulled Loose	75000.00	lb
Initial Str Wt	58000.00	lb
Unseated Str Wt	58000.00	lb
Bct Choke	0.75	in
Hole Size	7.88	in
D Col. ID	2.25	in
D. Pipe ID	3.80	in
D.C. Length	0.00	ft
D.P. Length	5073.00	ft

MUD DATA

Mud Type	Chemical	
Weight	9.10	lb
Vis.	41.00	cp
W.L.	12.80	in
F.C.	0.32	in
Mud Drop N		
Amt. of fill	0.00	ft
Btm. H. Temp.	120.00	F
Hole Condition	good	
% Porosity	0.00	
Packer Size	6.75	in
No. of Packers	2	
Cushion Amt.	0.00	n
Cushion Type	none	
Reversed Out N		
Tool Chased N		
Tester	Darren Lamerine	
Co. Rep.	Pete	
Contr.	Duke	
Rig #	1	
Unit #	no	
Pump T.	none	

TEST HISTORY

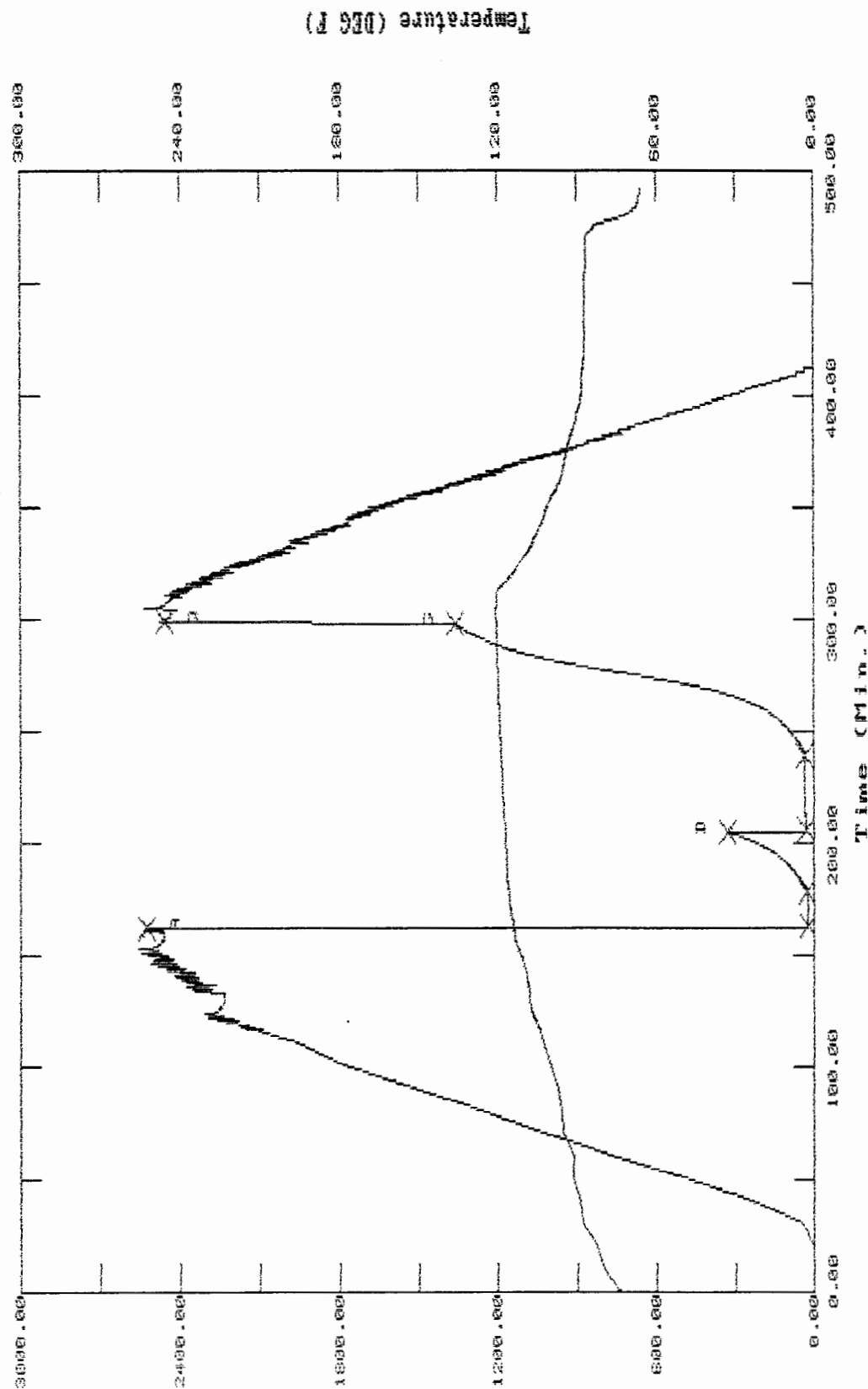
T H#114774 DST#1 Carrier #20-9 Star Resources, L.

Flag Points

PC (PSIG)

t (Min.)

L.C. 2525.70
 B: 0.00 20.17
 C: 14.75 21.71
 D: 27.00 327.05
 E: 0.00 27.32
 F: 33.50 30.69
 G: 59.25 1361.48
 Q: 0.00 2453.32



WELL NAME: Currier #20-9

LOCATION : Sec.20 Twp.32s Rge.18w

TICKET No. 11475 D.S.T. No. 2 DATE 05/11/199

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 25

TOTAL TOOL 55

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single 1 Total 31

TOTAL ASSEMBLY 86

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands86 Single 1 Total 5194

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5280

TOTAL DEPTH 5263

TOTAL DRILL PIPE ABOVE K.B. 17

REMARKS:

Fluid sampler data

Sampler recovery

Fit mud analysis

GAS--2500-Z-cubic ft. Chlorides-----10000-ppm.

OIL--trace--ML. Res-.5-Ohms@--80--'F.

MuD--1500---ML. Viscosity-----44---

Water-----ML. Mud wt.-----9.1----

Other-----ML. Water.loss-----12.8--

Pressure-500-PSI. Trace of Lcm.

Total-----ML.

P.O. SUB top of tool @	5180
C.O. SUB	5181
S.I. TOOL	5186
3'sample chamber	5189
HMV	5194
JARS	5199
SAFETY JOINT	5201
PACKER	5205
PACKER	5207
DEPTH 5207	
STUBB 1'to	5208
ANCHOR 21'of perfs.to	5229
Alpine rec@ 5214	
	5229
	5229
T.C.	
DEPTH	
31'jt.drillpipe to	5260
	5260
Ak-1 rec.5260	
BULLNOSE 3'bullnose to	5263
T.D.	

OPERATOR : Star resources,L.L.C

DATE 05/11/199

WELL NAME: Currier #20-9

KB 2143.00 ft

TICKET NO: 11475

DST #2

LOCATION : Sec.20 Twp.32s Rge.18w

GR 2135.00 ft

FORMATION: Miss

INTERVAL : 5207.00 To 5263.00 ft

TD 5263.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	10332	10332	2357			PF Fr. 0300 to 0330 hr
SI 60	Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 0330 to 0430 hr
SF 15	Clock(hrs)	12hr.	12hr.	elec.			SF Fr. 0430 to 0445 hr
FS 45	Depth(ft)	5260.0	5260.0	5214.0	0.0	0.0	FS Fr. 0445 to 0530 hr

	Field	1	2	3	4	
A. Init Hydro	2671.0	0.0	2609.0	0.0	0.0	T STARTED 0045 hr
B. First Flow	51.0	0.0	23.0	0.0	0.0	T ON BOTM 0257 hr
Bl. Final Flow	51.0	0.0	32.0	0.0	0.0	T OPEN 0300 hr
C. In Shut-in	669.0	0.0	690.0	0.0	0.0	T PULLED 0530 hr
D. Init Flow	81.0	0.0	39.0	0.0	0.0	T OUT 0830 hr
E. Final Flow	81.0	0.0	45.0	0.0	0.0	
F. Fl Shut-in	405.0	0.0	437.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2661.0	0.0	2546.0	0.0	0.0	Tool Wt. 2100.00 lb
Inside/Outside	O		I			Wt Set On Packer 20000.00 lb
						Wt Pulled Loose 85000.00 lb
						Initial Str Wt 60000.00 lb
						Unseated Str Wt 60000.00 lb
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 5225.00 ft

RECOVERY

Tot Fluid 80.00 ft of 0.00 ft in DC and 80.00 ft in DP
 80.00 ft of SGCM 10%gas 90%mud trace of oil
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

IF:Weak blow built to
 died off to weak surface blow.

ISI:No blow back.

FF:Weak blow built to 1\2" slowly died-
 to weak surface blow.

FSI:No blow back.

SAMPLES:

SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.10 lb
Vis.	44.00 S/
W.L.	12.80 in
F.C.	0.32 in
Mud Drop N	

Amt. of fill	0.00 ft
Stm. H. Temp.	124.00 F
Hole Condition	good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00 n
Cushion Type	none
Reversed Out N	
Tool Chased N	
Tester	Darren L.Amerine
Co. Rep.	Pete Debenham
Contr.	Duke
Rig #	1
Unit #	none
Pump T.	none

Test Successful: Y

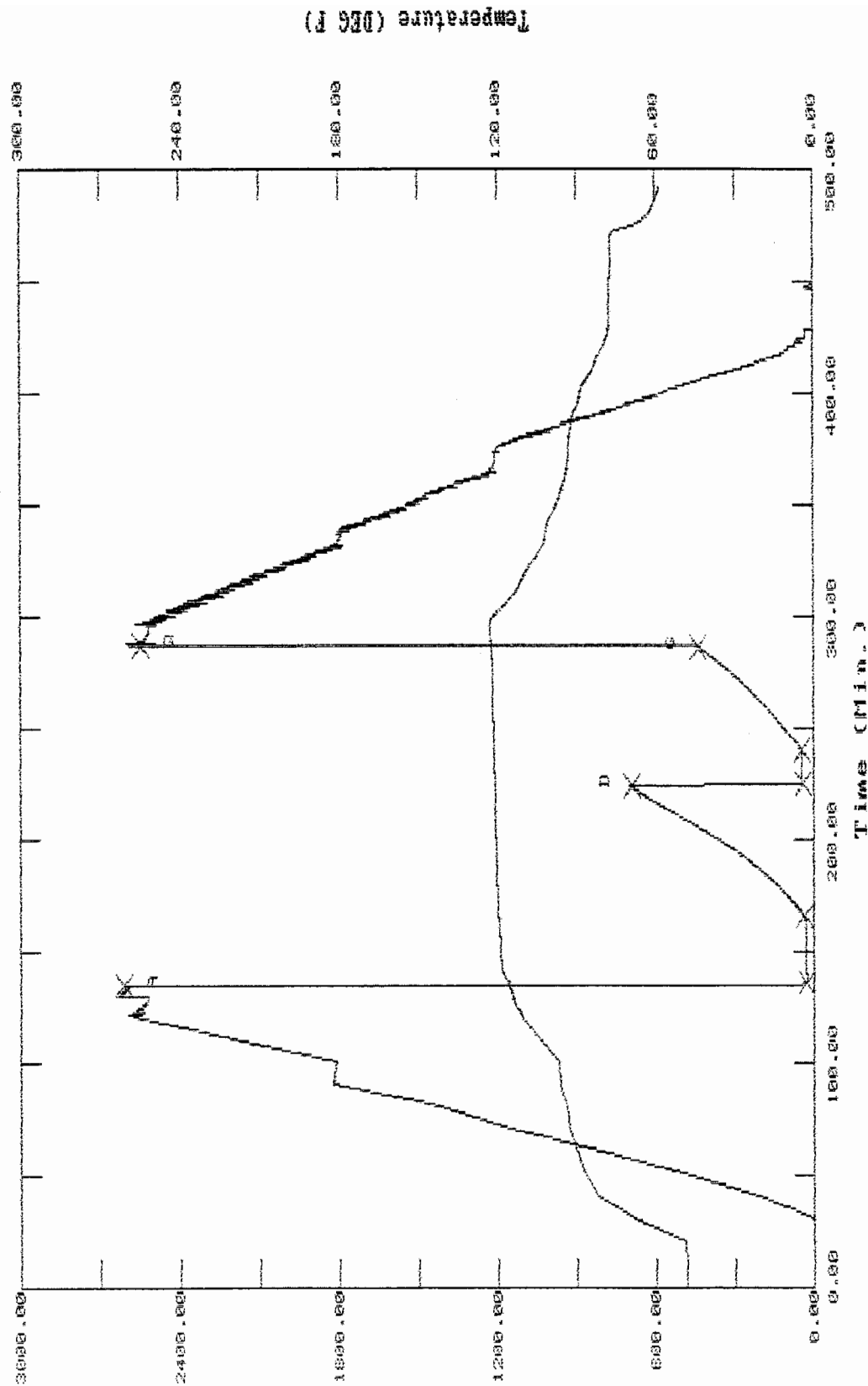
TEST HISTORY

T M11475 DST#2 Carrier, #28--9 Star Resources, Mr. L.C.

Flag Points

(Min.) PC PSIG

PC	PSIG
2609.49	
23.34	
31.77	
690.36	
39.20	
45.43	
436.66	
2545.61	



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Currier #20-9

LOCATION : sec.20 twp.32s rge.18w

TICKET No. 11426 D.S.T. No. 3 DATE 05/14/199

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 19

TOTAL TOOL 49

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY

D.C. ABOVE TOOLS.Stands Single Total

D.P. ABOVE TOOLS.Stands92 Single Total 5719

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5768

TOTAL DEPTH 5743

TOTAL DRILL PIPE ABOVE K.B. 25

REMARKS:

Fluid Sampler data

Sampler recovery

Gas----1000-.5-cf.of gas. #####
oil---trace---ML. Chlorides---7000-ppm
mud-----ML. res-----ohms.@---F
water--3000---ML. Vis-----50-----
other-----ML. weight---9.1-----
pressure--125--PSI. WL-----9.6-----
Total---4000---ML.

Pit mud analysis

P.O. SUB top of tool @	5694
C.O. SUB	5695
S.I. TOOL	5700
3'sample chamber	5703
HMV	5708
JARS	5713
SAFETY JOINT	5715
PACKER	5719
PACKER	5724
DEPTH 5724	
STUBB 1'to	5725
ANCHOR 16'of perfs.to	5741
Alpine rec.@ 5731	
	5741
T.C.	
DEPTH	
	5741
Ak-1 rec.@ 5740	
BULLNOSE 2' bullnose to	5743
T.D.	

TRILOBITE TESTING L.L.C.

OPERATOR : Star resources,L.L.C

DATE 05/14/199

WELL NAME: Currier #20-9

KB 2143.00 ft

TICKET NO: 11426

DST #3

LOCATION : sec.20 twp.32s rge.18w

GR 2135.00 ft

FORMATION: Viola

INTERVAL : 5724.00 To 5743.00 ft

TD 5743.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 15 Rec.	10332	10332	2357			PF Fr. 0030 to 0045 hr
SI 30 Range(Psi)	4025.0	4025.0	4995.0	0.0	0.0	IS Fr. 0045 to 0115 hr
SF 60 Clock(hrs)	12hr.	12hr.	elec.			SF Fr. 0115 to 0215 hr
FS 120 Depth(ft)	5740.0	5740.0	5731.0	0.0	0.0	FS Fr. 0215 to 0415 hr

	Field	1	2	3	4	
A. Init Hydro	2915.0	0.0	2823.0	0.0	0.0	T STARTED 2131 hr
B. First Flow	61.0	0.0	14.0	0.0	0.0	T ON BOTM 0027 hr
B1. Final Flow	71.0	0.0	38.0	0.0	0.0	T OPEN 0030 hr
C. In Shut-in	1876.0	0.0	1899.0	0.0	0.0	T PULLED 0415 hr
D. Init Flow	101.0	0.0	52.0	0.0	0.0	T OUT 0645 hr
E. Final Flow	172.0	0.0	153.0	0.0	0.0	
F. Fl Shut-in	1906.0	0.0	1930.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2905.0	0.0	2818.0	0.0	0.0	Tool Wt. 2100.00 lb
Inside/Outside	0		I			Wt Set On Packer 20000.00 lb
						Wt Pulled Loose 70000.00 lb
						Initial Str Wt 60000.00 lb
						Unseated Str Wt 62000.00 lb
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 0.00 ft
						D.P. Length 5719.00 ft

RECOVERY

Tot Fluid 315.00 ft of 0.00 ft in DC and 315.00 ft in DP
 90.00 ft of SG&MCW 18%gas trace of oil 28%water 52%mud
 125.00 ft of SMCGW 4%gas trace oil 85%water 10%mud
 100.00 ft of salt water
 120.00 ft of gas in pipe
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 SALINITY 85000.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

IF:Weak blow built to b.o.b
 mins.

ISI:Bled down for 10 mins.no blow back.

FF:Weak blow built
 4" in H2O.

FSI:Bled down for ten mins.No blow back.

SAMPLES:

SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.10 lb/gal
Vis.	50.00 cP
W.L.	9.60 lb/gal
F.C.	0.32 lb/gal
Mud Drop N	

Amt. of fill	0.00 lb
Btm. H. Temp.	140.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00 lb
Cushion Type	none
Reversed Out Y	
Tool Chased N	
Tester	Darren L.Amerine
Co. Rep.	Pete Debenham
Contr.	Duke
Rig #	1
Unit #	none
Pump T.	no

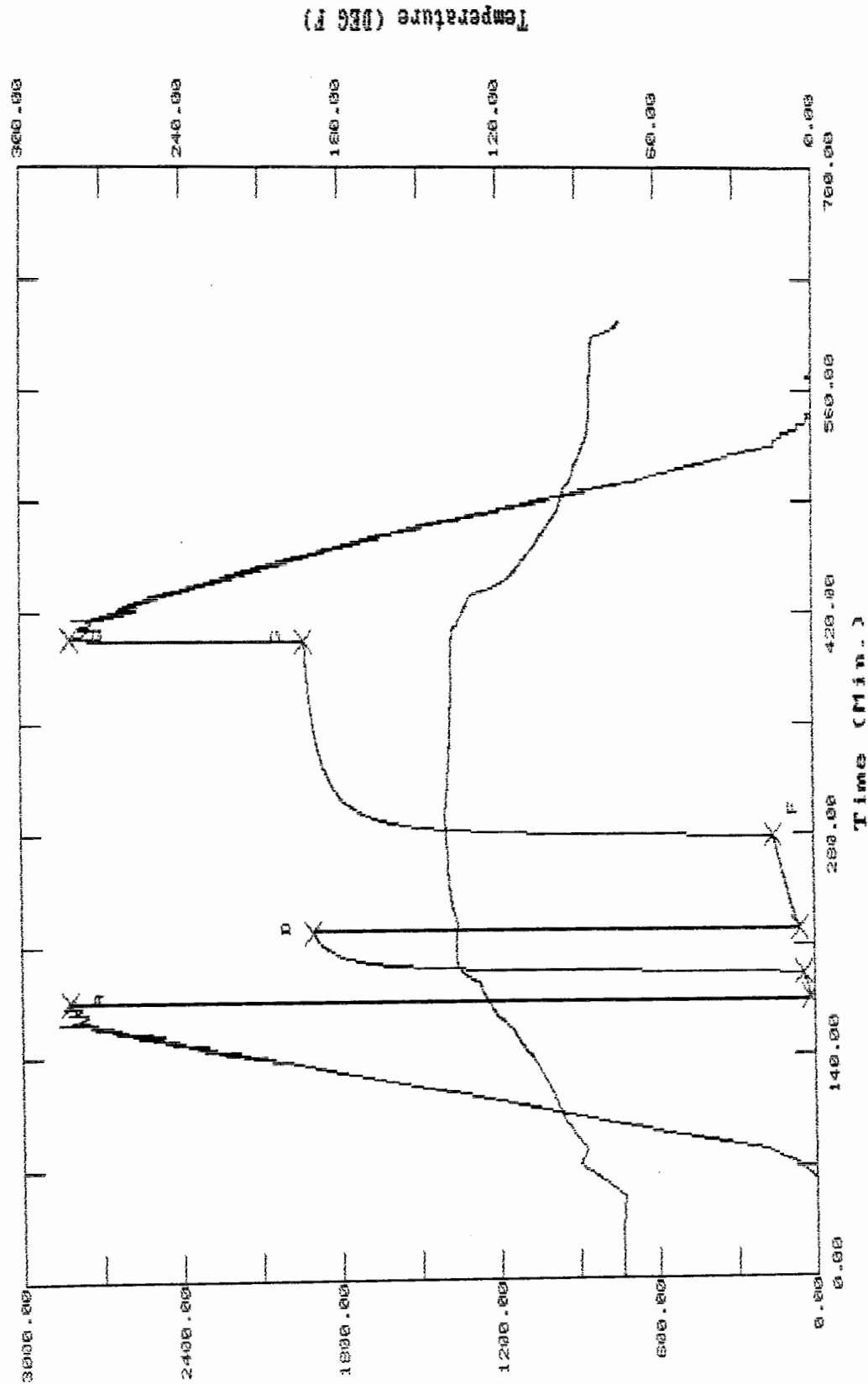
Test Successful: Y

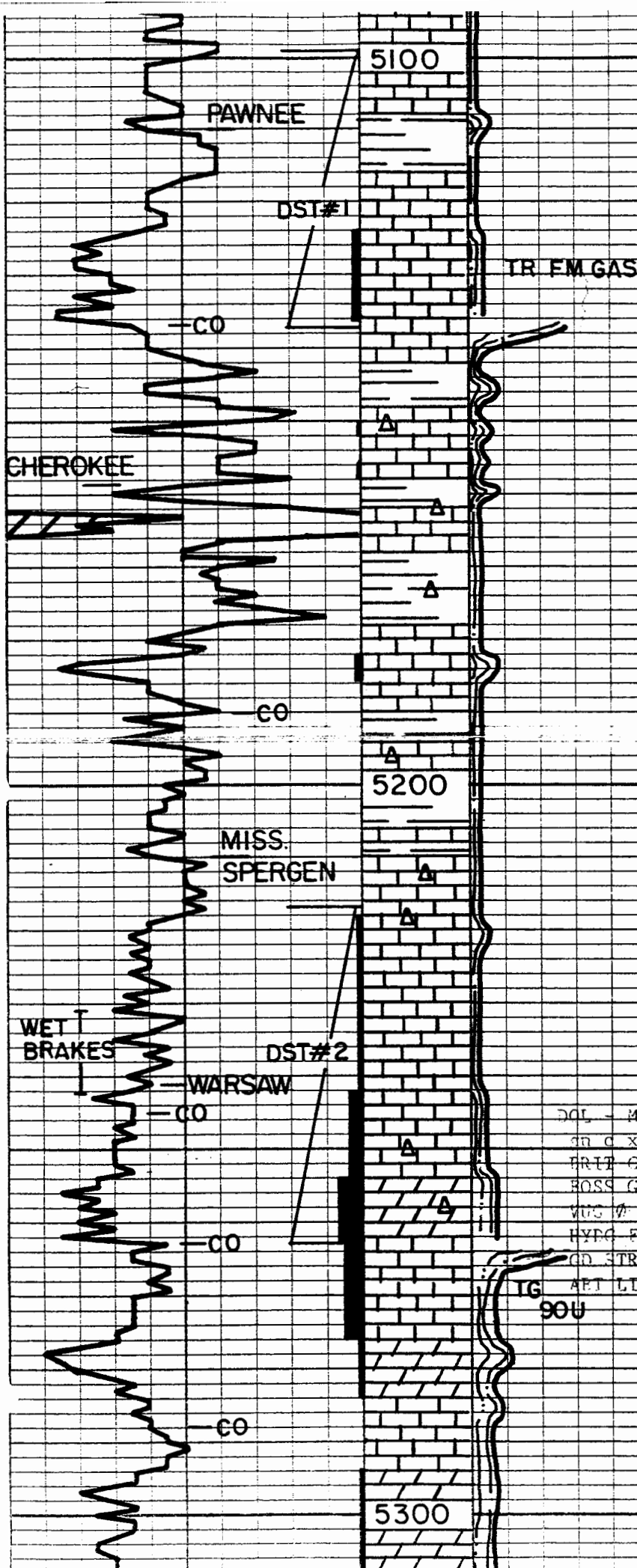
TEST HISTORY

#11426 DST#3 Carrier #20-9 Star resources

Flag Points
t(min.) PC PSIG

A:	0.00	2823.48
B:	0.00	13.78
C:	15.00	37.90
D:	27.75	1899.45
E:	0.00	51.69
F:	58.50	153.31
G:	123.50	1929.67
H:	0.00	2818.13





SH - AIA
LS - M/LT BRN TO RE MICH
DNC SIL CLN TO ARG FOSS
NO FLOR NO STN OR CUT

SH - BLK DK GR/GYEN FLS
FRM CARB CALC INTD W/
LS - NA PRED TT NO SHW

LS - LT BRN RE BROMIC
MICSUC BRIT CLN SLOW
FOSS W/MOLDIC Ø CORAL
TR FENSTRAL Ø TR SY-CA
INTXL Ø BRI GOLDEN HYD
(5% SPL) FR STRMG CUT TR
BRN Ø STN

LS - LT BRN MIC/GRPK
TO OCC TR INTXL Ø
TT CLN/ARG FOSS SIL
JALE PL HYDC FLOR FRT
OUT NO STN WK SHW
SH - BLK DK BRN FIS/BLKY
SH - BLK DK BRN FIS/BLKY
CALC CARB

LS - LT/M BRN FAL MICH
CLN FOSS W/MOLDIC Ø
NOT YEL/GRNG HYDC

SH - BLK DK GY SHE/SIL
CARB CALC INTD W/
LS - M BRN GY MICR FLS
CLN/ARG SIL TT NO SHW

TR CHRT
LS - BRN CRPKL HP DNC SIL
NO SHW

TR CHRT
LS - LT BRN RE NOT REDEBN
MIXL MICSUC UP SF FRT
GRKY CLN SIL IP SIL & TT

TR CHRT NODS SNDY FOSS
INTXL VUG & INTART Ø
NOT BLVEL HYDC FLOR (6%SP)
FR STRMG/BLDNG CUT NOT

LS - WH SPEC CN C XL GRKY
SUC/GRAN FRT LT CN SH
NODS SL GLAUC GOL FOSS
& INTART Ø YELGOLD HYDC
(12%SP) FR STRMG CUT NO
STN TR LIVE Ø GR SHW

LS - LT/M BRN MICR GRPK
CLN FOSS DOLIC IP SNDY
PYR TR INTXL & VUG Ø
yel hydc flor 96% SPL
STRMG CUT TR LIVE Ø
DOL - M/DK MGT GY/BRN
MICSUC ARG/MRLYIP CARB
TT IP FOSS GLAUC TR
Ø TR (2% SPL) NOT YEL
FLOR SLOW BLDNG CUT

DOL - M BRN MGT GRKY

DOL - M/Lt brn mgt gy
cn c xl suc/GRAN IP
BRIT CLN GLAUC SNDY
FOSS GR INTXL Ø &
VUG Ø BRI YELGOLD
HYDC FLOR (25% SPL)
GR STRMG CUT & STN
AET LIVE Ø EYC SHW

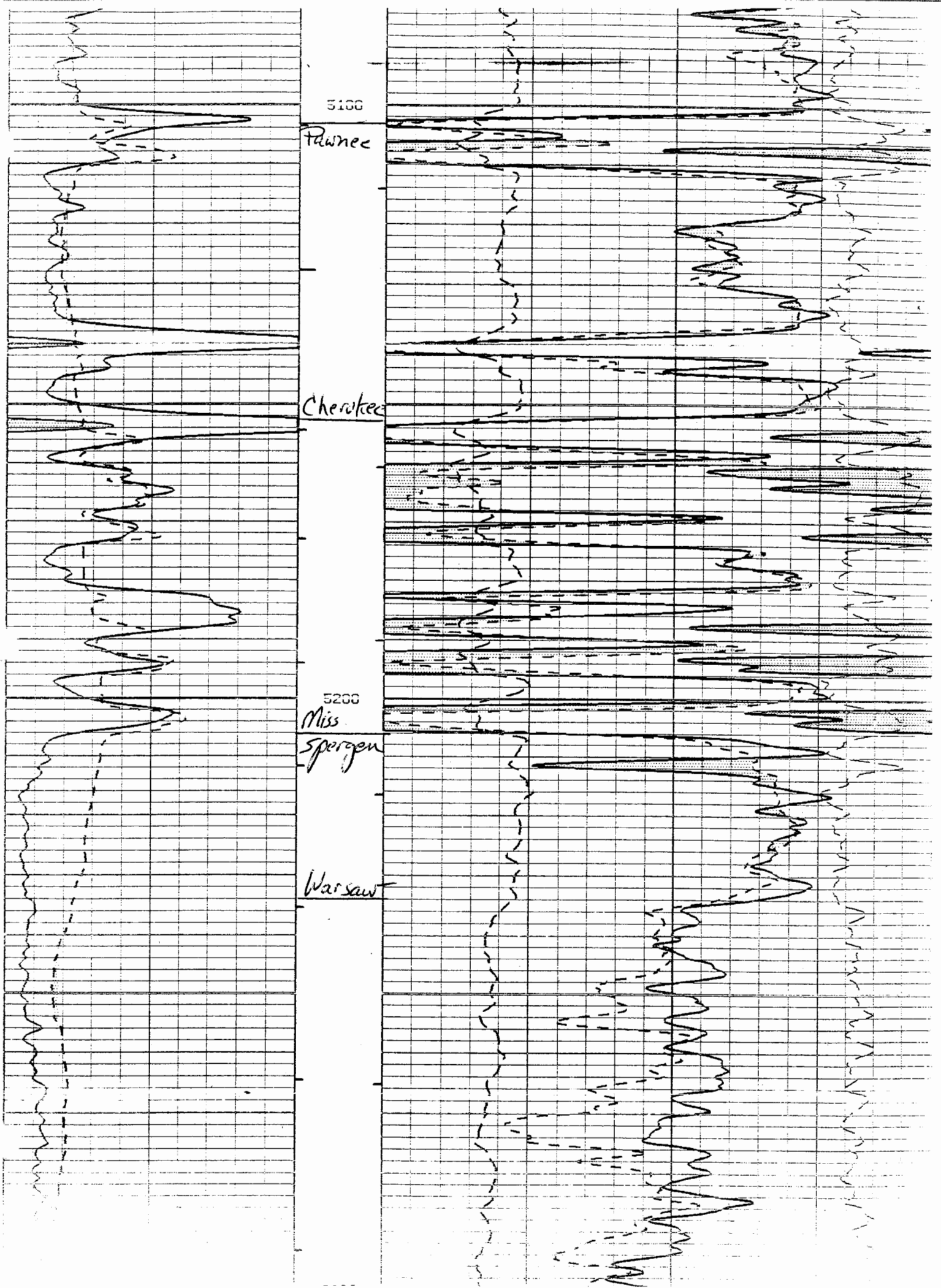
Pawnee
5100

Cherokee

5200
Miss Spengen

Warsaw

5300



KINDERHOOK

CHRT - M NOT

SH - DK GY TO BRN DK GY
BLKY WY CALC OCC INTR
LS - PREP A4 MLY IP
CHRT

ART CHRT(5% SPL) - MLY

LS - LT/M BRN BT GY MICR
CRPYL DNS CLN SBCHKY CLN
E TT IP P VIS Ø NO SHOW
INTBD W/
SH - MOT GY GYCN BLK HD
TO FLS CALC

DOL(15% SPL) - M BRN C XI
GRAN IP BRIT CLN GD INT
TR F VUG Ø BR VELBL HY
FLOR(12% SPL) - MAJ OF DOL
STRMG CUT SL Ø ODOR SHOE
ART CHRT(6% SPL) - MLY
WH TRNSL ED XL TRIPOL IP
INTXL Ø TR LT YEL HYDC
FNT CUT INTBD W/CRPYL

ART CHRT(12% SPL) - MLY
HD XL TR YEL FLOR & CUT
VERY FINE CUTTINGS
DOL(60% SPL) - M BRN C
BRIT CLN GD INTXL Ø BRIT
HYDC FLOR(12% SPL) GD ST
CUT NO STN

DOL - LT/M BRN LT GY MICR
SUG BRIT CLN GD INTXL Ø
HYDC FLOR(2% SPL) SLOW E
STRMG CUT NO STN
ART CHRT(10% SPL) - GY WH
TRIPOL IP

LS - TAN LT BRN CRPYL HD
STL TT NO SHOW
CHRT - AA

DOL - M/LT BRN MICR
CLN TT/TR INTXL Ø NO STN
STN OR CUT
ART CHRT

LS - BRN LT REFRY
F XL DNS GYCN STN
FLOR NO STN
ART CHRT(12% SPL)

VIOLA

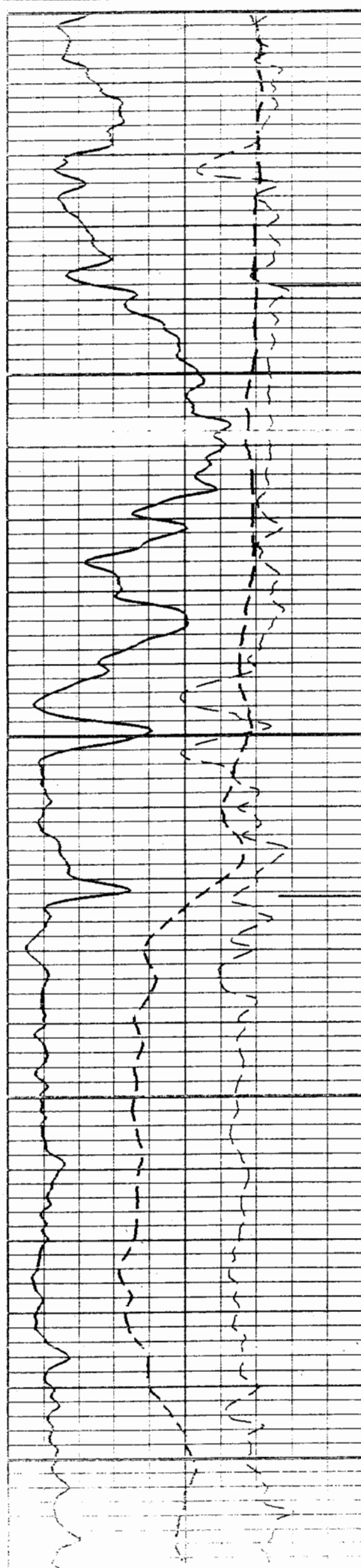
DST #3

25(24/10/4/1)

15

5700

5800

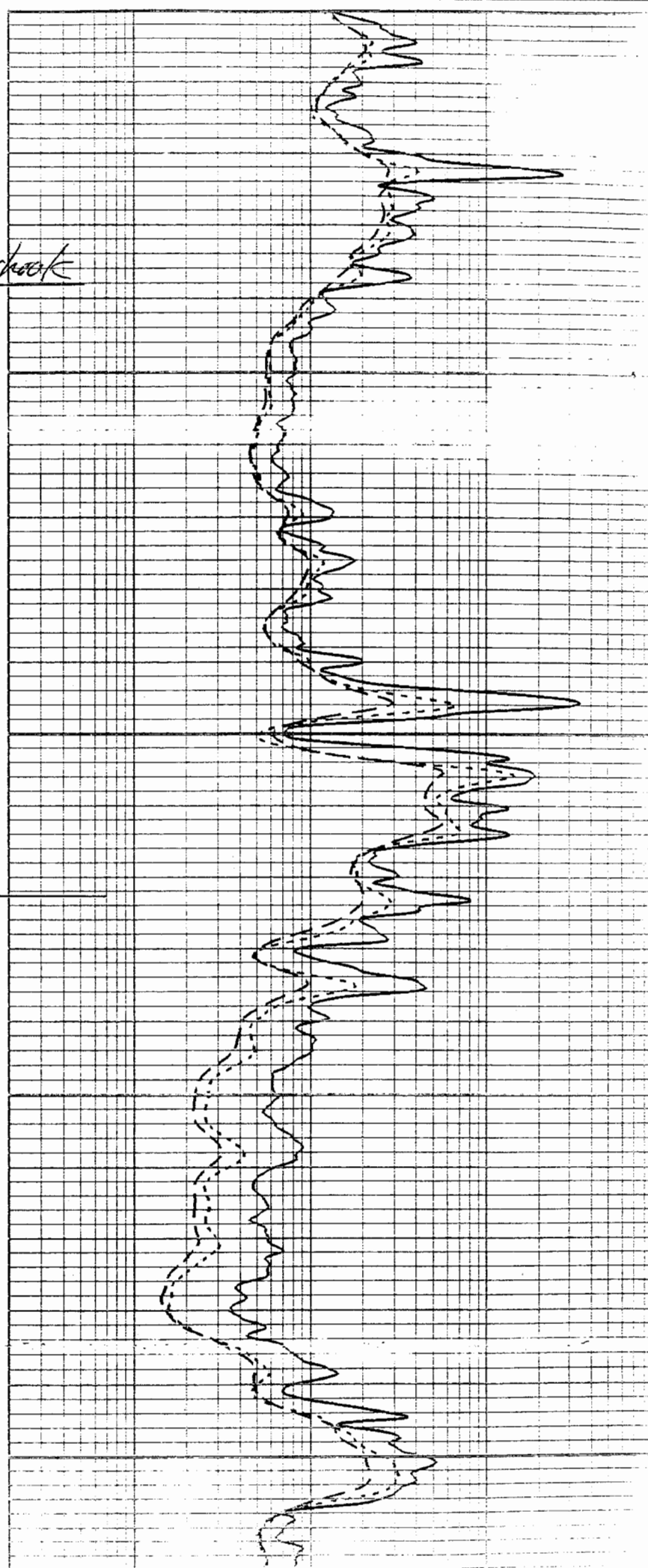


Kinderkrook

5700

Viola

5800



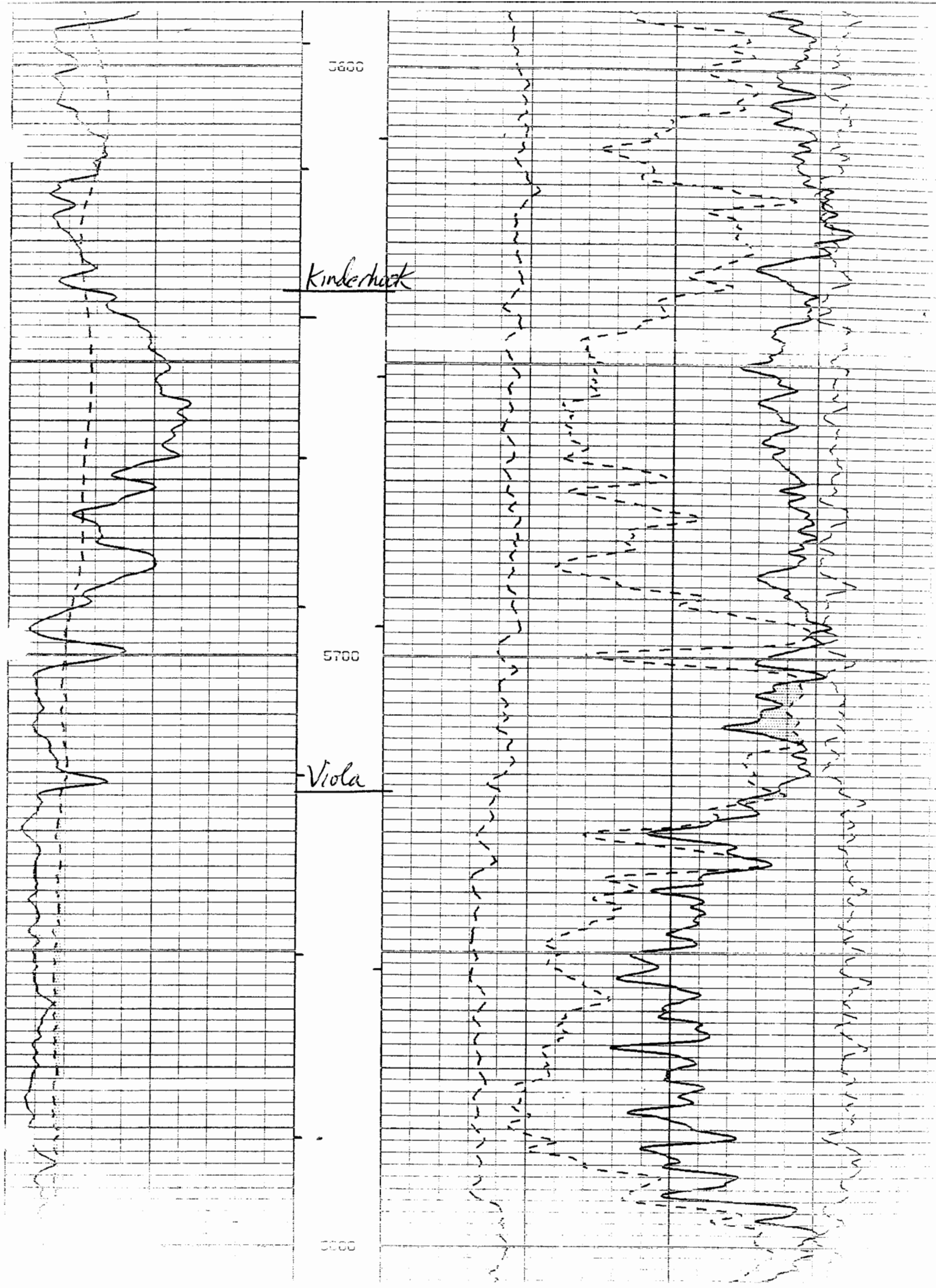
5600

Kinderhook

5700

Viola

5800



LITHOLOGY DESCRIPTION

Samples are lagged

*Indicates Hydrocarbon Show

Corrected E-Log Formation Tops

3600 - 3655' Shale - Light to medium gray to graygreen, occasionally dark gray to black, firm, blocky, waxy, calcareous, interbedded with Limestone - Light to medium brown, buff, mottled, micrite, cryptocrystalline, hard, dense, siliceous, fossiliferous, marly in part, tight, no show

Stotler 3644

3655 - 3674' Limestone - Light brown, white, buff, biomicrite, microcrystalline, microsucrosic to sucrosic, brittle, clean, very fossiliferous and oolitic with moldic porosity, fair intercrystalline porosity, orange mineral fluorescence, no cut or stain

3674 - 3710' Limestone - Mottled brown to gray, biomicrite, cryptocrystalline to microcrystalline, hard, dense, argillaceous to marly in part, sandy, pyritic, carbonaceous, poor visible porosity, no fluorescence, no stain or cut, interbedded with Shale - Mottled gray to graygreen, medium to dark brown, occasionally black, waxy, calcareous, interbedded with Limestone - As above, poor visible porosity, no fluorescence, no stain or cut

Howard 3713'

3710 - 3750' Limestone - Light to medium mottled brown, buff, biomicrite, microcrystalline, microsucrosic, brittle, clean, recrystallized, sandy, very fossiliferous, no fluorescence, no stain or cut, interbedded with Shale - As above, with trace unconsolidated Quartz grains

3750 - 3782' Shale - Medium gray to graygreen, mottled, light green, occasionally redbrown, hard, blocky, calcareous, sandy, interbedded with Limestone - Light to medium mottled brown, gray, biomicrite, finely crystalline, dense, clean to marly in part, sandy, fossiliferous, tight, no show

3782 - 3818' Limestone - Light to medium mottled brown, buff, microcrystalline, microsucrosic, brittle, subchalky in part, fossiliferous, carbonaceous, trace intercrystalline and occasionally moldic porosity, no fluorescence, no stain or cut

3818 - 3832' Limestone - Medium to light brown to redbrown, mottled, biomicrite, microcrystalline, microsucrosic, brittle, clean, fossiliferous, oolitic,

sandy, trace intercrystalline and moldic porosity, no fluorescence, no stain or cut,
with trace Chert - Milky white, clear, hard, crystalline

3832 - 3860' Limestone - Medium mottled brown to redbrown, biomicrite, cryptocrystalline, hard, dense, argillaceous to marly in part, pyritic, occasionally sandy, siliceous and tight, no fluorescence, no stain or cut, interbedded with Shale - Medium to dark gray to graygreen, occasionally black, blocky, hard, calcareous, carbonaceous in part, with trace Chert

Topeka 3857'

3860 - 3912' Limestone - Mottled brown to gray, redbrown, micrite, finely crystalline, recrystallized in part, clean to argillaceous, very fossiliferous, sandy in part, poor visible porosity, no fluorescence, no stain or cut, interbedded with Shale

3912 - 3935' Limestone - Light mottled brown to gray, buff, microcrystalline, microsucrosic, subchalky, clean, fossilifeous, sandy, trace intercrystalline and occasional oomoldic porosity, no fluorescence, no stain or cut, with course, unconsolidated Quartz grains

3935 - 3962' Shale - Black, dark to medium gray, hard, blocky to subfissile, calcareous, waxy, carbonaceous

3962 - 3982' Limestone - Light to medium mottled brown, buff, biomicrite, finely crystalline, microsugrosic in part with trace intercrystalline porosity, fossiliferous, sandy, siliceous and tight, mineral fluorescence, no stain or cut

3982 - 4092' Shale - Dark brown to gray, black, graygreen, hard, blocky, waxy, calcareous, carbonaceous, occasionally interbedded with Limestone - Medium to dark mottled brown, cryptocrystalline, hard, dense, argillaceous to marly in part, sandy, fossiliferous, poor visible porosity, no show, with coarse, unconsolidated, subround Quartz grains

4092 - 4120' Abundant unconsolidated Quartz grains(25% Spl) - Clear, white, very coarse and poorly sorted, no show, Shale - Black, dark gray, firm, subfissile, calcareous, carbonaceous, interbedded with Limestone - As above, no show

4120 - 4146' Shale - Dark gray, black, mottled graygreen, hard, blocky to subfissile, waxy, calcareous, sandy

Elgin 41 60'

4146 - 4278' Shale - Medium to dark gray, black, subfissile to blocky, firm, calcareous, carbonaceous, silty, occsionally interbedded with Limestone - Medo=ium

to dark mottled brown, gray, micrite, cryptocrystalline, hard, dense, siliceous, fossiliferous, anhydritic in part, tight, no show

4178 - 4200' Shale - As above, with Limestone - Medium to dark gray to brown, micrite, cryptocrystalline, hard, dense, marly, fossiliferous, tight, no fluorescence, no stain or cut, with unconsolidated Quartz grains - Clear, course, subround

4200 - 4210' Abundant unconsolidated Quartz grains - Clear, frosted, course lower to fine upper, poorly sorted, subround, no show, with Shale - As above

4210 - 4235' Shale - Dark brown to gray, black, subfissile to blocky, hard, calcareous, silty to sandy in part, carbonaceous, occasionally interbedded with Limestone - As above, poor visible porosity, no show

4235 - 4290' Shale - Dark brown, black, subfissile, firm, calcareous, carbonaceous, silty, occasionally interbedded with Limestone - Dark mottled brown to gray, micrite, finely crystalline, marly, fossiliferous, tight, no show

4290 - 4335' Limestone - Medium to dark mottled brown to gray, biomicrite, cryptocrystalline, hard, dense, argillaceous to marly in part, fossiliferous, sandy, carbonaceous, poor visible porosity, no fluorescence, no stain or cut, interbedded with Shale - Black, dark brown to gray, subfissile to blocky, firm, waxy, calcareous, carbonaceous, silty in part

Heebner 4352'

4335 - 4362' Shale - Black, dark brown, firm, fissile, waxy, calcareous, carbonaceous, with Limestone - Medium mottled brown to gray, biomicrite, finely crystalline, recrystallized in part, argillaceous, silty, fossiliferous, carbonaceous, siliceous and tight, poor visible porosity, no fluorescence, no stain or cut

Toronto 5369'

4362 - 4395' *Limestone - Medium to dark mottled brown to gray, occasionally black, cryptocrystalline to microcrystalline, microsucrosic in part, hard, fossiliferous, very sandy in part and occasionally grading to Sandstone(6% spl) - Medium gray to graygreen, hard, slightly friable, fine lower to very fine upper, well sorted, subround grains, clay and calcite cement, poor visible porosity, trace pale blue hydrocarbon fluorescence in 1 % of the samples, slow bleeding cut, no stain

4395 - 4420' Limestone - Medium mottled brown, biomicrite, cryptocrystalline, hard, dense, clean to argillaceous, oolitic, fossiliferous, siliceous and tight in part, poor visible porosity, no fluorescence, no stain or cut

4420 - 4433' Sandstone(15% spl) - Light gray, speckled green, salt and pepper, friable, very fine upper to very fine lower, well sorted, subround grains, calcite cement, clean to argillaceous, glauconitic, micaceous, carbonaceous, trace intergranular porosity, no fluorescence, no stain or cut

4433 - 4496' Sandstone(20% spl) - Mottled gray to graygreen, salt and pepper, predominately as above, fine lower to very fine lower, well sorted, subround grains, carbonaceous, poor visible porosity, no fluorescence, no stain or cut, interbedded with Shale - Medium to dark brown, graygreen, black, firm, blocky to subfissile, carbonaceous, calcareous, sandy in part, occasionally interbedded with Limestone - Medium brown, biomicrite, finely crystalline, hard, dense, siliceous, fossiliferous, sandy, clean, tight, no show

4496 - 4530' Shale - As above, with Limestone - As above, poor visible porosity, no show

Brown LS 4530'

4530 - 4538' Sandstone(25% spl) - Gray, speckled graygreen, salt and pepper, speckled green, friable, very fine, well sorted, subround grains, calcite cement, clean, glauconitic, micaceous, carbonaceous, trace intergranular porosity - some clay infill, no fluorescence, no stain or cut

4538 - 4564' Limestone - Medium brown to gray, graygreen, buff, biomicrite, cryptocrystalline, hard, dense, subchalky in part, fossiliferous, clean, poor visible porosity, no fluorescence, no stain or cut

Lansing 4560'

4564 - 4584' Limestone - Medium brown, micrite, cryptocrystalline, hard, dense, clean, pyritic, fossiliferous, tight, no show

"B" Porosity

4584 - 4610' Limestone - Medium to light brown, microcrystalline, microsiliceous, brittle, clean, subchalky in part, fossiliferous, pyritic, trace intercrystalline and moldic porosity, no fluorescence, no stain or cut, very sandy in part and occasionally grading to Sandstone(10% spl) - Light gray, brown, friable, fine upper to fine lower, well sorted grains, calcite cement, clean, carbonaceous, trace intergranular porosity, no fluorescence, no stain or cut

4610 - 4622' Limestone - Medium to dark mottled brown, biomicrite, cryptocrystalline, hard, dense, argillaceous to marly in part, pyritic, tight, no fluorescence, no stain or cut, interbedded with Shale - Black, dark gray, hard, blocky, calcareous, carbonaceous

4622 - 4644' Limestone - Light brown, buff, microcrystalline, microsucrosic, brittle, clean, subchlkly in part, fossiliferous, sandy, oolitic, occasional fair intercrystalline and moldic porosity, no florescence, no stain or cut

4644 - 4692' Limestone - Medium to dark mottled brown, micrite, cryptocrystalline, hard, dense, siliceous, fossiliferous, carbonaceous, pyritic, tight, no show, interbedded with Shale - Black, dark gray, firm, fossiliferous, carbonaceous, calcareous

4692 - 4700' Limestone - Light brown to buff, microcrystalline, microsucrosic in part, subchalky, clean, fossiliferous, oolitic, trace moldic porosity, trace intercrystalline porosity, no fluorescence, no stain or cut

4700 - 4713' Limestone - Brown, gray, cryptocrystalline, hard, dense, siliceous, clean, pyritic, tight, no show, with Shale - Gray to black, fissie, hard, siliceous, trace Chert - Milky gray, white, hard, crystalline, tripolitic in part

4713 - 4733' Limestone - Light brown, micro to coarsely crystalline in part, sucroic, brittle, clean, dolomitic, fossiliferous, good intercrystalline porosity, fossiliferous with trace moldic porosity, no fluorescence, no stain or cut

4733 - 4748' Limestone - Brown, cryptocrystalline, hard, dense, siliceos, clean to argillaceous, fossiliferous, poor visible porosity, no show, interbedded with Shale - Medium to dark gray, firm, blocky, waxy

Drum 4746'

4748 - 4862' Limestone - Medium to dark brown, oomicrite, microcrystalline, sucrosic to granular, very brittle, clean, very oolitic with excellent oomoldic porosity, no fluorescence, no stain or cut

4762 - 4798' Limestone - Medium mottled brown, dark brown, oomidrite, cryptocrystalline, hard, dense, siliceous, clean to argillaceous, pyritic, occasional trace oomoldic porosity, mostly tight, no fluorescence, no stain or cut, interbedded with Shale - As above

4798 - 4818' Limestone - Medium mottled brown, oomicrite, coarsely crystalline in part, brittle, clean, very oolitic with excellent oomoldic porosity, no fluorescenc, no stain or cut

Stark SH 4851'

4818 - 4868' Limestone - Medium mottled brown to gray, biomicrite, cryptocrystalline, hard, dense, siliceous, oolitic, fossiliferous, tight, no show, with Shale - black, firm, fissile, carbonaceous

Swoop 4858'

4868 - 4875' Limestone - Light brown, buff, oomicrite, micro to coarsely crystalline in part, sucrosic to granular, brittle, clean, excellent biomoldic porosity, no fluorescence, no stain or cut

4875 - 4912' Limestone - Light brown, buff, finely crystalline, dense, clean, fossiliferous, siliceous, tight, no show, with Chert - Brown, milky, hard, crystalline

4912 - 4945' Shale - Dark gray, black, firm, fissile, carbonaceous, calcareous, occasionally interbedded with Limestone - As above, no show

BKC 4942'

4945 - 4966' Limestone - Light brown, buff, oomicrite, finely crystalline, clean, oolitic with moldic porosity, no fluorescence, no stain or cut, interbedded with Shale - Dark gray to black, subfissile to blocky, carbonaceous, interbedded with cryptocrystalline Limestone - As above, poor visible porosity, no show

4966 - 4982' Limestone - Medium mottled brown, biomicrite, crypto to microcrystalline, microsucrosic in part, clean to argillaceous, very fossiliferous with occasional trace moldic porosity, subchalky in part with trace intercrystalline porosity, pyritic, carbonaceous, no fluorescence, no stain or cut

4982 - 5012' Limestone - Medium to dark brown, occasionally black, cryptocrystalline, hard, dense, argillaceous to marly in part, siliceous, pyritic, tight, no show

5012 - 5030' Shale - Black, dark gray, hard, blocky, calcareous, carbonaceous, pyritic

5030 - 5044' Limestone - Medium brown to gray, microcrystalline, microsucrosic, brittle, clean to argillaceous, subchalky in part, very sandy, fossiliferous, trace sparry calcite with intercrystalline porosity, no fluorescence no stain or cut, interbedded with Shale - Black, hard, subfissile, carbonaceous

5044 - 5062' Shale - Dark gray to brown, black, hard, blocky, calcareous, carbonaceous, pyritic

Marmaton 5058'

5062 - 5080' Shale - As above, interbedded with Limestone - Medium to dark brown, cryptocrystalline, hard, dense, siliceous, fossiliferous with trace moldic porosity, no fluorescence, no stain or cut

Altamont 5071'

5080 - 5093' Limestone - Light brown, buff, microcrystalline, microsucrosic, subchalky, clen, fossiliferous, trace intercrystalline porosity, no fluorescence, no stain or cut, occasionally interbedded with Shale - As above

5093 - 5108' Limestone - Medium to light brown, buff, micrite, cryptocrystalline, dense, siliceous, clen to argillaceous, fossiliferous, tight, no fluorescence, no stain or cut

Pawnee 5103'

5108 - 5124' Shale - Black, dark gray to graygreen, fissile to blocky, firm, carbonaceous, calcareous, with Limestone - As above

5124 - 5137' *Limestone - Light brown, buff, biomicrite, microcrystalline, microsucrosic, brittle, clean, subchalky in part, very fossiliferous with moldic porosity, coral fossils with fenestral porosity, trace sparry calcite with occasional fair intercrystalline porosity, bright goldbrown hydrocarbon fluorescence(5% spl), fair streaming cut, trace mottled oil stain

5137 - 5152' *Limestone - Light brown, micro to cryptocrystalline, dense to occasional intercrystalline porosity, predominately tight, clean to argillaceous, fossiliferous, siliceous, trace(1% spl) pale blue hydrocarbon fluorescence, faint streaming cut, no stain, weak show, interbedded with Shale - Black, dark brown, fissile to blocky, firm, carbonaceous, calcareous

Cherokee 5152'

5152 - 5182' Limestone - Medium brown to gray, dark brown, occasionally black, cryptocrystalline, hard, dense, siliceous, argillaceous to marly in part, tight, no fluorescence, no stain or cut, interbedded with Shale - As above, trace Chert

5182 - 5185' *Limestone - Light to medium brown, finely crystalline, microsucrosic in part, clean, fossilifeous with moldic porosity, occasionally abundant vuggy porosity, mottled yellow to orange hydrocarbon fluorescence(5% spl), trace bright yellow fluorescence, good streaming cut, light brown oil stain - some matrix staining, trace live oil when crushed

5185 - 5210' Shale - Black, dark gray, subfissile to blocky, firm, carbonaceous, interbedded with Limestone - Medium brown to gray, micrite,

cryptocrystalline, hard, dense, clean to argillaceous, siliceous, tight, no show, with trace Chert

Mississippi Spergen 5206'

5210 - 5218' Limestone - Medium to dark brown, cryptocrystalline, hard, dense, siliceous, tight, no show, trace Chert

5218 - 5240' *Limestone - Light brown, buff, mottled redbrown, white, microcrystalline, microsucrosic, soft, brittle, subchalky, clean, siliceous and tight in part with Chert inclusions, sandy, fossiliferous, trace sparry calcite with trace intercrystalline and vuggy porosity, dull mottled pale blueyellow hydrocarbon fluorescence in 6% of the samples, slow streaming to bleeding cut, mottled brown oil stain, trace bright yellow fluorescence, show dissipates when dry

5240 - 5253' *Limestone - White, speckled green, light brown, coarse intergrown crystals, chalky in part, sucrosic to granular in texture, brittle, light green Shale and Chert inclusions, glauconitic, oolitic, fossiliferous, occasional moldic and interpartical porosity, good vuggy porosity, pale yellowgold hydrocarbon fluorescence(12% spl), fair streaming cut, mottled oil stain, trace live oil when crushed, good show, show dissipates when crushed

Warsaw 5234'

5253 - 5263' *Dolomite - Medium to light brown, mottled graygreen, coarsely crystalline, sucrosic to granular in part, brittle, clean to abundant light green clay inclusions, slightly glauconitic in part, sandy, fossiliferous, good intercrystalline and vuggy porosity, bright yellowgold hydrocarbon fluorescence in 25% of the samples - majority of the dolomite, even brown matrix oil staining, excellent streaming cut, live oil when crushed

5263 - 5275' *Limestone - Light to medium brown, micrite, cryptocrystalline, hard, dense, clean, fossiliferous, trace well formed sparry calcite crystals, pyritic, slightly glauconitic, trace intercrystalline porosity, no fluorescence, no stain or cut, with Dolomite - Medium brown, gray, microsucrosic in part, glauconite(chlorite?), trace intercrystalline porosity, mottled yellow hydrocarbon fluorescence(6% spl), slow faint cut, trace oil stain, occasional trace live oil

5275 - 5282' Dolomite - Mottled gray to brown, microcrystalline, microsucrosic, argillaceous to marly, carbonaceous, siliceous in part, trace intercrystalline porosity, trace dull mottled hydrocarbon fluorescence, slow faint cut, no stain, poor show

5282 - 5295' Limestone - Brown, micrite, cryptocrystalline, hard, dense, clean, fossiliferous, pyritic, poor visible porosity, no show

5295 - 5310' *Dolomite - Medium brown, speckled green, medium to dark mottled brown, microcrystalline, microsucrosic, clean to marly in part, sandy, glauconitic, pyritic, trace intercrystalline porosity, trace dull mottled yellow hydrocarbon fluorescence(4% spl), faint slow bleeding cut, no stain

Osage 5318'

5310 - 5350' Limestone - Medium to dark mottled gray to brown, micrite, crypto to microcrystalline, dense, sandy, glauconitic, fossiliferous, argillaceous to marly, dolomitic in part, poor visible porosity, no show, occasionally interbedded with Dolomite - Dark mottled gray to brown, microsucrosic, argillaceous, fossiliferous, no fluorescence, no stain or cut

5350 - 5365' Dolomite - Medium brown, microcrystalline, microsucrosic, brittle, clean to argillaceous in part, sandy, glauconitic, trace to fair intercrystalline porosity, siliceous and tight in part, dull mottled bluegreen hydrocarbon fluorescence(2% spl), slow faint cut, no stain, with Milky gray Chert

5365 - 5430' Dolomite - Medium mottled brown to gray, dark speckled green, microcrystalline, microsucrosic, marly, sandy, fossiliferous, carbonaceous, glauconitic, very siliceous and tight in part, no show interbedded with Limestone - Dark brown, gray, cryptocrystalline, dense, siliceous, marly, tight, no show, trace *Dolomite(5400' - 5408') - Medium brown, speckled green, microcrystalline, microsucrosic, clean, glauconitic(chlorite?), trace intercrystalline and vuggy porosity, pale mottled yellow hydrocarbon fluorescence(4% spl), faint streaming cut, trace oil stain, occasionally interbedded with Shale - Dark gray, black, hard, blocky, dolomitic, trace milky Chert

5430 - 5465' Limestone - Medium to dark mottled brown, gray, dark speckled green, salt and pepper, micrite, microcrystalline, dense, argillaceous to marly, sandy, glauconitic, fossiliferous, dolomitic in part with trace intercrystalline porosity, no fluorescence, no stain or cut, with abundant Chert - Dark milky gray, graygreen, hard, crystalline, fossiliferous

5465 - 5480' Shale - Dark gray to graygreen, brown, black, firm, blocky, waxy, calcareous, interbedded with Limestone - Dark brown, gray, graygreen, finely crystalline, hard, dense, siliceous, argillaceous to marly, fossiliferous, tight, no show, trace Chert

5480 - 5500' Limestone - Medium to dark brown, micrite, cryptocrystalline, dense, argillaceous to marly, sandy, fossiliferous, poor visible porosity, no show, trace Chert - Milky gray to brown

5500 - 5535' Limestone - Medium to dark brown, mottled gray, cryptocrystalline, hard, dense, siliceous, sandy, fossiliferous, tight, no show, interbedded with Shale - Graygreen, brown, hard, blocky, dolomitic

5535 - 5605' Limestone - Dark mottled brown to gray, biomicrite, cryptocrystalline, hard, dense, siliceous in part, argillaceous to marly, sandy, tight, no show, interbedded with Shale - Dark gray to brown, hard, blocky, dolomitic

5605 - 5630' Shale - Dark gray to brown, firm, blocky, waxy, calcareous, interbedded with Limestone - As above, marly in part, no show, trace Chert

Kinderhook 5638'

5630 - 5690' Shale - Dark gray, graygreen, dark brown, hard, blocky, waxy, fossiliferous, pyritic, calcareous, interbedded with marly Limestone - As above, trace Chert - Mottled gray, milky white, redbrown to orange

5690 - 5720' Abundant Chert(5% spl) - Milky gray, brown to orange, hard, crystalline, Limestone - Light to medium brown, buff, gray, micrite, micro to cryptocrystalline, dense, clean, subcherty, siliceous and tight in part, no fluorescence, no stain or cut, occasionally interbedded with Shale - Mottled gray, graygreen, black, hard, blocky to fissile, calcareous

5720 - 5733' Limestone - Light to medium brown, buff, cryptocrystalline, hard, dense, clean, siliceous, tight, no show, with abundant Chert(6% spl) - Milky gray, brown, white, translucent, hard, crystalline

Viola 5722'

5733 - 5743' *Very fine cuttings,(25 Units Gas), Dolomite(15% spl) - Medium brown, coarsely crystalline, sucrosic to granular, brittle, clean, good intercrystalline porosity, trace fine vuggy porosity, bright yellowblue hydrocarbon fluorescence in 15% of the samples - majority of the dolomite, good streaming cut, no visible stain, slight gas odor when crushed, show dissipates when crushed, abundant Chert(6% spl) - Milky gray to brown, white, translucent, hard, crystalline, tripolitic in part with trace intercrystalline porosity, trace light yellow hydrocarbon fluorescence and faint streaming cut, interbedded with Limestone - Light brown, cryptocrystalline, hard, siliceous, tight, trace fluorescence and cut

5743 - 5770' *Abundant Chert(12% spl) - Milky gray, brown, hard, crystalline, trace yellow hydrocarbon fluorescence, faint cut, Dolomite(60% spl) - very fine

cuttings, Medium brown, coarsely crystalline, sucrosic, brittle, clean, good intercrystalline porosity, trace fine vuggy porosity, bright yellowblue hydrocarbon fluorescence(12% spl), good streaming cut, no stain, show dissipates when dry

5770 - 5800' *Dolomite - Light to medium brown, light gray, micro to coarsely crystalline, sucroic, brittle, clean, good intercrystalline porosity, trace yellow to blue hydrocarbon fluorescence(2% spl), slow faint cut, no stain, with abundant Chert(10% spl) - Gray, white, tripolitic in part

5800 - 5814' Limestone - Tan, light brown, cryptocrystalline, hard, dense, siliceous, tight, no show, with Chert

5814 - 5827' Dolomite - Medium to light brown, microcrystalline, hard, dense, siliceous, clean, tight to trace intercrystalline porosity, no fluorescence, no stain or cut, with abundant Chert

5827 - 5855' Limestone - Brown to redbrown, tan, microcrystalline, dense, clean, siliceous, poor visible porosity, no fluorescence, no stain or cut, with abundant Chert(12% spl) - Translucent, milky white, hard, crystalline

5855 - 5895' Limestone - Medium to dark brown, biomicrite, cryptocrystalline, dense, clean, subchalky in part, fossiliferous, sady, poor visible porosity, no fluorescence, no stain or cut, with Chert

5895 - 5915' Limestone - Light brown, buff, finely crystalline, clean, subchalky, tight, no show, with Chert

Upper Simpson Dolomite 5910'

5915 - 5945' Dolomite - Light to medium brown, coarsely crystalline, sucrosic to granular, brittle, clean, sandy in part, good intercrystalline porosity, no fluorescence, no stain or cut

5945 - 5975' Limestone - Brown, buff, cryptocrystalline, dense, clean, tight, no show, with Chert

5975 - 6006' Poor sample quality - abundant cavings, Dolomite - Light to medium mottled brown to gray, microcrystalline, microsucrosic to sucrosic, brittle, clean to argillaceous, very sandy in part with fine, subround grains, trace intercrystalline porosity, no fluorescence, no stain or cut, ocasionaly grading to Sandstone(6% spl) - Medium gray, light brown, friable, fine upper to fine lower, well sorted, subround grains, calcite cement, poor visible porosity, no show

Upper Simpson Sandstone 6011'

6006 - 6024' Sandstone(15% spl) - Clear, white, hard, slightly friable, fine lower to very fine upper, well sorted, subround grains, siliceous cement, clean, poor visible porosity, no fluorescence, no stain or cut, with Shale - Medium graygreen, fissile, firm, waxy, dolomitic

Simpson Shale 6023'

6024 - 6050' Shale - Dark gray, graygreen, brown, occasionally black, fissile, firm, waxy, carbonaceous in part

6050 - 6068' Shale - Medium green to gray, mottled, dark brown to gray, occasionally black, fissile, hard, waxy, pyritic in part

Basal Simpson Sandstone 6068'

6068 - 6088' Unconsolidated Quartz grains(60% spl) - Clear, white, occasionally orange, frosted, medium upper to fine lower, moderately sorted, subround to round grains, no fluorescence, no stain or cut

6088 - 6096' Sandstone(40% spl) - Gray, white, slightly friable, fine lower, well sorted, subround grains, occasionally medium lower to fine lower and moderately sorted, siliceous cement, clean, trace intergranular porosity - some clay infill, no fluorescence, no stain or cut

Arbuckle 6096'

6096 - 6110' Dolomite - Medium to light brown, white, fine to coarsely crystalline in part, sucrosic, brittle, clean, very sandy in part with fine upper, well sorted, round grains, oolitic, fair intercrystalline porosity, medium brown mineral fluorescence, no stain or cut

6110 - 6120' Dolomite - Medium to light brown, microcrystalline, microsucrosic to sucrosic, brittle, clean, oolitic and sandy in part, fair intercrystalline porosity, orangebrown mineral fluorescence, no stain or cut

6120 - 6150' Dolomite - Medium brown, micro to coarsely crystalline, sucrosic to granular texture, clean, sandy with fine lower, well sorted grains, very oolitic with excellent oomoldic porosity, occasional fair intercrystalline porosity, dull brown mineral fluorescence, no stain or cut, interbedded with Shale - Medium green, graygreen, hard, fissile, waxy, pyritic, with Chert - Milky gray to brown, hard, crystalline

6150 - 6178' Dolomite - Medium to dark mottled brown, microcrystalline to coarse intergrown crystals, sucrosic, clean, brittle, good intercrystalline porosity, oolitic with moldic porosity, vuggy porosity, mineral fluorescence, no stain or cut, occasionally interbedded with Shale - As above

6178 - 632' Dolomite - Light to medium brown, microcrystalline, microsucrosic in part, clean, tight to trace intercrystalline porosity, mineral fluorescence, no stain or cut, interbedded with Shale - Dark green, hard, fissile, waxy, dolomitic

6232 - 6262' Dolomite - Light to medium brwn, buff, occasionally white, course intergrown crystals in part, granular, clen, fair intercrystalline porosity, occasional vuggy porosity, orange brown mineral fluorescence, no stain or cut

6262 - 6300'TD Dolomite - Medium to light brown, coarsely crystalline with occasional intergrown crystals, brittle, clean, sucrosic to granular texture, occasional good intercrystalline porosity, trace vuggy poroity, orangebrown mineral fluorescence, no stain or cut, trace Chert - Milky white, gray, hard, crystalline