

KIM B. SHOEMAKER

CONSULTING GEOLOGIST

316-884-9709 * WICHITA, KS

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY L. D. DRILLING, INC.
 LEASE # 1-13 ULTRA UNIT
 FIELD WILDCAT
 LOCATION 2395' FNL & 2220' FWL
 SEC 13 TWP 13s RGE 29w
 COUNTY GOVE STATE KANSAS
 CONTRACTOR L. D. DRILLING, INC.
 SPUD 3-16-15 COMP 3-25-15
 RID 4621 LTD 4620
 MUD UP 3509 TYPE MUD CHEMICAL

ELEVATIONS
 KB 2781
 OF _____
 GL 2776
 Measurements Are All
 From 2781 KB
 CASING
 SURFACE 8 5/8" @ 387'
 PRODUCTION 5 1/2" @
 ELECTRICAL SURVEYS
 DUAL IND., DENS-N. MICRO

SAMPLES SAVED FROM 3600 TO 4621
 DRILLING TIME KEPT FROM 3900 TO 4621
 SAMPLES EXAMINED FROM 3600 TO 4621
 GEOLOGICAL SUPERVISION FROM 3800 TO 4621
 GEOLOGIST ON WELL KIM B. SHOEMAKER

FORMATION TOPS	LOG	SAMPLES
ANHYDRITE	2273 + 568	2272 + 509
B/ANH.	2308 + 473	2308 + 473
STOTLER	3539 - 758	3540 - 759
HEEBNER	3901 - 1120	3902 - 1121
LANSING	3942 - 1161	3941 - 1160
STARK	4171 - 1390	4174 - 1393
MARMATON	4260 - 1479	4262 - 1481
FORT SCOTT	4423 - 1642	4432 - 1651
CHEROKEE	4452 - 1671	4456 - 1675
MISSISSIPPI	4526 - 1745	4528 - 1747
MISS. SPERGEN	4534 - 1753	4535 - 1754



REMARKS

API: 15-063-22251
 3-16-15 SPUD
 3-17 @ 390
 3-18 @ 1676
 3-19 @ 2610
 3-20 @ 3263
 3-21 @ 3802
 3-22 @ 4200
 3-23 @ 4315
 3-24 @ 4410
 3-25 @ 4621

LEGEND

- Dolomite
- Chert
- Co. Lime
- Limestone
- Carb. sh.
- Shale
- Sandstone
- Salt
- Anhydrite

DRILLING TIME IN MINUTES
 PER FOOT
 Rate of Penetration Increases

DEPTH
 2250
 2300
 2350

SAMPLE DESCRIPTIONS

REMARKS

ANHYDRITE 2272 + 509

B/ANH. 2308 + 473

LITHOLOGY

3400

3500

3600

STOLLER 3540-759

Samples are tagged

15 - Top 4 ft. of Sil. Foss. w/ DE G. Foss.

Sh. G. silt

15 - 11 ft. Sil. Foss. w/ DE G. Foss.

15 - Foss. in DE G. silt

15 - 11 ft. Sil. Foss. DE G. Foss.

Sh. G. silt

15 - 11 ft. Foss.

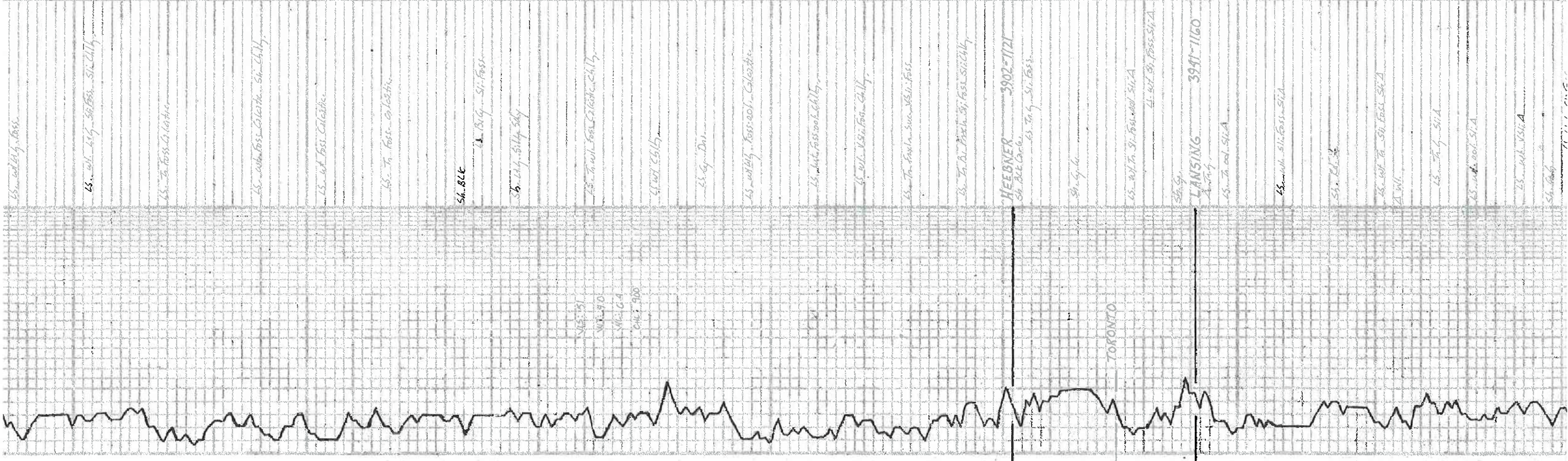


3700

3800

3900

4000



LS. wt. 1.5g - 50 Foss. - Sil. Chit.

LS. wt. 1.5g - 50 Foss. - Sil. Chit.

LS. wt. 1.5g - 50 Foss. - Sil. Chit.

LS. wt. 1.5g - 50 Foss. - Sil. Chit.

LS. wt. 1.5g - 50 Foss. - Sil. Chit.

LS. wt. 1.5g - 50 Foss. - Sil. Chit.

SH. 82C

SH. 82C - 50 Foss.

SH. 82D - 50 Foss.

SH. 82E - 50 Foss. - Sil. Chit.

SH. 82F

SH. 82G

SH. 82H - 50 Foss. - Sil. Chit.

SH. 82I - 50 Foss. - Sil. Chit.

SH. 82J - 50 Foss. - Sil. Chit.

SH. 82K - 50 Foss. - Sil. Chit.

SH. 82L - 50 Foss. - Sil. Chit.

HEEBNER 3902-1121

SH. 82M - 50 Foss. - Sil. Chit.

SH. 82N

TORONTO

SH. 82O - 50 Foss. - Sil. Chit.

SH. 82P - 50 Foss. - Sil. Chit.

LANSING 3941-1160

SH. 82Q - 50 Foss. - Sil. Chit.

SH. 82R - 50 Foss. - Sil. Chit.

SH. 82S

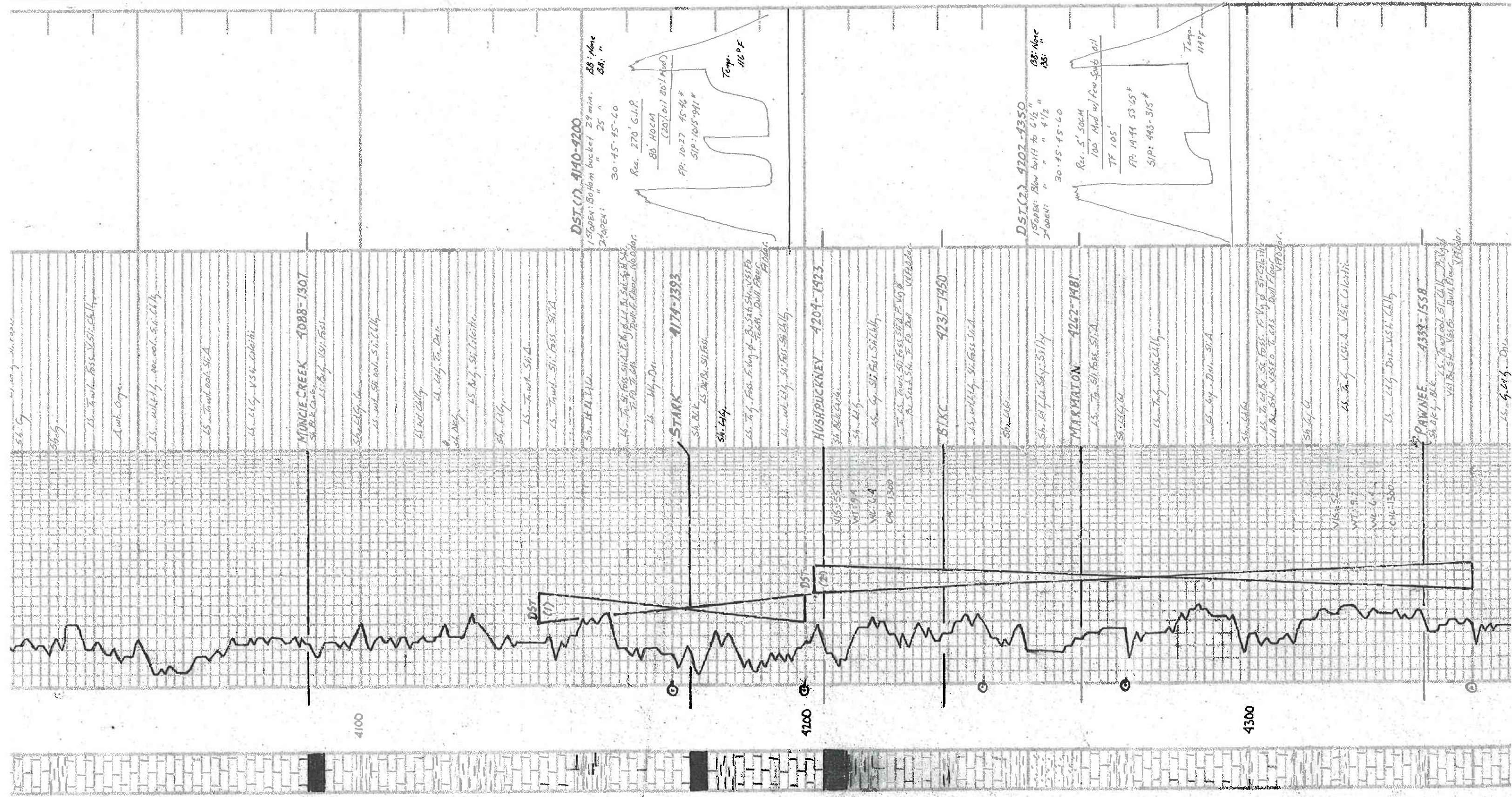
SH. 82T - 50 Foss. - Sil. Chit.

SH. 82U - 50 Foss. - Sil. Chit.

SH. 82V - 50 Foss. - Sil. Chit.

SH. 82W - 50 Foss. - Sil. Chit.

SH. 82X



DST (1) 4140-4200
 150 DEN: Bottom bucket 24 min. 88' None
 24 DEN: " " " 25 " 88' "
 30-45-45-60
 Rec. 270' G.I.P.
 80 HOCH
 (20/01) 80.1 Mud
 FP: 10-27 95-96 #
 SIP: 1015-991 #
 Temp. 112.0 F

DST (2) 4202-4350
 150 DEN: Blow bit to 6 1/2 "
 24 DEN: " " " 4 1/2 "
 30-45-45-60
 Rec. 5' SOCH
 100' Mud w/ few sand oil
 TF 105'
 FP: 14-44 53-65 #
 SIP: 443-315 #
 Temp. 114.4 F

MUNCIE CREEK 4088-1307
 Sh. Blk. Clay
 L.S. Blk. Gy. V.S. Foss.

STARK 4174-1393
 Sh. Blk. L.S. Dol. Sil. Foss.
 Sh. 414.
 L.S. Gy. Foss. F. clay of Blue Sil. Sh. V.S. Foss. Dol. Foss. F. Dol.

HUSHUCKNEY 4204-1423
 Sh. Blk. Clay
 Sh. 414
 L.S. Gy. Sil. Foss. Sil. Clay
 L.S. Dol. Sil. Foss. Sil. Clay P. 169 #
 Bl. Sand Sil. F. Dol. Dol. V. F. Dol.

BIRC 4231-1490
 Sh. Blk. Clay
 Sh. 414
 L.S. Dol. Sil. Foss. Sil. Clay

MARMATON 4262-1481
 L.S. Gy. Sil. Foss. Sil. Clay
 Sh. 414
 L.S. Dol. V.S. Clay

PAWNEE 4332-1538
 Sh. Blk. Clay
 L.S. Dol. Sil. Foss. Sil. Clay
 V.S. Blk. Sil. Foss. Sil. Clay
 Dol. Foss. V. F. Dol.

4100

4200

4300

38. DE 5 Silty
39. BLK
40. BLK
41. BLK
42. BLK
43. BLK
44. BLK
45. BLK
46. BLK
47. BLK
48. BLK
49. BLK
50. BLK
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90. BLK
91. BLK
92. BLK
93. BLK
94. BLK
95. BLK
96. BLK
97. BLK
98. BLK
99. BLK
100. BLK

MURKIN STATION 4396-1615

41. w/ly 51. fass
55. DE 5 - BLK

FORT SCOTT 4437-1651
41. Redool. Calcite

44. w/ly 51. fass
55. DE 5 - BLK

CYERO KEE 4456-1675
41. BLK Calc

45. 41.5 51. fass 51.1. Chly

45. 41.5 51. fass 51.1. Chly

54. DE 5

45. 41.5 51.1. Calcite

55. 41.5 51.1. Calcite

JOHNSON 4494-1713

44. 41.5 51.1. fass 51.1. Chly

54. Blue chly

4. Orange - Red chly

38. Yellow chly 1.7. BLK

MISSISSIPPI 4528-1747

25. 41.5 51.1. fass 51.1. Chly

MISS SPERGEN 4535-1754

44. 41.5 51.1. fass 51.1. Chly
Dol. 7. 51.1. fass 51.1. Chly
80. 11. 51.1. fass 51.1. Chly

45. 41.5 51.1. Calcite

40. 41.5 51.1. fass 51.1. Chly

40. 41.5 51.1. fass 51.1. Chly

45. 41.5 51.1. Calcite

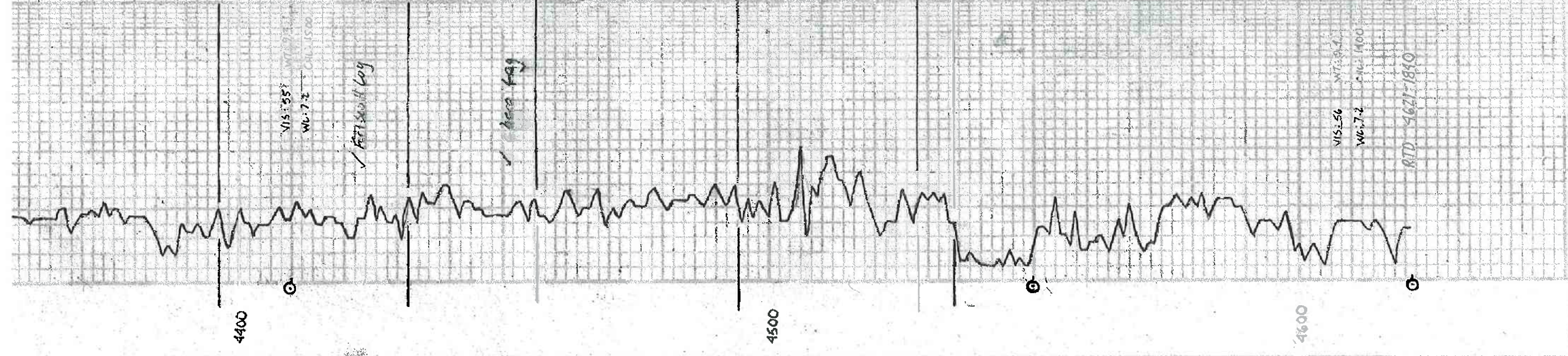
45. Yellow to fass Calcite

45. 41.5 51.1. Calcite

45. 41.5 51.1. Calcite

45. 41.5 51.1. Calcite

45. 41.5 51.1. Calcite



4400

4500

4600

VIS 55
WU 7.2
CHL 1500

✓ RTD 4621-1810

✓ RTD 4621-1810

VIS 56
WU 7.2
CHL 1400

RTD 4621-1810