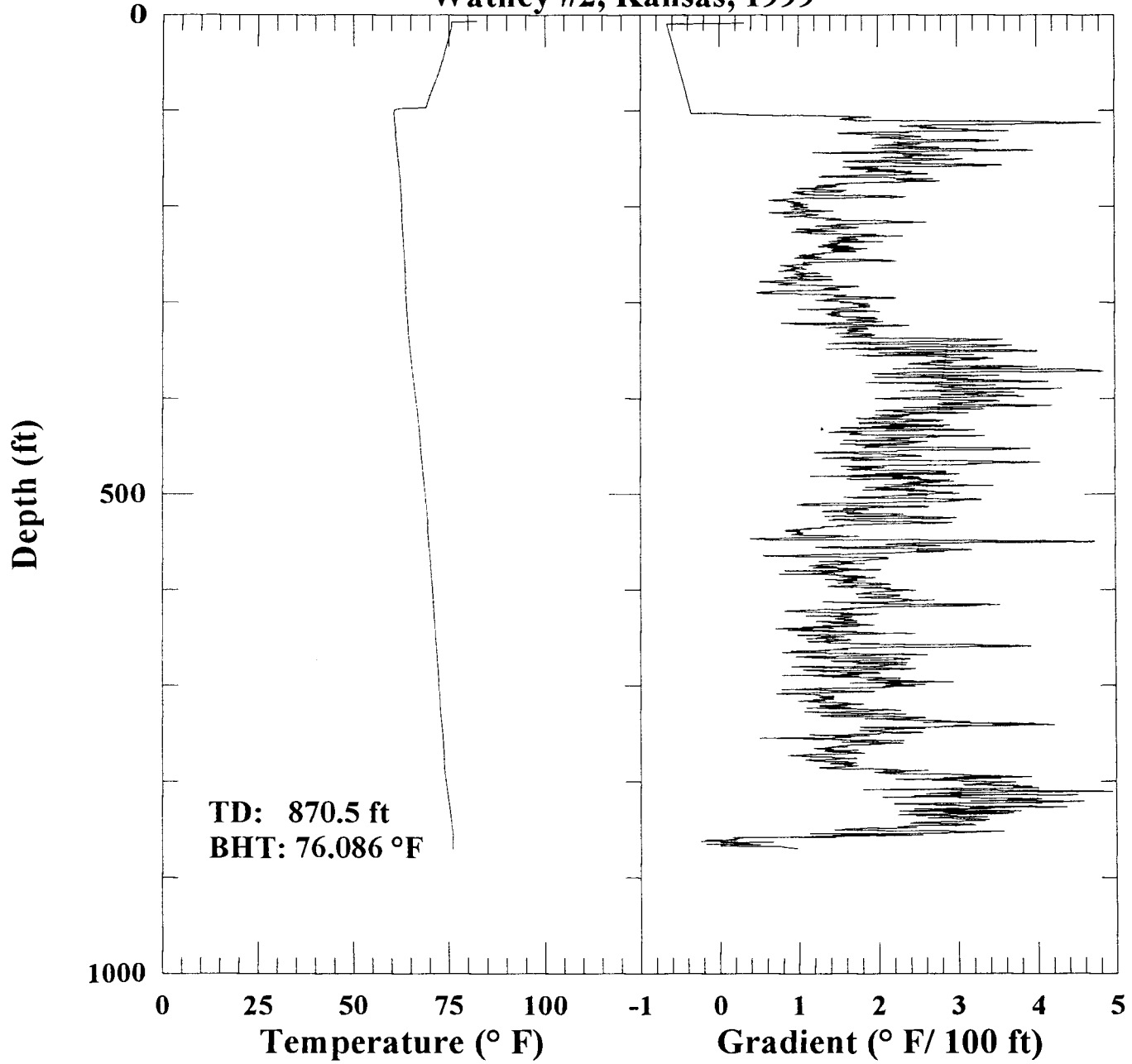


WELL & LOCATION: KGS No. 1. S. Osburn (=No. 2 Walnut) <sup>CEL</sup> NE 10-32S 13E

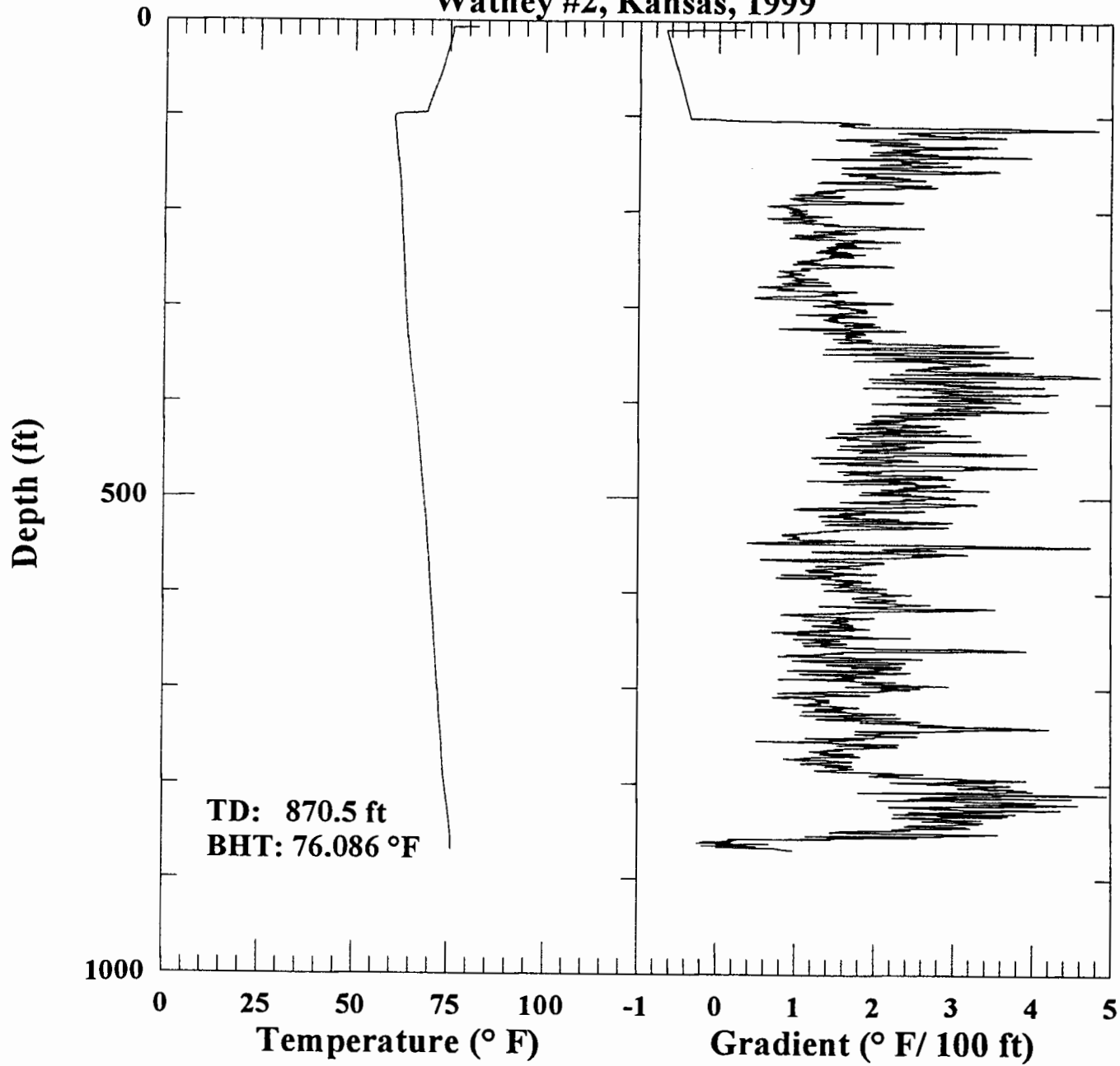
UNIT	THICKNESS	LITHOLOGY	RX COND.	REMARKS
Dong.	173	1 sh		CQ Co
{ Lams.	37	1 sh 4 ls		
{ Lams.	43	1 sh		
{ Lams.	49	1 ls		
{ Uilas	118	1 sh		
{ Platts	8	1 sh 1 ls		
{ Ls/KC	133	1 silty sh 1 sh		
{ KC	111	1 silty sh 4 ls		
{ "	83	1 silty sh		
{ KC	43	1 ls.		TD 788 1/2 elev. 905 (265.4 m)

**Watney #2, Kansas, 1999**



265.4 m  
SWU: 02 - North

**Watney #2, Kansas, 1999**



DAI-DAO

Watney No 2

4-4981

Operator KGS page 1  
 Lease #1 Steve Osburn depths 0-70  
 Location e/l NE Sec 10-32S-13E 9056L

spud 6/2 6:15 PM 420-2

comments

with draw (EIA City  
 water supply (with  
 operated 150 gal/  
 25¢)  
 no draw due east  
 down slope

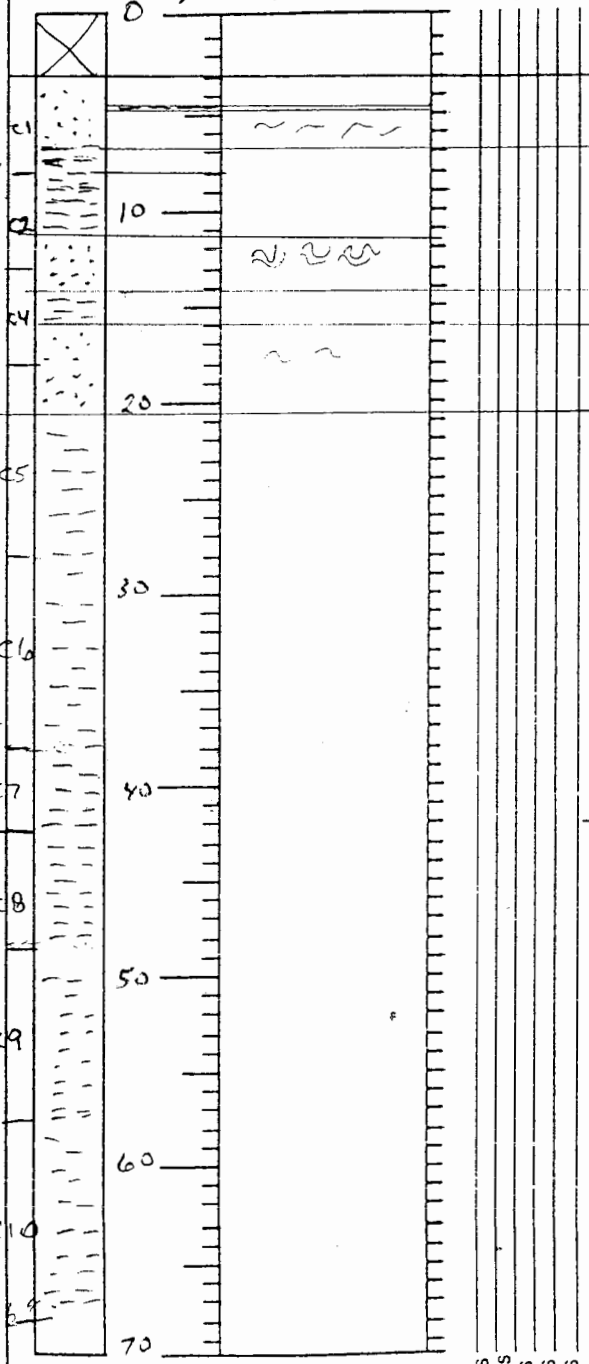
~ 7:30

casiny point 8:15 p

casiny 10:30 pm

6-3 9:15 AM  
 set up to core  
 ahead

1/2 cement pvc  
 plug

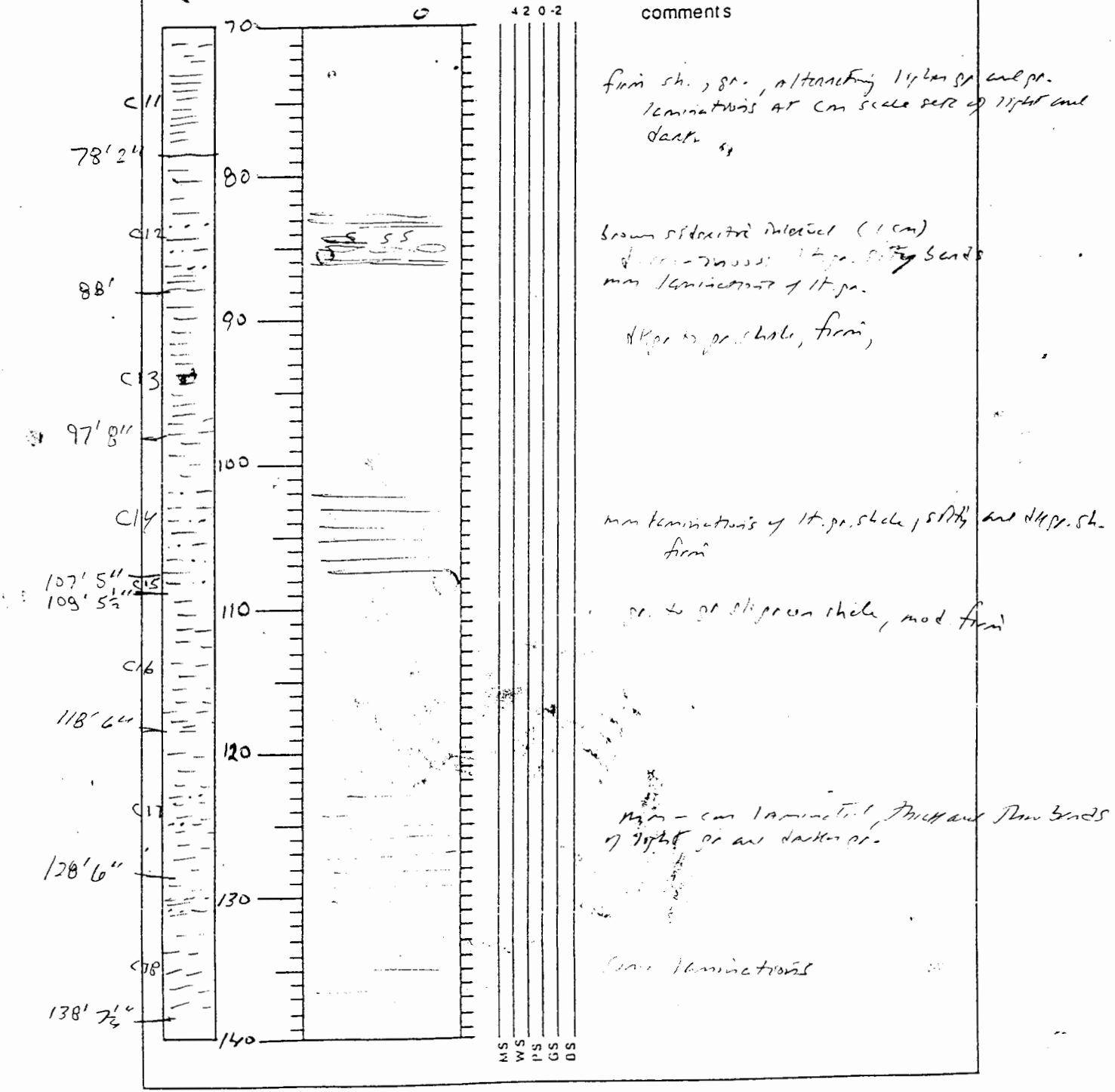


drilled out, oxidized clay/sand  
 commence coring 6:33 PM  
 thin shale  
 ss. fine. some congl. w/ medium limonite weathering  
 some distorted bedding  
 lt. tan. claystone, also limonite stain to lt. tan. color  
 intervals  
 ss., lt. tan. fine gr., contorted bedding  
 soft sh., lt. tan.  
 ss. fine gr., lt. tan., some contorted bedding  
 gr. sh., soft  
 soft gr. shale w/ platy bedding, easy to split  
 pvc plug 11 AM  
 v/soft, angular blocks, stick  
 sm. siltstone  
 v. soft sh., sticks, chert in pipe

MS  
WS  
PS  
GS  
DS

Operator 9GS  
 Lease #1 Steve Osburn  
 Location e/l NE Sec. 10-32S-13E

page 2  
 depths 70-140



2  
26  
27  
5  
340

GL = 905

U

Operator HGS  
Lease #1 Steve Osburn  
Location e/l ne Sec. 10-32s-13E

page 3

depths 140 - 210

20  
5  
shale south  
to  
bond

148' 8" 1/2  
top for hydraulic hose  
work ~ 5:15  
no hole an back  
13:00am 6/4

Box 22  
6 AM to coring  
26 2pm  
3:30 am  
4:10 168' 2 1/2"

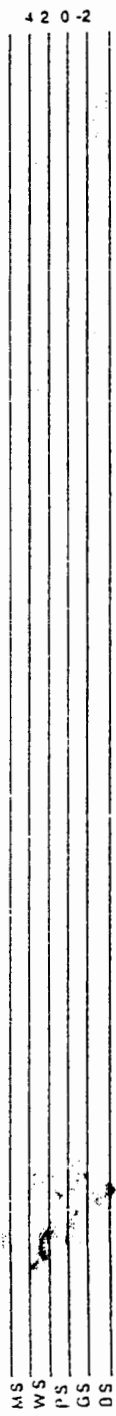
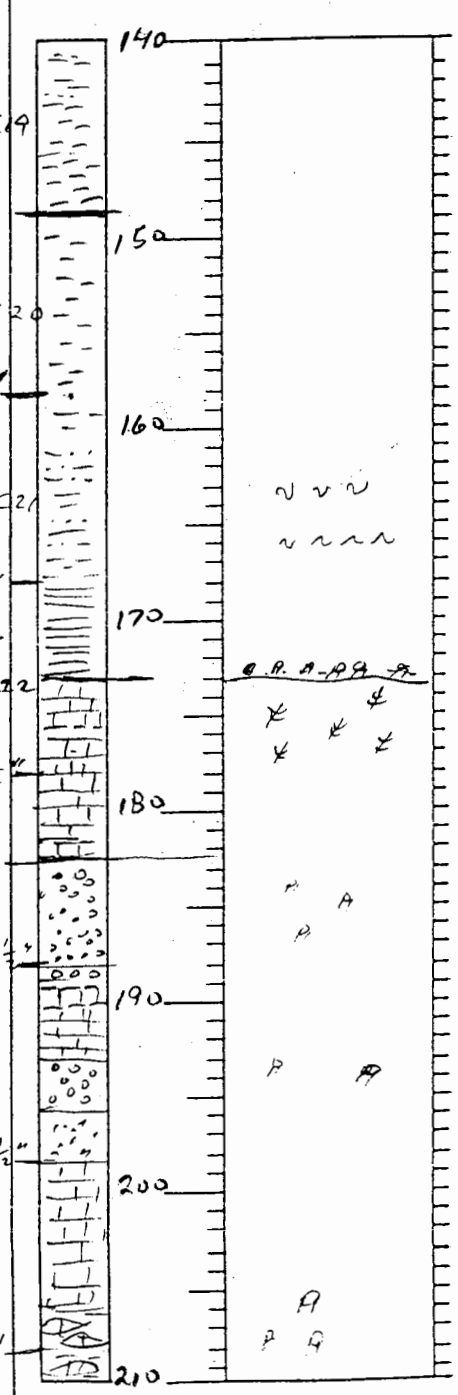
GRETNA SH.  
SOUTH BEND LS.  
4:50 178' 1 1/2"

5:15 188' 2 1/2"

5:35 198' 2 1/2"

6:15 pm 208' 1"

June 27  
START 6:45 AM



comments

from 16 minutes section in shale  
no fossils —

Controlled bedding in v. fm. ss. w/ shale lam.  
pr. pr.  
sh. bed on round burrows

diff grey sh. hard ground?  
conchoidal, shaly 1cm thick resting on sharp  
17.5-18, phylloid open wackest, w/ sect  
w/ sh. below 76

Phys. seams 8"-12" apart w/ sharp basal contact  
(flooding)  
sandstone, encrusting w/ voids and coated  
grains —  
shale seam (2cm)  
wackestone, 17.5-18. few fossils  
encrusting oolite  
peloidal sandstone

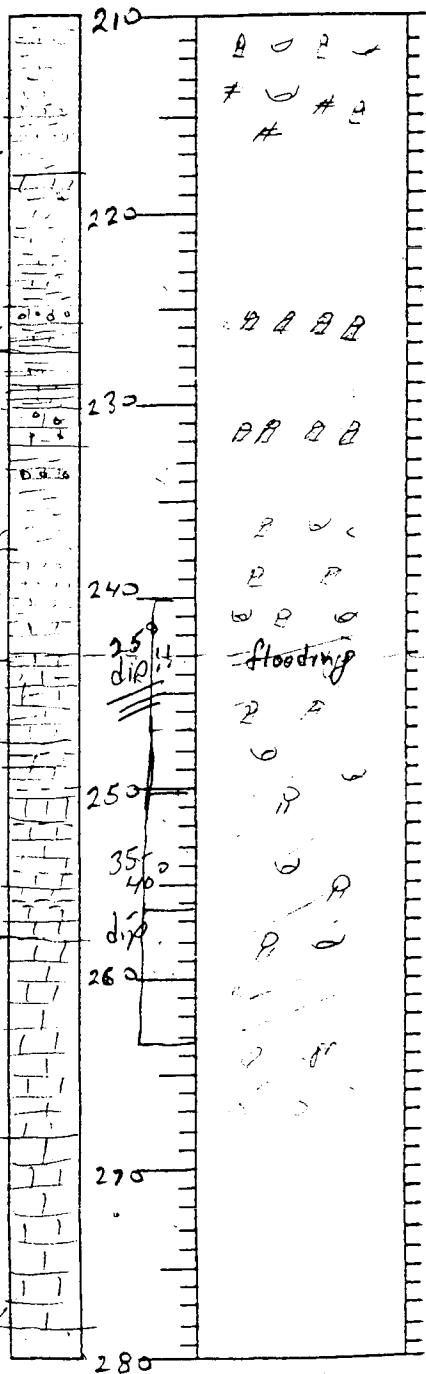
large conchoidal frags.

22  
22  
3

Operator KGS  
 Lease #1 Steve Osburn  
 Location \_\_\_\_\_

page 4  
 depths 210 - 280

diameter?  
 7:35 213' 1/4"  
 3:12 227' 10 1/2"  
 2:00 237' 10 1/2"  
 ? Captains Creek  
 9:45 247' 10"  
 35-40% dip !!  
 10:30 258' 1"  
 1:10 268' 2"  
 11:40 278' 3 1/2"



comments

v. fossil. w/ large brachi. crinoids, sects. bryozoa especially large crinoids  
 ~6" spaced between beds of  $Ca_3$  - "flags" suggest  
 androgynous slope bed interval  
 shale is firm dk gr-gr  
 sect. mottling - burrows with green argonite free  
 thin thick 4" spaced  $Ca_3$  beds  
 250' - 260' - shale  
 partstone or ss, extensive - possibly coated??  
 grains  
 extensive partstone, poorly coated  
 last part of  $Ca_3$   
 cl. gray, light to dark, small, brachi. crinoids  
 small gastropods  
 thin crinoid rich cm thin  
 fine to med. sandstone with mixed sandstone  
 side dk gr.  
 weathering brownish gray - dk gr. - mottling  
 burrows?, dk color filled burrows  
 shale intercalations, sect. in crinoids  
 Rhythmic shale seems as dip! separating crinoid  
 rich clay carbonate - soft; unconsolidated  
 sect. br. crinoids in "flags"  
 "flags" continued  
 dip not as "apparent", shale  
 extensively gray mottled  
 "mound rock", gray mottled 1/2 part  
 dk. stylolites -  
 hard rock  
 Jan Sakpan

240  
 245  
 250  
 255

Operator KGS  
 Lease #1 Steve Osburn  
 Location C & L NE Sec. 10-32S-13E

page 5  
 depths 280-350

120 ft. of  
 STONER!!  
 LS.!!

2:35 293' 1/2"

Flooding  
 surface  
 2:50 298' 3/4"

Vilas Sh.

3:30 308' 3/4"

2:00-  
 5:05  
 at ranch

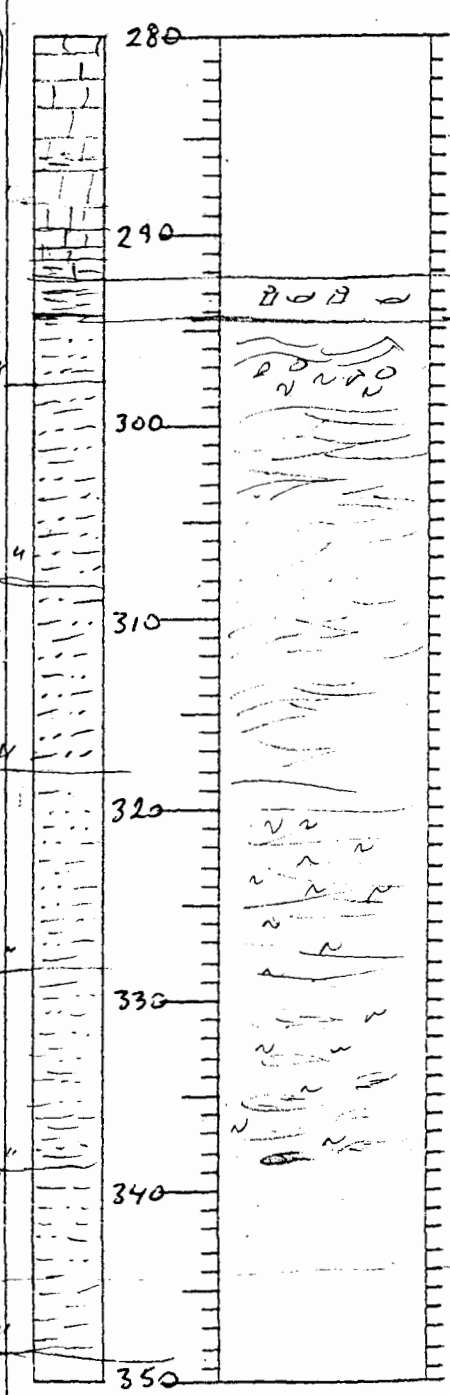
5:45 318' 5/8"

6:30 328' 2 3/4"

7:10 338' 4 3/4"

8:20 348' 5"

fr. 30 ft.  
 to Pleaschberg ls.?



420-2  
 MS  
 WS  
 PS  
 GS  
 OS

comments

slightly calc. & (top of grey mottled, argillite, sand (brown), some voids)  
 slight dip (15°) in shale parting.

shale at 92  
 irregular, abundantly fossiliferous  
 flaser bedding, biturbated, ripple - shale  
 circular burrows from top sand part  
 lamellar, x lamellar (ripples), run  
 to on lenses

more flaser bedded silt ss, micaceous  
 x lamination, few burrows, some lamination  
 in shaly portions (heterolithic bedding)

more biturbation, slight increase in thickness

60% shale, massive down above  
 ripple in silt even

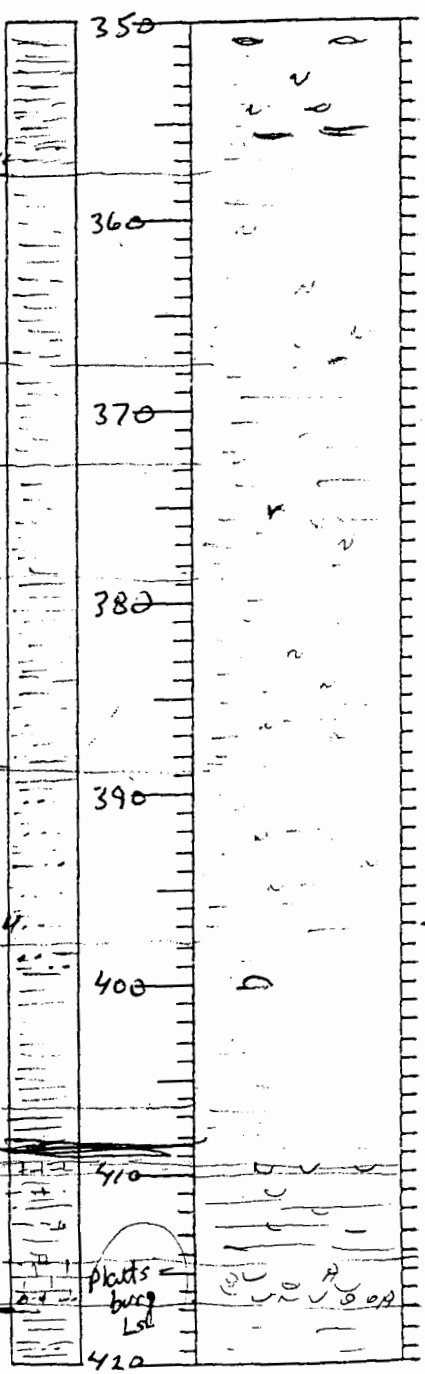
mostly shale, dk gr., laminated with  
 fine lt. gr. silt

905  
 299  
 /



Operator MGS  
 Lease #1 Steve Osburn  
 Location c e/l NE Sec 10-32S-13E

page 6  
 depths 350-420



420-2

comments

laminated dk. sh. w/ many laminae and  
 lenses of silt, occ. circular burrow

few laminae of silt, dk gray shale  
 mod hard (not black shale), occ. burrows -  
 horizontal &

more homogeneous

node - bin micrite siderite??  
 occ. horizontal burrow

occ. small circular burrows  
 moderate to fine lamination of silt  
 sh. micrite - some flat, but mod. firm

10-20% silt lamination, occ. small lamination  
 occ. small circular burrows

bin nodule in sh. micrite surrounding it - siderite??  
 more shale, dk. gray, < 10% silt laminae

gray shale

argill. calc. sh., sm. comminuted fossil debris  
 thin silt beds in dk part

Argill. w/ finest. in coarse. skeletal large and  
 scat. bivalves and brachiopods  
 matrix. base (3") sharp base

Gray shale  
 w/ v. fine silt lamination

7:30 p 357' 4 1/2"  
 6/28/98  
 7:45

367' 1/2"

8:15 372' 4 1/4"

7:05 378' 7/8"

8:05 388' 8 3/4"

1:15 397' 11 1/2"

2:20 406' 5"

2:50 408' 4"

9" cum in hole  
 by catcher, 1/2"  
 9"  
 not enough force  
 to push thru!

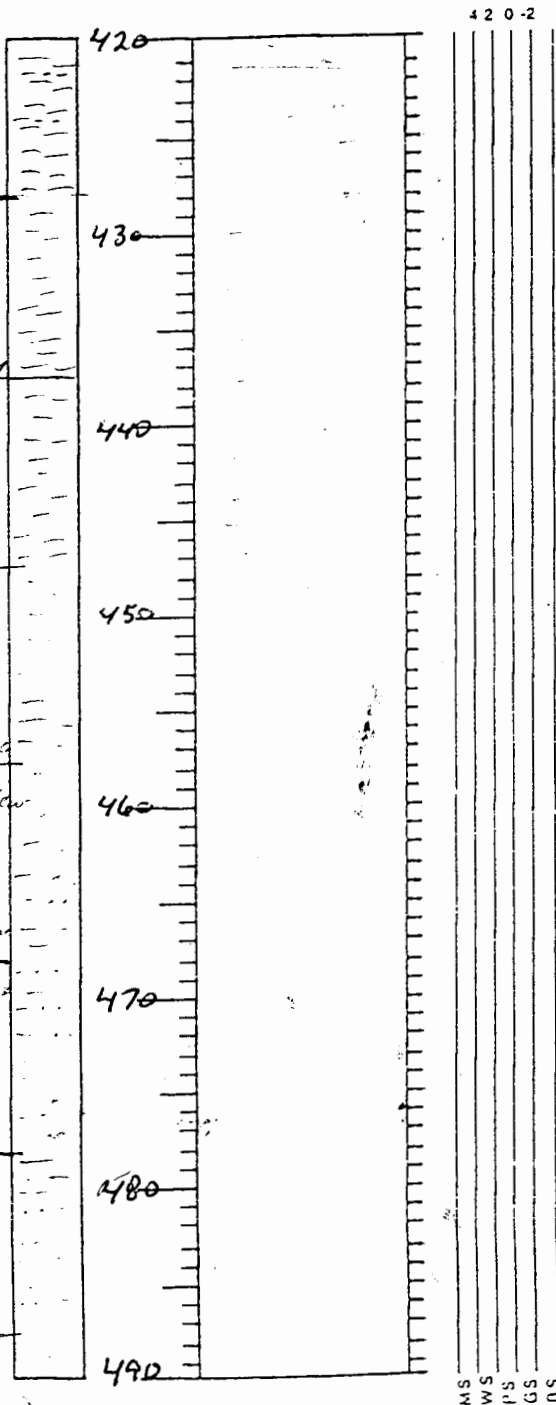
begin 9/22/98 5PM  
 #1 Steve Osburn

9:15  
 9:25  
 9:35

9:45  
 9:55  
 10:05

Operator RGS  
 Lease Al Steve Osburn  
 Location C e/r NE Sec. 10-325-13E

page 7  
 depths 420-490



420-2

comments

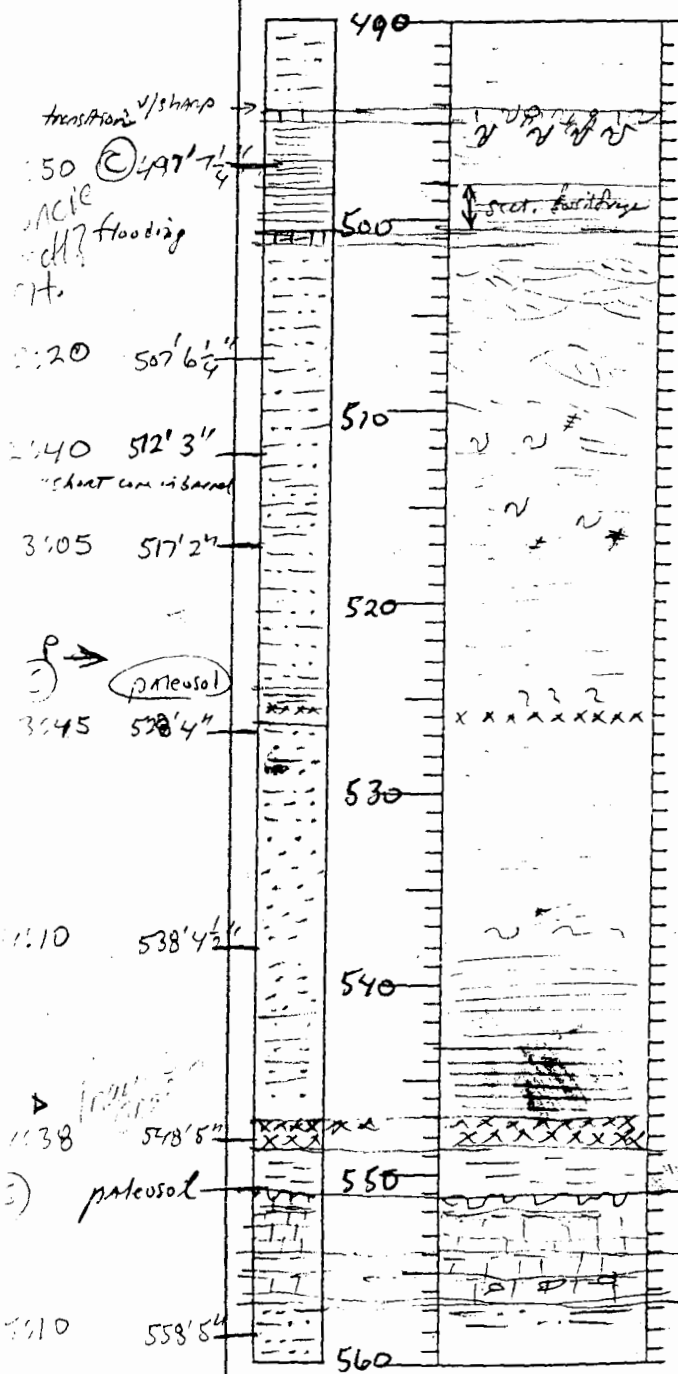
Gr sh.  
 faint H. jaegeri lamination

AA, no SAT

MS  
 WS  
 PS  
 GS  
 DS

Operator HGS  
 Lease #1 Steve Osburn  
 Location c e/r NE Sec. 10-32s-13E

page 8  
 depths 490-560



comments

gr. sh., little more brittle than above, parting  
 sect. thin silt

ls., gr., argill., fine comminuted fossil debris,  
 (minerals, hug. disturbance)  
 silt. sh., argill. with subhorizontal laminae - some with  
 thin layers of debris in silt. shale.  
 (min.)  
 ls., argill., argill. - 1 sect. fine comminuted fossils, common  
 siltstone - fine, gr. - lt. gr., flaser bedded w/ varying  
 scale, argill., reconstruction surface  
 mm alternating shale, siltst. laminae - tidal  
 sect. climbing ripples  
 siltst. - more mixed clay and silt. siltst.  
 bioturbated, plant debris

slightly more argill. siltst., generally slightly laminated  
 sect. plane and bedding plane, coaly material

siltstone sh. w/ p. disturbance? and ool. calc. nodules  
 few mm "coal", nodular leaves on bedding plane  
 siltst. coaly argill. sh. dk shale in siltst. center  
 with underlying siltstone  
 silt to v. fin sd. thinly laminated w/ shale,  
 wavy rippled,  
 v. fin. ss interbedded w/ shale, rippled in part  
 but mostly low inclined beds, sm  
 purely siltst. shale lam. - tidal  
 ool. contorted @ 33.5  
 tidal laminae  
 deep spring, tidal laminae - excellent  
 greying down to thin shaly red laminae  
 with ls. - siltst. above coal

coal

dk gr. sh. w/ siltstone  
 well sorted ls. - tan - argill. sh.  
 shale bed on cavity  
 wavy - mudst.  
 clasts - siltstone clasts (argill.) in lt. sh.  
 fine gr. siltstone  
 conspicuous green stain to internal layer  
 thinly laminated siltst. shale - shaly siltst. - near horizontal  
 laminae

transitional v/sharp →

500' 497' 7/8" →

507' 6 1/4" →

512' 3" →

517' 2" →

528' 4" →

538' 4 1/2" →

548' 5" →

558' 5" →

500' flooding

548' paleosol

548' coal

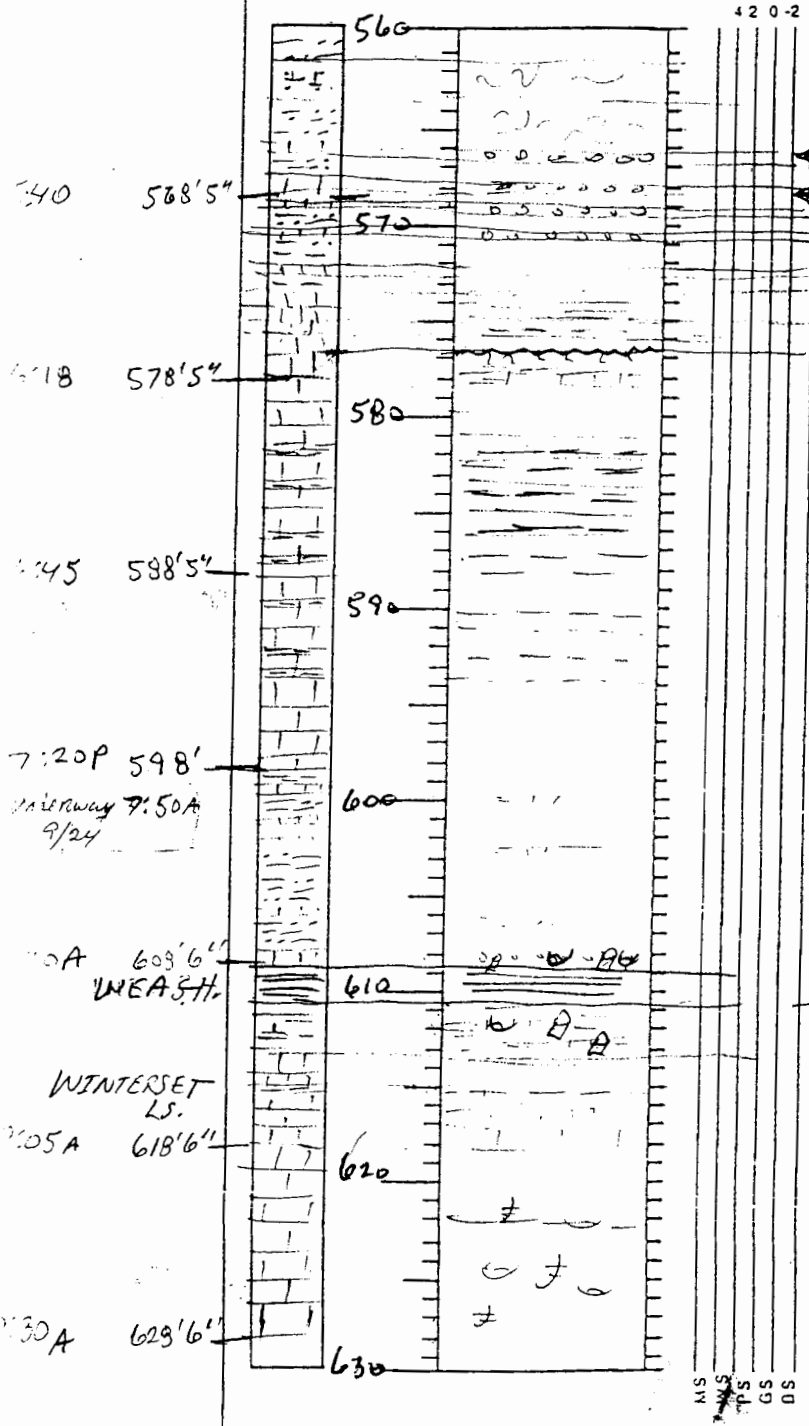
Operator KGS

page 9

Lease #1 Steve Osburn

depths 560-630

Location C e/r NE 10-32S-13E



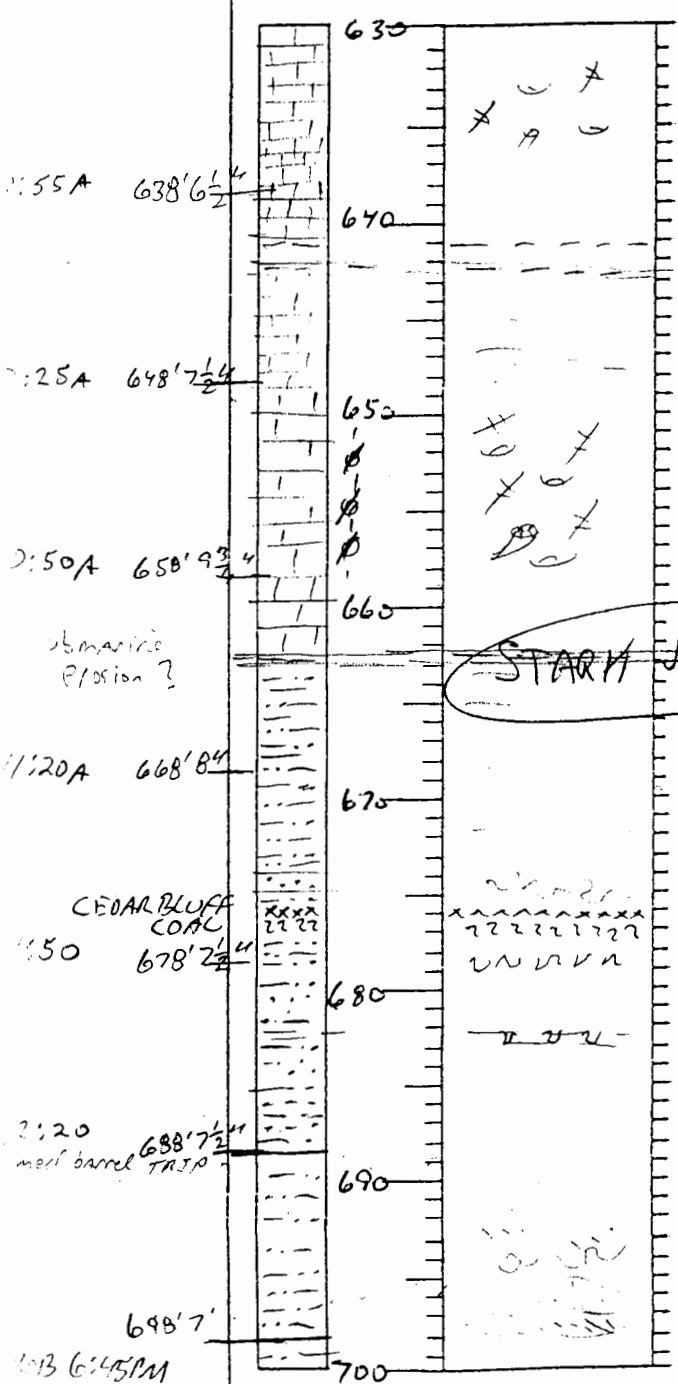
comments

560  
 siltst.  
 calc. fr. rd. "dish" structures? dolomite  
 contacted bedding, w/ sp. silt - in rd - w/ sh  
 mod. dolomite shale laminae  
 568'5"  
 CO<sub>2</sub> magnet. w/ dark red, mixed, druse  
 shaly - all grains darkened - magnetite?  
 magnetite? pyrite?  
 570  
 wackest  
 v. porous  
 578'5"  
 vuggy, mottled - burrowed, hard ground?  
 interbedded wackest and thin rhythmic shale seams  
 wackest, lt. gray  
 shaly bed of crinoids  
 580  
 STD shale laminations  
 590  
 wackest, calc., block, with abundant  
 crinoid shale stems  
 600  
 thin fine mult., siltst.  
 siltst., v. argill., gray w/ thin lt. gray  
 calcareous laminae  
 610  
 packstone, comminuted fossils, some crinoids  
 and brachiopods  
 BLACK SH. (lt. gr. sh w/ calc. fossils and mod. - a sand stone)  
 crinoid / brachiopods  
 lt. gr. wackestone  
 620  
 clean wackestone, tan  
 shaly seams (crinoids)  
 630

MS  
 GS  
 OS

Operator KGS  
 Lease #1 Steve Osburn  
 Location C e/l NE Sec. 10-32S-13E

page 10  
 depths 630-700



420-2  
 MS  
 WS  
 PS  
 GS  
 DS

comments  
 it's a wackert.  
 "mound rock"  
 shale seen  
 sec. sh. w/ps -  $\phi$   
 dk gr. sh w/ small comminuted fossils  
 fossils,  
 wackert. - pretholite  
 sec. shale w/ripps  
 "mound rock" 1 sm. <sup>fine</sup>  $\phi$   
 maybe slight staining  
 dk gr. shale, soft, scattered small spheroids  
 siltst. or dk gr. fine shale laminations, to  
 shale w/ silt. laminations  
 laminated  
 contorted bedding  
 2.5" coal w/ granite, surface covered by fine  
 siltst. layer  
 17 gr. blocky clastic, soft  
 laminated or siltst. (AA) - actually micro faults  
 more contorted bedding  
 shaly interval by laminated siltst.  
 v. fm. sh. (1.5" gray w/ horizontal to wavy laminations)  
 climbing ripples  
 siltst. - v. fine ss, gray  
 flake bedding, climbing ripples  
 contorted bedding

1:55A 638' 6 1/2"  
 2:25A 648' 7 1/2"  
 2:50A 658' 9 3/4"  
 4:120A 668' 8"  
 CEDAR BLUFF COAL  
 4:50 678' 2 1/2"  
 2:120 688' 7 1/2"  
 698' 7"  
 6:13 6:45 AM  
 cut 1 ft.  
 sample most of "614"  
 core

7-26-98 - BOL 7:20A  
 measure 5th hole - 699' 10"

Operator RGS

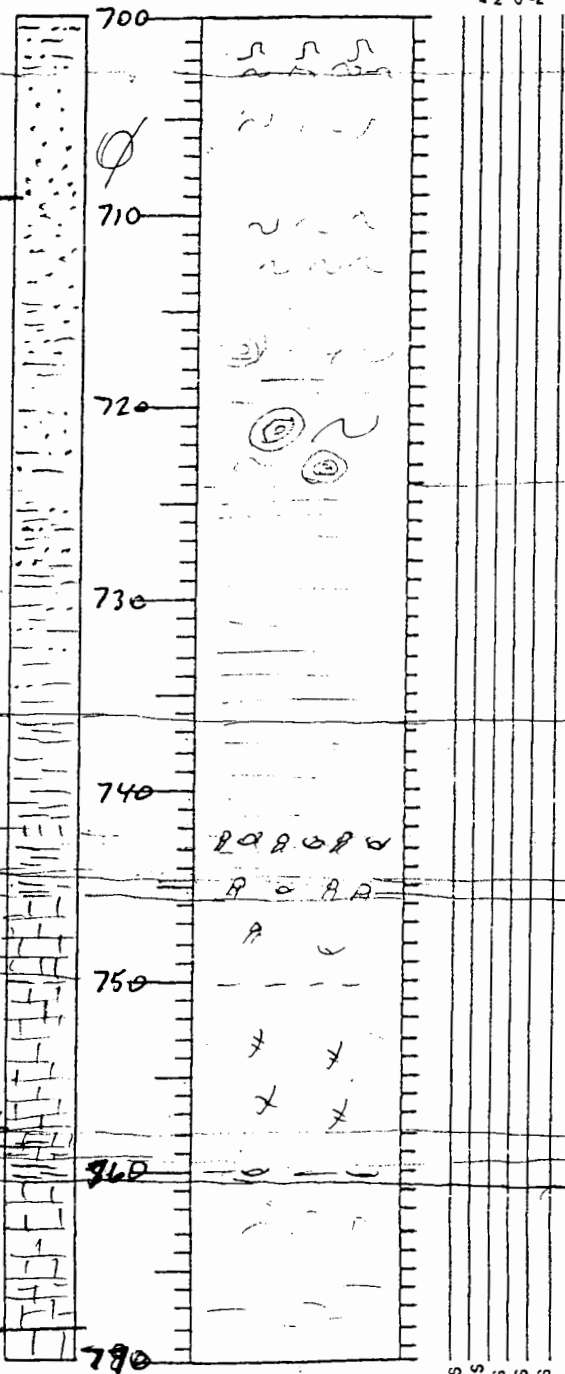
page 11

Lease #1 Steve Osburn

depths 700-790

Location c e/l NE Sec. 10-32S-13E

7-9-25  
 1302 7:30A  
 3110 709'11"  
 Layton Sh  
 3140A 718'2 1/2"  
 3A 728'4"  
 50A 737'10 1/2"  
 30A 747'11"  
 Mound Valley  
 LS.  
 100A 757'11 1/2"  
 Bethany Falls  
 LS.  
 1125A 768'



comments

flame structure "classic"  
 contorted bedding  
 SS, tan gr., low angle to horiz. laminated  
 contorted bedding with cut and fill  
 reconstruction surfaces

contorted

flame structure

flow roll

more clay laminations

flow rolls

SABT, interlaminated with shale  
 gray

more argillaceous, dk grey

interlaminated silt shale, some thin siltstone  
 units (thin bedded)

dk grey shale, mod. soft, claystone  
 undisturbed

2-3' thick, comminuted skeletal debris, sharp  
 undisturbed. Contact

about. 1/2' thick, minor in dk shale

Appl. 1/2' - weatherstone

shale seam, dk gr.

"mound rock", abundant spar and argal  
 blades, mottled look

mod. argillaceous, mod. gray with small brachiopods  
 nodules of shale at base  
 dk gray sh w/ large nodules and oolitic in places  
 horizons

sharp contact w/ ls., 1/2' to mod. pr. mottled  
 ls. (weather - mudstone)

And lips

NS  
 WS  
 PS  
 CS  
 OS

F

Operator HGS  
 Lease #1 Steve Osburn  
 Location C E/2 NE Sec. 10-32S-13E

page 12  
 depths 770-840

125  
 791.7  
 31  
 208  
 324  
 91

11:55A 778'14"

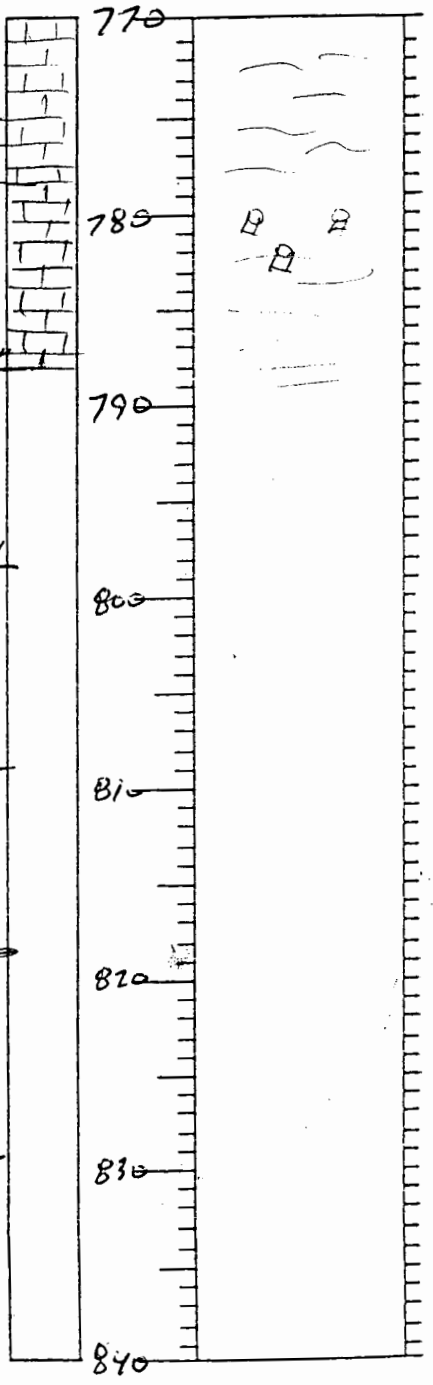
12:30p 788'16"

798'24"

808'2"

718'2"

825'2"



420-2

comments

wavy shale laminations  
 in westest. - mudstone

lg. crinoids

fetid odor on fresh break  
 wavy shale laminations

Harpuckney  
 Shale

Shale

MS  
 WS  
 PS  
 GS  
 BS

South 1 ————— 3.5 miles ————— North

HGS #1 PMS

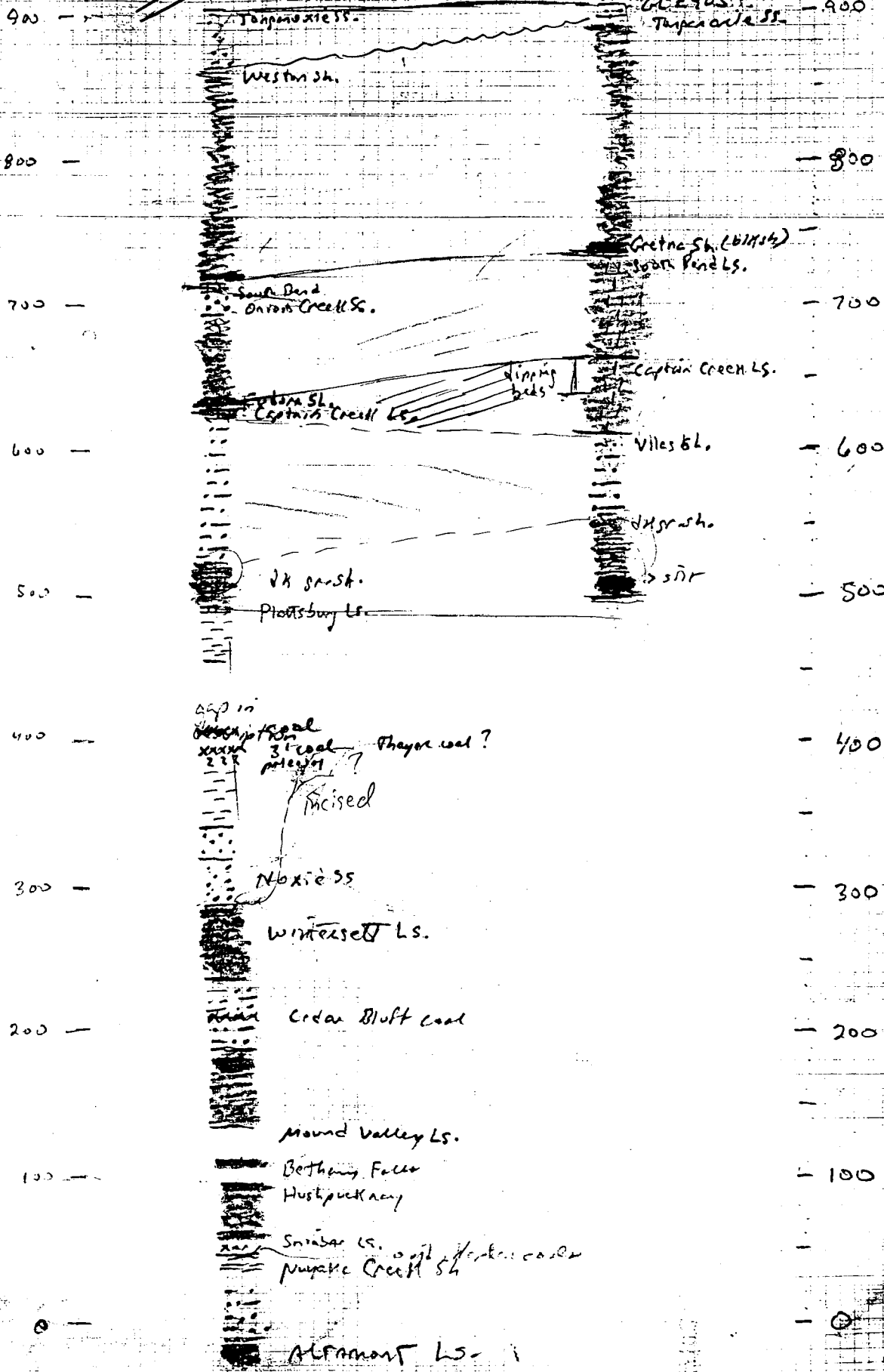
HGS #1 Osburn

section elevation

TWIN

E2 = 950  
Haskell

E2 = 905



app in  
 description of coal  
 2' coal  
 3' coal  
 1' coal  
 ?  
 incised  
 Thayer coal?



Watney No. 1

