

Mt. Judson

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

LOOSE-LEAF FIELD NOTEBOOK

9-137

Grand Glaize

(12)

Con S  $\frac{1}{2}$   
5-13N-21W

E.E. Glick  
Sunday 11-20-77  
Cloudy & mild

Limestone Section No 2

Along gravel road from Deer, Ark. to  
Limestone, Ark.

1600 - Prairie Grove 6" - 2' Cong. - qtz, grans, Claystone  
1590 - Cane Hill

Massive decalcified ss - pebbles  
Dark-gy silty shale; ironstone layers  
Well exposed in upper part;  
Poorly exposed in lower 20'.

1555 -  
1545

Turn

Mostly covered = shale

1530 -  
1520

1515 -  
1505

Exposed

Many layers of ironstone

Mostly covered

2" Ironstone layer  
1480 Clay pebble cong =  
decalc p-med ss w/ clay pebbles  
Fe cement in part.

Slump

1465 -  
1455

Top of sandstone - boulder supported bench - No evidence  
of sandstone in adjacent sections

Shale

Very hard & tough - breaks to 2" but  
difficult to collect pebbles

8" - 1' Conglomeratic med to med-dark gy ls. Clay & Fe st  
5' Silty shale

1445 -  
1435

1' Conglomerate - Crin, Ironstone, - red matrix  
Pitkin Limestone - conglomerate rests  
on 4" - 2' beds of Fe ss ls.

G42-23959.

11-20-77

(3)

Limestone Section No. 3  
cen E side Sec 5, 13N, 21W

Mt Judea quad

1640 PG - Cong, if present, not well exposed  
CH

} DK-gy silty sh & ironstone  
Mostly well exposed

1540 - 8" dk-gy very hard limy siltstone  
conglomerate; much iron?; Sampled  
5" sh

} Covered

1510 - 4' silts = bench in gully  
to the south

1495 - No Cong Seen  
001 Pitkin Ls.

4  
NE corner 8-13N-21W

Mt Judea quad  
11-20-77

20'± Waterfall over PG.

Massive PG blocks from  
lower 20' of PG fill gully  
below falls

1620 — PG conglomerate @ base of falls

Silty sh & ironstone

Mostly exposed

1500 — Sh?  
Massive (18") beds of vsilty, hard vfgross slts  
1490 — Sh & 3" beds slts — thin beds ironstone  
1480 — covered

1460 — Mg ool ls

Oil stained



①

Limestone Section

Mt Judea quad  
Clear & Cool

11-21-77

1570

PG  
CH

in small gully to west.  
SS - no cong seen  
Sh

} Some shale exposed above,  
especially in small gully to west

1472

} Silty, cliff-forming vfg SS

1458

} Silty dk-gy sh - ironstone layers  
well exposed

6" Cong

14" dk-gy sh

6" Cong?

1440

Mg Ool ls - no sh

- looks like reworked mpw/pebbles on top  
some c-ool

(5)

Glick  
11-21-77  
Swain quad

Corr NE  $\frac{1}{4}$  6, 13N-21W

PG Massive med-gr ss  
 1660 shale  
 1650 PG limy med-gr ss (PG cong @ 1615 oversh to the east = slump?)  
 1630+ CH shale - well exposed

} Nearly all covered  
 East side - 1530-40 - CH shale

1510 ch. 2' bed v fgr ss  
 ?  
 1505 mp  
 Od ls  
 Silty ls to slts  
 Rubby, knobby ls

(16)

1:05 set back  
from 1500 to 1410

11-21-77

Flick

11-22-77

Cloudy  
Ozone good

In Rock Creek about 8' above stream  
Cane Hill is exposed only in 20' outcrops  
above Mp, below PG, etc

On north side of Rock creek  
@ Ele - 900 about 800 feet (or less)  
upstream from last Mp is a slightly  
slumped red, limy, fossiliferous  
conglomerate or limestone. Most  
of pebbles are claystone or phos.

Fossils - Crin, large & small  
Corals  
Gastropods  
Brachiopods  
Archimedes (small)  
Other bryozoans

The shale associated is clay shale,  
not silty.

Thursday April 27, 1978

Left Little Rock, Ark at 6:30 AM  
Arrived Memphis, Tennessee 9:30 AM  
Returned to Little Rock 5:30 PM  
All travel with Woodrow Bettis,  
Arkansas Geological Commission  
Visited John B. Gusterson & Steve Rogers,  
International Oil & Gas, Memphis, Tenn  
(901) 345-5610  
2162 Venture Drive  
Memphis, Tennessee 38131

Got core:

- Hole 1-2 NESW sec 11, T. 16 N., R. 15 W - GL-1100  
(68 boxes) Searcy County, Cozabone quad  
1-3 SW NW sec 14, T. 16 N., R. 15 W - GL-1080  
(55 boxes) Searcy County, Cozabone Quad  
1-7 NW SE sec 10, T. 16 N., R. 15 W. - GL-983  
(53 boxes) Searcy County, Cozabone Quad  
3-1 NW SW sec 11, T. 16 N., R. 16 W - GL-965  
(56 boxes) (Maurice Quad, Searcy County)

Will get core

- 3-2 WNW sec. 15, T. 16 N., R. 16 W. GL-925  
(52 boxes)

N. Little Rock, Ark.  
Friday April 28, 1978  
Ernest E Glick

Hole  
1-2

0-21 No sample

21-116.5 Boone Formation  
94-116.5 = St Joe Ls.  
Base of St Joe limestone rests  
directly on green St. Peter ss, but  
lower 6" of limestone contains  
scattered f-med gr rd & fr sd

116.5-167<sup>+</sup> St Peter Sandstone  
Box 16 contains osp/oc contact  
somewhere below top @ 167 & well  
above base @ 177 - - Box is mixed  
and out of order  
Osp is green (clayey) and brown  
subfriable fine- to med-gr ss

167<sup>±</sup> -  
663<sup>±</sup> Everton Formation  
Base of Everton - top of Powell Dol  
is not obvious. Lowest definite  
sandstone (siliceous, f-med gr) is  
a 1" <sup>±</sup> bed, base @ 663.  
663-670 = med - c xlln dol -- no  
sand noted  
670-675 f-xlln massive dol

TD: 675

4-28-78 (Cont)

Hole  
3-1

0-226 No Core

226-281 Platin Limestone - base sharp

281-324 St Peter Sandstone

Quite a lot of green clay E. of Lewis  
Base sharp @ a stylolite or undulating -  
surface - some of clay parting missing

324-747.5 Everton Formation

1' of Platin-like limestone 1 foot  
below top of Oe.

Oe - Opw contact at base of  
m-c gr sandy interval. A few  
grams of sand worked into the  
upper  $\frac{1}{2}$  to 1" of Opw - no sand  
noted in the next  $3\frac{1}{2}$ ' of core to TD

TD - 751

4-28-78 (Cont)

Hole  
1-7

0-99 No core

99-156 St Peter Sandstone

Base of Osp @ solution-breccia  
zone. Sand has penetrated Oe locally

156-605<sup>+</sup> Everton Formation

Pelletal limestone in part of upper  
10' of Oe

Bottom of core is med- to C-gr ss  
No Powell in box

TD - 605



4-28-78 (Cont)

Hole 3  
1-7

0-230 No Core

230-256 St Peter sandstone

Contact sharp but at solution horizon  
Osp rests directly on <sup>4<sup>th</sup></sup> limestone

256-753+ Everton Formation

Base of Everton may not have been reached. At 753 f-c sand in dolomite & some dolic sandstone overlies -- at a tight but undulating surface -- med to c xlln dolomite. Some f-xlln dol in lower 3' of core but not good Powell = much ill-banding.

TD - 756'

5-11-78

168 boxes of core picked up in Memphis  
(Int. Oil & Gas) and delivered to  
Camp Robinson by J. W. Bettis

Hole

3-2PRE 11-16N-16W Searcy 208-700 GL; 925  
(52 Boxes)

B54 26-20N-19W Boone 11.5-600 GL; 930  
(64 boxes)

B5 8 32-19N-19W Boone 13-501 GL; 958  
(52 boxes)

Glick, EE.  
 Saturday  
 September 23, 1978  
 Clear

Photo 1-7 Gravel pit (SS pebbles) North  
 of Russell, Arkansas  
 Sec 26, T9N, R5W  
 On west side of gravel road  
 just north of power line

1	11	-	1/30	-	∞	
2	16	-	1/15	-	∞	
3	16	-	1/8	-	∞	
4	16	-	2/15	-	∞	
5	16	-	1/15	-	30	
6	16	-	1/15	-	20	
7	16	-	1/15	-	∞	- 30° 2 way from sun <sup>into</sup>

Finished 9:45 AM DST

8-9 Possum Grove Gravel pit

8	16	-	1/15	-	∞	} 90° to sun (South)
9	11	-	2/30	-	∞	

Finished 10:10 AM

10-13 Graveyard SS Gravel w of Hwy

10	F-11	-	1/30	-	30
11	16	-	1/15	-	∞
12	16	-	1/15	-	7
13	14	-	1/15	-	∞

14- Graveyard Cong Ls E of Hwy

14	16	-	1/15	-	9	
15	11	-	1/30	-	9	
16	8	-	1/15	-	2.5	
17	16	-	1/15	-	∞	- Done from Cong Ls

Sept 23, 1978  
Cont.

18&19 View of dam from north  
into sun  
18) 16 -  $\frac{1}{15}$  -  $\infty$   
19) 16 -  $\frac{1}{15}$  -  $\infty$  Lens shaded

Finished 11:50 AM

20-23 Rosie Chert Gravel Pit

20 - 16 -  $\frac{1}{15}$  -  $\infty$   
21 - 11 -  $\frac{1}{30}$  -  $\infty$   
22 16 -  $\frac{1}{15}$  -  $\infty$   
22 16 -  $\frac{1}{15}$  -  $\infty$   
23 16 -  $\frac{1}{15}$  -  $\infty$   
24 16 -  $\frac{1}{15}$  -  $\infty$  minus  
25 16 -  $\frac{1}{15}$  -  $\infty$  (Boulder = 25' across)

26  
Finished 1:10 PM

K w/ Halim sites - N of Newark

26 -  
27 14 -  $\frac{1}{15}$  - 7  
28 14 -  $\frac{1}{15}$  - 20  
Gravel pit (Chert) N of Sulphur Rock  
29 16 -  $\frac{1}{15}$  -  $\infty$   
30 " " "  
31 " " "

From Oil Trough - Looking South

32 16 -  $\frac{1}{15}$  -  $\infty$   
33 11 -  $\frac{1}{30}$  -  $\infty$  - shaded  
2s Cong @ Gon yard

34 11  $\frac{1}{15}$  - 4  
35 }  
36 } BK Lake

April 13, 1979

Clear & mild

EEGlick working alone

South Bailey locality of Olyphant, Ark. T. 22 quad

SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec 35, T. 11N., R. 5W.

On east side & north slope of paved highway. Base of section is to the north

Thin slumped layer.

Sample 6 Upland Gravel - Many ss pebbles, & coal & sider ch - largest 6" -

Sample 5 K-sand w/ soft IP(?) ss pebbles included

3'??

Sample 4 Sand, f-gr, red-br mottled gray. In part, rests on Penn. ss ledge

3'??

IP<sub>ss</sub>

K-3

IP<sub>ss</sub>

Sample 3 Sand, red-brown; gray streaks of sdy clay: entire unit clayey; grains range in size from v-f-c to grains  
Thickness unknown Unit has slumped across 20° high slope - may not be lithologically reliable

Sample 2 Fe cemented conglomerate - Chert pebbles to 3" - Coarse sd & gtz granules - f-gr ss pebbles

4"-6"

Sample 1 Basal friable zone - sandstone pebbles (soft) to 1 1/2" in f-c sand matrix  
3'± Some lower layers (under water at pot hole) = Fe-cemented.

3'±

April 16, 1979

Clear & mild

E. E. Glick, working alone

Prospect pit & outcrop under Hill 661, near center of  $S\frac{1}{2}$   $SE\frac{1}{4}$  Sec 32, T. 11 N, R. 4 W., Independence County, Arkansas, Olyphant  $7\frac{1}{2}$  quad. Sample 1 is at base of exposure. 3 pieces of "basal" - massive chert collected.

Sample 5 Friable sand overlain at sharp contact by about 8' of massive silicified limestone that caps the hill. Note: Both intervals 4 & 5 contain layers of weathered siliceous rock. May not be in place but appears to be interbedded w/ sd & gravel.

Sample 4 Fe-cemented sd that contains pebbles & granules of f-gr ss - Unit may not be in direct stratigraphic position above unit No 2 -- may be some slump offset that thickens the sequence. See note under Sample 5.

Sample 3 Similar to sample 2

3'0"

Sample 2 well rounded pebbles of xf gr ss in sand matrix - friable. Some  $2\frac{1}{2}$ " pebbles in upper part

2'0"

Sample 1 Well rounded pebbles of f-gr ss in soft sandy matrix (Base not exposed)

1'0"

April 16, 1979  
(Cont)

Roundel Mississippian and Ordovician?  
gravel is present at an altitude  
of 675' N 20E ± 900' from  
top of 715 hill in Sec 32,  
T11N, R4W. Independence County,  
Arkansas.

The gravel is cemented in  
Fe- & Fet v f sd. Even though  
the gravel is not quite at  
the top of the ridge, it  
appears to be above the  
massive layers of silicified  
limestone. Some silicified  
limestone breccia is associated  
with the gravel - cemented  
with it and cemented in  
many separate boulders.

Hot

Little Rock, Ark.  
Sept. 10, 1980

EE Glick working alone

Amer Core Holes N. Ark, 1975-80  
Hole 53

NW  $\frac{1}{4}$  Sec 32, T 18N, R. 15W

No samples 0 to 20 feet  
Boxes 1 & 2 missing - found = Powell dol

20'-52.5 Dol, med-lt-gy to lt-br gy, laminated,  
Box 3 f-xlln  
4, 5,

52.5-66.0 Dol, gr-gy, clayey, banded,  
Box 6 & 7 vs xlln

66.0-69.5 Dol, lt-br-gy to gr-gy,  
Box 7+8 banded to massive, vs xlln  
Opw ?  
OC

69.5-72.0 Dol, med-gy, f-med xlln,  
Box 8 - A few small (1") sl banded  
chert nodules

72.0-216 Dol, med lt-gy, lt-br-gy, & gr-gy  
Box 8-22 f-xlln to clayey, massive to  
banded; some pink dol; some  
gr-gy clay stone; a few  
small (1") chert nodules, but  
mostly non-cherty

216-273 Dol med lt-gy to gr-gy,  
Boxes 22-28 sl banded f-xlln, trace  
of drusy ftz, pink dol, white  
calcite, & pyrite in fractures;  
very little chert

273-280.5 v cherty dol to ch  
Box 29 Dol med-gy  
Ch mostly dull earthy wh



Hole 53 Assoc

- 280.5-289  
Box 30 Dol, med  $\frac{1}{2}$  gy to gr-gy, f-XII-  
massive; to pink dol in fractures
- 289-317  
Box 31, 32, 33 Dol, med-gy, mottled, fractured  
v. cherty, gy to earthy wh chert  
some highly figured; pink dol
- 317-345.5  
Box 33, 34-35  
36 Dol, med-gy, massive f- $\frac{1}{2}$  to X $\frac{1}{2}$   
Some fracture and vugs
- 345.5-347  
Box 36 Dol as above but cherty and  
fractured - dull wh ch; pink dol
- 347-381  
Box 37, 38-39, 40 Dol med-gy, sl banded to  
massive, f-X $\frac{1}{2}$ ; ruggy &  
fractured in part; scattered ch
- 381-395  
Box 41, 42 Dol as above but some 3"  
fracture + solution zone are pyritic  
breccia; pink dol
- 395-478  
Box 42, 5  
Box 50 Dol, med-gy, massive, f-X $\frac{1}{4}$   
Some gr-gy - clayey. Some vugs and  
fractures to pink dol
- 478-484  
Box 50-51 Dol, med-gy, cherty, figured,  
sandy (may be med or heavy  
in part) f-G to X $\frac{1}{4}$   
chert poorly developed in  
figured breccia
- 484-561  
Box 51-58 Dol gr-gy to med-gy  
massive, f to  $\frac{1}{2}$  to X $\frac{1}{4}$   
Sandy in part.  
Some fractures & breccia

Hole 53 Apex

- 561-675 <sup>to gr-gy</sup> D of med-gy, mottled, brecciated  
 Box 59-70 F to med X1/4; <sup>in part</sup> sandy cherty  
 mostly wh earthy ch. associated  
 with breccia; pink dol
- 675-734 Dol as above but more fractured  
 Box 70-75 and brecciated; wh earthy ch,  
 some banding, 'figuring'; pink  
 dol  
 (2 boxes numbered 73)
- 734-734.3 Fractured zone stained dark gy  
 Box 75 May be weathered dead oil
- 734.3-767 Dol, med-gy, brecciated, F to  
 Box 76-79 med X1/4; <sup>hint of</sup>  
 "dead oil" to 736"; F to sub  
 sdy in lower part
- 767-781 Chert + dol.  
 Box 77-80 Ch, wh, <sup>F<sup>n</sup></sup> sandy, oil  
 Dol, med-gy, <sup>F-med sdy</sup>  
 brecciated, F to med X1/4
- 781-801 Dol, med-gy, brecciated to  
 Box 80-81 massive, F to med X1/4;  
 Dark grey "dead oil" <sup>in</sup>  
 fracturing zones with pyrite,  
 pink dol, and regular dol,  
 pieces
- 801-883 Dol, med-gy brecciated, fractured  
 Box 82-91 to massive; F to med gy; to sd  
 to pink dol  
 "dead oil" and pyrite on  
 many fracture faces and in  
 fracture zones - see Box 89, 90

Hole 53 - Amex

883-979 Dol, med-gr, brecciated to  
massive, blue-gray in part,  
fractured, f to sand x 1/2"  
Sandy in part  
Old & dry chert, egs 948-951  
Some pink calcite and  
some "dead oil" in fractures

979-1000 BOH

Dol med-gr, fractured,  
f to med shells, some  
pink dol in fractures  
"Dead oil" sampled  
from fracture zone  
985.2 - 985.4  
Other fractures similar  
Lower 2' = massive dol

TD: 1000'

Hot  
Little Rock, Ark  
Sept 10, 1980

E.E. Glick, working alone

Amer Core Holes N. Ark, 1975-80

Hole No 51  
Near Cen (slightly East of)  
W  $\frac{1}{2}$  Sec 32 T. 18N R. 15W

- 0.0-0.3 weathered porous dirt rock
- 0.03-14 Dol, yel-gy clayey, massive
- 14-14.5 Dol as above & 1" + nodule of  
lt-to med-gy ds ch
- 14.5-18.7 Dol, med-gy, f-xlls  
Box 1
- 18.7-30 Dol yel-br clayey f-xlls  
Box 2 - some med-gy in lower part
- 30-31 Dol, med-gy, f-xlls; some  
Box 2 - calcite on fractures
- 31-43 Missing  
Box 3
- 43-55 Dol, yel-br + med-gy - alternating  
Box 4, 5, f-xlls; ~~some earthy wh ch~~
- 55-65 Dol med-gy f-xlls; some  
Box 5 earthy wh ch
- 65-96 Dol, med-gy, f-xlls; some  
TB Box 79 brighter green clay fillings + to  
dk-gy ch;  
lt-br gy ch nodule (1") at  
89.5

Aug 51

Sept 11, 1980

- 96-105 Dol, med-gy - stained br-gy  
Box 9 along fractures, f-xlls
- 105-175 Dol, weathered lt br-gy, earthy  
Box 10-15 f-xlls; some med-gy less weathered
- 175-225 Dol med-gy <sup>to br-gy</sup> f-gxlls; some  
Box 16-22 banding & some tilted bands
- 225-227 Dol, med-gy, to med dk gy  
Box 22- clayey; tilted bands; f-xlls
- 227-288 Dol, lt br-gy, f-xlls;  
Box 23-29 brecciated & recemented in part  
Some med-gy clayey dol as above  
Solution breccia makes up  
much of unit
- 288-373 Dol, med-gy to br-gy clayey  
Box 30-37 f-xlls; & dol med lt gy to  
lt br gy f-xlls; solution  
breccia and tilted bands is  
both; large (3"+) lt br gy &  
med-gy C-banded chert  
nodules @ 370 365
- 373-461 Dol, med-gy, lt br gy, lt gr-gy  
Box 38-56 brecciated to dense, f-xlls  
pink dol in fractures  
"Dead oil"? @ 408 in  
Box 41

Hole 51 Amer

461-482 Dol, med-gy, f to med xlln  
Box 57-59 Dol in Fractures

482-546 Dol, med-gy, f to med xlln;  
Box 59-65 Brecciated in part;  
med-gy, lt-gy, & lt br chert  
strat every 2' to 3'  
= 10% ch; pink dol  
Scattered f to med sd @ 538-39

546-595 Dol, med-gy, f-xlln; some  
Box 66-71 bright green clay in fractured  
zone; poorly banded lt-gy  
& med-gy ch @ 572

595-614 Dol br-gy, distinctively banded  
Box 71-73 to laminated; some dk-gy  
clay partings; f-xlln

614-632 Dol, med lt gy, f-med xlln;  
Box 73-74 tr pink dol

632-726 Dol, med-gy, f-xlln (f to med)  
Box 75-83 fractured, sl brecc, stcd in part;  
c xlls of pink dol  
lt & med-gy ds ch scattered  
throughout  $\approx < 1\%$

726-730 Dol, lt br gy, m-xlln; massive  
Box 84

730-807 Dol, med-gy, f-xlln  
Box 85-92 fractured & brecciated in part;  
scattered lt gy ch ( $\approx 1\%$ )  
dull earthy red f-med sly ch  
781-785 pyrite; sly  
(f-m) dol; 803-807

Hole 51

807 - 893 Dol, med -gy f to med X // in;  
Box 93-101 Tr pyrite dol in fractures  
Brecciated 840 - 849 (an sl cherty)  
Brecciated 873 - 893; possible  
"dead oil" in solution zone

893 - 975 Dol med -gy v f to med X // in;  
Box 102-110 Brecciated in part  
f-c sd 917 - 922  
Pink dol, pyrite  
Some solution zones  
May be some "dead oil" but  
not well developed

975 - 999 Dol, med -gy, v f to f X // in;  
Box 111-113 pink dol in fractures;  
Possible "dead oil" but poorly  
developed; med 11 9m sl ch  
992 - 993 Tr ch below

TD: 999

Sept 11, 1980

October 31, 1988

Dangola Quad

Stop 1 SE Sec 4, T 291N, R. 10E,  
Sandstone boulders  
Lower Powell - + Smithville  
in associated hills  
Some chert exposed on ground  
with block.

1. May be slumps
2. May be in place under  
blocks.

Blocks are not turned much --  
mostly nearly horizontal  
Joint patterns seem to be  
preserved.

Stop 2 Rural dump  
sandstone boulders sampled  
in September overlies  
sandy "pez" gravel (sampled)  
Gravel has high quartz granite  
and small pebble contents. Not  
found downstream beyond barn.

Stop 3 Middle block with "sink hole  
fill" - 2 samples in September  
Sandstone boulders sampled  
in September.  
Much of block seems to be  
chert residue overlain by  
loess.



Stop 4 Lutesville Hill (Got w/ logs)  
collected sample

Stop 5 Marble Hill E clay

stop 6 Scopus structure (MT)  
collected SS (K)

Stop 7 SE 4 - 31 N - 10 E  
Sampled SS boulder w/ qtz veins

stop 8 Swan Cree of ARAIB cut  
75' E & above base of latter  
Sampled

Stop 9 Upper SS Boulders on old  
road East of Arab  
NE NW 16 - 28 N - 9 E

April 29, 1981

Limestone Section of Cape H

55, fgr (may be out of place)

8'

10'

Siderite Limestone Archimedes Branch, Crinoids  
Sponges, Sponges, Galls,  
ironstone nodules, etc.

6'

Silty shale & Siltstone

11'

Conglomerate, sandy, siderite-  
Pitkin Limestone

Round Mountain Section  
Sec 23 T18N, R8W

Notes by  
Ernest E Glick  
working alone  
Clear & mild

March 31, 1982

Level of White River just below 260'

260' Base(?) of massive Batesville Sandstone  
(4' above water level of White River) This is at least the lowest exposure  
River channel probably in Moorefield Formation

Batesville Sandstone 15.5' exposed  
sandstone, lt-br-gy, v f to f-gr;  
well sorted; sl limy & foss.  
Upper 1.3' grades upward to  
v. foss med to dk-gy f-rls 15

Sample 1 275' to 275.5' = Batesville  
No outcrops 275.5 to road at 325'

325' Road

330' Base of dk-gy Fayetteville Shale  
exposure (Fair to poor)  
silty (?) granular pyritic 3" hard zone  
@ 340

402 Base of dk-gy Jones Limestone 35'  
& few brachs (3/4")

405.5 Top of limestone - floor in creek = tilted  
Sample 2 405.0 to 405.5 - Collected dk phosphatic  
shale 20' below this limestone  
405.5 to 475 poorly exposed shale

475 ls, dk-gy dense in sharp  
contact with shale

Sample 3 475 to 475.5 dk-gy ds/ls; some  
pockets are fossiliferous

Round Mountain Section

Continued March 31, 1982

Sequence above shale top @ 473

- 506 — limy shale & beds of ls  
483 — massive dk-gy ls  
477.4 — shaley nodular ls  
476.4 — dk-gy ls  
475 — shale

500 ls, dk-gy, dense in beds 2' to 9" thick  
over shale, dk-gy  
Some nodular (cherty to siliceous)  
layers of ls.

508 to 535 ls, dk-gy, foss, massive

Sample 4 534.5 - 535 dk-gy f-illn ls  
Fetid odor; foss

535 - 585 Covered

585 Base of limestone outcrop

Sample 5 589.5 to 590 Med to dk-gy  
f-illn to f-pelletal massive ls

Sample 6 639.5 - 640 Similar

Sample 7 684.5 - 685

Sample 8 719.5 - 720

Sample 9 770 - 770.5 Thin-bedded ls

Sample 10 819.5 - 820 Top of massive cliff  
f-pelletal

Round Mountain  
Section (Cont)

April 1, 1982

Sample 11 892.5 - 893  
ool 15' 3" above base of  
exposure

In Sink @ 928 read 890 = 38' low

~~Sample 12~~ Upper limestone in Sink area  
Altimeter not corrected

Sample 12 909.5 - 910  
Upper 6" of yf ool & iron-stained  
uppermost bed exposed on  
slope face - collected just  
above Sample 11

Finished collecting 12:45 PM

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1983 Top limestone @ 960' (corrected)  
Sample collected @ 860'  
Base of Pitkin @ 635' (wise)

April 4, 1982  
Glick, EE.  
Working alone

Swains Chapel

On east side of Hwy 167

15'± Pennsylvanian sandstone  
Many layers contain quartz granules  
} 2 to 3' covered

3'± Pitkin Limestone (upper 6" sampled)

Sample #13 { Upper 2" is limy siltstone  
Lower 4" is silty Ross limestone

Saturday April 10, 1988  
E.E. Glick, Working alone  
Clear & cool

Wade Hill Section south of Tomahawk Cr  
6 miles south of Mtn. View, Arkansas  
along gravel road near Gen NW $\frac{1}{4}$  500.11,  
T13N, R. 11W. & up creek from 880' cross  
Samples 14, 15, & 16 in creek west of road @ 935'

Sample 14 Upper one foot of Pitkin Limestone

Sample 15 Lower one foot of Cape Hill conglomerate  
directly on map ls

Sample 16 Upper one foot of 3'-thick unit  
of Cape Hill conglomerate and  
red-weathering sideritic limestone  
Base of #16 is 2' above top  
of #14, 1' above top of #15.

Sample 17 Upper 1' of Pitkin Limestone  
along road (East side at junction  
with Jeep trail). Should equal  
Sample #14.

End of collection

Tuesday April 13, 1982  
Fayetteville Shale Drilling project  
Leslie, Arkansas  
Ron Morrison Owner

Crew: Buddy Smith } Arkansas Geological  
Joe Bottoms } Commission  
Bill Pryor }  
Ernest E. Glick, USGS

Hole A

Set up  
Box 1 Spudded to 4'9" in valley fill  
Drilled 3'0" with roller bit,  
no samples  
Core 2'3" Interbedded shale & limestone  
Depth 7'9" to 10'0"

Core  
10'0"-15'0" Shale and limestone interbedded  
(Trouble getting out of core barrel)

April 14

Core Same  
15'-18' Drilling trouble

Box 2 None Bit failed - Moved to  
8:45 new hole.

Hole B

10:10 am Began coring Hole B @ depth of  
15'  
Only a few inches of recovery  
before bit began to fail  
No further drilling



April 18, 1932

Cliff working along

South side of Marshall hill  
Section begins at lowest outcrop  
of main exposure. First part  
slightly separated from upper cliff  
but beds can be correlated.

- Sample 1 Shale, dark gray, fissile;  
4'0" line of septarian concretions  
3" to 8" thick not sampled, but  
included in thickness
- Sample 2 Similar shale  
5'0" Band of septarian concretions  
8" - 10" thick not sampled  
but included in thickness
- Sample 3 Similar shale. Very fissile & iron stained  
4'0" Scatter concretions 10"-12" thick in  
upper part but not strictly aligned.  
Hard 1/2" pyrite-rich zone @ top, Not sampled
- Sample 4 Phosphatic shale  
2'10" Some selected zones in small bag
- Sample 5 Phosphatic shale  
3'0"
- Sample 6 Shale dk. gy fissile to massive  
1'0" very phosphatic
- Sample 7 Sh dk-gy fissile
- Sample 8 Massive low 18", Fissile above  
7'0" 3" hard layer 18" from top

Sample 9 Fossiliferous Shale to massive / <sup>TOP</sup> 8' below  
5' 0" Fresh shale sampled (thick bed)

Sample 10 Shale, dk-gray, limy  
8' 0" Massive ls = 10' 3" thick beds 3" to 10" thick  
2' sh ← top sample 10  
8" ls (not sampled)  
18" sh  
6" ls not sampled  
sh  
Base Sample 10

Sample 11 Sh, phosphatic? in lower 1/2  
2' 8" Splintered ssite in upper 1/2

Sample 12

10" ls  
32" sh  
9" ls  
20" sh  
10" ls  
2' 6" sh  
6" ls  
4' 4" sh  
3' 9" ls  
10" sh  
11" ls (not sampled)

Sample 13

9'6" 5'6" Limy in upper 1"  
Iron-stained 54

4'0" Black Shale

40'± Interbedded limy sh & limestone  
(At least 30 beds of ls mostly 6" thick)  
Overlain by massive Pittkin

April 16, 1982  
Cloudy & warm, <sup>some</sup> rain  
Glick, working alone

Sample 18 Upper 1' of Pitkin Limestone of upper  
Falling Water Creek.  
Overlain by 10' dk-gy shale (Mp)  
which is overlain by about 3" of  
Cane Hill conglomerate  
Upper 6" of silty Mp ls is  
oil saturated. Some samples include

Upper 10" thick Mp shale  
sampled in separate bags (2)  
Bag A is general sequence  
including pieces of septarian  
module  
Bag B is more obviously fossiliferous,  
middle part of shale. Mashed  
cephalopods (?)

Sample 19 3' thick basal Cane Hill conglomerate  
Many clay galls, Pitkin ls  
pebbles (some oolitic), and  
Crinoid debris  
More limy part sampled

(cont)

April 16, 1982 (cont)

Sample #20 Gray Cane Hill ls. w/ many shells & Archimedes. In stream above road but near road level. Not in place; but nearly? None other seen

Sample #21 Red Cane Hill ls w/ many shells & Archimedes. This is the upper red ls. Probably 5' above road level.

Sample #22 Red Cane Hill ls w/ crinoids but no(?) Archimedes. This is the lower ls, 5' below road level. (All Cane Hill beds slumped?)

End of samples

March 22, 1983  
E.E. Glick, USGS

## APEL Power Plant Project

Mike Howard  
Bill Pryor  
Buddy  
Herman  
Joe Bottom

Hole 1 Start @ 2:00 PM (S 84 W to Stack  
5630m S 64 W to Tower  
Top of hole @ road level / S 42 W to Tower  
in crushed rock road metal #2

0-5' No sample

5-10' Sample 1 Silty gray clay

10-20' Sample 2 Tan clay

20-30 Sample 3 - Tan clay but becoming sandy  
in first 5' of interval, - Sandy in lower  
(5') part - little return - probably in next sample

30-36 Sample 4 -  
lt br vf sand = quick-sand,

36-45 Sample 5  
Sand as above & some pieces of gravel

45-50' Sample 6 - Sand & gravel - not  
much return because could not  
spin last section of auger

At 50' Start drilling inside of  
auger

APSL Project.  
Continued

3-22-83  
2:45 PM

Sample 7 53'-61' should be gravelly sand  
50'-55' No return from gravel - Eventually  
sand as sampled

Sample 8 Fine gravel return; Slump  
55-60 into hole - added mud; slightly  
coarser from hole during circulation.

Sample 9  
60-65 Coarse sand & fine gravel

Sample 10 Sand finer than above; lost  
65-70' circulation & re-filled water truck

Sample 11 From drill stem after pulling  
70-75' because of cave & plugged  
stem

TD-75'

Unable to continue on 3/23/83  
Moved to Location 2

590  
1770

10:00 AM

290 X6 to Stack March 23, 1983

Hole # 2 - S33W to Stack

- S-1 } On road-metal  
0-5' } No sample  
S-1 }  
S-10 } Silty gray clay  
S-2 }  
10-15 } Clay, silty, tan  
S-3 } Same  
15-20 }  
S-4 } Same  
20-25 }  
S-5 } Change @ 26' wetter, more sandy  
25-30 }  
S-6 } Sandy tan clay -  
30-35 }  
S-7 } Change @ 37' - more gravelly  
35-40 }  
S-8 } Gravel & clay  
40-45 }  
S-9 } Same (TD=50' on auger)  
45-50 } Washed gravel from bottom of hole. added to sample  
Began washing down with bit  
S-10 } & mud circulation - Bentonite in hole  
50-60 } Open gravel - no return  
gravel caves into hole

TD 50' - Lost Circulation



Hole #3

3-23-83

0-10 Fill - no sample

5-1

10-15 Tan clay

5-2

15-20 Same

5-3

20-25 Probably sand @ 24'

5-4

25-30 Sand

5-5

30-35 Gravel

5-6

35-40 Coarse gravel

5-7

40-50 No return 40-45 but still in sand  
and gravel - No return from auger  
45-50 -

TD 65' but no return below 40'  
Lost circulation below auger

Wednesday  
October 5, 1983

EE Glick

Drive from Carbondale, Ill. to  
Newport, Arkansas

Stop 1 Pictures & samples, Brown  
Gravel Pit 1 $\frac{1}{2}$  mile north of  
Hwy 60 at Dexter, Mo.

Gravel is sandy, poorly bedded,  
and highly varied

Stop 2. Pictures & samples in gravel  
pits near site of Hole-EE-3.  
= North Pocahontas.

Gravel is clayey and sandy.  
Some blocks larger than 12".  
Very little Mississippian chert (1-piece)  
Gravel, clayey layer, and sand  
island (?) sampled.

Stop 3 Pictures (1 stereo set) and  
1 sample at Sand Hill  
locality west of Pocahontas, Ark

Thursday  
October 6, 1983

EE Flick

Traverse out of Newport, Ark  
to Little Rock, Ark.

① Photos of western Wyatt Gravel  
pit, Basie, Ark

Gravel may be graded upward  
Very little Mississippian (some)  
in this pit. Many well-rounded  
Ordovician pebbles, to 8"  
Some Batesville boulders &  
Batesville floor.

Photos (stereo) of clay mass (sampled)  
that may be rip-up. Gravel  
both above & below at least  
right end. C-sd grains &  
trace of pebbles to 3" = smooth  
to polished.

Wyatt East - finished 1st roll of  
film & Co #24 (1-23) on 22.

Sampled Batesville<sup>55</sup> large boulders,  
gravel & clay beneath boulders,  
& Tuscaloosa -

South of largest central boulder  
is fl's lowermost Cretaceous sands.  
Two samples - 1 = lower 6" 2 = remainder  
Gravel to 5" but mostly by  
fine in lower interval.  
Small pebbles in layers in upper  
sand. Sand is mixture of quartz  
and chert grains.

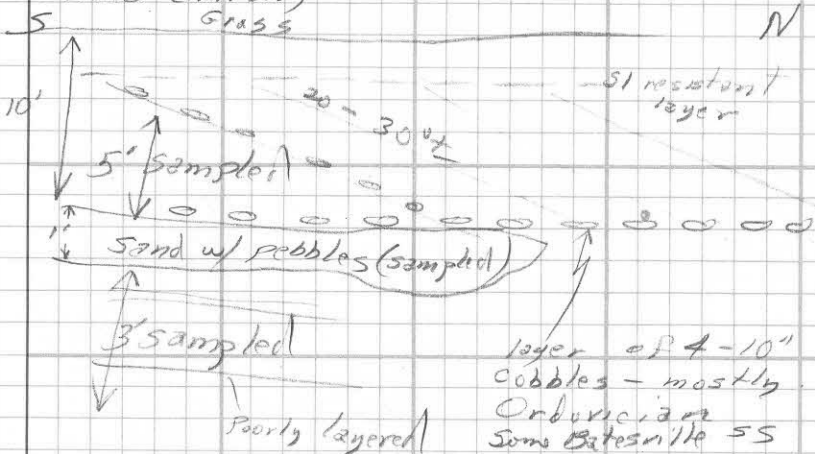
Saturday  
Oct 8, 1983

① Gravel upstream from Newark Bridge on White River

Mostly 1" Mississippian brown chert  
Rounded sandstone to 4"  
Many small pieces of Ord, etc  
No quartz granules or pebbles noted, even though looked for. Mostly dirty, mostly low density gravel.

② Newark Pit (Tommy Joe Gipson)

On western face near entrance (Just below Church)



Pictures 0-9 on 3rd row

To northwest, photo 10, Similar sequence but less dip on laminae  
4" Batesville SS block at base,  
Mostly fine Miss pebbles  
& Ord cobbles - no glz noted

Photo 11 East side of pit - free block  
Shows matrix - sampled

Photo 12 Out of focus #13 view to west

Boswell Quadrangle - let know when available

Paul Cooper

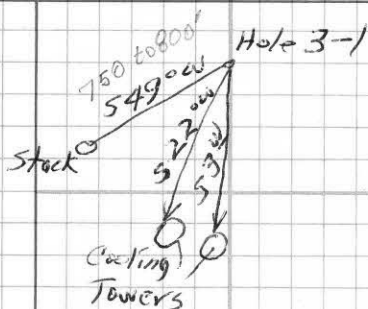
Box 112

Cabier Rock, W  
72519

Cold  
12:18 PM

Glick -  
11-28-83

3rd Drilling @ AP&L Site



Buddy Smith  
Joe Bottoms  
MIKE Howard  
Bill Prior

ONE Drill

0-35 Silt & clay

35- Gravel - No return

Auger to 55' last part in sand

55-56½ Split Spoon Sample (SSS-1)

Wash sample 3-1 55'-60'

60-61½ SSS-2 Sand in lower 6"

Wash sample 3-1 60'-65'

SSS-3 Broke Tool - no return.

End of day )

Glick  
11-29-83

Cool & bright

8:45 AM Began auger 2nd hole  
20' NW of hole 3-1

3-2

25' ± Clay  
25-30 Water = sand?  
30 - Gravel

Drilled auger to 60' & washed

3-2- 60' wash sample - Upper

3-2 Drilled & washed 58-60  
Caught sample - some black  
shale slump from site fill.  
Probably Mississippian

Set 5' of auger

3-2 Wash (upper) @ 65

3-2 Drill - Wash 65-70

3-2 Drill - Wash 70-75

3-2 Drill - Wash 75-80 Lost  
Circulation most of time

TD - 80'

March 30, 1984  
EE Glick with Mike Howard  
At Gold Mine Springs  
Prospect pits

↑ Top of ridge  
Sandy silicified ls  
70' ← contact not exposed  
Probably ss pebble gravel

Prospect #3  
Opening



ss pebble gravel as below  
ss loose  
Mostly fine (1/4") ss  
pebbles in sandy, clayey  
matrix

Samples taken @ #1 & #3 opening



St Joe Survey

5-10-84

135 W

DE

