

HENRY H. GRAY

1956 BOOK 1

ROCKVILLE & ATTICA DIST.

SECTIONS 80-81

HUNTINGBURG DIST.

SECTIONS 82-102

DEPARTMENT OF GEOLOGY

INDIANA UNIVERSITY

AND

DIVISION OF GEOLOGY

INDIANA DEPARTMENT OF CONSERVATION

LOOSE-LEAF FIELD NOTEBOOK

HENRY H. GRAY

PROJECT 56-~~2~~

BOOK 1

**Please note: this PDF contains only pages with content.
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W. H. G.

6/11/56

H.H.G., H.C.H., R.L.P.

SECTION 80: 17N 7W 32 97 ALONG ROARING
CREEK 1/2 MI. UP FROM BRIDGE &
JUST S. OF TRIBUTARY FLOWN, ON
SE BANK OF CK., 3/4 MI. SW OF JUNIOR PARK.
CK LEVEL 540' T. (See notes of 6/15/56)

unit 1 2.0 2.0 ft covered, from level of creek at
junction. 3' \pm black shale; 1'
shale, coal crop just below this
level 100 feet north. (Alt. 537' \pm)

2 24.0 Claystone, shaley, medium gray,
indistinct, even, thin bedding, irregular
fracture, limonite nodules, abundant
carbonized plant impressions, soft,
covered along most of bank but
exposed at north end. Bottom contact
not seen, slickensides; root impressions
common in upper foot or so

3 .3 shale, coaly, black, indistinct, uneven,
very thin bedding; coaly streaks
appear to be clayey, some fusin
also present, bright orange-yellow
stain on fracture surfaces, platy
fracture, brittle, poorly exposed
near north end of bank, bottom
contact sharp though somewhat
uneven, slickensides common. 56-3-3
- 566' LT -

4 4.5 siltstone, shaley at bottom, light greenish
gray, bedding absent except in lower
part where indistinct, even, very thin,
micaceous, irregular fracture,
mica subparallel to bedding, limonite stain
along irregular fractures, well exposed
on north end of bank, basal contact sharp
& slightly uneven, grades upward from shale
to silt, to very fine sand at top

to silt to very fine sand at top, large carbonaceous streaks in upper one foot may represent roots

- 5 .6 Shale, carbonaceous, dark gray, indistinct, wavy, very thin bedding; thin bands of vitrain and bands of limonite common, gypsum xls along several bedding surfaces, platy fracture, brittle, exposed entire length of bank, basal contact sharp but slightly uneven — ~~towards south end of bank unit thickens and becomes less carbonaceous, medium gray shale similar to unit seven~~

~~- 572 ft -~~

Revised
26/5/0

- 6 to Ironstone, silty, medium gray, one bed, 0.3 finely crystalline, somewhat nodular, 0.5 hard, forms discontinuous ledge for length of bank, basal contact sharp, slightly uneven.
- 7 1.5 Shale, dark gray, distinct, even, 2.7 very thin bedded, platy fracture, brittle, well exposed entire length of bank, basal contact sharp, slightly uneven.
- 8 3.7 clay, silty, light gray, bedding absent, slightly micaceous, mica is random, root impressions and carbonaceous streaks in upper part, soft, but well exposed through length of bank, bottom contact transitional (gradational) within 0.1 foot

unit 9 2.5 Coal, shaley, black, distinct, even to uneven, very thin to thin bedding, thin bands of vitrain common in lower one foot, elsewhere appears to consist almost entirely of clastic, considerably disturbed, sand rolls and lenses common, reaches maximum thickness near south end of bank, northward thins, splits and inter fingers with sandstone; brittle, platy fracture, basal contact sharp and uneven with relief of half of foot in three feet.

-582' LT-

56-3-4

10 7.0 Siltstone, clayey, medium gray, bedding absent, slightly micaceous, mica is random, irregular fracture, limonite stain along larger fracture surfaces, form steep slope near top of bank, basal contact sharp, uneven, with relief of one foot + or -, finely sandy at base, shaley at top

11 1.4 Coal, black, distinct, even, very thin bedding, largely lignite, few thin bands of vitrain, platy fracture, brittle, well exposed, near top of bank, basal contact transitional (interleaved) within 0.5 feet.

-591' LT-

56-3-5

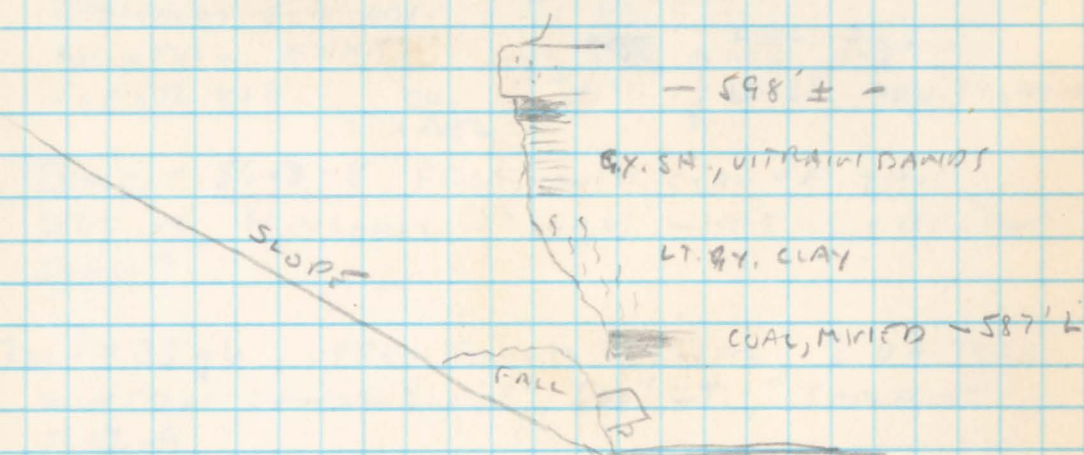
12 .6 Shale, dark gray, distinct, even, very thin bedding fissile, papery plant remains along bedding surfaces, top forms weak overhanging ledge over unit 11, basal contact not certainly seen, but appears sharp & even

13 5.5 Clay, medium gray, bedding absent, soft, plastic in upper one foot; poorly exposed near top of bank, bottom contact covered; there may be a thin bed of coal near bottom of this unit,

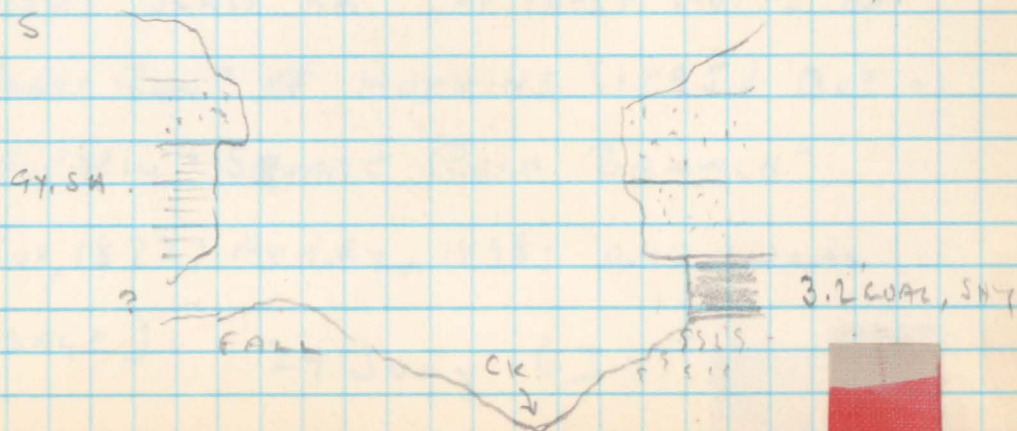
14. 1.0 Coal, black, soft, badly weathered, basal contact slumped. 56-3-6

58.3 / 56.3 EXP. - 598' LT -
- TOP OF BANK -

SAMPLE 56-3-1 . MINSHALL (?) COAL,
17 N 7 W 32 h 4, FROM ADV. OLD SLOPE
MIN. SECTION APPROX



SAMPLE 56-3-2 . UPPER BLOCK (?) COAL,
17 N 7 W 32 h 6, ALT. 610' T. SECTION APPROX.
N

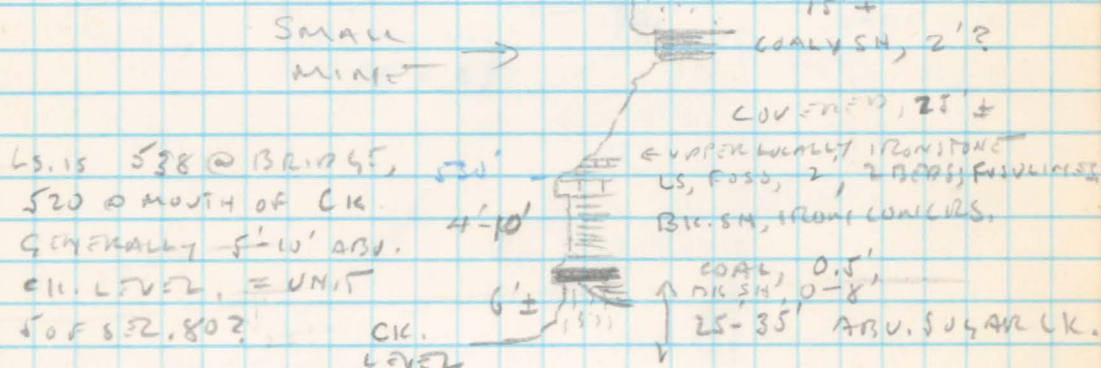


6/12/56

14 1/8, 1/4 CH, RLP

17N7W35? COAL, 0.8' ±, SS. ABV, CLAY BELOW,
POWD. UPPER COAL OF SLATE CK. SECTION.
CALL IT COAL II? SAMPLE 56-2-7

17N8W36 ± 17N7W31
ALONG SLATE CK. FROM
COVERED BRIDGE TO SUGAR
CK., ABT. 1/4 MI.



SAMPLE 56-3-8, FROM LOWER COAL OF THIS
SECTION, MINSHALL (?) COAL; WHAT IS UPPER
COAL?

17N6W33g6, UPPER BLOCK (?) COAL, 2.0' ± THICK,
MINERAL SMALL SCALE, 600' LT., SAMPLE
56-3-9

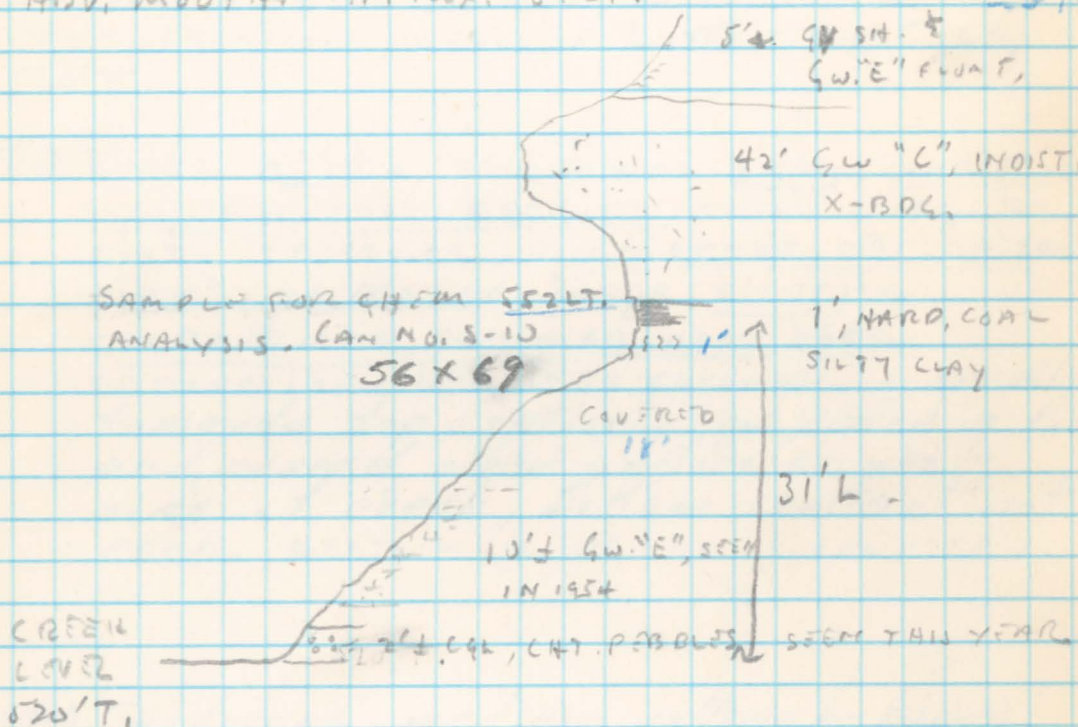
NOTE: "SLATE CK." OF THESE NOTES IS
"SLATE RUN" OF HOPKINS (1895) BUT IS
PROPERLY "SQUARE ROCK BRANCH"
(COX, 1872; ASHLEY, 1898; AND LOCAL
USAGE). 29 JUNY 63

6/13/56

U138, HCH, RLP.

17N7W 29 h1, ALONG SUGAR MILL CREEK 1 MI.

ADV. MOUNT. APPROX. SECT:

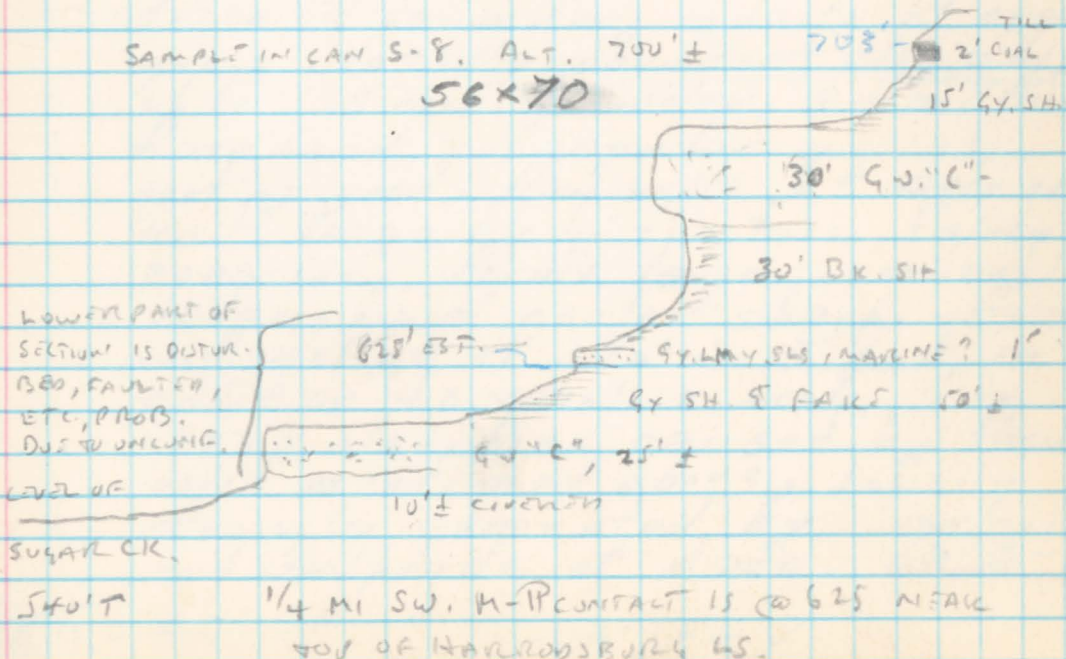


17N6W 762, ON FARM OF CLYDE SMITH, 4 MI.

S. OF WALLACE; GULLY E. OF FARM NEAR SECTION LINE

SAMPLE IN CAN S-8. ALT. 700'±

56X70



O. Thompson

6/14/56

U118 & RLP

SECTION 81:

22 N 6 W 5 d 6, IN GULLY JUST S. OF FALLER ROCK
CASCAD E HIGH BRIDGE, WARREN CO.
BASE OF SECTION LEVEL OF LITTLE PINE CK,
560' T.

unit 1 47.0 shale, silty, medium gray, indistinct,
uneven, thin bedding, small irregular
platy fracture, numerous carbonized
plant remains, large siderite
concretions common near base
concretions are less common & smaller
towards top, entirely exposed in this
and several other gullies on west
side of creek, bottom contact not
seen. WEATHERED DEBRIS IS SPLINTER-L.

unit 2 34.0 Sandstone, medium yellowish-brown,
distinct, uneven, thick bedding in
crossed lenticular medium scale
beds, quartz 90%, clay-limonite 10%,
trace of secondary quartz xl over
gross, locally abundant clay chips
up to 25 mm. diameter, 3 mm. thick.
Fine sand, subangular grains,
sorting good, flow rolls at base of
unit, large blocky fracture, fairly
cohesive, forms large overhanging
ledge, basal contact sharp, uneven,
with relief of 1 1/2' in 5 feet, in
addition to smaller scale
irregularities caused by flow
rolls mentioned above, locally
strongly cemented by iron oxide
and sulphide at base. 56-3-10

81.0 tot.

-641' LT - ✓

81' EXP.

88 81 82 83 84 85 86 87 11 10 17 15 14 13 12

ACROSS CK. & JUST ABV. HIGH BRIDGE 20' +
BORDEN SHOWS:

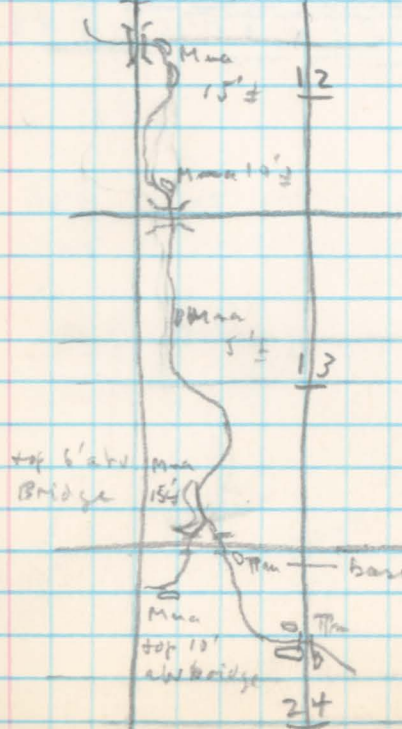
SLS, LT. GR, INDISTINCT UNEVEN THIN BGS,
PLATY FRACT, SMALL TUBULAR (FOODS),
FORMS STEEP BANK FROM WHICH MUCH
PLATY DEBRIS IS SWEEP DOWNSTREAM.

IT IS MOST LIKELY THAT SHALE OF UNIT 1,
SECT. 81, IS MANISFIELD.

IN GULLY JUST S. OF HIGH BRIDGE SH. OF UNIT
1 MEASURES 71'; S. OF UNIT 2, 8'. TOTAL 79'

27N CW 25 d6 - QUARRY (?) DRIFT COVERED, NOW
WATER-FILLED. PROB. PRODUCED BANDED LS.
NO OUTCROP @ WALCOTT.

27N 7W 24g 4 & 5 ALONG CO. ROAD ACROSS CARPENTER
CK. 1 MI. NW OF REMINGTON. 23' GWL, PROB TPm,
17' BELOW, 6' ABV. BRIDGE LEVEL.



DOWNSTREAM (SEE MAP) ARE
SEVERAL OTCS. SH, DK. GR,
HARD, CARB. WEATH. SILVERY.
NEW ALBANY.

BASE OF TPm NOWHERE SEEN.

Addenda to Sec. 80.

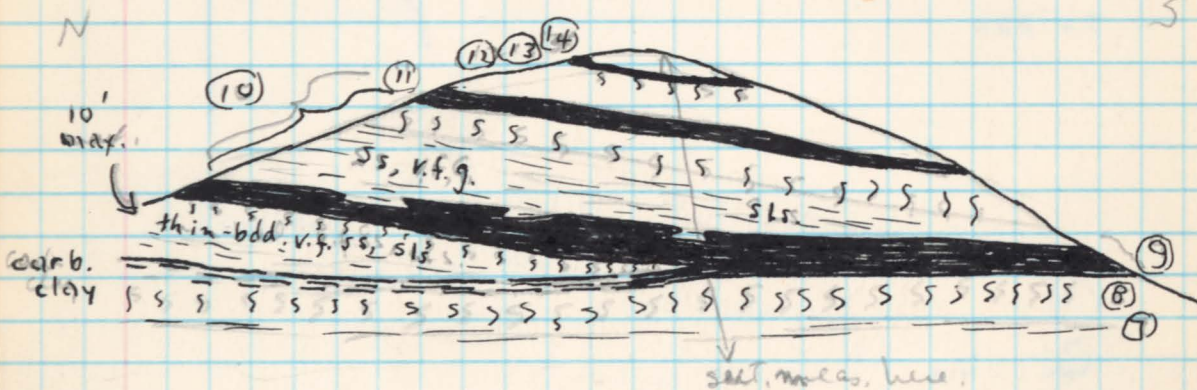
6/15/56

H.H.G. & R.L.R.

6 0.5 Ironstone, silty, medium gray, two beds separated by 0.1 to 0.2 feet soft gray shale, finely crystalline, somewhat nodular, hard, forms discontinuous ledges for length of bank, basal contact sharp, slightly uneven

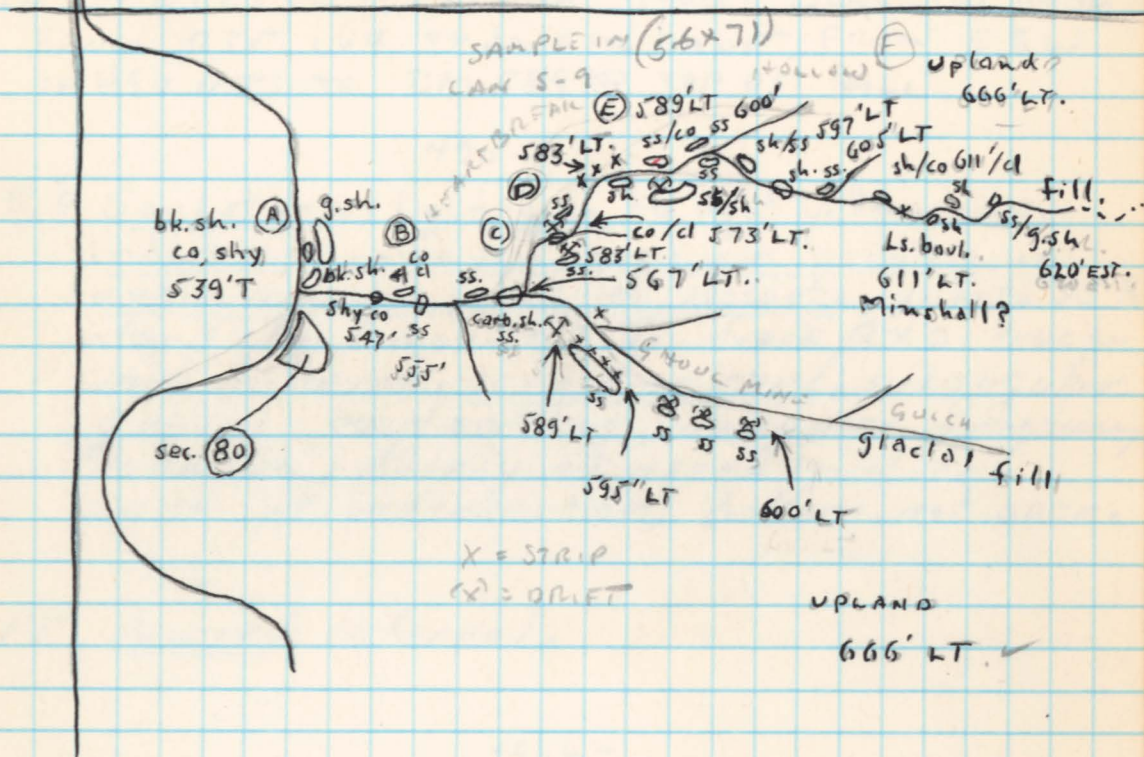
7.2.7 Shale, identical to description but with one band of ~~flat~~ flat ironstone nodules up to 0.3 feet thick, one foot up from base

COAL OF UNIT 9, RETAIL

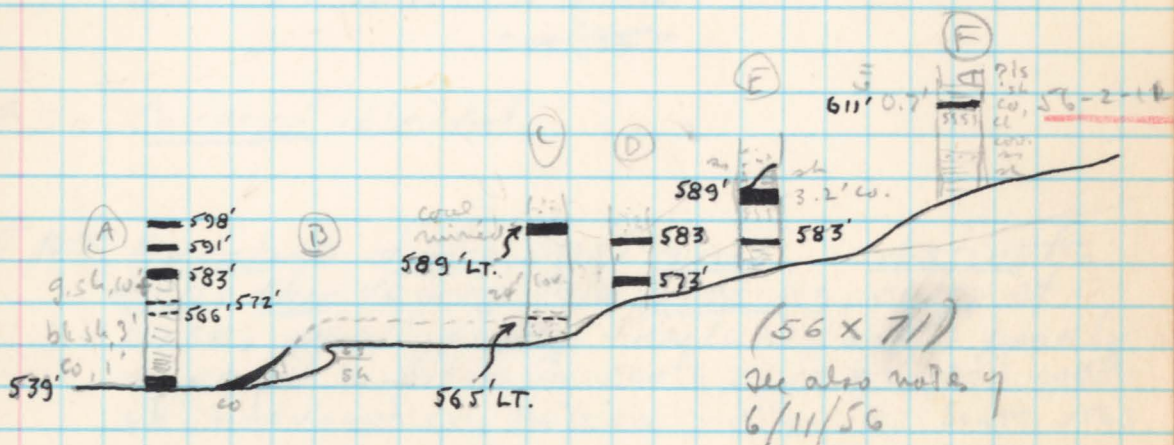


SEE NEXT PAGE FOR DIAGRAM OF COALS UP "NEAR? BRADLEY HOLLOW".

NW COR. S. 32, T. 17N, R. 7W.



Profile



88 8 82 83 84 85 86 87 11 87 16-17 154 14 13 12

6/18/56

WNB & RLP

SECTION 82:

154W 29, 788 to 3152 ALONG BLACKTOP ROAD
FROM RTE 164 TO JASPER LAKE, FROM E & W
OF 490 INT. TO BM 589 @ TOP OF HILL.

-490-

Unit 1 4.0 Sandstone, light-gray to light yellow-brown,
indistinct, uneven, medium bedding, in
medium scale irregular crosssets, quartz 95%
clay & clay limonite 5% trace QXO, trace
dark minerals, very fine sand, subangular
grains, good sorting, irregular fracture,
cohesive, poorly exposed in ditch
east of intersection, bottom not seen.

Unit 2 1.5 covered interval.

-496-

Unit 3 0.5 Iron ore, sandy, scoriaceous structure,
seen only as float blocks in ditch
east of intersection.

-496-

Unit 4 5.0 covered interval

Unit 5 10.0 mudstone, shaley, light gray, indistinct,
even, thin to very thin bedding, silty at
base, small platy fracture, soft, poorly
exposed in ditch on south side of road west
of intersection, bottom not seen. SCATT. ORCS.
QW. ALONG PAVED RD, IN DITCHES BOTH SIDES.

Unit 6 10.0 Covered, scattered exposures of sandstone,
float fragments of sandy iron ore near top
indicate possibilities that are
rises to south.

88 82 83 84 85 86 87 2 18-16-17 154 14 13 12

Unit 7 2.0 Mudstone, similar to unit 5, large nearly vertical joints, with diffusion bands, poorly exposed in ditch on west side of paved road, bottom not seen.

Units 9.7 Covered interval.

Unit 9 3.4 shale, dark gray, distinct, even, very thin bedding, slightly micaceous & carbonaceous, smooth, platy fracture, mica parallel bedding; cohesive when dry, so ft when wet, fairly well exposed in ditch west of road, several ferrous green seepages from near top of this unit, bottom covered.

- 586' -

10 30.0 Graywacke, medium olive-gray to medium yellow-brown, distinct, uneven, thin bedding, medium lenticular cross-sets, quartz 70% Clay & clay limonite 30%, trace mica, fine grained, angular grains, poor sorting, few ripple marks, mica is random, friable, weathers to rounded masses, basal contact sharp, uneven, with relief of 1/2 foot in five feet and locally as much as 1/2 foot of conglomerate, with pebbles of limonite and black shale at base, becomes light gray to white in upper part, with few plant impressions in limonite zone, one prominent red ferrous zone 22 feet from base

Unit 11 17.0 Siltstone, shaley, light yellowish-brown to light gray, distinct, uneven, very thin bedding, micaceous, some beds of very fine sand near top, bedding appears considerably disturbed, apparently by penetrative deformation, but exact nature of disturbance could not be determined. Small large iron concretion, especially near top, platy fracture, in some places almost like whetstones, fairly well exposed in ditch and bank north of road, lower contact appears sharp, but was not certainly seen.

Unit 12 6.0 Covered to BM 589 at Hwy intersection.
- 589' -

99' / 67' exp.

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6/19/56

ANB & RLP

SECTION 83: 35 4W 29 97 ALONG GRAVEL RD. 1 MI.
NW OF FERDINAND, BASE OF SECTION 507,
BY 55' T. SECTION MEASURED TO NORTHWEST.

~~507 41~~ - 522 T

Unit 1 8.0 Covered from level of culvert.

Unit 2 3.0 Clay, light gray, bedding absent, blocky
or fracture, soft, smooth, plastic, poorly
exposed in road bed - bank east of road,
bottom not seen and clay may be
somewhat thicker.

Unit 3 1.7 Coal, shaly, black, indistinct, uneven,
very thin bedding, contains some
vitrain but appears to be mostly
shaly or vitrain, badly weathered and
dumped in most places, sample 56-3-12
dyg from ditch below telegraph pole,
bottom contact appears sharp.

- 515' LT - 535 LT

Unit 4 0.2 Clay, shaly, light gray, mottled with light
yellow-brown, indistinct, even, very
thin bedding, small platy fracture, soft,
smooth, plastic, bottom contact sharp
and apparently even.

Unit 5 16.0 mudstone, shaly, medium olive-gray,
indistinct, uneven, thin bedding, slightly
silty throughout unit but particularly
silty in thin bands near base, small
platy fracture, well exposed in
road bed & on north bank, bottom

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roadbed, $\frac{1}{2}$ on north bank, bottom
contact sharp and apparently even.

Unit 6 1.0 Clay, shaley, light gray, indistinct, uneven,
thin bedding, hackley fracture, numerous
plant impressions, mostly roots with
random orientation, pink, yellowish-
brown and black stain on fracture
surfaces and along plant impressions
fairly well exposed in north bank of
road, basal contact transitional
within 0.5 foot.

Unit 7 0.01 Coaly streak,

-532' LT-

Unit 8 3.0 Clay, shaley, light gray, light yellowish-brown,
indistinct, uneven, thin bedding, platy
fracture, soft, in part somewhat silty,
poorly exposed on north bank of road,
bottom contact sharp & apparently even.

Unit 9 0.1 Coal, black, slumped: badly weathered
sample 56-3-13 dug from bank north
of road, bottom contact appears sharp
and even

-535' LT- 555' LT

Unit 10 4.0 Clay, shaly, light gray, indistinct, uneven,
thin bedding, platy fracture, soft, smooth
poorly exposed on bank on north side of
road, it is possible that part of this
unit may be weathered residue of the
limestone of unit 11, basal contact

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apparently sharp and even.

- 539' LT 559' LT

Unit 11 1.5 limestone, silty, light gray, in one bed, rough blocky fracture, fusilines, brachiopods sparse, cohesive, forms weak ledge on north bank of road, bottom contact not seen.

Unit 12 1.0- Flint, medium gray, in one or two beds, 1.5 vitreous, blocky, fracture, brittle, forms good ledge which appears to be responsible for holding up topographic bench, in part porous "Tripoli", basal contact sharp & uneven, sparse spirifers and other brachiopods, finely crystalline.

*13 1.3 chert, shaley, light gray, indistinct, uneven, thin bedding, finely crystalline, rough platy fracture, brittle, forms ledge, bottom contact sharp & somewhat irregular.

*14 0.1 ironstone, light gray, speckled with medium brownish-red, one bed, finely crystalline, appears oölitic, poorly exposed at top of road bank, bottom contact not seen.

*15 4.0 Covered to ground level of pipe line vent at top of hill
45' / 33' EXP ~~547T~~ - 567T

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57. Metastations NW
SECTION 84: 35 4W 30a S, ALONG GRAVEL RD.

2 MI. W. OF FERNANDINO. BASE OF SECTION
475' T, TOP 570' T. MEASURED IN EASTERLY
DIRECTION FROM VALLEY OF HUNTLEY CK.

-480' T

Unit 1 290 Covered, slumped shows of clay-
sandstone near top of unit

2. 2.5 SS, CARBONACEOUS, LT. GR; DISTINCT UNEVEN
THIN BOD; Quartz 90% Clay 10%
very fine sand, subangular grains,
poor sorting; many thin beds of
gray shale and several very thin
layers of vitrain; friable; abundant
mica parallel to bedding; locally
banded with limonite along some beds;
small exposure near mail box; bottom
not seen. Sample 56-3-14 from
more carbonaceous parts of this unit
-51' T.

- 3 14.5 Graywacke, medium yellowish-brown;
distinct, uneven, medium bedding in
medium scale lenticular cross-sets;
quartz 70% clay; clay limonite 30,
abundant mica; fine sand,
subangular grains, poor sorting;
friable but fairly well exposed on
bank north of road; bottom contact
sharp and uneven with relief of 0.2
foot in two feet.

- 4 2.5 Covered interval

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Unit 5 25.0 Graywacke, light gray to light yellow brown; distinct, even, thin bedding; Quartz 80, clay; clay limonite 20% fine sand, subangular grains, poor sorting, platy fracture, in part interbedded with siltstone that has thin shaly partings which are locally carbonaceous, cohesive, fairly well exposed, on north bank and in road bed; bottom contact not seen; appears to become somewhat silty near top.

Unit 6 6.0 covered to ground level on top of hill.

80' / 42' exp.

-560' / T-

454W 23c2, NEW BOEHMAN STRIP

14' Gw, wx.

4'-11' S4, BK, SLT, SOME BK. GW.

3.5'-4' COAL, BLOCKY.

-440' T-

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St. Meinrad
SECTION 85: 45 4W 23 62 TO 26 93, ALONG GRAVEL
ROAD 1 1/2 MI. S OF ST. MEINRAD JUST
S. OF BOEHMAN MINE. BASE OF SECTION 4151,
TOP @ 570' T. SECTIONAL MEASURED IN SOUTHERLY
DIRECTION.

- 416' LT -

Unit 1 22.0 Covered from level of road at bridge;
scattered exposures of dumped gray clay.
no indication of position of St. Meinrad
Coal which in the Bohman strip mines on
opposite side of vally is from 10-15
feet above valley level.

Unit 2 10.0 Clay, shaley, light gray to light yellow-brown;
indistinct, uneven, thin bedding; platy
fracture, soft, smooth, somewhat plastic
poorly exposed in ditch; bank west
of road; Bottom not seen, upper part
largely covered.

- 448' LT -

Unit 3 33.0 Graywacke, light gray to medium yellowish-
brown; distinct, even, thin bedded;
medium scaled lenticular cross-sets;
quartz 80%, clay; clay limonite 20%
trace mica, fine sand, subangular grains
poor sorting, numerous limonite, bands
parallel to bedding; rough blocky
fracture, mica is subparallel; friable;
lower part fairly well exposed in both
ditches and west bank, top poorly
exposed, basal contact not seen, but
inferred to be sharp and somewhat
uneven because it is thought to be
equivalent to upper Graywacke in
Bohman mine (see notes of preceding
page) and because of abundant

pebbles of clay, carbonaceous shale,
and coal in lower foot of this unit.

Unit 4 20.0 Siltstone, shaly, light yellow-brown,
distinct, uneven, very thin bedding,
slightly micaceous, platy fracture, micas
parallel bedding, soft but fairly well
exposed in both ditches and banks, basal
contact transitional within 10 feet,
probably interleaved as some beds of
gray wake occur in lower part of
this unit.

Unit 5 4.0 Clay shaly in lower part, light gray,
bedding absent soft, smooth, plastic,
somewhat slumped, scattered
in ditches on both sides of road,
bottom contact transitional (gradational)
within 0.5 feet

- 505' LT -

6 3.0 Gray wake, medium olive-gray, quartz 20%
clay; clay limonite 30%, trace mica;
indistinct, even, thin, parallel bedding,
fine sand, subangular grains poor
sorting, irregular blocky fracture
micas subparallel friable, poorly
exposed in bank west of road, basal
contact not seen

7 8.5 Gray wake, medium yellowish-brown,
distinct, uneven, thin parallel bedding

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quartz 60%, clay & clay limonite 40%
trace mica, very fine sand, subangular
grains, poor sorting, platy fracture,
micas parallel, somewhat friable
partly exposed in ditch & bank west
of road, basal contact probably
gradational within one foot or so.

Unit 8 1.0 Clay, light gray, soft, plastic,
probably somewhat slumped.

- 518' LT -

Unit 9 11.0 Covered, scattered exposures of
gray wake similar to unit 10.

10 8.5 Gray wake, medium yellowish-brown;
distinct uneven thin bedding; apparently
in medium-lenticular cross-sets;
quartz 90%, clay & clay limonite 10%,
trace mica, fine sand, subangular
grains, good sorting, numerous bands
of limonite parallel to bedding,
irregular platy fracture, micas
subparallel, fairly cohesive, fairly
well exposed on both banks of road,
basal contact not seen, flat clay
chips common in a few beds.

Unit 11 30.5 Covered, scattered exposures of
gray wake similar to unit 10
possible a thin bed of clay near top
of hill.

- 568' LT -

152' / 88' exp.

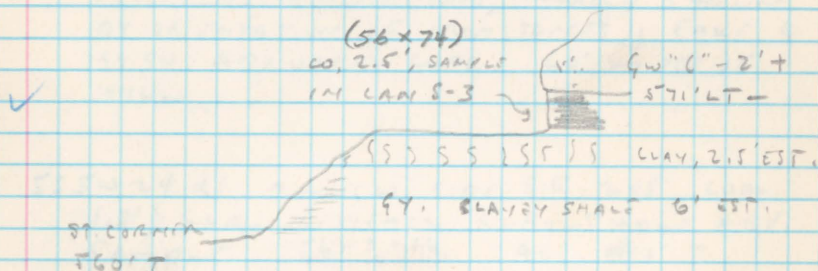
88 89 90 91 92 86 87 2 18' / 16-17 6 154 23 22 20-21

6/20/56

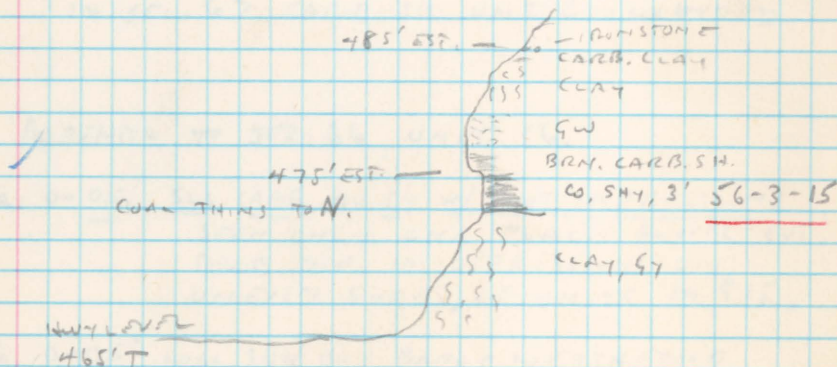
418 & RLP

SAMPLES FROM SECT. 61: LOWER COAL
(56X72) (UNIT 3) IN CAN S-1 (1.1' THICKNESS),
(56X73) UPPER COAL (UNIT 5) IN CAN S-2
(0.6' THICK),

SAMPLE FROM 155W 26 f 5, @ WATER TOWER
IN JASPER. UPPER BLOCK?



155W 35 f 8, ALONG S.R. 45 JUST S OF SECT. W/
S.R. 56, WEST OF HWY



454W8C6 HAGEDORN PIT 2 MI. NE OF
MARIAH HILL. 2 COALS - LOWER
MORE EXTENSIVELY MINED - ALT. 520' LT
HAGEDORN SAYS NO LB. OVER COAL
BUT QUALITY SIDERITE WAS SEEN IN
SPILL. OVERBURDEN CLAY & CLAY SHALE
WITH IRON STONES & LOCALLY MUCH FAKE.
UPPER COAL ALT. 540' LT. CLAY FLOOR,
SEVERAL SPLITS ON LOWER BEDS,
CONSIDERABLE STRUCTURE (SWAMPING,
REMELONTER PERMANENT, LOCALLY SHOWING
AN ORIENTATION OF IRON STONES), FAKE &
GY. SH. ABOVE UPPER COAL. 60' TO TOP OF
HILL.

555W24d1, ALONG W. SIDE S.R. 245, COAL,
1.3'; CLAY BENEATH, CLAY-SH. AND ABL.
SAMPLE 56-3-16 ALT. 415' T.
LOWER BLOCK(?)

(56X75)

SAMPLE IN CAN 5-11 FROM COAL, UNIT 7,
IN SEC. 67, CARB. SH. UNIT 6 INCLUDED

ADDENDA TO SEC. 66, UNIT 16.

16a. 0-0.5' SLT, CARB, DIC GY, W/ ROOT IMPRESSIONS
SEEN ONLY ONE PLACE ALONG CUT,
PROB. DEP. IN DEPRESSIONS ON
UNEVEN SURFS. OF UNITS 14 & 15.

16b. 0-0.5' COAL, SNY, BK. BADLY WEATHERED
SEEN ONLY ONE PLACE ALONG CUT.
PROB. ALSO IN DEPRESSIONS, WHICH ARE
PERHAPS AS MUCH AS 2' DEEP.
SAMPLE 56-3-17

16c. 5.5 COVERED, AS BEFORE

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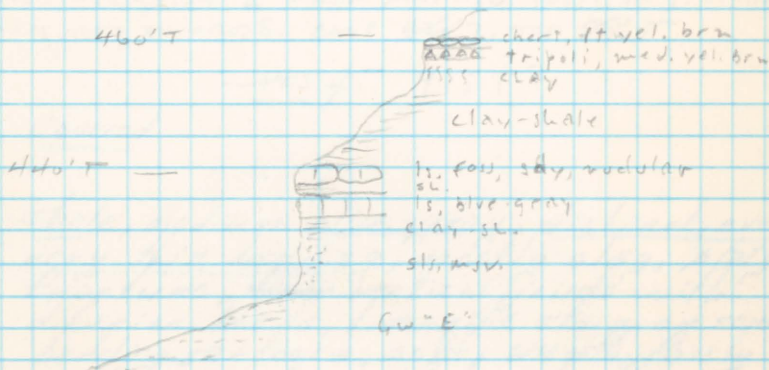
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654w928, STRIP PIT FOR CLAY 3 MI. W.
OF MAXVILLE



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~~FULDA~~
~~SECTION 86~~
SECTION 86: S S 3 W 29 & 26 to d6 ALONG N-S RD.
(MOVED SLIGHTLY E FROM MAPPED POSITION). SECTION
MEASURED TOWARDS S. CASE 420' T, TOP 810' T

~~423' T~~ 415' T?

Unit 1 4.0 Covered

Unit 2 17.0 shale, medium olive-gray, distinct, even,
very thin bedding, mostly clay, platy
fracture, ~~vertical~~ vertical joints with
diffusion bands, limonite stain on some
bedding surfaces, soft, smooth, fairly
well exposed in ditch east of road;
bottom contact not seen

Unit 3 5.0 siltstone, shaly, light yellow-brown, distinct,
slightly wavy, thin to very thin bedding,
slightly micaceous, platy fracture,
forms weak ledge and waterfall in
ditch, bottom contact transitional
(interleaved) within about 1 foot,

4 9.0 Covered

5 9.5 Graywacke, light yellow-brown,
indistinct, uneven, thin, parallel
bedding, quartz 60%, clay
limonite 40%, slightly micaceous,
mica is random, rough platy
fracture, very fine sand, subangular
grains, poor sorting, fairly cohesive,
fairly well exposed in ditch west of
road, bottom not seen.

88 89 90 91 92 86 87 2 18-19 5-26 24 23 22 20-21

at top is zone of limonite cement
.05 feet thick.

6 2.5 Clay, silty, light gray, bedding
indistinct to absent, hackly fracture,
abundant root impressions,
particularly at top, basal contact
sharp and apparently even, upper
.2 feet brown & slightly
carbonaceous.

7. 0.3 CLAY, CARBONACEOUS, DARK PURPLISH-BROWN;
BEDDING ABSENT, MANY LARGE VESICULAR
CONCRETIONS OF RED IRON OXIDE, HACKLY
FRACTURE. BOTTOM CONTACT TRANSITIONAL
(GRADATIONAL) WITHIN 0.05 FT. SAMPLE
56-3-18, CARB. CLAY, & 56-3-19, IRON ORE.
~~470 LT~~ - 462 LT

8. 10.0 GW, MED. YEL.-BRN, INDIST. UNEVEN THIN
BDS. IN MEDIUM-SCALE LENTICULAR
CROSS-SETS, QTL 70%, CLAY & CLAY-LIM 30%,
TR. MICA; FINE SD, SUB-ANG. GRAINS,
POOR STG, ROUGH BLOCKY FRAC, MICA S II,
FRIABLE, FAIRLY WELL EXP. ON DITCH
& BANK W. OF RD, BASAL CONTACT
SHARP & APPARENTLY FAIRLY EVEN,
CLAY CHIPS ABUNDANT IN SOME BEDS.

9. 27.0' COVERED TO TOP OF ROAD GRADE & UPLAND
LEVEL TOP OF HILL

84' / 44' EXP.

~~407 LT~~ - 499 T

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6/21/56

4143 & 414

SECTION 87: SS 3W 5B 5 to a 3, MEASURED EASTERNLY
ALONG GRAVEL RD. WHICH WAS CLEANED & GRADED
LAST YEAR (*!?) BASE OF SECTION 4157, TOP
550' T.

- 410' T - 403

Unit 1 6.0 Covered from level of culvert.

- 2 13.0 siltstone; light gray to light yellow-brown;
indistinct, uneven to contorted, thin
bedding; micaceous, locally carbonaceous,
in lower part very finely sandy; some
fucoids and scour marks; irregular
blocky fracture; fairly well exposed
in ditch north of road; bottom contact not
seen; at top is ferruginous concretionary
zone 0.1 foot thick.
- 3 5.5 Clay, light olive-gray to light gray;
bedding absent; silty in lower half;
hackly fracture; poorly exposed in
ditch north of road; except for
concretionary iron ore zone at top
of unit 2 contact would be
gradational within 1 foot.
- 4 3.5 Covered interval.
- 5 12.5 Clay; silty in lower 1/3, light gray to light
yellow-brown; bedding absent through
most of unit though may be indistinct
present in lower part; silty; upper part
plastic; hackly fracture; root impressions
common especially towards top; poorly
exposed in ditch north of road; mostly

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rather badly weathered and slumped;
may in large part actually be claystone or
mudstone; bottom not seen.

Unit 6 0.2 Coal; clayey; black to dark purplish-brown;
badly weathered; other characteristics
cannot be seen - Sample 56-3-20 -
bottom contact apparently sharp and
even
- 451' LT - 446

7 32.0 Mudstone; medium yellow-brown;
indistinct, uneven, thin bedding;
splintery fracture; poorly to fairly
well exposed in ditch and bank north
of road; bottom contact apparently
sharp & even; limonite staining bands
common in upper $\frac{2}{3}$ of unit; ~~the~~
~~upper~~ upper thirds appears to be clayey
and lacks bedding; middle $\frac{1}{3}$ is
shale with fairly well developed
thin bedding and platy fracture.

8 0.1 Coal; clayey; black; badly weathered,
other characteristics cannot be
observed - sample 56-3-21 -
bottom contact sharp and even.
- 483' LT - 478 -

9 11.0 Mudstone; medium yellowish-brown;
indistinct, uneven, thin bedding;
slightly micaceous; clayey with
splintery fracture at bottom grading
upward to silty with platy fracture
at top; mica subparallel; rather
poorly exposed in ditch north of
road; basal contact apparently sharp &
even with clay zone 0.1 foot thick,

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immediately above coal of unit 8; heavy red iron oxide bands in upper part of unit.

- 10 9.0 graywacke; light yellowish-brown; indistinct, uneven, thin bedding; quartz 70%, clay; clay limonite 30%, trace mica, very fine sand, subangular grains, poor sorting; rough platy fracture; micas random; lower part fairly well exposed, upper part poorly exposed in ditch north of road; basal contact gradational within about 1 foot.

11 12.5 Covered interval

- 12 5.5 Graywacke, medium yellow-brown; distinct even, thin bedding; quartz 70%, clay; clay limonite 30%, trace mica; very fine sand, subangular grains, poor sorting; platy fracture, micas parallel; friable; basal contact not seen; fairly well exposed in ditch north of road.

13 4.0 Covered interval

- 14 8.5 Graywacke; medium yellow-brown; distinct even, thin bedding; quartz 60, clay; clay limonite 40%, trace mica, very fine sand, subangular grains, poor sorting; platy fracture, micas parallel; friable; fairly well exposed in ditch north of road; bottom not seen.

15. 9.0 Covered interval

16. 18.5 Graywacke; medium yellow-brown; distinct, even, thin bedding in medium scale lenticular cross-sets; cross bedding less conspicuous in lower less well exposed part of unit; quartz 70% clay; clay limonite 30%, trace mica, very fine sand; subangular grains, poor sorting; splintery to blocky fracture; micas parallel; friable; fairly well exposed in both banks of road near crest of grade, top of unit is about 1 foot above road level at crest of grade; basal contact not seen; covered intervals 13, 15 probably occupied by graywacke similar to that of units 12-14-16.

151' / 115' exp

361' KT 556

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See 88 b 453w 29 b5, c3, & b3, IN ALMOST
ABANDONED STRIP MINE EAST OF ROAD BEND,
BASE OF SECTION 450' T, TOP 500' T.

SECTION @ FAULT IN E END, N SIDE OF CR.

Unit 3 4.0 Coal; black; distinct, even, thin bedding;
approx equal parts vitrain & clain; blocky fracture; seen in recently
active part of pit; bottom gradational
through shaley carbonaceous clay .05
feet thick; top .2 foot is bony; cannell-
oid; locally there is some pyrite; coal
rises steeply to north and east.

- 474' T -

Unit 4 3.0 Shale; carbonaceous; black; distinct, even,
very thin bedding; trace mica; platy
fracture; mica parallel bedding; brittle;
seen immediately above coal on high way;
base gradational through .01 foot;

26.5

Section moved to pit 100 yds SW

88 c

Unit 5 17.0 Siltstone; shaley; medium gray; indistinct, uneven,
thin bedding; slightly carbonaceous; trace
mica; hackly fracture; brittle; forms
majority of high wall throughout length
of pits; total thickness of unit was
not measured at anyone place; interval
may therefore be somewhat in error;
base contact gradational within about
.5 foot, as seen at top of section 88 b

6 0.7 Siltstone, light yellow-brown; indistinct
contorted thin bedding; rough platy fracture
forms weak ledge along high wall; base
contact gradational within a few tenths
foot.

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7. 6.0. claystone, shale; medium gray; indistinct, uneven thin bedding, platy fracture, soft, smooth, foot impressions in upper part; forms steep slope, basal contact gradational within 2 tenths

8. 0.7 shale; gray; black; distinct, even, very thin bedding, many very thin vitrain bands, platy fracture, bottom contact sharp and even, - Sample 56-3-22 -

-501' LT -

9. 10.0 est. shale, carbonaceous, dark purplish-brown, distinct, wavy, very thin bedding, thin vitrain bands in lower part, upper and more weathered part medium gray, platy fracture, abundant carbonized plant impressions, easily splittable, forms steep slope at top of high wall; bottom contact sharp and even.

60' / 60' est.

-511' FT -

SECTION 88a. DRAIN DITCH OF WEST PIT.

-450' FT -

1. 18.0 siltstone, medium yellow-brown, indistinct, uneven, thin bedding, micaceous, rough blocky fracture, mica random, cohesive, seen in drain of pit S (W) of Sec. 88 b/c, some thin beds of very fine grained sandstones, and several beds about 0.1 foot thick of clayey limonite, upper part of unit is quite clayey with considerable limonite stain on fracture surfaces.

2 1.5 Clay, silty, medium gray, indistinct
conformable thin bedding, micaceous,
carbonaceous, blocky fracture, mica
sub parallel, soft, fairly well exposed
in ditch draining SW pit, bottom
contact transitional within 1.3 feet,
lower unit may in fact be weathered
equivalent.

19.5 Transfer section to active east end
of pit, 200 yds E.

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SECTION 89. 354W27a4 IN OLD QUARRY,
NEXT TO PRESENT MILL OF ST. MEINRAD
SS, CO. ~~EAST OF LOCATION UNDERGROUND~~

535
-540' -

Unit 1 3.0 Sandstone; white banded with light yellow-brown,
indistinct wavy thin bedding; quartz 95%
clay and clay limonite 5%, very fine
sand, subangular grains, good sorting,
blocky fracture, one parting 7.7
feet up from base, cohesive, basal
contact not seen

Unit 2 0.4 Graywacke, shaley, medium gray, distinct
wavy, very thin bedding, quartz 20%,
clay + clay limonite 30%, trace mica,
platy fracture, micae parallel,
forms slight recess in weathered
quarry face, basal contact transitional
within .05 foot (interleaved, this
unit does not persist to opposite wall
of quarry)

3. 0.6 ss., similar to unit one, possible
root impressions on upper surface

4 0.7 graywacke, similar to unit two.
this unit appears to thin + wedge out
within 20 feet perpendicular to
quarry face but is persistent along
side of quarry though thickness
decreases toward east end.

95 89 90 91 92 93 94 27- 25-26 24 23 31 29-30

5 1.6 ss., similar to unit 1 but containing in upper $\frac{1}{2}$ foot numerous clay chips and root impressions, this unit thickens eastward, details of splitting of ss bed on East wall of quarry are shown in sketch.

6. 2.0 graywacke, similar to unit 2, but grading upward into similar material with contorted bedding

7 1.0 Clay, silty, medium gray, bedding absent, carbonaceous, micaceous, numerous root impressions with random orientation, exposed in gullies on north wall of quarry above working face, bottom contorted gradational within 0.2 foot,

8 0.3 Coal, black, distinct, even, very thin bedding, apparently largely carbonaceous, small platy fracture, soft, weathered, on north wall of quarry. - Sample 56-3-23 - bottom contact sharp and even,

~~549' LT~~

9 0.6 Shale, carbonaceous, dark purplish-brown; distinct, even, very thin bedding, platy fracture, numerous carbonized plant fragments and some well preserved leaves parallel to bedding. Soft, bottom contact sharp and even,

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10 0.1 Ironstone, various shades of yellowish-brown, in one bed, uneven crinoid structure, irregular fracture, bottom contact sharp and apparently even.

11 3.5 Siltstone, medium yellow-brown, contorted bedding, slightly micaceous, irregular fracture, basal contact would be gradational within 0.5 foot except for ironstone layer noted below, bedding of this unit is very contorted and shows all sorts of rolls, knots and tubes with random orientation.

12 8.5 Shale; silty; light yellow-brown; distinct even, very thin bedding; micaceous; platy fracture, micas parallel, several zones of flat ironstones .02 feet thick bottom contact gradational within 1/2 foot and lower part this unit shows bedding contortions similar to those of unit 11 below.

22' / 22' exp. - 32' 1/2

UNFOLDED SKETCH OF QUARRY WALLS, NOT TO SCALE.

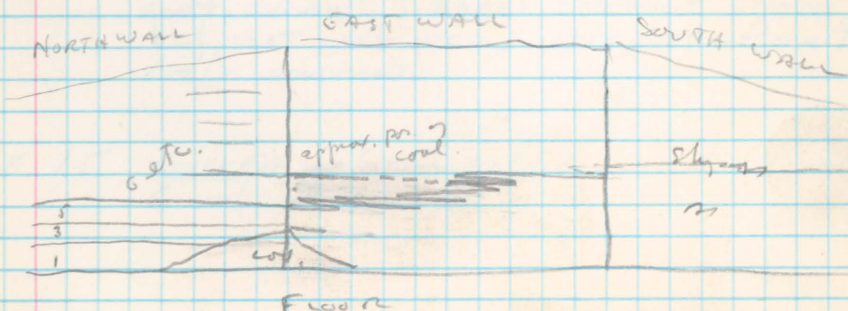


Photo by R.H.P. nicht gut R.H.P.

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St. Metamorph

SECTION 90: 383W 296G to E3, EASTWARD
ALONG COUNTY ROAD FROM Jct. W. ROAD TO S.
E. OF HURRICANE CR. BAS: 445°T, DUT 520°T.

-438T-

1 5.0 covered from junction with road to south

2 1.0 ls, light gray indistinct, even, medium
bedding, largely calcite, finely xline,
irregular fracture, abundant
brachiopods, weathers to rounded
blocks; bottom not seen.

3 0.5 ls; Permo-genous, dark redish-brown;
finely xline abundant brachiopods,
weathers to large rough blocks.
basal contact sharp and slightly
uneven.

M
P

-445LT-

4 3.0 shale; medium gray, indistinct, even,
very thin bedding; platy, fine texture;
soft, smooth; basal contact sharp
but not well seen; upper part of unit
badly covered;

5 1.5 covered; relation between units 4 and
6 not observed.

95 96 90 91 92 93 94 27 25-26 24 2-33 4-35 31 29-30

6 17.0 Graywacke, light yellowish-brown; distinct, uneven, contorted, thin bedding; Quartz 60%, clay, clay limonite 40%, very fine sand, subangular grains, poor sorting; rough platy fracture, locally considerable bedding contortion, micaceous, slickensides and other evidence of disturbance which tilted units up to 60° degrees to the S₂SE, in ls. bedded with siltstone, medium yellow-brown; indistinct, uneven to contorted thin bedding; slightly micaceous mica subparallel; rough platy fracture; in most aspects similar to graywacke, fairly well exposed in ditch north of road; thickness measured is topographic thickness, stratigraphic thickness would be much greater but for this disturbance is considered to be the result of compaction of sediments in a deep pre-monsfield valley, the axis of which would run NE-SW a little SE of this point, the conventionally measured stratigraphic thickness would have little meaning, the ls. of unit 2 is considered a small hilltop outlier as no other outcrops were found in the immediate vicinity, bottom contact of unit 6 is not seen

7. 3.5 covered interval

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8. 5.5 graywacke; light yellow-brown;
indistinct, uneven, thin bedding,
quartz 80%, clay & clay limonite 20%
very fine sand, subangular gypsine
poor sorting, irregular scallop-shaped
ripple marks on some bedding surfaces
accompanied by scattered limonitic
concretions, rough blocky fractures
cohesive, appears to be as possible
for holding up slow topographic bench,
the attitude of bedding is essentially
horizontal but relation between
this and unit 6 obscured by
covered interval, top of exposures
and top of grade in road; bottom
not seen.

37'/27' EXP

- 475 LF -

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7/10/56

1415 512LP

RECON N 1/2 ST. ANTHONY QUAD, W. V. 163 OTS

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S. Anthony

1/11/56

W.H.C. & R.L.P.

SECTION 91: 253W191 to 62, SOUTH ALONG RD.
UP FROM BRIDGE OVER GRASSY FORK,
1 1/2 MI. SE OF SCHNELLVILLE, DUBOIS CO.

-558' L-

Unit 1 2.5' Covered from level of road at bridge,
medium bedded graywacke is exposed in
creek bed below bridge

Unit 2 5.0 Graywacke; medium yellow-brown; bedding
generally absent, few indistinct thin beds
seen; quartz 80% clay & clay limonite 20%,
trace mica; very fine sand; subangular
grains, poor sorting; locally banded with
limonite along irregular fracture surfaces;
small blocky fracture; micas random;
somewhat friable, but fairly well exposed
in ditch east of road; bottom not seen.

Unit 3 0.5 covered interval

Unit 4 26.5 Graywacke; light pink to light yellow-brown; distinct
unbroken thin bedding in medium scale irregular
cross-sets; quartz 80%; clay & clay limonite 20%
trace mica; irregularly distributed specks of
limonite gives speckled yellow-brown & red
colors; very fine sand; subangular grains,
poor sorting; blocky to platy fracture;
micas random; fairly cohesive; fairly
well exposed in ditch & bank east of
road; bottom contact not seen but probably
gradational, though short covered interval
into unit 2, in upper 2/3 are several beds
of shaly graywacke or siltstone less than
1 foot thick, at very top is a zone of

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limonite banding about 0.5' thick.

Unit 5 21.0 Covered interval.

Unit 6 8.5 Siltstone; shaly; light gray; distinct wavy very thin bedding; with many small lenticular cross-sets; micaceous, ferrous, small platy fracture, micas parallel, locally heavy limonite stain on some bedding surfaces; brittle; forms thinly covered slope on bank west of road; basal contact not seen

- 622' -

Unit 7 24.0 Graywacke; light red to medium yellow-brown; distinct, even, thin bedding, in medium scale lenticular to tabular cross-sets; quartz 90%, clay; clay limonite 10%, trace mica, trace QxO, very fine sand, subangular grains, good sorting; many bands of limonite up to 0.5 inch thick micas subparallel rough blocky fracture; friable, but well exposed on bank west of road; lower part is less well exposed than upper and basal contact is not seen but was rather easily picked on basis of float fragments and small ferrous spring in ditch.

Unit 8 2.5 Covered interval

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Unit 9 9.5 Graywacke; medium yellow-brown; biotite even, thin bedding; apparently in large scale cross-bedding; coarse to 20 02 clay & clay limonite 10 06, trace mica, trace a x o; this is graywacke of unit 7 are of "Rotston" type with the clay occurring largely as aggregates of sand size; fine sand, sub-angular, good sorting; irregular platy fracture; micae subparallel; several zones of very heavy limonite concentration in bands and nodules in upper 1/3 of unit; fairly friable, but generally well exposed in ditch; bank west of road; lower part of unit better exposed than upper part; bottom not seen.

Unit 10 6.0 covered in the rest to intersection at top of hill.

106' / 74' E x P. - 664' -

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SECTION 92: 254w 16 f 8 to 17 h 1, NW ALONG RD (UP FROM TRIBUTARY TO FLAT CREEK, 3 MI. NW OF ST. ANTHONY.

- 475' -

Unit 1 14.5 covered interval from level of culvert

Unit 1.5 Graywacke; light yellow-brown; distinct uneven thin bedding; quartz 90%, clay & clay limonite 10%, trace mica, trace $\alpha \times \alpha$, locally a few clay chips; fine sand, subangular grains, good sorting; rough blocky fracture; micaceous sub-parallel; locally some limonite in bands and concretions; fairly cohesive; poorly exposed in ditch east of road; bottom not seen

Unit 3 2.0 Graywacke; light yellow-brown; distinct uneven thin bedding; quartz 80%, clay & clay limonite 20%, trace mica, very fine sand, subangular, poor sorting; clay chips abundant in several zones which appear shaly but are merely more thinly bedded than rest of unit; limonite bands common, along bedding surfaces; rough platy fracture; fairly cohesive; poorly exposed in ditch east of road; basal contact intercalated with in about 0.5 foot.

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Unit 4 34.5 Claystone; shaly; light gray to light yellow-brown; indistinct, even, very thin bedding, becoming distinct at top, smooth; clayey in lower $\frac{2}{3}$, upper $\frac{1}{3}$ contains many very thin silty interbeds; small platy fracture; numerous heavy limonite diffusion bands along few prominent vertical joints, and limonite stain common on some bedding surfaces; fairly cohesive; fairly well exposed in ditch and bank east of road; lower & upper parts not so well exposed as middle; lower part in particular shows evidence of slumping; bottom contact not well exposed but appears sharp & fairly even.

Unit 5 7.5 Covered interval, from nature of float it appears that this is underlain by silty mudstone similar to that of unit 4

Unit 6 8.5 Clay; silty; light gray to light purplish brown in upper foot; bedding absent in lower part of unit, indistinct, uneven, very thin bedding in upper 2.0 feet; upper part carbonaceous; rough blocky to small platy fracture; root impressions common; fairly well exposed in ditch east of road; several bands of light yellow-brown limonite near base; basal contact not seen

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Unit 7 0.5 Coal; shaly; black; distinct, even, very thin bedding; badly weathered, but exposed in ditch and bank east of road; thickness ranges from 0.2 to 0.7 feet; thicker towards south where it is topographically 3.0 foot lower; these variations may be due to slump and creep, bottom contact gradational with 14 0.2 feet - sample 56-3-24 - thin veins of ironstone occupy nearly vertical joint seams.

-544' LT-

Unit 8 8.5 Graywacke; light yellow-brown; distinct uneven, thin bedding; quartz 70%, clay & clay limonite 30%, trace mica, trace a.x.o.; very fine sand, subangular grains, poor sorting; rough platy fracture; somewhat friable; poorly exposed in ditch and bank east of road; one or two ledges are prominently exposed at top of unit; basal contact sharp and perhaps somewhat uneven, but appears somewhat disturbed as a result of slumping mentioned in connection with underlying unit, several float blocks of "scouraceous" iron ore appear above the coal and may belong with this unit, but they were not seen in place. PLANT FRAGS. common in some beds.

9. 3.0 COARSE

10 3.0 Graywacke, silty, light gray; indistinct uneven thin bedding, 60% quartz 40% clay & clay limonite, trace mica; very fine

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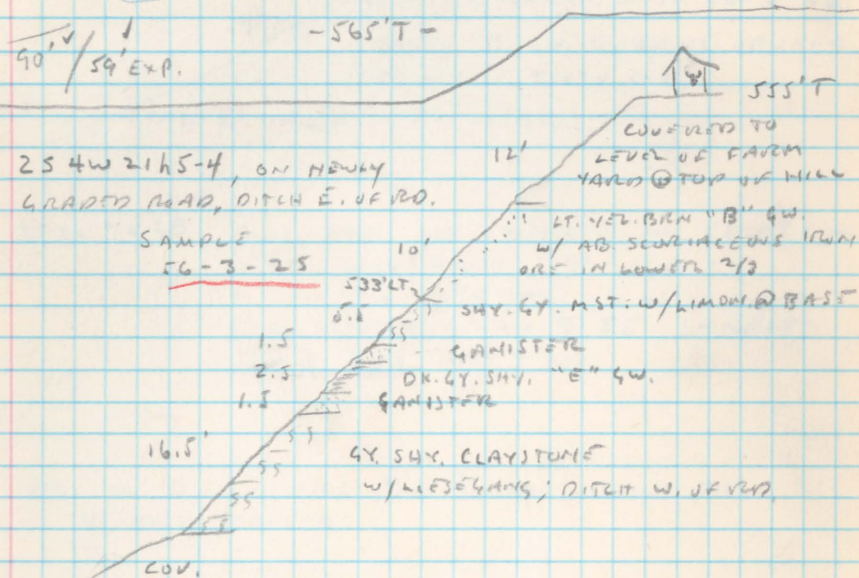
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sand, irregular fracture; mica's random;
~~some~~ some straight root impressions
 with random orientation; fairly cohesive;
 but poorly exposed in ditch east of
 road; basal contact not seen

Unit 11 6.0 covered to level of road near top of
 hill in front of house.



25 4W 8 g 2 CO, BARELY WX. + SLURRY, @ 480' T. Sample 56-3-26

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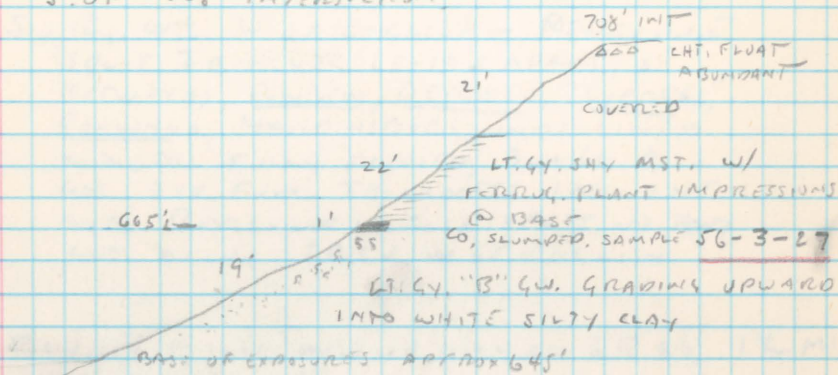
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354W119-62 ALONG GULLED DIRT ROAD
S. OF 708' INTERSECTION



353W70-58 SMALL ABD. STRIP MINET? IN FERRO? COAL.
ALT OF COAL 640' T. 3' CLAYEY 3IN.
BELOW, 3' + GW "E" ABV. N. V. 65. ON DUMP.
COAL RISES RAPIDLY TO SE. SAMPLE
56-3-28 ALT. 1' COAL.

OTCS ON HUNTINGBURG & ST ANTHONY QUADS, Q.V.
115 OTCS. MAPPED.

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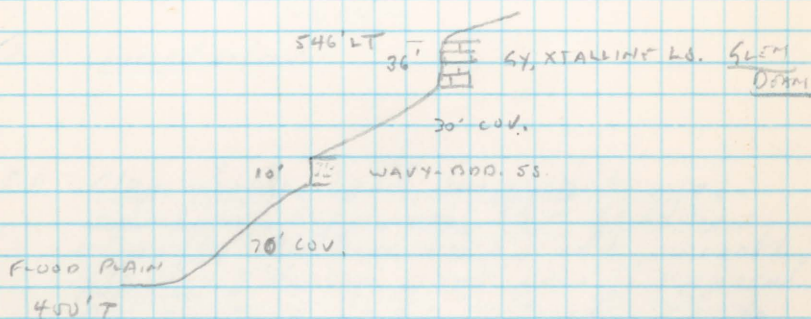
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651W 33e3 to 54, 12L GEORGE CLIFF,
 LEVELLED FROM FIELD @ BASE OF SLOPE



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St. Anthony

July 13, 1956

H.H.G. & R.L.P.

Section 93 35 4W 13 48 & 14 21 south
along ST 264 from 644 intersection 1 mile
SW of entrance to Ferdinand State Forest

- 644 -

Unit 1 2.0 Covered interval

Unit 2 8.0 Clay; shaley; light purplish-brown; indistinct, even, very thin bedding; slightly carbonaceous; soft; smooth, plastic; lower part poorly exposed but appears to be silty; blocky to platy fracture; poorly exposed in ditch west of road; bottom contact not seen.

- 654'4 -

Unit 3 0.7 Chert; black; one bed; finely x'line; rough blocky fracture; numerous fossils, including principally crinoid columnals, brachiopod fragments and possibly some pelecypods, fenestrate bryozoans and fusilines; well exposed in ditch west of road; bottom contact sharp; even; upper part is light tan, porous "Tripoli".

Unit 4 0.5 Covered, may be underlain by porous, leached, highly fossiliferous light gray to light yellow-brown chert "Tripoli", float fragments of which are abundant above chert of Unit 3, Tripoli is at least 1/2 foot thick and appears to directly overlie chert.

Unit 5 1.5 Covered interval

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34-35

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29-30

Unit 5 1.5 Covered, mottled gray & yellow-brown clay,
may be residuum of limestone.

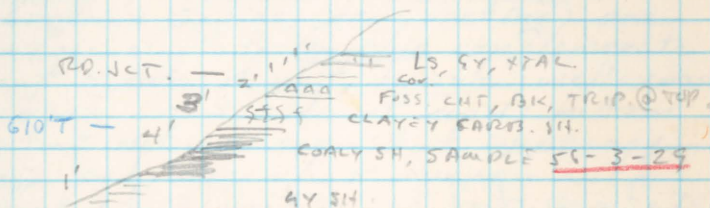
Unit 6 1.0 limestone; medium gray; one bed;
finely x'line; irregular fracture, no
fossils seen; cohesive, one block only
seen in ditch west of road; basal
contact not seen

Unit 7 11.5 shale; light olive gray; distinct, even, thin
bedding; soft, smooth, small platy fracture,
fairly well exposed in ditches and banks on
both sides of road; basal contact not
certainly seen but appears sharp.

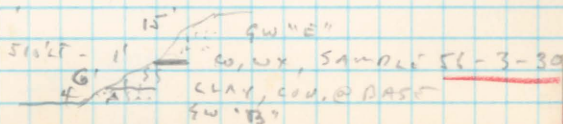
25' ✓ / 21' ✓ EXP.

- 669 L -

354W14C7, @ Jct W/FARM RD. TO S.



354W2182, Along RD. 1 mi. N. of FERDINAND, AND.
GREENICK.



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5. ACTIVITY

SECTION 94: 3S + W428, 5a1, 8h1, 59h8, ON RD
 TO W. OF S.R. 162 1/4 MI. S. OF BRETZVILLE,
 DUBOIS CO., @ 5081 INT.

-508'-

Unit 1 11.0 shale; medium gray; distinct, even, thin
 bedding; slightly carbonaceous; contains
 a few very thin, light gray, siltstone beds;
 soft; platy fracture, well exposed in
 ditches and banks at junction; bottom
 not seen

Unit 2 4.0 shale; dark gray; distinct, even, very
 thin bedding; carbonaceous; brittle;
 platy fracture; well exposed on both
 sides of side road; thickness ranges
 from 3 to 6 ft.; bottom contact
 gradational within 2 ft.

Unit 3 21.0 Greywacke; medium yellow-brown; distinct
 even, thin bedding; in medium scale
 lenticular cross-sections; medium sand,
 subangular grains, poor sorting; one
 conspicuous ^{5x} of clay-chip conglomerate
 about middle of unit; friable; well exposed
 in bank on S side of road; bottom
 contact not well seen but appears
 sharp and somewhat uneven with
 relief of 3 feet in 25 feet; Quartz 20
 30 clay; clay ironite, trace mica.

Unit 4 6.0 est covered to top of cut.

42' / 36' EXP

-550'

95 96 97 98 99 100 94 38 39 40 37 36 32-33 34-35 31

SE. Art. Harry

SECTION 95: 393W 7th to 6th, N. ALONG ROAD TO 676' INT. @ TOP OF HILL, 2 MI. SW OF KYANA

- 576' L -

Unit 1 8.0 covered from level of road at bridge

Unit 2 450 Graywacke; medium yellow-brown; distinct even, thin bedding in large scale lenticular cross-sets; Quartz to clay; clay limonite 30%; trace of mica; medium sand, subangular grains, poor sorting; rough blocky fracture; micas subparallel friable, fairly well exposed in ditch and bank east of road; bottom not seen; hollow ironstone pebbles abundant in some zones near top. ~~to~~ *Sisillaria*, etc. ~~more from~~ cut 1/4 MI. S. TOP IS somewhat LOWER IN CUT 705.

Unit 3 250 covered. IN RD. CUT 1/4 MI. S. THIS INTERVAL IS OCCUPIED BY: MUDSTONE, SHALY, LT. GR; MOIST. THIN EVEN BGS; SOFT, SMOOTH, MANY DIFFUSION BANDS UP TO 0.05' THICK; PLATY FRACT; SOFT, FAIRLY WELL EXP IN BANK & DITCH E. OF RD. BASAL CONTACT GRADATIONAL WITHIN 1'. UNIT IS SOMEWHAT THINNER IN CUT 705.

Unit 4 10 clay; light gray; indistinct, even, thin bedding; soft, smooth, somewhat plastic; numerous light purplish-brown plant impressions, mostly probably roots; irregular fracture; poorly exposed in ditch west of road.

Unit 5 2.0 shale; coaly; dark gray; distinct, even, very thin bedding; numerous very thin beds of fusain; small platy fracture, abundant

95 96 97 98 99 100 101 38 37 36 32 33 31
39 40 34-35

plant fossil fragments poorly preserved;
soft; poorly exposed in ditch east of road;
at base is limonite zone 0.05 feet thick;
basal contact sharp and apparently even
Sample 56-3-31
- 657' 67' -

6 8.0 Covered. IN CUT $\frac{1}{4}$ MI. S, THIS INTERVAL IS
OCCUPIED BY SLT, LT. GY, INDISTINCT UNIFORM THIN
BGS; CARBONATES, MICACEOUS; PLATY FRACT, MICAS II,
AB. PLANT FRAGS, SOFT, POORLY EXP. BASE SHARP.

7 2.0 Sandstone; light yellow-brown; apparently
one bed; quartz 90%, clay & clay limonite 10%
very fine sand; subangular grains, good
sorting; upper surface is somewhat
irregular; hard; resistant to weathering, forms
well defined small ledge in ditch west of road;
bottom not seen.

8 9.0 covered to level of 676' intersection

100' / 50' EXP. - 676' -

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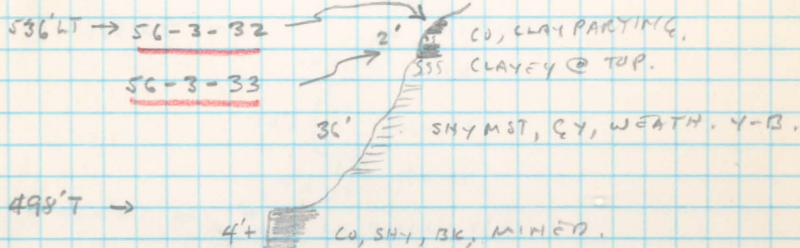
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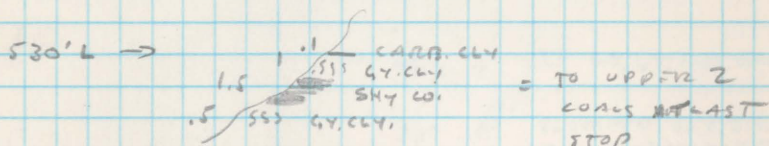
7/28/56

41065 RLP.

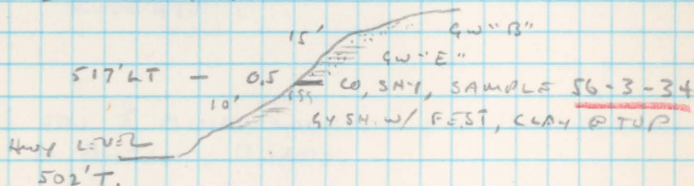
255W14 S4, ABD. STRIP MINE JUST S. OF RD.



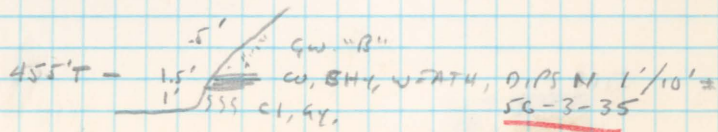
255W14 E2 IN E. DITCH OF RD. JUST N. OF INT.



255W22 E4 ALONG N. BANK OF COUNTRY RD. JUST E. OF S.R. 45.



255W15 E4 ALONG S.R. 45 1 MI. S. OF PATOKA R. W. SIDE OF RD.



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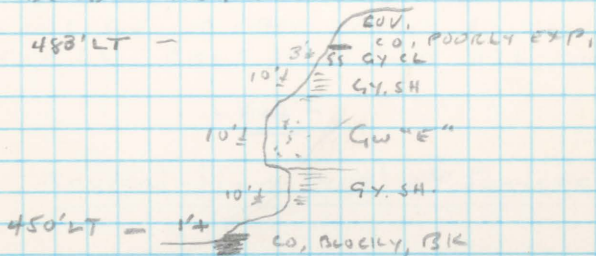
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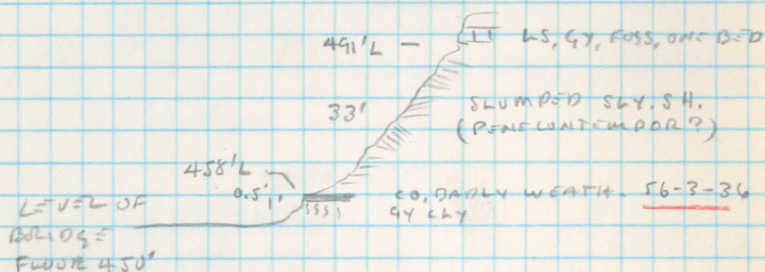
32-33

34-35

25SW 9 h 5, ON W. SIDE OF COUNTY RD. NEAR
BEND. STRIP MINE.



25SW 18 h 3? ALONG COUNTY RD JUST W. OF
COVERED BRIDGE ACROSS PATOKA RIVER.



66 OTCS. & MINES LOCATED ON HUNTINGBURG &
ST. ANTHONY QUADS.

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CANON 2704
Q

7/26/56

1116 ERLP

SECTION 96: MILLER HILL GS 2W 16E1 to 966,
ALONG RD. UP FROM VALLEY OF MIDDLE
DEER CK. BASE OF SECTION 422'; TOP 680' EST.

- 422' -

Unit 1 25.0 Covered from level of Bridge

Unit 2 8.0 shale; medium greenish-gray; distinct
even thin bedding; rough platy fracture,
soft; interbedded with siltstone; light
greenish-gray, slightly micaceous,
rough platy fracture, siltstone becomes
more abundant toward top, bedding
surfaces show numerous irregular
markings and flow structures; fairly
well exposed on ditch on south side of
road; bottom not seen

- 455' -

Unit 3 11.0 limestone; argillaceous; medium yellow-brown
finely x'line, nodular appearing; at least
one zone is fossiliferous with 12 or more
species of brachiopods; occurs mostly
as boulders in ditch, many of which are
slightly out of place; is most likely a
series of nodular limestones about one
foot thick interbedded with shale;
poorly exposed in ditch south of road;
bottom contact not seen, more completely
exposed in AUTUMN ROAD TO 5.

Units
3-4
are
Mm
1116
53

Unit 4 10.0 mudstone; shaley; medium greenish-gray;
indistinct, uneven, thin bedding; uneven
fracture; probably fossiliferous; interbedded
with medium beds of limestone, medium
gray; finely x'line, fossiliferous, cohesive

102

96

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poorly exposed in ditch south of road;
bottom contact appears sharp.

-476L-

Unit 5 20.5 Mst; sh; medium greenish-gray, mottled
with medium yellow-brown, indistinct
even, thin bedding; irregular fracture;
poorly exposed in ditch south of road,
bottom contact apparently sharp. IN ALTERNATE
ROAD JUST S. 2' Foss. CALC. SS. SHOWS AT POS. 10.
OF TOP OF THIS UNIT OR AT POS. OF UNIT 6.

Unit 6 3.0 siltstone; medium olive-gray to dark
redish-brown, distinct, even, thin bedding;
micaceous; rough platy fracture;
numerous cylindrical mud lumps on
some bedding surfaces; cohesive; poorly
exposed and partly slumped in ditch
south of road; bottom contact not seen.

-500L-

Unit 7 28.0 Mudstone, similar to that of unit 5;
toward top are several beds of siltstone
similar to those of unit 6; entire
unit is poorly exposed and parts are
largely covered.

-528L-

Unit 8 11.0 Covered, float of greenish-gray mudstone
and yellow-brown argillaceous limestone
verified by exposing along ALT. ROAD TO
S.

Unit 9 4.0 Shale, medium olive-gray, indistinct
even, very thin bedding; micaceous,
small platy fracture, micas parallel
bedding, soft, poorly exposed in
ditch south of road; bottom not
seen.

Unit 10 3.5 Limestone and breccia, mottled light gray to medium yellow-brown, bedding absent, fragments of several varieties of ls. up to 12 mm dia. angular grains poorly sorting, random fabric, abundant brachiopods of two or more genera, fairly cohesive, forms small but persistent ledge, well exposed in bank on south side of road; bottom contact not seen.

MP

Unit 11 24.5 Mostly covered, scattered outcrops of fossiliferous, calcareous sand near base; most of unit appears to consist of soft redish and greenish mudstone, toward top are several feet of clay which may be somewhat slumped and a few loose plates of finely x-line gray ls. K.L. found to N. rd. fall '61 N.H.S.

M
P

-570' L-

Unit 12 21.0 Covered, several feet of slumped clay occurs at base ~~occurs at base~~, followed by scattered slumped plates of graywacke and siltstone, soft gray shale can be dug from bank near middle of unit.

Unit 13 5.5 Sandstone, light yellowish-brown, distinct uneven medium bedding; quartz 90% clay & clay limonite 10%, Qz, very fine sand, subangular grains, poor sorting, few ripple marks, some bedding surfaces heavily coated with limonite, rough platy fracture

cohesive, well exposed in ditch west of road; bottom not seen.

Unit 14 240 siltstone; light purplish-brown to light yellowish-brown; distinct wavy to uneven thin bedding; micaceous; in part carbonaceous, poor sorting, lumpy flow rolls on many bedding surfaces, rough platy fracture, micas subparallel, cotton and somewhat friable, but well exposed in ditch west of road; basal contact gradational within one foot, limonite diffusion banding along widely spaced vertical joints
- 62' -

Unit 15 8.5 Graywacke, medium yellowish-brown; distinct, even, medium bedding, quartz 20, clay & clay limonite 30, trace Q & O trace mica, very fine sand, subangular grains, poor sorting, one set large ripple marks, asymmetrical indicate north flowing current two or three zones of small clay chip conglomerate some small pebbles of white translucent quartz, only slightly rounded, blocky fracture, micas parallel, cohesive, fairly well exposed in ditch west of road but somewhat slumped in part, basal contact appears sharp.

16 500 covered

Unit 17 7.0 Graywacke, medium yellowish-brown, distinct, even, medium bedding; quartz to clay & clay limonite 30 fine mica trace & x0, very fine sand, subangular grains, poor sorting, few small ripple marks seen in float fragments, blocky fracture, mica parallel, cohesive, poorly exposed in ditches on both sides of road, probably slightly slumped, bottom not seen.

Unit 18 6.0 Covered

Unit 19 2.0 Mudstone, shaly, light olive-gray; indistinct even thin bedding; micaceous slightly carbonaceous, rough, platy fracture, mica parallel, ~~with~~ numerous limonite concretions in several zones, soft but fairly well exposed in ditches on both sides of road, bottom not seen

Unit 20 16.0 Graywacke, light yellowish-brown, distinct even thin bedding, medium scale lenticular cross-sets more apparent at top than at base, quartz to clay & clay limonite 40, fine mica trace & x0; very fine sand, subangular grains, poor sorting, platy fracture, mica parallel; somewhat friable but fairly well in ditches on both sides of road, bottom contact sharp and apparently even. Upper 1/3 of unit not completely exposed.

Unit 21 22.0 Covered to crest of grade near
junction with private road.

27' / 156' / 68' EXP Tm - 69' L -

SECTION 97: 6s + w 9c 8 to c 8, ALONG RD. 1/2 MI.
C-A4 PIT 1/2 MI. N. OF S.B. TO. BASE
OF SECTION 380' T, TOP 465' T.

- 380' T -
390' T

(Elev. abt 10' 90')

Unit 1 2.0 Graywacke, light yellowish brown; distinct
wavy thin bedding in small scale
lenticular cross-sets, quartz 70, clay
and clay limonite 30, trace mica, trace
carbonaceous material, very fine sand,
poor sorting, platy fracture, micaceous
parallel, cohesive, well exposed at
NE bridge abutment, bottom not seen

Unit 2 4.5 Graywacke; light yellowish-brown, distinct
even, thin bedding in medium scale
lenticular cross-sets, quartz 80, clay
& clay limonite 20, trace mica, trace
QXO, platy fracture, micaceous parallel,
cohesive, forms strong ledge face about
100 feet along creek NE of bridge,
individual bedding units and lower
contact dip noticeably SE, basal
contact interleaved within one
foot

Unit 3 5.0 Covered

Unit 4 5.5 mudstone, clay at base, silty at top, light purplish-brown to light yellowish-brown, indistinct, even, thin bedding, micaceous, carbonaceous, few small pyrite concretions, rough platy fracture, mica parallel, fairly well exposed in ditch east of road, basal contact not seen.

Unit 5 11.5 Covered long shots and stratigraphic interval may not be correct

Unit 6 2.0 Graywacke, gneiss, light gray, indistinct, uneven thin bedding to bedding absent quartz 80 clay and clay limonite 20 trace mica trace QXO, very fine sand poor sorting, blocky fracture numerous root impressions, hard, poorly exposed in ditch east of road, may be somewhat slumped, bottom not seen.

Unit 7 11.0 Mudstone, medium purplish-brown, bedding absent to indistinct, uneven and thin, micaceous, locally slightly carbonaceous, very silty, irregular fracture, mica random, numerous root impressions also random, fairly cohesive, poorly exposed in ditch east of road,

basal contact not seen but
apparently sharp.

Unit 8 5.0 covered, may include some light
gray plastic ~~carbon~~ clay.

439LT Pos. of unit?

Unit 9 8.5 Siltstone, medium slint-gray, disint,
wavy, very thin bedding, micaceous,
small platy fracture, mics parallel,
fairly cohesive well exposed at
entrance to pit on east side of
road, basal contact not seen.

10 2.5 Graywacke, dark gray, bedding mostly
absent but locally showing indistinct
even very thin bedding, quartz 50
clay 50; very fine sand, poor
sorting, conspicuous, micaceous,
irregular fracture, mics random,
fairly cohesive, well exposed in
east wall of pit, bottom contact not
seen. numerous plant fragments in
bedded part of unit.

11 1.0 Graywacke, medium yellowish-brown,
distinct uneven, thin to medium
bedding, quartz 80 clay and clay
inverte 20 fine mic fine 2x10
very fine sand, subangular grains,
poor sorting, locally shows peculiar
flaw fluting (rooster tails)
brachiopods sparsely found in upper part

of unit, cohesive, well exposed in east wall of pit, bottom contact sharp and somewhat uneven but unit is laterally persistent.

-442' LT - 452 LT

- Unit 12 0.6 Limestone, dark gray, bedding absent, finely x'line, fossils mostly brachiopods and crinoid stems abundant, hard, well exposed on east face of pit, bottom contact gradational within 0.1 foot.
- Unit 13 0.7 Shale, medium olive-gray, indistinct, even, thin bedding; irregular fracture; numerous fossils, mostly small; soft, well exposed on east face of pit, bottom contact gradational within 0.1 foot.
- Unit 14 1.0 Limestone, medium gray, bedding indistinct to absent, finely x'line, probably highly argillaceous, blocky fracture, contains numerous crinoid stems, several genera of brachiopods and bryozooids and microfossils; weathers to soft light yellowish-brown surface; well exposed in east wall of pit, top and bottom of unit are deeply weathered and are represented only by a shaly residue, bottom contact gradational within 0.1 foot.

Unit 15 12.0 Siltstone, ~~shy~~, medium olive-gray, distinct, wavy, thin bedding, micaceous, platy fracture, micas parallel, soft, but well exposed in east wall of pit, basal contact sharp and apparently even.

Unit 16 1.5 mudstone, medium purplish-brown, bedding absent, carbonaceous and micaceous, irregular fracture, micas random, soft, poorly exposed above main working face, basal contact gradational within 1.0 foot

17 1.0 clay, light gray, plastic, poorly exposed containing one or two thin smut streaks,

18 1.5 Covered.

-460 LT - 470 LT

19 2.0 Tripoli and chert, medium gray to white, scattered black at top of overburden not sufficiently in place to determine the stratigraphic arrangement, but it appears that the tripoli occurs between two beds of chert. Fossil brachiopods sparse.

20. 3.5 COVERED TO CREST OF GRADE 5 UNIT RD. ONLY SCATTERED SHOWS OF UNITS 15 & 19. SHOW

85' / 50' Pn EXP

-465 LT - 475 LT

DATE
9-11-1960
PAGE

SECTION 98: 355W 23N 1 TO 1 ± 24 N 8 TO 18, AUNGS
CO. ROS 2 mi. N. of ST HENRY BASE OF
SECTION 510'T, TOP @ 585'T.

-510'T - 505'T

Unit 1 10.0 Covered from level of road at culvert.

-520'LT - 515'LT

Unit 2 5.0 Chert, light gray to light yellowish-brown, distinct
even thick beds, shaly x'line, irregular
fracture, hard, fossils locally common,
mostly gemmules, aripids, large spirifers
and other tracheopods well exposed in
ditch east of road, bottom contact sharp
and even but underlying rock not
seen.

Unit 3 1.5 Shale, siliceous, medium olive-gray
distinct very thin bedding, platy
fracture, fossils sparse as molds,
hard, fairly resin lamin, fairly well
exposed in ditch east of road, the
more siliceous parts of this unit
appear as concretions and weather
out in relief, bottom contact sharp
and even

Unit 4 2.5 Shale; clayey, light olive-gray at
base to light gray at top, indistinct
even very thin bedding, platy
fracture, soft, poorly exposed in
ditch east of road, basal contact
apparently transitional within
1/2 foot.

Unit 5 1.5 Mudstone, carbonaceous, dark purplish-brown, bedding absent, finely micaceous, irregular fracture, micaceous random, poorly exposed in ditch east of road, basal contact gradational within 1/2 foot.

Unit 6 1.0 Coal; shaly, black, distinct even thin bedding, small platy fracture, poorly exposed in ditch east of road, partly due to slumping of overlying unit, and it may be that full thickness of coal is somewhat greater, basal contact sharp and apparently even - 56-3-37

- 532' LT - 527' LT

Unit 7 16.0 Graywacke, light yellowish-brown, distinct, very, medium bedding is medium scale, particularly cross-beds, Quartz 80 clay and clay laminae 20, trace mica, trace QXO, very fine sand, subangular grains, good sorting, irregular fracture, micaceous random, friable, but well exposed in ditches and banks on east sides of road, basal contact sharp and apparently somewhat uneven.

Unit 8 6.0 Covered

Unit 9 17.0 Graywacke, light yellowish-brown, distinct wavy thin bedding, quartz 70 clay & clay limonite 30, trace mica, trace Qtz, very fine sand, subangular grains, poor sorting, irreg clay ripple marks common, rough platy fracture micas subparallel, Coag. exposed, fairly well exposed in ditch west of road, bottom contact not seen.

10. 15.0 Graywacke, medium yellowish-brown distinct, even, medium bedding, quartz 70 clay and clay limonite 30 trace mica, very fine sand, subangular grains, poor sorting, platy fracture micas subparallel, friable, poorly exposed in ditch west but better exposed in north ditches on south side of hill, basal contact appears gradational within about 5 feet.

76' / 60' EX / 11' PM - ~~586~~ T - 581 T
EX 12

LOCATED 26 OTLS. & MINES ON ST. MCINRAD. TELL CITY, & HUNTINGBURG QUADRANGLES.

Higgins way

7/27/56

NN8 & RLP

SECT. 99 234W 3095 to 15. S. ALONG RD.
FROM LAKE BOTTOM TO HILL TOP.

- 495' T -

Unit 1 5.5' Covered from level of road at stream

Unit 2 6.0' Graywacke, light yellowish brown, disconform, even, thin bedding in medium scale, conchoidal cross sets quartz 70 clay and clay limestone 30. trace mica, trace QXO, very fine sand, subangular grains poor sorting, irregular fracture, mica subparallel, zone of lignite impregnation about 0.1 foot thick at the top, weathers into small platy fragments, friable, but fairly well exposed in ditch west of road base not seen.

- 50' LT -

Unit 3 4.0' Shale, light gray, grading upward into siltstone, gray, light gray, distinct, even, very thin bedding, micaceous, platy, fracture, mica parallel, soft, and poorly exposed in ditch west of road, basal contact not seen.

Unit 4 22.5 Graywacke, light to medium yellowish-brown, distinct, even, thin bedding in medium scale lenticular cross-sts. Quartz 60, clay and clay limonite 40, trace mica, fine sand, subangular grains, poor sorting, irregular fracture, micas random, friable but well exposed in ditch west of road, upper 3 feet or so is more cohesive and forms a weak ledge, basal apparently sharp.

Unit 5 27.0 Covered to top of hill.

65' 33' 11m exp. - 560'T -

SECT. 100: 254W 18d.5 TO C6, ^{SW} ALONG COUNTY RD.
1/2 MI. SW. OF MATTERVILLE. BASE OF
SECTION 480'T; TOP 560'T.

- 479'T -

Unit 1 31.0 Covered from level east of private road to west,

Unit 2 21.0 Graywacke, light yellowish-brown to light purplish brown, distinct even thin bedding. Quartz 70, clay and clay limonite 30, trace mica, fine & O very fine sand, subangular grains, poor sorting, platy fracture, micas subparallel, friable; interbedded with about equal amounts of

siltstone, dark olive-gray, distinct, very to even, thin to very thin bedding, micaceous, carbonaceous, mica up to 2 mm diameter, platy fracture, micas parallel, friable. Individual units are a foot or so thick and have transitional contacts, base of unit as whole not seen, where deeply weathered unit as appearance of mudstone.

Unit 3 3.0 Covered.

4 18.0 Graywacke, dark reddish-brown, distinct, even thin bedding in medium scale (vertical cross-sections), Quarts 70 clay and clay (monite 30, trace mica, trace AXO, fine sand, subangular grains, poor sorting, heavy red iron oxide bands up to 0.1 foot wide in middle part of unit, irregular fracture, micas random, friable, poorly exposed on both benches and ditches, bottom contact not seen.

5 22.0 Covered.

6 9.5 Graywacke, medium yellowish-brown, distinct, even, thin, bedding in medium tabular cross-sections, Quarts 70, clay and clay (monite 30, fine sand, subangular grains, good sorting, blocky fracture, micas random, somewhat friable but well exposed on road bed near top of hill, basal

contact not seen.

7. 510 covered to top of hill

82' / 49' R.R. exp. -561 T-

SECTION 101: 255W 36 d to b G & 7 ^S _{ROAD} _{SEC} _{J.R. 64 &} _{501. R.Y.} [^] _{AWAY COUNTRY}

-450 T-

Unit 1 36.5 covered from level of bridge at R.R. Xing.

Unit 2 2.5 Mudstone, light gray to medium yellowish-brown; indistinct, uneven, thin bedding, soft, smooth, somewhat plastic, irregular fracture, poorly exposed and somewhat slumped in ditches on both sides of road, bottom contact not seen.

-484 LT-

Unit 3 0.5 Chert, dark gray, bedding absent, pinky x' line, rough blocky fracture, scattered brachiopods and numerous smaller fossils, hard, brittle, forms weak ledge in both ditches, bottom contact sharp.

Unit 4 0.3 Chert, similar to unit 3, but largely weathered to dark yellowish-brown to olive, bottom contact apparently sharp and uneven.

Unit 5 6.0 Mudstone, shys, dark olive-gray mottled with medium brownish-yellow; indistinct, even, very thin bedding; several zones of pseudo oolites

Sample Can 5-13

botryoidal iron oxide, irregular fractures, soft but fairly well exposed in both ditches, bottom contact not seen,

Unit 6 5.5 Clay, shy, med. gray, bedding indistinct to absent, soft, smooth, somewhat plastic, irregular fracture, numerous root impressions with random orientation particularly at top, well exposed in ditches on both sides of road. basal contact gradational within one foot. True stratigraphic thickness of units 5-6 may be less than shown because of apparent northward dip. on the other hand these units may thicken southward as sheet does not appear to dip as steeply as coal of unit 7

Unit 7 1.2 Coal, black, distinct even, very thin bedding, largely clastic with some very thin bands of vitrain and lignin, platy fracture, well exposed in ditch and bank on both sides of road, bottom contact sharp. Sample 56 - Coal continues to rise to south.

- 503' LT -

Unit 8 5.5 Shale, dark gray, distinct even very thin bedding, carbonaceous, slightly micaceous, papery fracture, brittle, well exposed in banks on both sides of road, thins to south where cut out by graywacke of unit 9, basal contact sharp and even.

Unit 9 10.0 Graywacke, light yellowish-brown, distinct, uneven, medium bedding, consists 80 clay, 20 clay limonite 20, trace AXO, very fine sand, subangular grains, good sorting, rough blocky fracture, cohesive, well exposed in bank east of road, bottom contact sharp and slightly uneven, with relief of 0.1' in 1.0',

Unit 10 40 est. Covered to top of bank 523' T = 72' / 32' LTP / 15' T.P.M.

HUNTINGTON

7/27/56

25

18155 ERCP

S-2, 102: 3S 4W 18 E 6 TO E 4, EAST ALONG CO. RD.
UP FROM HUNLEY CK. TO TOPO. BENCH @ EAST
OF GRAD. EAST OF SECTION 495 T, TOP, 555 T.

-493 T-

- Unit 1 1.0 Covered from level of bridge over tributary to
Hunley Creek, about one foot of
white clay shales in creek 5' below
bridge
- Unit 2 3.5 Graywacke, medium yellowish-brown, distinct,
even, very thin bedding, small scale
articulate cross-sets; quartz 60 clay &
clay limonite 40, trace mica; platy
fracture, mica parallel, very fine grains,
poor sorting, friable, poorly well exposed
in bank north of road, bottom contact
not seen.
- Unit 3 4.0 Graywacke, medium gray, distinct, even, very
thin bedding, quartz 50 clay and clay
limonite 50, trace mica, trace
carbonaceous material, very fine sand,
poor sorting, platy fracture, mica
plates and carbon fragments parallel
bedding, soft, poorly exposed in ditch,
and bank north of road, bottom contact
not seen, unit appears to dip slightly to
east, and it may be that lower part
of this unit is stratigraphic equivalent
to upper part of unit 2.
- Unit 4 2.5 Covered

Unit 5 17.0 Graywacke, medium yellowish-brown, distorted even to uneven, thin bedding, partly in tentacular cross-sets, Quartz 80, clay and clay limonite 20, trace mica, fine sand, subangular grains, good sorting, irregular fracture, lower part friable with random micaceous, upper part more cohesive with sub-parallel micaceous, entire unit is poorly exposed in ditch and bank north of road, bottom contact not seen.

Unit 6 6.0 Covered

Unit 7 17.0 Sand stone, light yellowish-brown, distinct uneven, medium bedding, partly in medium scale tentacular cross-sets, quartz 90, clay and clay 10, trace mica, trace QXO, fine sand, subangular grains, good sorting, blocky fracture, micaceous subparallel, fairly cohesive, exposed in brush covered bank south of road, bottom contact not seen.

Unit 8 12.0 Covered, streaks of dark reddish-brown soil and float fragments of gray chert may mark approx position of Ferdinand 6.

-556' T-

63' - 42' Pm Exp.

^{186'}
35501208, MINSHALL ? CO. - L.S. FLUAT
BLOCKS, 5' CO, 3' CLAY, 1' CO @ 565' T. 56-3-38

255034 d 8 COAL - II ? - GOOD EXPOSURES,
30' + ss. sh, 5' CLAY, 1' CO @ 565' LT, 5' CLAY, 1' CO @
570' LT, 3' CLAY, PITS IN HILL FOR PROB. FOR L.S.
Upper coal 56-3-40. Lower coal 56-3-39

