doc. 517

UNITED STATES
DEPARTMENT OF THE INTERIOR

DI-6

APPROVED DECEMBER 1941

K.M. Waage.

Czsselman Field Notes

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Hole 21 — Notes: 364-6 to 365 — irreg. bedd'd ls + greenish sh. ls. masses with marine fossils.

Bk — 436	Black to gray siltstone, interbedded ss in basal foot.
436 — 443	Shaley claystone grading to silty clay band with many nodules. Festone cones in upper 2'
449-9	Dense gray fine sandstone, calcareous thruout upper part becoming silty below.
467-4	Gray to dk gray silty clay ~~stone~~ + 5' lignite + worm streak inclusions ~~thruout~~ upper 5' (3" blk cl. sh at base)
476-6	Gray silty claystone ~~grading to~~ becoming shaly + sandy streak ~~claystone~~ downward. (Upper 6' ~~with~~ frequented with large rounded sand grains)
481	Greenish gray sideritic siltstone minor silty claystone at top
492-6	dk bedded gray siltstone & sandstone
496-10	Silty claystone & semiplastic clay, 3' dense gray shaly clay at top.
504-7	dk bedded siltstone and ~~sh~~
507-7	Mottled gray silty clay & claystone ~~grey~~ ironstone nodules
515	Gray shaly siltstone sandy streaks, ~~Grey~~ Lignite gray shale zone in lower Part
517-4	Fine ss, silty streaks.

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532-8	Gray to black carbonaceous shale, silty in upper 2'.
533-10	Coal. (Pittsburg)
536-2	Carbonaceous claystone ~~grading to stem fragment shale~~ (plant fossil), streaks of coal.
538-9	Interlaminated dark shaly siltstone and white ss.
539-9	Black shale
542-4	Coal - Upper Freeport.
546-7	Dense gray silty claystone, few calc. pellets in lower half.
563	Argillaceous siltstone and silty claystone, zones of limey pellets and argill. limestone thruout.
572-6	Argillaceous sandstone & siltstone (dark gr.); zones argill ls + limey pellets thruout.
574	Argillaceous ls.
578	Fragmental claystone grading to ~~silty~~ semiflint + siliceous flint. Light gray to brown gray, whole shot thru with irreg zones + stringers (Lith Bol^{H} 1 upper 1' Bol^{H} 2 Lower 1'.)
586-6	~~Finely silty~~ gray to green ~~clay~~ semiflint clay locally finely silty, calc. stringers and fine sand impr. an fossil 1 ft.
589-4	Fragmental silty claystone + argill siltstone and fine ss. (dark gray to tan) ~~to~~ dark gray siltstone & shale (Lith B-3

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589-8	Argillaceous limestone
605-0	Light and dark gray semiplastic clay very finely silty locally, minor calc. stringers. Basal 4' includes claystones and fragmental claystones. (Lith. B-4 & 5 from lower 4')
611-10	Silty & sandy gray claystone
617-7	Sandstone some interbedded siltstone.
623-7	Dark gray to carb. silty shale - plant frags interbedded ss in upper 18"
626-11	Coal.
635-9	Dark + light gray silty claystone 2 feet of fragmental semiplastic clay at base (Lith H-1)
650-10	interbedded siltstone and sandstone minor clay shale in middle part
651-2	Carbonaceous shaley clay
656-11	Dark gray clayey siltstone, plant rootlets in upper part, ironstone in basal foot.
656-9	Dark gray clay shale grading to brownish semiflint, finely silty.
668	Finely interbedded to interlaminated gray to black silty shale and light sandstone
670-2	Dark gray shale.
671-0	Coal + bone.
677-4	Carbonaceous to dark gray clay shale

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	~~coal shaly clays~~ with plant rootlets thruout.
679-4	Coal
680-7	~~Dark~~ Gray silty claystone, plant rootlets
681-7	Fragmental pyritic claystone & siliceous flint clay (Lith) LA-1
682-8	Silty claystone, brownish gray.
693	interbedded siltstone and fine sandstone
724-8	Med. grained sandstone, few clay partings small stylolites
727-4	dressy, interbedded gray siltstone and fine sandstone (1 inch zone of intermixed clay + coal flecks at 725-2)
736-2	Med. to med + quartzitic stylolitic sandstone
746-4	dressy, interbedded dark gray siltstone + fine sandstone.
748-4	Dark gray semiplastic clay, coaly zone at top.
749-11	Coal
752-7	Core loss - driller says bone.
758-7	Gray to dark gray silty ~~claystone~~ semiplastic clay, 3" of ss at base.
758-9	Bone (coaly)
763-10	Gray silty claystone + semiplastic clay - rootlet remains.

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766	Carb shale coaly streaks.
~~769-6~~	~~Interbedded dark shale and~~
769-6	Med gr ss with wavy interbedded carb. streaks
770	Coal
776-8	Gray to brownish gray claystone, ~~massive~~, silty, ~~to~~ grading to siltstone in lower 1½'
785-4	Interbedded siltstone and fine sandstone
787-6	Dark to carb claystone, 6" of dark ~~coal~~ semi flint.
790-5	Dark to carb shaly claystone. 2" coaly bone at top.
792-2	Coal
~~798-8~~	Dark argillaceous siltstone with plant
9	rootlets grading to sandy siltstone
~~796-6~~	

Bottom.

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		Mine	Owner or Operator	
1	Slope	Beachy #1	Meyers Coal Co.	Upper Freep
2	Crop	Beachy		UF
3	Crop	Butler		
4	"	Gumshoe		UF
5	"	Old Patton	Yoder	UF
6	"	Bowman H.L.		
7	Slope	Bender + Beachy		" UF
8	Crop	Sloan (Patten		UF
9	"	Beachy		Brush Creek
10	"	no info		" "
11	Crop	Bill prospect		?
12	Crop	Shaw mine		UF
13	Crop	Opel "		UF
14	"			~~L~~ Bakerstown
15	"	Hackman "		UF
16	"	Stanton, Guy	Sherman Miller	LB
17	"	McKenzie	John Hershiger	UF
18	"	——	Fred Yoder	BC
19	"		Earl Stanton	UF
20	"	Ridgely Mine	Norman Baker	UF
21	"	Old " "		"
22			Paul Kinsinger	UB
23			" "	LB
24		2 openings	Orville "	LB
25	"	Harry Broadwater	Fred Yoder	LB
26	"	Tadpole	John Hershiger	LB
27	"	Broadwater	Stanton-Rutherford	LB?
28		Old Brenneman		LB ??
29	"	Brenneman		LB

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Hole 22

0 + 18	
25-7	Dark gray silty clay grading to shaley siltstone, sandy at base, (3' core loss)
28-6	Grey sandy shale, carbonaceous, pyritic at base.
29-5	Coal
44	Gray calcareous clay becoming silty downward, zones siltstone in lower 4'.
78-6	Interbedded shaley siltstone and fine sandstone.
97-2	Medium grained, x-bedd. sandstone, coarse zones, gray to dark gray, coaly partings in middle part, carbonaceous at base
99-2	Calcareous silty clay
104	Argillaceous limestone
123-0	Calcareous silty clay, inclusions of argillaceous limestone.
135-2	Greenish gray and gray silty claystone & clay. Irony nodules and streaks in upper part.
141-7	Interbedded siltstone and fine sandstone
150-6	Gray silty clay shale, gray siltstone with carb. shale inclusions in basal foot
156-9	Silty semiplastic clay grading to clayey siltstone
162-4	Silty gray clay, calcareous stringers

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183	Fine grained calcareous sandstone, siltstone interbedding in upper part.
191-4	Silty gray shale.
220-7	Black shale with marine fossils.
222-4	Coal.
248-0	~~Irregularly interbedded~~ chiefly interbedded limey gray clay & claystone with limestone pellets, zones of argillaceous limestone in upper part.
251	Mottled greenish gray & red shaley clay.
252-8	Dark gray to black shaley clay.
254-41	Silty green claystone.
257-6	Argillaceous limestone
269-2	Greenish gray silty clay, limey pellets in upper 2/3.
273-6	Grey to dark grey semiplastic clay.
287-8	Greenish gray to gray shaley siltstone, limey zones in basal foot, minor(?) shaly clay at top. (Sandy zone in middle part - Sabellum?)
290-5	Gray to black clay shale
295	Grey shaley siltstone, limey & pyritic zones.
296-5	Black, pyritic silty claystone.
299-9	Coal - Upper Bakerstown.
303	Irregularly interbedded sandy claystone and pyritic argillaceous limestone
305	Black pyritic silty clay.
311-3	Silty clay & claystone, limey pellets & inclusions
334-5	Gray and dark gray shaley siltstone, zones of silty claystone, 2' silty clay

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30	c Jacob Kinsinger	———	LB
31	James Bottinger	Hampton Butler	LB
32	Old Butler	" "	LB
33	New Butler	" "	LB
34	Harry Wildit		LB
35	Elijah Livengood	ACC	LB
36	Ray Bellmeyer	John Orr	LB
37	Everett Platter		LB
38	Handwerk	Victor Mines	LB
39	Chris Yoimmer	" "	LB
40	Elmer Miller		LB
41	Butler Sugar Camp		BC
42	Morgart # 1 (Louis) now	ACC	LB
43	Elmer Miller		LB
44	Harry Miller		LB ?
45	Morgart UB		UB
46	Ross & Ambrose		LB
47	Hoover		LB

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at top.

336-9 Dark gray silty shale

338-7 Coal Lower Baker town

346-6 Dark gray to gray silty clay with 6" zone argillaceous limestone in middle part.

363 Gray silty shale, sandy in upper 4'.

373 Greenish gray + gray silty clay (upper 1' dark, pyritic.) siderite pellets in lower part. (locally calc.)

377-8 Red + green claystone, limey zone in middle part

383-4 Fine sandstone with zones sandy siltstone

402 Interbedded shaly siltstone + fine sandstone. ~~Brown~~ gray siltstone in lower 2'

405-5 Black silty shale with calc. nodules + marine fossils.

405-6 Coal

412 Gray silty clay, limey pellets

434 Greenish gray ~~shaley~~ siltstone, calc. stringers. Sandstone 430-433

451 Gray shaley siltstone grading to dark gray silty shale

467-11 Black shale, with calc nodules + marine fossils

469-4½ Coal. Brush Creek.

485 Silty gray + dark gray clay + claystone with calc. pellets + zones argillaceous limestone...

499 Gray silty claystone and siltstone. 30' Sandstone 489 to 491

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Major stratigraphic trends in Castlemen.

Conemaugh:

Presence of marine zone between Brush Creek and Lower Bakerstown. Occurs locally above Buffalo sandstone.

Development. —

Max. = Coal (thin) overlain by marine shale (fossils) and underlain by calcareous underclay.

A considerable thickening of the L.B. - B.C. interval accompanys the occurence — also peripheral zone marked by

1. Increased L.B - B.C interval
2. Lines clays of underclay type at about 60 to 65' above B.C.

Further from holes with marine zone L.B - B.C interval decreases and red bed — often with calc. nodules, comes in at the horizon.

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Church property E end
Attitude on coal
14° N.E., 8° W

Mine on Pig Shade
GO NE 8° SW

July 11 — Traverse with transit Valley
#1 two openings with 15+ ft shale roof
Marine fossils in shale — Harlem ✓

July — D&S in old Locust Strip — N 42 E. 40 W

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506-6	~~Interbedded~~ green siltstone, w/ thin zones of calcareous sandstone.
509-6	~~Interbedded~~ fragmental sandy claystone and silty clay.
529-8	Interbedded greenish gray siltstone + shaley siltstone, zones fine SS in upper half.
537-4	Gray silty claystone.
558-6	Green to gray siltstone and shaley siltstone minor silty claystone in upper part. Lower 4' with much interbedded fine SS.
567-4	Gray to dark gray shale.
569-4	Dark gray to black clay with numerous coaly partings in upper part. Coal
571-4	~~Black~~ shale
577-9	Gray, interbedded dark gray siltstone and white sandstone
590-2	Dark gray shale, soft sandy streaks
594-6	Coal - Upper Freeport
603-10	Argillaceous limestone + limey claystone
607-10	Fragmental silty claystone
617-0	Light to dark gray, tough, silty semiplastic clay
621-8	Gray semiplastic clay, zones argillaceous limestone + ironstone concretions
631-2	Gray silty claystone grading to siltstone. Sandy zones in basal 2'
652-10	Medium grained quartzitic, slightly

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	sandstone
655-10	Coal - Upper Kittanning.
660	Argillaceous limestone grading to limey claystone.
662	Gray siltstone.

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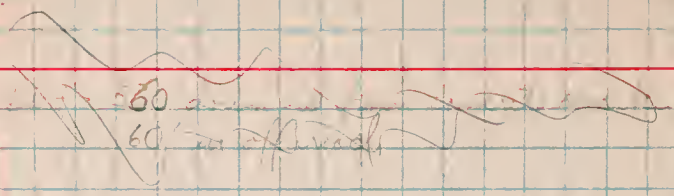

Fuel: Ship

Rosyn coal

Tubes leaking present distance water 20 feet above DK

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Monday Aug 9

(1) [illegible] of [illegible] soft clay [illegible] with [illegible] fragmental [illegible] SS [illegible]. Topog expression suggests hill with SS cap [illegible] by the [illegible]. Soft clay worth testing. Good possibility it is all [illegible] SS cap [illegible] be easy strip.

(2) [illegible] dense [illegible] area [illegible] around

(3) [illegible] underlain [illegible] by varieties of claystones [illegible] dark gray [illegible]. No [illegible] places [illegible] float at X. Blue [illegible] clay at X near base of slope may be sunken in part but quite plastic (derived from above?).

Up hill [illegible] — [illegible]

(4) No [illegible] Coal [illegible] streak [illegible] 24 paces [illegible]

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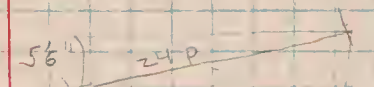

shaley thin between – Dip 9° W, strike between N 60° E + N 8° W

SS comes out at top

Fault plane with gouge

L+S N 86° E, 9-12° W at SE end of face

coal showing on face

SS arch

18" coal

4-10 ft. lab + roof shale (9" to 1')

3 coal

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Bowman Bros. stripping

Shale with concretions

Coal 18"

Sh. Binder 1"

Coal 23-24"

~~Similar runs measured - [illegible]~~

~~many [illegible] 6" [illegible]~~

Meadow Mt. —

Attitude - Shaley siltstones & ss
in lower cut - Mirabeau Mine
N 28° E, 9° W.

" — In gutter 100'+ E of entrance to
Mirabeau Mine S side US 40
N. 18 E — 10-20° W

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102 - 10
11
91 10

71-6 – 71-11 – Silty semihard clay
72-3 Fragmental claystone
72-7 Limestone-pyrite concretions
74-5 Dark gray and black, locally shaley semiplastic clay. Pyritic.
76-7 Argillaceous ls-(inclusions in matrix which becomes less limey downward.
80-9 Grey to black semiplastic clay limey nodules in upper part, shalen clay at base
84 Argillaceous limestone – interbedded clay & claystone in basal 2'

Hole # 26.

0 - 27	Surficial material
34-10	Weathered clay + claystone, limey pellets in upper part.
39-9	Greenish gray silty claystone grading to siltstone, limey stringers and ironstone inclusions + stringers
58	Interbedded greenish gray siltstone and silty shale. A few zones fine ss, same limey.
62-4	Interbedded gray shale and argilleceous limestone.
65-10	Irregularly interlaminated gray and black shale, pyritic, coaly streaks.
68-7½	Coal, Upper Bakerstown.
71-6	Gray clay and claystone, limey nodules, 3" argilleceous limestone at top.
84	Interbedded gray + dark gray clay claystone and argilleceous limestone.
92	Gray shaley claystone - grading to shale, ironstone concs in middle part.
108-6	Black shale, pyritic in lower part ironstone concretions thruout.
110-3	Coal, Lower Bakerstown.
115	Dark to light gray clay + claystone, ~~calcareous~~ limey pellets
117-8	Silty claystone grading to siltstone.
121-11	Fine grained sandstone
134	Interbedded siltstone and fine sandstone, ~~minor~~ some claystone in lower part

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$$\frac{16\frac{1}{2} \quad 7.8}{171.8}$$

144 0
6
24
152-8

Old tram - SS lodge N.39°E, 12W. may be x-lam.

#26 (cont.)

135-8	Mottled gray semi-hard clay.
150-8	Mottled red, & green semiplastic clay, silty at base
152-8	Green silty shaley claystone.
154-2	Argillaceous limestone
171-8	Interbedded siltstone and fine sandstone
172-6	Mottled gray and tan shaley clay (semihard to semiplastic as in 135-8) with scattered brackish or marine fossils.
179-9	Greenish semiplastic clay, large inclusions argillaceous limestone in upper 2'.
200-6	Fine grained sandstone, minor ~~sand~~ interbedded siltstone. Upper 3' calcareous.
226-1	Interbedded dark gray silty shale & siltstone and 1-2" zones white ss. in all but lower 6'. Plant fragments throughout.
245	Gray to black silty ~~stone~~ shale & shale with marine fossils & lime-limestone concretions. pyritic in lower 3'.
246-10	Coal - Brush Creek
248-7	Gray silty claystone, locally finely fragmental
255	Limey ~~mottled~~ gray fragmental claystone with zone argillaceous limestone at top and base.
258-3	
263-3	Gray finely silty semiplastic

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270-2 to 274-10 Gray mottled to fragmental ~~finely silty claystone~~ semiplastic clay zones fine rodents pellets. Lower 18"

~~to 276-2~~ ~~Shaley claystone~~ shaley claystone.

279-5 Hard dense claystone + fragmental claystone shades of gray.

280-8 Silty gray clay shale zone argillaceous ls + ~~nodules~~ concretions in upper 18"

286-10 Variegated zone of green + gray claystone + fragmental claystone.

285 – green clay ls zones, argill ls at top. fragmental green + variegated gray

286-10 Dark gray mottled to fragmental claystone

290 Silty greenish gray semiplastic cl. with calc. + dolostone zones + stringers

	mottled to frequental clay.
266-1	Greenish gray silty claystone, minor semiplastic clay, zones + stringers siderite.
269.	Fine grained sandstone
270-2	Shaley claystone.
290	Interbedded semiplastic clays and claystones, gray + green, some frequented zone and minor zones argillaceous limestone.
293	Green shaley siltstone
300-9.	Mottled green, red + gray semiplastic clay + claystone. Chalky fragments!
307-4.	Greenish gray silty claystone grading to siltstone, sandstone stringers + inclusions.
317-2	Interbedded siltstone + Fine sandstone, some ~~shaley~~ zones, shale.
323-4	Fine grained sandstone, minor ~~zones~~ streaks siltstone.
325	Intermixed gray claystone + sandstone + siltstone, 6" silty claystone at face.
330-6	Interlaminated dark + light gray clay shale.
333-4	Gray claystone with stringers dark pyritic claystone (some intermixed sand + coaly traces)
340-10	Silty brownish gray claystone with zones fine ss, 2' Fine argillaceous ss at top.
365-9	Finely interbedded to interlaminated dark gray to black silty shale + white

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426-14
8-10
418 4

357-4
7-6

~~364-10~~

7-6
375-11
382 17
383-5

	fine-grained ss. (344-4 carb. siltstone coal str. + 346-2 to 346-8 carb clay)
367-1	Pyritic carb shale.
370-11½	Coal. UPPER FREEPORT
379-11	Argillaceous limestone. (varies from limy claystone to ls. 1 inch., some zones limey from clastics)
383-5	Fragmental clinty claystone
389-6	Silty claystone grading to siltstone with zones fine sandstone.
393.	Semiplastic clay, fragmental in upper 4' grading to silty claystone
406	Irregularly interbedded siltstone, silty claystone & fine sandstone. (Few limey ironstone concs in lower part)
406-5	Dark gray to black claystone
408-5	Limestone
410-6	Fragmental claystone & limestone, ironstone concretions.
418-4	Dark gray silty claystone.
419-2	Claystone, 2" ls at base
430-6	Interbedded fine ss & clayey siltstone
432-3	Dark gray to carbonaceous shale
435-4	Coal — UPPER KITTANNING
438	Argillaceous limestone.
439-10	Fragmental claystone & argillaceous limestone, ironstone inclusions at base
445	Gray siltstone & silty claystone.

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Tom McKenzie. – worked Boucher mines
Roy Welburn –

1 PM Sunday – with Mr McKenzie.

AMO 12-59

1. Coal blossom – gray clay – cool Hebs. – surficial material.
2. Platey SS N 48° E 10-15° E – may be x bed. From here to 3 SS platey to shaley.
3. Blossom – about as in 1. rolling in place On down hill surficial stuff with considerable plastic clay as matrix.
4. On shale – N 36° E, 15° E
   Black fissile shale – inclined to good dip.
5. Dark gray ran underlain by 4 to 6" clstn, locally fray, with plant rootlets, then by dark gray silty clstn.
6. Blossom – very little – about 3" streak in clay.
7. Light gray-tan sandy soft clay – surficial
8. Craggy SS, N 2° E, 14° E may be x bed. Platey underlain by calcareous siltstone & SS.
9. Smutty blossom streak in surficial clay – carbonaceous material from coal outcrop above, underlain down hill by
10. Salty, claystone & siltstone with

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plant fragments and ironstone concretions. — whole is redder-toned

11 Coal smut in gutter. Underlies flaggy ss which becomes shaley upward to N then comes black shale.

Down hill wash — at (12) surficial clay with shale & coal mixed in.

(13) Surficial dark clay with coal & sh. (coaly)

Pictures UFB Co Negro Mt Slumping #1

1 Ms coal & beds above from middle of slump (1/2 way between rd & river. Then close-up coal & clay — laminar at first. Then 2 shots of entire section exposed.

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557-5 – 557-8 Flint clay, slightly stoney in spots

559-7 – Tan silty semiplastic clay + claystone. (Eastend ROM

5 62 ~~Clay~~ Tan to gray shaley claystone & semiflint clay.

2 (cont)

535-7	Dark gray siltstone, plant rootlets, shaley in lower part
536-1	Carb. shale with interlaminated sandstone
536-4	Coal + bone.
540-5	Silty claystone, irregular patches fine ss.
546-9	Fine ss, grading to interbedded shaley siltstone and fine ss.
554-5	Gray silty shale, zone coal shale + zone pebble pellets in lower half.
557-5	Coal + Bone - Mam of Seacliff bed. Sunrise.
565-10	Dark gray to black siltstone interbedded fine SS
569-4	Dk Gray siltstone grading to gray shale
571-2	Coal + Bone
578-8	Gray ~~silty shale~~ siltstone, plant rootlets ~~Excessive~~ shaley in lower part
~~577-8~~	
586	interbedded siltstone + fine SS
605-4	Med-gr. glauconitic sublitic SS.
608-9	Conglomeratic, inclusions of coal. 606-6 to 608
631	Med. grained sublitic SS. Some coarse beds

AMU 12-56

1. Clays – with red-bed streaks, probably part of nearby valley zone – at least in lower part. SS float thrown on slope on either side of rd. –

2. Pace traverse of Rd from fence corner at (2) going north.
From (2) to Z14 – flat with large SS float boulders (not walked)

	Paces	
A	15.	(2) to Edge cut across to little fold
	↓	Obscured
B	10	to E end of seepage area – very flat to Rd
	↓	
C	12	Between C & B seepage in grassy flat superficial clay with SS pebbles in gutter coal blossom at (B+11)
	↓	
D	17	hardpan with mottled white gray & yellow superficial clays.
	↓	
E	30.	D to E no variation except small gullies SS float present & taper, slope suggest bedrock SS
	↓	A-E is small seep –
F	19.	E to F No discrepancy SS float but not clays red in gullies minor seep stains upper part. blue sandy-silty clays (surface) in last part mottled shales and ss

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F - Black shale

F to G. Black shaly siltstone and silty shale with plant remains
Attitudes N 26 E, 8 to 11°

25

Minor fault downthrown E
Slickensides N 52 W slight N dip

H

Interbedded black silty sh + siltstone and lenses ss up to several ft thick. In lower 15 ft chiefly ss. Some interbedded shly siltstone. Attitudes variable, ss beds mostly N 16° E, 6 to 10° E

5

A H. Limonitic weathering with coal fragments. Sh breaks in with the ss. conform.

I

From H-I all but 2 beds (2 1' thick) concealed.

Gully comes out at I. Hill of ss shale. But bedrock at road is weathered yellow clay stone & clay. Thin seam of coal - shaly - but ss bed. Not worth working. Not of commercial thickness.

7

J

I to J concealed, thin ss float

5

K

J-K Interbedded weathered siltstone & silty claystone

K — Gray to black siltstone — plant fragg

↓ 20

L — At L [illegible] ss stringer, calc, mostly (mmm fault?)

↓ 14

+

M — 1 to 1½ [illegible] ss 2+ 8' beds heavy but lower 3 ft may be [illegible]

↓

6 — Obscured pale salt beds.

N.

13

O — N to O dark gray to blk silty sh with plant fossil. Alt tuffaceous, weathers pellets, + abundant - with very great clay in [illegible] part of section as clusters run it.

↓ 8

↓ — At O - good coal thickness.

P — Takes coal thickness in basal clay other obscured, Pat drummond.

6

Obscured last to take thickness continue

9

1

28 — Obscured. ~~Base~~ ss float seems to

R — come in in upper 12+ pace. R is at start of red + mottled.

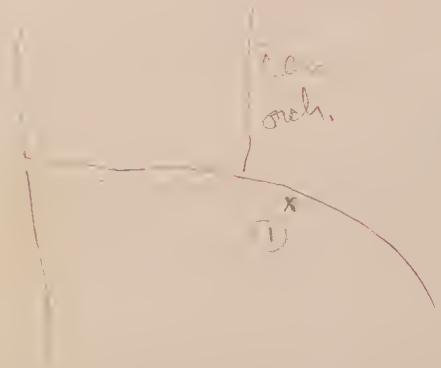
not any thick

KM Wagge

surficial clays at 1

3 – Coal crop in gulley shows overburden. Jerlin, on 15" coal. Prob. Harlem 50' down strike on E bank old dry hole.

1 Old 2d cut hazelog N 35 E
Bond & Blk shale str. dump.


x

(1) Stone House rd. cut – Mudstone, silty, sh + dk.
N 63° E, 7° W
just below tuff at base

AMO 12:58

① Black shale over clay, ss float to N, weathered, no attitude – looks flat lying

Corner of 22 Patty Donat Mine – 30'+ coal & shale roof. Platy ss 25' above.

✓ James P. Willey – 2.5–3.0' coal, split, 4.5'

✓ Willey – 3ft up gulch

✓ Clarence Rash opened it

Mr. Grant Willey – Elsbury road

✓ Mr. Hattrick

✓ S 38° W 7½° – Amsh. rd. sandstone above & to N, flint float

Ed Baker, Wagner, Eisel - About 200'
about 38" coal.

Leave C
7
10:30
2:30
Standard time

Arrive B

Blue & white
Blue Ridge Tournament

Ashby's well — 46' deep

5 flint
27"
Coal at 44

5' flint
27" soapstone
44 - 46½ Coal

(3)

3' Surface
2' Soft cl.
3' Flint
6' Soft.

14 TD

(1)

4' Surf
5' Shale
4'6" Coal + Sh
6" Rashings
5' Soft fine clay
4'6" Flint
6'6 Soft Clay + ROM.

T.D. 30'

(2)

6'6" Surf
3'6 Soft Cl
6' Bl. Sh.
6" SS
2'6 Coal + slate
2' Soft Cl
6" SS
4'6 Soft Cl
14'6 Sandy clay
6" SS

41 T.D.

(4)

2'6' Surface
1' Flint
6'6" Soft Cl.
1' Ore + flint
13' Run of Mine
7' Rock SS

31'

Morgart drilling U.E.B.Co

#Stat 1	N 39 30' E,	18.3	to ~~Hole~~ 1
	N 68 30 W,	136.5	to ~~Hole~~ 2 (VA 5-10)
	S 34 W,	108.7	To Hole 3 (VA 7-10)
	S 19°45 W,	76.4	to Hand hole. (VA 10°-50°)
	S 10° 30 E,	191.7	to crop.
	S 52°30 E,	211.	" "

Hole 3	S 64 30 W	211.	
	S 81 20 W	54.6	to #4
Hole 4	N 2 E	49.7	Hole 5
Hole 5	N 2 E	50	Hole 6
Hole 6	N 2 E	35.5	Hole 7
Hole 1	N 65 E	71	Hole 8

Hole #1 to Sta 1A	N 24-30 E,	174.8
1 to 2	S 67° E	234.9
1 to 3	N 5-20 W	144.3
3 to 4	N 0-30 E	200.9
4 to #2 Dessler	N 85-30 E	158
2 to 5	N 73° 30 E	135.95
5 to 6	N 50 30 E	146
6 to 7	N 47 E	110.2
7 to 8	N 3 W	92.6

(5.)

Surf.	3'
Coal + Slate	5'
Soft Clay	6'
Sandy Cl	2'
SS	1'
ROM	14'
	31 TD.

(6)

Surf	4'6"
Boulders	1'
SS	1'
Coal	4'
Soft Cl	5'6"
Sandy Cl	3'6"
SS	5'
TD	24'6"

(7)

Surf	6'
Sandst	2'6
Coal	4'
Soft Cl	5'
SS	4'
TD	21'6"

(8)

4'	Surf
4'	Shale
1'6"	SS
5'	Coal + Slate
5'	Soft Cl
1'6"	Flint
2'6"	Mixed flint
6'	ROM
27'	TD

(9)

Surf	1'7"
Coal + Cl	2'
Soft Cl.	7'
SS.	6"
ROM	9'6"
TD	31'

(10)

Surf	6'
Dark Soft Cl	4'6"
SS	6"
Light Soft Cl	4'6"
SS	6"
Soft Cl.	2'
Brown shale	7'
Coal + slate	6'
Soft Cl.	1'
Flint Cl.	3'
Soft Cl.	4'
T.D.	39

T.D. 37

8 to Hole 10	N 2 W	94.6.
Hole 10 to H 11	S 70 E	100.9
H 11 to 9	E -	77.8
9 to Spr	S 35 15 E	158.
Hole #4 to 10	S 2-30 W	110.3
10 to #9	N 88-45 W	369.

#6 Bedford

coal	2'9"	—	51-2
"	1'5"	—	181-3
"	4'10"	—	298-10
"	4"	—	363-4
"	1'2"	—	381-1
"	1'7"	—	386-2

Dark Sh. 16'10"
Hardclay 4'2" (409-2
Iron ore 4"
Gray Sandy Sh. 13'6 (423)
Slate & Bone Coal 1'1" (424-1)
Dark sandy sh 20'8" (444-9)
Sandy sh, Strs SS 56'3" (501)
Cgl — 4' (505)

200' Beyond face of old #1 Tunnel
2 mi NW Mt Savage near old Patty Collins farm.

		TD	
40	Surf.		
45	Broken SS	85	
14	Wash	99	
4	Sandy sh	103	
2	Dark sh	105	
–6	Coal	105-6	
4	Rotten sh	109-6	
5	Rough Sftcl.	114-6	
3-6	SS	118	
4	Hard fire cl	122	(Cone 33)
5	Dk. shale	127	
6	SS & sh	133	
6	SS	139	
9	Dk sh.	148	
4	Slate & coal	152	
7	Rough cl.	159	
2	Boney coal	161	
4	Rough Sftcl	165	
13	Sh. & sand.	178	
34	SS (hard)	212	
19-6	Dk. sand sh	231-6	
1-6	Fire Cl. Soft rock	233	
6	Fire Cl Soft	239	
14-6	SS	258-6	
9-4	Dk ss sh	267-10	
14-8	SS hard	282-6	
2-6	Dk sh	285	
3-6	Fired soft rough	288-6	
2	Sandy sh	290-6	
54-6	SS – weathd	345	

3-10	Dk grayish	348-10
3	SS Hard	351-10
4-2	Dk gr sh	356
3-3	Sandy sh	359-3
12-2	SS	371-5
4-7	Dk sdy sh	376
16-4	" " "	392-4
4	Sndy sh	396-4
68-8	SS	465
15	Green sh	480
3	Red sh	483.

11 ½ toward Pa line from where old plane crossed it. about 150 or 200' above RR.

6	Surface	6
1-6	Hard Fire clay	7-6
14-6	Gray sh	22
8	Gray sndy sh	30
41	(Hard) SS	71
9-4	Dk gray sh	80-4
1	Coal dirty	82
6"	Dk gray sh	82-6
13-6	Fire cl. rough sft	96
6"	Hard Fire cl. good	96-6
11"	Rough Soft Fire cl.	97-5
17'7"	SS cons sted	115
18-6	SS hd	133-6
4-6	Dk sndy sh	138-2

1-8	Soapstone	139-10
3-2	Dk sndy sh	143
1	fire cl soft	144
2	Grey rk	146
2-6	Dk sndy sh	148-6
12	Hard ss coal str	160-6
1-8	Dk grey sh	162-2
33-10	SS Hd	196
7-4	SS+sh hd	203-4
15-8	SS med hd	219
9"	coal	219-9
3"	Dk snd sh	220
5-3	Rough soft cl	225-3
5-7	Light sndsh	230-10
4-2	SS + sh	235
17-4	SS med.	252-4
10-6	Lt sndy sh	262-10
50-8	SS hd	313-6
21-7	Dk gr sh	335-1
11-5	Dk green snd sh	346-6
6	Red + green sh	352-6
3-6	Red sh	356

SS

H 21

Johnson & Borsum #21 for UMCo on Mt Savage

14	Surface	14
8	SS	22
9	Snd sh	31
14	Dk gr sh	45
19	Lt snd sh	64
2	Sl + coal	66
14-6	Dk gr sh	80-6
6	Fred rough	86-6
14-6	Lt sh.	101
3	SS	104
2-8	Dk gr sl	106-8
2	Sl + Coal	108-8
7	Fired soft rf	115-8
15-4	Lt shale	131
2	Slt + coal	133
12	Dk gr sh	145
13-3	Dk snd sh	158-3
29	SS hard	187-3
2-6	Dk gr sh	189-9
6"	Coal + Sl	190-3
6-4	Imp ls.	196-7
3-5	Lt gray sh	200
11-8	Fire clay hard	211-8
3-4	Dk snd sh	215
7	SS & sh	222

Brg. Sewage Ship —

Coal
Soft clay — 3 or 4 ft
Sandstone — 2-3'+ Coarse part shaley
~~Soft~~ clay stone (siltstone) 4 to 6 - slabby
~~Soft~~ Clay seam — 12' variable acute hard
Soft 31-32 Coal + soft
(12'+ hard in rib on ship)
Plastic (Coarse grade) — Cat Age 25-28
~~Sandstone~~

Coal — carbonaceous fossil — 2"
Bone — 3"
Carbonate — 7"
Coal — 2"
Bone — 3"
Coal — 20"
Soft clay.

Over coal — 10-15' Interbedded SS + Shale
13'-3' Massive Cgl. SS.

Mrs Fahey's coat at Elias