

Gulf Pittsburg-Midway

Strat Well PM-20

HOLE NO.

DEPARTMENT OF THE ARMY

1. PROJECT

SHEET OF

2. LOCATION (Coordinates or Station)

SENE 8-325-22E

3. DRILLING AGENCY

R+M Coal (Gulf Minerals)

5. NAME OF DRILLER

DRILLING LOG

4. HOLE NO. (As shown on drawing title and file No.)

P+M # 20

6. DIRECTION OF HOLE

☐ VERTICAL☐ INCLINED

DEGREES WITH VERTICAL

7. THICKNESS OF OVERBURDEN

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE

10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)

12. MANUFACTURER'S DESIGNATION OF DRILL

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN

DISTURBED

UNDISTURBED

14. TOTAL NO. CORE BOXES

15. ELEV. GROUND WATER

16. DATE HOLE

STARTED

COMPLETED

17. ELEV. TOP OF HOLE

895

18. TOTAL CORE RECOVERY FOR BORING (%)

100%

19. SIGNATURE OF INSPECTOR

John W. Harris

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	0					
	5					
	6		Top of core	6'		
			Limestone - Hgy(N7) hard, wackestone, medium gr. at top to muddy at base, brachs, gradational lower contact	1.5'	# 1	Breezy Hill L.S.
			Mudstone - Hgy(N7) mod. hard, blocky fracs, massive, silty, micaceous, non fossiliferous, calcareous cement, sharp lower contact.	25'		
	10					

3.8
23.5
10.0
2.5
89.8

8-32-22e

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF	
DIVISION _____				2. LOCATION (Coordinates or Station)			
INSTALLATION _____				3. DRILLING AGENCY			
DRILLING LOG				5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)				5. NAME OF DRILLER			
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL				9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED				STARTED COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	10	...	Siltstone - alternating				
		...	Vltgy (N8) + medgy				
		...	(N5) laminae,				
		...	hard, parallel to				
		...	blocky fracture,				
		...	qtz, micaceous,				
		...	abundant mud,				
		...	massive at				
		...	base with mud				
		...	matrix to				
		...	wavy bedded at				
		...	top, few small				
		...	plant frags,				
		...	burrows,				
		...	pyrite nodules				
	15	...	to 1cm dia,				
		...	sand sized authigenic				
		...	siderite crystals,				
		...	Concentric brown				
		...	Fe oxide stains				
		...	around pyrite				
		...	nodules,				
		...	gradational				
		...	lower contact.				
	20	...					

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DRILLING LOG		5. NAME OF DRILLER				
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVER-BURDEN				
6. DIRECTION OF HOLE		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE		
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL						
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		
DISTURBED		UNDISTURBED		16. DATE HOLE		
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	20		<u>mud shale -</u>			
			med gy (NS) w/ brown mottling, hard, parallel fracture, silty, qtz, micaceous, thin horizontal laminae with occasional thin silty lense, abundant small plant fragments, pyrite nodules less than 0.05' dia, clay ironstone bands less than 0.1' thick, brown Fe oxide stains, few small brachiopods near base, gradational lower contact, remarkably uniform color & composition throughout.		# 2	
	25			73.5'		
					27'	
					# 3	
	30					

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INSTALLATION				3. DRILLING AGENCY							
DRILLING LOG				5. NAME OF DRILLER							
4. HOLE NO. (As shown on drawing title and file No.)				7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE			
6. DIRECTION OF HOLE				11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL					
☐ VERTICAL		☐ INCLINED		DEGREES WITH VERTICAL		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES			
DISTURBED		UNDISTURBED		15. ELEV. GROUND WATER		16. DATE HOLE		STARTED COMPLETED			
10. SIZE AND TYPE OF BIT				17. ELEV. TOP OF HOLE				18. TOTAL CORE RECOVERY FOR BORING (%)			
19. SIGNATURE OF INSPECTOR				ELEVATION		DEPTH		LEGEND			
CLASSIFICATION OF MATERIALS (Description)				% CORE RECOVERY		BOX OR SAMPLE NO.		REMARKS (drilling time, water loss, depth of weathering, etc., if significant)			
Mudshale - same unit as above.				73.5'		#3					
				35'		#4					
30'											
35'											
40'											

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF	
DIVISION _____				2. LOCATION (Coordinates or Station)			
INSTALLATION _____				3. DRILLING AGENCY			
DRILLING LOG				5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)				5. NAME OF DRILLER			
6. DIRECTION OF HOLE				7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL		☐ INCLINED		DEGREES WITH VERTICAL		9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED		STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	40		<u>Mudshale</u> - same unit as above.				
	45			73.5	#4		
					#5		
	50						

[illegible]

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			1. PROJECT _____		SHEET _____ OF _____	
			2. LOCATION (Coordinates or Station) _____			
4. HOLE NO. (As shown on drawing title and file No.) _____			3. DRILLING AGENCY _____			
5. NAME OF DRILLER _____						
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____					9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE
DISTURBED _____		UNDISTURBED _____		STARTED _____		COMPLETED _____
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	60		<u>Mudshale -</u> same unit as above.			
	65					
	70					

HOLE NO.

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			2. LOCATION (Coordinates or Station)				
3. DRILLING AGENCY			5. NAME OF DRILLER				
4. HOLE NO. (As shown on drawing title and file No.)			7. THICKNESS OF OVER-BURDEN				
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL			8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE		
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED		STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)	
	70		Mud shale - same unit as above.				
	75				# 7		
				73.5'	75'		
					# 8		
	80						

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4. HOLE NO. (As shown on drawing title and file No.)			7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL			8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE STARTED COMPLETED
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	80		<u>Mudshale-</u> same unit as above			
	85			73.5'	#8	
					#9	
	90					

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10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	110		<u>Limestone</u> - (cont) cement, abruptly gradational lower contact.	3.1'		Verdigris L.S.	
			<u>Clayshale</u> - dkgy(N3), hard, parallel fracs, micaceous, thin horizontal laminae, abundant brachs, other marine fossils scattered throughout, calcareous cement, abruptly gradational lower contact.	5.6'	# 11		
					# 12		
			<u>Mudshale</u> - Hgy(N7), mod. hard, parallel fracs, slightly silty, micaceous, plant frags, thin laminae, sharp lower contact w/ coal.	2.2'			
			<u>Coal</u> blk(N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.8'		Croweburg Coal	
	120		mudstone - below	5.3'			

ENS FORM 1836 (TRANSLUCENT) PREVIOUS EDITIONS ARE OBSOLETE PROJECT _____ HOLE NO. _____
1 JUN 87 (FM 1110-2-1801)

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DRILLING LOG				5. NAME OF DRILLER					
4. HOLE NO. (As shown on drawing title and file No.)				7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
☐ VERTICAL ☐ INCLINED						15. ELEV. GROUND WATER		16. DATE HOLE	
10. SIZE AND TYPE OF BIT		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)	
DISTURBED		UNDISTURBED				19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)			
140		T	Mudshale- same unit as above.	11.2'		Unnamed coal			
		T							
		T							
			Coal blk(NI), bony, sharp cont.	0.2'	# 14				
			Mudstone - lt gy(NV) soft, massive, plant frags, gradational lower contact	1.1'					
145			Mudshale- med dk gy(NV) at base to lt gy(NV) at top, hard, parallel fracture, silty, micaceous, plant fragments, clay ironstone nodules to 0.1' thick, gradational lower contact	7.0'	# 15				
150									

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☐ VERTICAL		☐ INCLINED		DEGREES WITH VERTICAL		8. DEPTH DRILLED INTO ROCK	
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DISTURBED		UNDISTURBED		STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
150		T	Clayshale - dkgy (N3) hard, parallel fracs, micaceous, thin horizontal laminae, abundant brachiopods crinoid stems & other marine fossil frags, calcareous cement, sharp lower contact w/ coal.	3.3'	# 15		
			Coal, blk (N1) banded. mod. bright, white & yellow sulfate bloom, calcareous cement in vertical fracs, sharp contacts.	1.7'	# 16	Mineral Coal	
155							
			Mudstone - med Hgy (N6), soft, blocky fracture, silty, micaceous, massive, abundant plant fragments, clay ironstone nodules & veins, brown Fe oxide stains, gradational lower contact.	5.0'			
160							

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			1. PROJECT _____ SHEET _____ OF _____			
4. HOLE NO. (As shown on drawing title and file No.) _____			2. LOCATION (coordinates or Station) _____			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____			3. DRILLING AGENCY _____			
10. SIZE AND TYPE OF BIT _____			5. NAME OF DRILLER _____			
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____			7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____		
12. MANUFACTURER'S DESIGNATION OF DRILL _____			9. TOTAL DEPTH OF HOLE _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____	15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____		
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____				
19. SIGNATURE OF INSPECTOR _____						
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
160			Mudshale - med dk gy (N4) at base to med H gy (N6) at top, hard, parallel fracture, silty, qtz, micaceous, thin horizontal laminae at base, lenticular bedded at top w/ thin lenses, few pyritized plant fragments at base, burrows at top, clay ironstone nodules to 0.1' thick, few authigenic siderite veins near top, gradational lower contact.		# 16	
165					# 17	abundant lenticular clay ironstone nodules in this interval!
170						

ENG FORM 1 JUN 57 1836 (TRANSLUCENT) (PM 1110-2-1801) PREVIOUS EDITIONS ARE OBSOLETE PROJECT _____ HOLE NO. _____

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INSTALLATION				3. DRILLING AGENCY			
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☐ VERTICAL		☐ INCLINED		DEGREES WITH VERTICAL			
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED				STARTED COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
180			mudstone - med lty (N6), soft, blocky frags, silty, micaceous, massive, plant fragments, clay ironstone nodules & veins, gradational lower contact.	4.7'			
			mudshale - med gy (N5), hard, parallel frags, silty, qtz, micaceous, lenticular bedding w/ thin lenses at base to thin horizontal laminae at top, small plant frags, few burrows at base, authigenic siderite crystals, sharp lower contact.	2.8'	# 18		
185			Sandstone - v lty (N8) w med gy (N5) muddy laminae, hard, blocky fracture, very fine - fine grained, qtz, micaceous comp, flaser bedded & rippled at base to massive at top, plant fragments, small clay ironstone nodules at base, sand sized authigenic siderite	6.8'	# 19	Chelsea S.S.	
190							

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4. HOLE NO. (As shown on drawing title and file No.) _____			5. NAME OF DRILLER _____				
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10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE	
DISTURBED _____		UNDISTURBED _____		STARTED _____		COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	190		<u>Sandstone</u> - (cont) crystals, gradational lower contact,	6.8'	# 19	Chelsea SS.	
			<u>Siltstone</u> - alternating lt gy (W8) & med gy (W5) laminar, hard, blocky fracs, qtz, micaceous, abundant muddy laminar, wavy bedded at base to flaser bedded at top, abundant plant debris, elongate pyrite nodules less than 1 cm long, with concentric brown Fe oxide stains, gradational lower contact.	2.9'	194'		
			<u>Mudshale</u> - same unit as below.		# 20		
	200			14.8'			

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4. HOLE NO. (As shown on drawing title and file No.) _____				5. NAME OF DRILLER _____				
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☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____						
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DISTURBED _____		UNDISTURBED _____				STARTED _____ COMPLETED _____		
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)		
	200	—	<u>mudshale - med</u> gy (N5) w brown mottling, hard, parallel fracture, silty, qtz, micaceous, thin horizontal laminae at base to lenticular bedded at top, abundant plant fragments, clay ironstone bands to 0.1' thick, pyrite nodules up to 1 cm dia., concentric brown Fe oxide stains around pyrite nodules, gradational lower contact,		# 20			
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	205	—		14.8	# 21			
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		—						
	210	—						

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF			
DIVISION				2. LOCATION (Coordinates or Station)					
INSTALLATION				3. DRILLING AGENCY					
DRILLING LOG				5. NAME OF DRILLER					
4. HOLE NO. (As shown on drawing title and file No.)				5. NAME OF DRILLER					
6. DIRECTION OF HOLE				7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
☐ VERTICAL		☐ INCLINED		DEGREES WITH VERTICAL					
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL					
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE			
DISTURBED		UNDISTURBED				STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR					
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)			
210			Clay shale - dk gy(N3) at base to med gy (N5) at top, hard, parallel fracture, micaceous, thin horizontal laminae, few scattered marine fossil frags at base, abundant pyritized plant frags in upper part, localized calcareous cement in lower 6', clay ironstone bands to 0.2' thick, pyrite concretions to 0.05' dia, sharp lower contact w/coal.		# 21				
					214'				
215					222'				
					# 22				
220									

[illegible]

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG				1. PROJECT _____		SHEET _____ OF _____	
				2. LOCATION (coordinates or Station) _____			
				3. DRILLING AGENCY _____			
4. HOLE NO. (As shown on drawing title and file No.) _____				5. NAME OF DRILLER _____			
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL		☐ INCLINED		DEGREES WITH VERTICAL		9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED		STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	230	—	Clay shale — same as above	22.2'		Tebob coal	
		—	Coal, blk(NB), banded mod. bright, sulfate bloom, sharp contacts.	1.1'			
		—	Mudstone — med				
		—	H gy(N6), soft, blocky frags, silty, qtz, micaceous, massive, plant frags, abundant brown Fe oxide stains, gradational lower contact.	2.7'	# 23		
	235	—	Mudshale — dkgy(N3) at base to med gy(N5) at top, hard, parallel frags, slightly silty, micaceous, thin horizontal laminae, few marine fossil fragments, localized calcareous cement, clay ironstone nodules to 0.1' thick, sharp lower contact.	9.5'	235'	# 24	
	240	—					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG				1. PROJECT _____		SHEET _____ OF _____	
				2. LOCATION (Coordinates or Station) _____			
3. DRILLING AGENCY _____				5. NAME OF DRILLER _____			
4. HOLE NO. (As shown on drawing title and file No.) _____				7. THICKNESS OF OVERBURDEN _____			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____		8. DEPTH DRILLED INTO ROCK _____		9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)	
	240	T	<u>Mudshale</u> - same unit as above	9.5'	# 24		
	245	T	<u>mudstone</u> - med H gy (N6), soft, blocky frags, silty, micaceous, massive, abundant plant fragments, brown Fe oxide stains, gradational lower contact.	3.5'	# 25	Underclay but no coal. Weir - Pittsburg horizon	
	250	T	<u>Interbedded siltstone & sandstone</u> - med H gy (N6) & vlt gy (N8) hard, parallel frags, qtz, micaceous, sand layers of v fine sand up to 0.2' thick, rippled, wavy bedded, small plant fragments, sand sized authigenic	4.9'		Unnamed S.S.	

DEPARTMENT OF THE ARMY			1. PROJECT		SHEET OF	
DIVISION			2. LOCATION (Coordinates or Station)			
INSTALLATION			3. DRILLING AGENCY			
DRILLING LOG			5. NAME OF DRILLER			
4. MOLE NO. (As shown on drawing title and file No.)			7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF MOLE			8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF MOLE	
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL						
10. SIZE AND TYPE OF BIT			11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN			14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	
DISTURBED			UNDISTURBED		16. DATE MOLE	
17. ELEV. TOP OF MOLE			18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	
ELEVATION			DEPTH		LEGEND	
CLASSIFICATION OF MATERIALS (Description)			% CORE RECOVERY		BOX OR SAMPLE NO.	
REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)						
260			Interbedded sandstone			
siltstone - siderite crystals, sharp lower contact.			4.9'			
Mudshale - same unit as below.			# 25			
255			11.1'		256'	
			#		26	
260						

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			1. PROJECT _____		SHEET _____ OF _____	
			2. LOCATION (Coordinates or Station) _____			
			3. DRILLING AGENCY _____			
4. HOLE NO. (As shown on drawing title and file No.) _____			5. NAME OF DRILLER _____			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____			7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	260		Mudshale - dk gy (N3) at base to med gy (N5) at top, silty, micaceous, lenticular bedded w/ thin lenses, pyritized plant frags, some bioturbation, clay ironstone bands to 0.2' thick, gradational lower contact.	11.1'		
			Clayshale - dk gy (N3), hard, brittle, parallel frags, micaceous, thin horizontal laminar, nonfossiliferous, clay ironstone bands to 0.1' thick, sharp lower contact w/ coal.		# 26	
	265				265	
					# 27	
				10.8'		
	270					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG				1. PROJECT _____		SHEET _____ OF _____	
				2. LOCATION (Coordinates or Station) _____			
3. DRILLING AGENCY _____				5. NAME OF DRILLER _____			
4. HOLE NO. (As shown on drawing title and file No.) _____				7. THICKNESS OF OVER-BURDEN _____			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____		8. DEPTH DRILLED INTO ROCK _____		9. TOTAL DEPTH OF HOLE _____			
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
270			Clayshale - same as above.	10.8'		Bluejacket "A" coal
			Coal, blk (N), banded, med. bright, sharp contacts.	0.3'		
			Mudstone - med gy (N5), soft, blocky frags, silty, micaceous, massive, plant frags, clay ironstone nodules to 0.1' dia, gradational lower contact.	1.3'	# 27	
275			Clayshale - dk gy (N3), hard, brittle, parallel frags, micaceous, thin horizontal laminae, abundant crinoid stems, brachs and other marine fossil frags at base, calcareous cement, clay ironstone bands to 0.1' thick near top, sharp lower contact.	4.0'	# 27 1/2	
			Mudstone - med lt. gy. (N6) at base to med dk gy (N4) at top, soft, blocky frags, silty, micaceous, massive, plant frags, brown Fe oxide stains, gradational lower contact.	2.0'		
280						Underclay but no coal! Bluejacket "B" horizon

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF	
DIVISION _____				2. LOCATION (Coordinates or Station)			
INSTALLATION _____				3. DRILLING AGENCY			
DRILLING LOG				5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)				5. NAME OF DRILLER			
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL				9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED				STARTED COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
280			Siltstone - med ltgy (N6), hard, blocky frags, qtz, micaceous, abundant mud matrix, massive, few small plant frags, abundant bioturbation, abundant sand sized authigenic siderite crystals, abruptly gradational lower contact.	9.0'	# 28		
285					# 29		
286							
290			Interbedded sandstone & siltstone - med ltgy (N8) + med ltgy (N6) laminar, hard, blocky frags, very fine rippled sand beds up to 0.1' thick, qtz, micaceous, (cont).	1.9'		Upper Bluejacket S.S.	

DEPARTMENT OF THE ARMY		1. PROJECT		SHEET OF		
DIVISION _____		2. LOCATION (Coordinates or Station)				
INSTALLATION _____		3. DRILLING AGENCY				
DRILLING LOG		5. NAME OF DRILLER				
4. HOLE NO. (As shown on drawing title and file No.)		7. THICKNESS OF OVER-BURDEN				
6. DIRECTION OF HOLE		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE		
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL						
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		
DISTURBED		UNDISTURBED		16. DATE HOLE STARTED COMPLETED		
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
290			Interbedded sandstone & siltstone cont. non-fossiliferous, authigenic siderite, gradational lower contact.	10.9'		Upper Bluejacket S.S.
			Sandstone - vlt gy (N8) w/med. Hgy (N6) muddy laminae, hard, blocky frags, very fine - fine grained, qtz, micaceous, abundant mud matrix & laminae, flaser bedded w very thin flasers, rippled, abundant sand sized authigenic siderite crystals, dead oil stains, gradational lower contact.	4.5'	# 29	
295			Siltstone - alternating vlt gy (N8) & med gy (N5) wavy laminae, hard, blocky frags, qtz, micaceous abundant mud, wavy bedded, nonfossiliferous, brown Fe oxide stains, sharp, non-scoured lower contact.	22'	# 30	
			Clayshale - dk gy (N3), hard, parallel frags, micaceous, thin horizontal laminae, nonfossiliferous, clay ironstone bands, sharp lower contact.	1.9'		
			Argillaceous limestone - lt gy (N7), hard, massive, brachs - other marine fossils, sharp lower contact.	0.9'		
300						Seville?

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____ INSTALLATION _____ DRILLING LOG				1. PROJECT _____		
				SHEET _____ OF _____		
2. LOCATION (Coordinates or Station) _____				3. DRILLING AGENCY _____		
4. HOLE NO. (As shown on drawing title and file No.) _____				5. NAME OF DRILLER _____		
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____		8. DEPTH DRILLED INTO ROCK _____		
9. TOTAL DEPTH OF HOLE _____		10. SIZE AND TYPE OF BIT _____				
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____				
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER _____		
16. DATE HOLE		17. ELEV. TOP OF HOLE _____				
STARTED _____		COMPLETED _____				
18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
320			<u>Mudstone</u> - med lt gy (N6), soft, blocky fracture, silty, micaceous, massive, plant fragments, abundant clay ironstone veins, gradational lower contact.	7.7'	# 32	
325			<u>Mudshale</u> - same unit as below.	15.3'	# 33	
330						

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			HOLE NO. _____			
			1. PROJECT _____			
			SHEET _____ OF _____			
2. LOCATION (Coordinates or Station) _____			3. DRILLING AGENCY _____			
4. HOLE NO. (As shown on drawing title and file No.) _____			5. NAME OF DRILLER _____			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____			7. THICKNESS OF OVER-BURDEN _____	8. DEPTH DRILLED INTO ROCK _____	9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____ UNDISTURBED _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____	16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	330		Mudshale— med lt gy(Nb), hard, parallel frags, silty, micaceous, thin horizontal laminae, occasional very thin silty lense, few small plant fragments, sand sized authigenic siderite crystals, sharp lower contact w/underclay.		# 33	
	335			15.3'		
					336'	
					# 34	
	340					

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____				1. PROJECT _____		
INSTALLATION _____				2. LOCATION (Coordinates or Station) _____		
DRILLING LOG				3. DRILLING AGENCY _____		
4. HOLE NO. (As shown on drawing title and file No.) _____				5. NAME OF DRILLER _____		
6. DIRECTION OF HOLE				7. THICKNESS OF OVER-BURDEN	8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL			9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	16. DATE HOLE	
DISTURBED		UNDISTURBED		STARTED	COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
340			<u>Mudshale</u> - same unit as above.	15.3'		Drywood horizon Underclay but no coal.
			<u>Mudstone</u> - med gy (N5) at base to lt gy (N7) at top, soft, blocky - conchoidal fracture, silty, micaceous, massive, abundant plant fragments, few sand sized authigenic siderite crystals, gradational lower contact.	4.7'	# 34	
345					346'	
			<u>Clayshale</u> - dk gy (N3), hard, brittle, parallel fracs, micaceous, thin horizontal laminae, nonfossiliferous, thin clay ironstone nodules less than 0.1' thick, sharp lower contact.	6.5'	# 35	
350						

HOLE NO. _____

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG		1. PROJECT _____		SHEET _____ OF _____	
		2. LOCATION (Coordinates or Station) _____			
		3. DRILLING AGENCY _____			
4. HOLE NO. (As shown on drawing title and file No.) _____		5. NAME OF DRILLER _____			
6. DIRECTION OF HOLE		7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL	☐ INCLINED	DEGREES WITH VERTICAL _____		9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER _____	
DISTURBED _____		UNDISTURBED _____		16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
350			Clayshale - same unit as above.			
				6.5'		
					# 35	
			Coal, blk (N1), banded, mod. bright, sharp contacts.	0.6'		Rowe coal
			Mudstone - med Hgy (N6) soft, blocky frags, silty, micaceous, massive, plant frags, sand sized authigenic siderite xtals, gradational lower contact.	2.0'		
355						
			Mudshale - med dk gy (N4) at base to lt gy (N7) upwards, hard, parallel frags, silty, qtz, micaceous, wavy to lenticular bedded, nonfossiliferous, few irregular clay ironstone nodules & veins, gradational lower contact.	6.0'		
					356'	
					# 36	
360						

DEPARTMENT OF THE ARMY				HOLE NO. _____					
DIVISION _____ INSTALLATION _____ DRILLING LOG				1. PROJECT _____		SHEET _____ OF _____			
				2. LOCATION (Coordinates or Station) _____					
				3. DRILLING AGENCY _____					
4. HOLE NO. (As shown on drawing title and file no.) _____				5. NAME OF DRILLER _____					
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____							
10. SIZE AND TYPE OF BIT _____			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____			12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN			14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE		
DISTURBED _____			UNDISTURBED _____				STARTED _____		COMPLETED _____
17. ELEV. TOP OF HOLE _____			18. TOTAL CORE RECOVERY FOR BORING (%) _____			19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)			
360			Mudshale - same unit as above.	6.0'					
			Clayshale - dk gy(N3), hard, brittle, parallel fracture, micaceous, thin horizontal laminae, non-fossiliferous, Clay ironstone bands to 0.1' thick near top, sharp lower contact w/ underclay.		# 36				
365				10.4'					
					366'				
					# 37				
370									

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF	
DIVISION _____				2. LOCATION (Coordinates or Station)			
INSTALLATION _____				3. DRILLING AGENCY			
DRILLING LOG				5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)				9. TOTAL DEPTH OF HOLE			
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL		7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL	☐ INCLINED						
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED				STARTED	
						COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
370			Clay shale - same unit as above,	10.4'	#		
					37	Underclay but no coal, Neutral horizon	
			mudstone - lt gy (N7), soft-mod. hard, blocky, conchoidal fracture, silty, micaceous, massive, plant frags, clay, ironstone nodules, veins, gradational lower contact.	1.4'			
			Mudshale - med dk gy (N4) at base to med gy (N5) at top, few vlt gy (N8) silty laminae, hard, parallel fracture, silty, qtz, micaceous, thin horizontal laminae at base to wavy & lenticular bedded at top,		375'		
375					#		
					38		
			4'0 zone from 391'-395' contains crinoids, brachs, other fossil frags, bioturbation and calcareous cement, few clay ironstone bands & nodules to 0.1' dia, plant fragments, sharp lower contact w/coal.	29.6'			
380							

INSTALLATION

1. PROJECT	SHEET	OF
2. LOCATION (Coordinates or Station)		
3. DRILLING AGENCY		

5. NAME OF DRILLER

7. THICKNESS OF OVER- BURDEN	8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
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10. SIZE AND TYPE OF BIT	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	12. MANUFACTURER'S DESIGNATION OF DRILL
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13- TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14- TOTAL NO. CORE BOXES	15- ELEV. GROUND WATER	16- DATE HOLE	
DISTURBED	UNDISTURBED			STARTED	COMPLETED

17. ELEV. TOP OF HOLE	18. TOTAL CORE RECOVERY FOR BORING (%)	19. SIGNATURE OF INSPECTOR
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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVER FRY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
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380 — Mudshale same
— unit as below.

385

390

Wavy to
lenticular
bedded,
381'-390'

[illegible]

38

29.6

385

39

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF	
DIVISION _____				2. LOCATION (Coordinates or Station)			
INSTALLATION _____				3. DRILLING AGENCY			
DRILLING LOG				5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)				7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF HOLE		DEGREES WITH VERTICAL		8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
☐ VERTICAL	☐ INCLINED						
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED				STARTED COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
390			Mudshale - same unit as above				
		T	391' - 395' Fossiliferous & bioturbated, calcareous cement.				
		ST					
		TS					
		ST					
		TS					
		ST					
		TS					
		ST					
		TS					
		T					
395				29.6'	395'		
					# 39		
					# 40		
400							

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG				1. PROJECT _____		SHEET _____ OF _____	
				2. LOCATION (Coordinates or Station) _____			
3. DRILLING AGENCY _____				5. NAME OF DRILLER _____			
4. HOLE NO. (As shown on drawing title and file No.) _____				7. THICKNESS OF OVER-BURDEN _____			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____		8. DEPTH DRILLED INTO ROCK _____		9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _____		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE STARTED _____ COMPLETED _____	
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)	
	400		Mudshale - same unit as above	29 1/6'			
			Coal blk(N), hard, banded, mod. bright, sulfate bloom, sharp contacts.	1.4'	# 40	"A" coal	
			Mudstone - med Hgy(N6), soft, blocky frags, silty, micaceous, massive, abundant plant frags, gradational lower contact,	2.0'	# 41		
	405 1/2		Mudshale - med dkgy(N4) at base to med gy(N5) at top, hard, parallel frags, silty, qtz, micaceous, lenticular bedded w/ thick and thin lenses, few pyritized plant fossils, clay ironstone nodules to 0.1' thick, sharp lower contact w/ coal,	5.1'			
	410						

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____		INSTALLATION _____		1. PROJECT _____		
DRILLING LOG		2. LOCATION (Coordinates or Station) _____		3. DRILLING AGENCY _____		
4. HOLE NO. (As shown on drawing title and file No.) _____		5. NAME OF DRILLER _____				
6. DIRECTION OF HOLE		7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK		
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL _____						
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		
DISTURBED _____		UNDISTURBED _____		16. DATE HOLE		
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	410	—	<u>mudshale</u> - same as above	5.1'		"B" coal
		■	<u>Coal</u> , blk(N1), banded, mod. bright, sulfate, bloom, upper 0.1' bony, sharp contacts.	0.7'		
		---	<u>Mudstone</u> - med Hqy (N6), mod hard, blocky frags, silty, micaceous, massive,	3.0'	# 41	

	415	—	<u>Mudshale</u> - med dkgy(N4) at base to med Hqy(N6) at top, hard, parallel frags, silty, lenticular bedded within lenses, few plant frags, brown Fe oxide stains at top, gradational lower contact,	2.0'	# 42	
		T	<u>Clayshale</u> - same as below,	12.4'		
	420	—				

[illegible]

DEPARTMENT OF THE ARMY			1. PROJECT		SHEET OF	
DIVISION _____			2. LOCATION (Coordinates or Station)			
INSTALLATION _____			3. DRILLING AGENCY			
DRILLING LOG			5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)			5. NAME OF DRILLER			
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN		8. DEPTH DRILLED INTO ROCK	
☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL					9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT			11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN			14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER	
DISTURBED			UNDISTURBED		16. DATE HOLE	
17. ELEV. TOP OF HOLE			18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	440	--	<u>mudstone</u> - Hgy(N7) at base to med gy(N5) at top, mod. hard - soft, blocky frags, silty, micaceous, massive, abundant plant frags, clay ironstone bands & veins, gradational lower contact.	3.7'	# 44	
			<u>Mudshale</u> - same unit as below.		# 45	
	445			25'		
	450					

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			1. PROJECT _____		SHEET _____ OF _____	
			2. LOCATION (Coordinates or Station) _____			
			3. DRILLING AGENCY _____			
4. HOLE NO. (As shown on drawing title and file No.) _____			5. NAME OF DRILLER _____			
6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN _____		8. DEPTH DRILLED INTO ROCK _____	
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____			9. TOTAL DEPTH OF HOLE _____	
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		12. MANUFACTURER'S DESIGNATION OF DRILL _____		
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES _____		15. ELEV. GROUND WATER _____		16. DATE HOLE
DISTURBED _____		UNDISTURBED _____		STARTED _____		COMPLETED _____
17. ELEV. TOP OF HOLE _____		18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	450		Mudshale - med dk gy (N4) at base to med H gy (N6) at top, hard, brittle, parallel fracture, silty, qtz, micaceous, thin horizontal laminae at base to lenticular or wavy bedded at top, but silty zones extensively bioturbated & original bedding destroyed, few small plant frags, convolute bedding, clay ironstone bands to 0.3' thick, brown Fe oxide stains, sharp lower contact w/coal.		# 45	
					453	
					# 46	
	455			25'		
	460					

DEPARTMENT OF THE ARMY				1. PROJECT		SHEET OF	
DIVISION				2. LOCATION (Coordinates or Station)			
INSTALLATION				3. DRILLING AGENCY			
DRILLING LOG				5. NAME OF DRILLER			
4. HOLE NO. (As shown on drawing title and file No.)				7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF HOLE				8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL			
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES		15. ELEV. GROUND WATER		16. DATE HOLE	
DISTURBED		UNDISTURBED		STARTED		COMPLETED	
17. ELEV. TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
480		⊕	Mudshale - dk gy (N3), hard, parallel fracs, slightly silty, micaceous, thin, horizontal laminae at base to lenticular bedded w/ thin lenses at top, abundant pyritized wood & plant frags, few small burrows, horizontal, pyrite concretions to 0.2' dia, few microfaults, sharp, nonconformable lower contact.	12.9'	# 48		
		⊕			# 49		
485		⊕	Limestone - lt gy (N8), hard, blocky fracs, massive, wackestone, brachiopods & other marine fossils, fractured at top, chert nodules to 0.2' dia, moderately oil stained near top, lower contact sharp.	6.3'		Mississippian Limestone	
490							

HOLE NO.

DEPARTMENT OF THE ARMY

INSTALLATION

DRILLING LOG

1. PROJECT

SHEET OF

2. LOCATION (Coordinates or Station)

3. DRILLING AGENCY

4. HOLE NO. (As shown on drawing title and file No.)

5. NAME OF DRILLER

6. DIRECTION OF HOLE

☐ VERTICAL☐ INCLINEDDEGREES WITH
VERTICAL7. THICKNESS
OF OVER-
BURDEN8. DEPTH
DRILLED
INTO ROCK9. TOTAL
DEPTH OF
HOLE

10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN
(TBM or MSL)

12. MANUFACTURER'S DESIGNATION OF DRILL

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN
DISTURBED

UNDISTURBED

14. TOTAL
NO. CORE
BOXES15. ELEV.
GROUND
WATER

16. DATE HOLE

STARTED

COMPLETED

17. ELEV. TOP OF HOLE

18. TOTAL CORE RECOVERY FOR
BORING (%)

19. SIGNATURE OF INSPECTOR

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)
	490	I	Limestone - same as above.	6.3'		Mississippian Limestone
		T	Shale - med dk gray (N4), very hard, parallel fracs, thinly laminated, abundant marine fossil frags, calcareous cement, fractured lower contact not observed.	16'	# 49	
		T				
		T				
		T	Bottom of core		492'	
	495					
	500					