

Gulf Pittsburg-Midway

Strat Well PM-14

HOLE NO.

DEPARTMENT OF THE ARMY			1. PROJECT		SHEET OF	
DIVISION _____			2. LOCATION (Coordinates or Station)			
INSTALLATION _____			SWSWNE 17-325-22E			
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 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	
17. ELEV. TOP OF HOLE			18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR	
835						
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					(logged by John Harris)
	25		Top of Core	25'		
		T	Clayshale - dk gy (N3), hard, parallel frags, micaceous, thinly laminated, fossil frags, calcareous cement, sharp lower contact	1.8'	#1	Bevier Coal
		T	Coal - blk (N1), hard, brittle, banded, mod. bright, sharp contacts.	1.4'		
		T	mudstone - med H gy (N6), soft, blocky frags, plant frags, lower contact not observed.	1.0'		
		T	8.7' core loss 29.3' - 38.0'	8.7'		
	30					

17-32-22c

HOLE NO. _____

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3. DRILLING AGENCY _____				5. NAME OF DRILLER _____			
4. HOLE NO. (As shown on drawing title and file No.) _____							
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)	
	30		8.7' core loss 29.3' - 38.0'				
				8.7'	#1		
			Clayshale - dk gy(N3) hard, parallel fracs, micaceous, thin horizontal laminat, few marine fossils, calcareous cement.	26'			
	40						

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4. HOLE NO. (As shown on drawing title and file No.) _____				9. TOTAL DEPTH OF HOLE _____			
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN _____		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 _____		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			Clayshale - (cont), Sharp lower contact	2.6'		Verdigris Limestone	
			Limestone - vlt gy(N8), hard, wackestone, abundant brachs, crinoid stems & other fossil frags, massive, calcareous cement, gradational lower contact.	4.4'	# 1		
					44		
45			Clayshale - gy blk(N2) - dkgy(N3), hard, brittle, parallel fracs, micaceous, thin horizontal laminae, few zones of marine fossil frags, calcareous cement & nodules to 0.3' dia, pyrite nodules, Sharp lower contact.	5.1'	# 2		
50							

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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	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)		12. MANUFACTURER'S DESIGNATION OF DRILL		
DISTURBED		UNDISTURBED		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		20. SIGNATURE OF DRILLER		21. SIGNATURE OF WITNESS		
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>Mudstone</u> - same unit as below.	3.0'	#3	
	65	---				
	70	---	7.0' core loss 63' - 70'			

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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 ☐ 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 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)			
70			<u>mudstone - med Hgy</u> (N6), soft, blocky frags, silty, micaceous massive, plant frags, clay ironstone nodules to 0.2' thick, sharp lower contact w/ coal.	30'	#3	Unnamed coal			
			/coal - smut < 0.05'	0.05	#4				
			<u>Mudstone - med Hgy (N6)</u> soft, crumbled, blocky frags, massive, plant frags, clay ironstone nodules, gradational lower contact.	1.5'					
75+			<u>Mudshale - med gy (N5)</u> mod. hard, parallel frags, silty, micaceous, thin horizontal laminae, few plant frags, clay ironstone nodules d. brown Fe oxide stains, lower contact not observed.	2.8'					
			4.7' core loss 77.3' - 82.0' probably mudshale	4.7'					
80									

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5. NAME OF DRILLER				7. THICKNESS OF OVER-BURDEN			
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED DEGREES WITH VERTICAL				8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
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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	
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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			4.7' core loss 77.3'-82.0' probably mudshale	4.7'	#4	Mineral Coal	
			Clayshale - dkgy(N3) - gy blk(N2), hard, brittle, parallel frags, micaceous, brachs & other scattered marine fossils, calcareous cement & nodules, sharp lower contact.	2.9'			
85+			Cool, blk(N1), banded, mod. bright, sulfate bloom, calcareous cement in frags, sharp contacts.	1.1'			
			Mudstone - ltgy(N7) soft, blocky frags, silty, micaceous, massive, abundant plant frags, clay ironstone veins & brown Fe oxide stains, gradational lower contact.	4.0'	#5		
90							

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6. DIRECTION OF HOLE				8. DEPTH DRILLED INTO ROCK		9. TOTAL DEPTH OF HOLE	
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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
	100		<u>Mudshale</u> - same as above	2.0'	#6		
			<u>Clayshale</u> - dkgy(N3), hard, parallel frags, micaceous, thin horizontal laminae, few brachs & other marine fossils, calcareous cement at base, clay ironstone bands to 0.2' thick, sharp lower contact.	4.2'			
	105	T	<u>Argillaceous Limestone</u> - ltgy(N7), brachs, crinoids & other fossil frags, massive, sharp lower contact.	0.3'			
			<u>Coal</u> - blk(N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.6'		Scammon Coal	
			<u>Mudstone</u> - ltgy(N7), soft, blocky frags, silty, micaceous, massive, plant fragments, abundant irregular clay ironstone nodules & veins, gradational lower contact.	2.9'			
	110				110'		

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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>mudshale</u> - med Hgy(N6), hard, parallel frags, silty, micaceous, thin horizontal laminae, nonfossiliferous, abundant irregular clay ironstone bands & veins, gradational lower contact.	5.4'	#7	
	115		<u>Interbedded sandstone & shale</u> - v Hgy(N8) & med gy(N5) laminae, hard, parallel frags, quartz, micaceous, comp, sand & fine gr, rippled, abundant plant frags, sand sized authigenic siderite crystals, gradational lower contact.	4.2'		
	120		<u>mudshale</u> - same as below.	5.9'	120	

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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)	
	120		<u>Mudshale</u> - med dkgy (N4) with v Hgy (N8) silty laminae, hard, parallel fracture, silty, micaceous, lenticular bedded w/ thick & thin lenses, abundant plant frags, few burrows, clay ironstone bands to 0.1' thick, gradational, intercalating lower contact.	5.9'	# 8		
	125		<u>Sandstone</u> - vltgy (N8), very fine grained, gte, micaceous, rippled at base, flaser to wavy bedded upwards, abundant small plant fragments, few sand sized authigenic siderite crystals, sharp lower contact w/ load casts.	3.4'		Chelsea S.S.	
	130		<u>Mudshale</u> - same as below.	11.2'			

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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)	
	130		Mud shale - med gy (NS) w brown mottling & occasional ult gy (NS) silty laminae, hard, parallel fracture, silty, micaceous, thin horizontal laminae at base, lenticular bedded at top w/ very thin lenses, abundant plant fragments, few burrows near top, brown Fe oxide stains, gradational lower contact.		130		
	135				#9		
	140				140		

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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)	
	160	..	<u>Siltstone</u> - med lt gy(N6), hard, blocky frags, abundant mud matrix, qtz, micaceous, thinly laminated to lenticular bedded, few plant fragments, some zones bioturbated, abundant sand sized authigenic siderite crystals, gradational lower contact.		160'		
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	165	..		15.4'	# 12		
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	170	..	<u>Mudshale</u> - same as below.	3'	170'		

[illegible]

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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'		180' - 190'		180'	
			missing			
			Box # 14		# 14	
			missing			
			probably a coal in this interval.			Weir-Pittsburg coal was lost in this interval.
	185'			10'		
	190'				190'	

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	190		Sandstone - u lt qy (N8) hard, very fine - fine gr., qtz micaceous, rippled, few small plant frags, abundant sand sized authigenic siderite crystals, sharp lower contact w/ load casts.	3.5'	190'	Unnamed Sandstone	
	195+		Mudshale - med dkay (N4) at base to med Hqy (N6) at top, hard, parallel frags, silty, qtz, micaceous, thin horizontal laminae at base, lenticular bedded at top with thin lenses, few small plant fragments, some bioturbation, sharp lower contact w/ coal,	20.6'	# 15		
	200				206'		

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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		Mudshale - same unit as above.		200		
	205*			20.6'	# 16		
	210				210'		

HOLE NO.

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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			
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			Mudshale - same unit as above.		210'	Bluejacket "A" coal	
				20.6'			
			Coal, blk(N1), banded, mod. bright, smut.	0.1'			
			Mudstone - med dk gy (N4) at base to med lt gy (N6) at top, mod. hard - soft, blocky frags, micaceous, silty, massive, plant frags, brown Fe oxide stains, gradational lower contact.	2.6'			
215			Clayshale - dk gy(N3), hard, brittle, parallel frags, micaceous, thin horizontal laminae, few small brachiopods & other marine fossil frags at base, calcareous cement at base, Clay ironstone bands at top, to 0.1' thick, Sharp lower contact w/ coal.	4.5'			
220					220'		

HOLE NO.

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)	
	220		Clayshale - same as above.	4.5'	220'	Bluejacket "B" Coal	
			Coal, blk (N1), smut.	0.1'			
			Mudstone - medgy (N5) at base to dkgy (N3) at top, soft, crumbled, blocky frags, massive, silty, micaceous, plant frags, brown Fe oxide stains, gradational lower contact	2.1'			
			Siltstone - med Hgy (N6), hard, blocky frags, micaceous, qtz, massive, bioturbated, few fine sand sized authigenic siderite crystals, gradational lower contact.	1.9'	# 18		
	225		Sandstone - same unit as below.			Upper Bluejacket Sandstone	
	230				230'		

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)	
	230		<u>Sandstone</u> - vlt gy (N8) w brown stains, hard, blocky frags, very fine - fine grained, qtz, micaceous, rippled at base to massive at top, few small plant frags, upper 2' bioturbated, sand sized authigenic siderite crystals, lightly oil stained, sharp lower contact.		230'	Upper Bluejacket Sandstone	
	235			10.6'	# 19		
			<u>Siltstone</u> - alternating vlt gy (N8) and med gy (N5) laminae, hard, parallel to blocky frags, qtz, micaceous, wavy bedded, few small plant frags along bedding planes, few sand sized authigenic siderite crystals, sharp lower contact.				
	240			4.8'	240'		

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 OVERBURDEN		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 _____		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)
	240	XXX	Clay shale - dk gy (N3), hard, parallel fracture, micaceous, thin horizontal laminae, nonfossiliferous, clay ironstone bands to 0.1' thick, sharp lower contact w/ coal.	3.5'	240'	Bluejacket "C" coal
		XXX	Coal, blk (N1), banded med bright sulfate bloom, sharp contacts.	0.4'	#	
		EE	Mudstone - med Hgy (N6), mod. hard, blocky frags, silty, micaceous, massive, plant frags, abundant brown Fe oxide stains, gradational lower contact.	2.1'	20	
			Mud shale - same unit as below.	14'		
	250				250'	

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		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)
	260		Coal - blk(N1), banded, med bright sharp contacts.	0.3'	260	Bluejacket "D" coal
			Sandstone - vlt gy (N8) at base to med lt gy (N6) at top, hard, blocky frags, very fine to fine gr, qtz, micaceous, massive, plant frags, base appears burrowed, irregular clay ironstone nodules, sharp lower contact.	33'	#	Seatrock Lower Bluejacket Sandstone
			mudshale - same unit as below.	21.1'	22	
	265					
	270				270	

DEPARTMENT OF THE ARMY DIVISION _____ INSTALLATION _____ DRILLING LOG			HOLE NO. _____			
			1. PROJECT _____			
			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 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 _____		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		Mud shale - med dk gy (N4) at base to med H gy (N6) at top, hard, parallel frags, silty, qtz, micaceous, lenticular bedded w/ thin lenses, few plant frags, burrows near base; clay ironstone bands to 0.3' thick, abundant sand sized authigenic siderite crystals in upper 5' have destroyed bedding, sharp lower contact.		270	
					# 23	
	275			21.1'		
	280				280'	

HOLE NO. _____

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.) _____				9. TOTAL DEPTH OF HOLE _____			
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 _____		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'		<u>Mud shale</u> - same unit as below.		280'	Drywood Coal	
				21.1'	# 24		
	285'		<u>Coal</u> , blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.7'			
			<u>Mudstone</u> - med lt gy (N6), mod. hard, blocky frags, silty micaceous, massive, plant frags, abundant sand sized oolitic siderite crystals, gradational lower contact.	3.6'			
			<u>Clay shale</u> - same unit as below.	7.7'			
	290'				290'		

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____				1. PROJECT _____		
INSTALLATION _____				SHEET _____ OF _____		
DRILLING LOG				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		
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		
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	—	—	<u>Clayshale</u> -dk gy(N3), hard, parallel frags, micaceous, thin horizontal laminae, non-fossiliferous, Clay ironstone bands to 0.1' thick, Sharp lower contact w/coal.	290'		
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—		7.7'	# 25	
295	—	—	<u>Coal</u> , blk, (N1), banded, med. bright, sharp contacts,	0.2'		Rowe coal
	—	—				
	—	—	<u>Mudstone</u> - med ltgy(N6) mod hard, blocky fracs, silty, micaceous, massive, plant frags, irregular clay ironstone concretions to 0.15' dia, gradational lower contact.	3.2'		
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
	—	—				
300	—	—		300'		

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 ☐ 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)
Start here	300	[Hand-drawn stratigraphic column with tick marks]	Mud shale - med dk gy (N4) at base to med lt gy (N5) ↑, mod. hard, parallel frags, silty, qtz, micaceous, lenticular bedded at base to wavy bedded ↑, plant frags, oolitic siderite crystals & veins, sharp lower contact marked by clay ironstone band.	5.2'	# 26	
	305		Clay shale - same unit as below.			
	310			10.4'		

HOLE NO.

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.) _____				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 _____	
18. TOTAL CORE RECOVERY FOR BORING (%) _____		19. SIGNATURE OF INSPECTOR _____		20. REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
310			Clayshale - dkgy (N3), hard, parallel frags, micaceous, thin horizontal laminae, non-fossiliferous, Clay ironstone bands to 0.4' thick, uniform color & comp. Sharp lower contact w/ underclay.		310	
				10.4'	# 27	
315						
			XXX Mudstone - med lt gy (N6), mod. hard, blocky frags, silty, qtz, micaceous, thin horizontal laminae at base to massive at top. plant frags, abundant sand sized autigenic siderite crystals, irregular clay ironstone bands & veins, to 0.2' thick, gradational lower contact.			
				4.1'		
320					320	Neutral coal horizon

HOLE NO.

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)		BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	320		mudshale - med dk gy(N4) w ult gy(V8) silty laminae, hard, parallel fracs, silty, qtz, micaceous, wavy bedded at base with silty laminae decreasing upwards, plant fragments, some bioturbation, clay ironstone bands to 0.2' thick, sand sized authigenic siderite crystals near top, sharp lower contact with underclay.		320'	
					# 28	
	325				14.1'	
	330				330'	

HOLE NO. _____

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.) _____				9. TOTAL DEPTH OF HOLE _____					
6. DIRECTION OF HOLE				7. THICKNESS OF OVERBURDEN _____		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 _____		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)			
	330		<u>Mudshale</u> - same unit as above.	14.1'	330'	Underclay but no coal? Unnamed coal horizon			
	335							<u>Mudstone</u> - med lt gy (No), soft, blocky frags, massive, plant frags, silty, micaceous, sand sized auth. siderite xstals, gradational lower contact.	17'
								<u>Mudshale</u> - same unit as below.	
			Fossiliferous zone 338' - 339.5'	10.2'	340'				
	340								

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____				SHEET _____ OF _____		
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 _____		
☐ VERTICAL ☐ INCLINED		DEGREES WITH VERTICAL _____		8. DEPTH DRILLED INTO ROCK _____		
10. SIZE AND TYPE OF BIT _____		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _____		9. TOTAL DEPTH OF HOLE _____		
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)
	340		<u>Mud shale - med dk gy(N4), hard, parallel frags, silty, qtz, micaceous, thin horizontal laminae w/ occasional v lt gy (N8) silty laminae, abundant plant frags, fossiliferous zone from 338' - 339.5' contains brachs, crinoid stems, bryozoa, & other marine fossil frags, clay ironstone bands near top to 0.1' thick, sharp lower contact w/ coal.</u>		340'	
					#30	
				10.2'		
	345		<u>Coal, blk(N1), hard, brittle, banded, mod. bright, sulfate bloom, sharp contacts.</u>			
				1.2'		"A" coal
			<u>Mudstone - med lt gy (N6), mod. hard, blocky fracture, silty, qtz, micaceous, massive, plant frags, no apparent diagenetic features, gradational lower contact.</u>			
				2.7'		
	350				350'	

DEPARTMENT OF THE ARMY				HOLE NO. _____		
DIVISION _____				1. PROJECT _____		
INSTALLATION _____				SHEET _____ OF _____		
DRILLING LOG				2. LOCATION (Coordinates or Station) _____		
3. HOLE NO. (As shown on drawing title and file No.) _____				3. DRILLING AGENCY _____		
5. NAME OF DRILLER _____				4. 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		
DISTURBED _____ UNDISTURBED _____				15. ELEV. GROUND WATER		
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)
	360		Mudstone - dk gy (N3) w v lt gy (N8) silty laminae, hard, parallel fracs, silty, qtz, micaceous, lenticular bedded w thick d thin lenses, convolute bedding near top, few small burrows, gradational lower contact.	3.0'	350'	
			Claystone - dk gy (N3) hard, parallel fracs, micaceous, nonfossil- iferous, abundant clay ironstone bands to 0.1' thick, sharp lower contact w/ coal.	2.1'	#31	
	355		Coal - blk (N1), banded, mod. bright, sulfate bloom, sharp contacts.	0.8'		"B" coal
			Mudstone - lt gy (N7), mod. hard, blocky fracs, silty, qtz, micaceous, lenticular bedded w thin lenses at base to massive at top, plant frags, sand sized authigenic siderite crystals, brown Fe oxide stains, lower contact not observed but probably gradational	4.1'	360'	

[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.)				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		17. ELEV. TOP OF HOLE	
18. TOTAL CORE RECOVERY FOR BORING (%)		19. SIGNATURE OF INSPECTOR		20. REMARKS (drilling time, water loss, depth of weathering, etc., if significant)		21. ELEVATION	
400		Fossiliferous Mudshale - same unit as above, Coal - blk(N1), banded, mod. bright, abundant sulfate bloom, sharp contacts.		0.7'		# 35	
402		Mudstone - dk gy(N3), silty, gradational lower cont.		0.3'		# 36	
405		Siltstone - med H gy(N6), hard, blocky frags, abundant mud matrix, qtz, micaceous, massive, plant fragments, may be burrowed, brown Fe oxide stains, gradational lower contact.		4.9'			
410		Mudshale - med gy(N5), hard, parallel to blocky frags, silty, micaceous, thin horizontal laminae, plant fragments along bedding planes, clay ironstone bands to 0.1' thick, sharp lower contact w/coal.		2.8'			

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 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)
	410		mudshale - same as above	2.8'		Riverton coal Core in reverse order.
			Coal, blk (N1), banded, mod. bright, hard, brittle, sulfate bloom, calc. cement, sharp contacts,	1.6'	411	
			mudstone - med dk gy (N4), mod. hard, blocky frags, silty, micaceous, massive, plant frags, no apparent diagenetic features, gradational lower contact.	1.2'		
			mudshale - dk gy (N3) w/ v H gy (N8) silty laminae, hard, parallel frags, silty, qtz, micaceous, lenticular bedded w/ thin lenses, abundant pyritized plant frags, pyrite concretions to 0.05' dia, few small burrows, gradational lower contact.	7.0'	# 37	
	415					
	420					

