



USGS Hanna Draw 2 - Core

Measured by: MD
Date: 4/20/2025

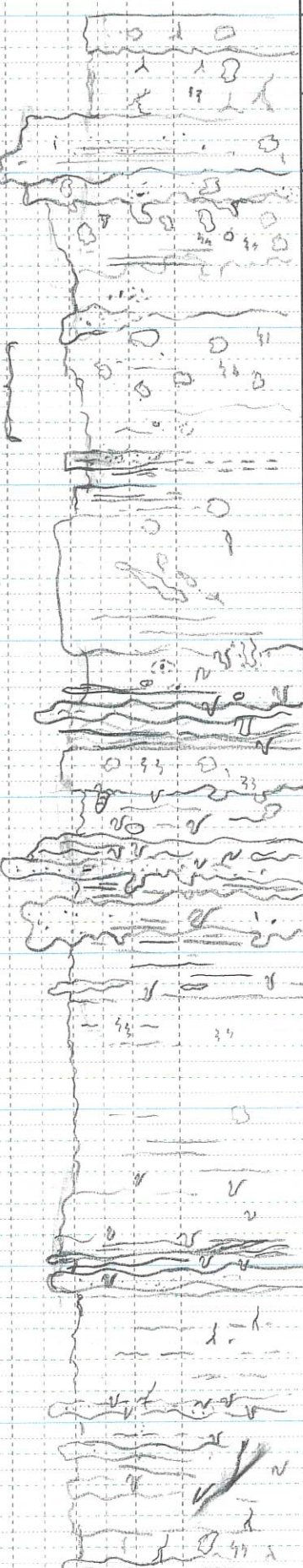
Leg/Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
Run 1												800	yellow mottling uvf ss ps? with clay and breaks from saw after slabbing → clay content. Agays to tan mottles yellow
												801	p.s. with clay content, yellow mottling fairly parallel laminated w. sand/og drapes red mottled patches
												802	red mottling in d-m grey fair parallel lamination
												803	red-yellow mottling in m. grey
												804	white-coated grains fair lamination
												805	orange diagonal mottling (along burrow)
												806	1 cm - mm scale bioturbation grey uvf ss mm-scale siderite/Fe? concretions
												807	orange mottling
												808	5mm beds, with og./silt-shale drapes bioturbated coal/black grains
												809	grey more sandy sheels with ss and biot og. drapes
												810	m grey w. dr m grey with clayey fracturing
												811	fair parallel lamination mm scale burrows
												812	hor. fractures 3cm spaced
												813	og. fragm vertical bioturbated slight coarse layer
												814	fracture w. calcite on fict planes
												815	black hor. og. shales/pods? red mottling / siderite

white coarse grains

pockets of white coarse grains

drilled and mottled

pits





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Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
Run 2												810	
													l. gray - yellowish colored fractured in sand due to clay content
												811	slightly finer in gray yellow-in gray
												812	solid red mottled siderite concretion, yellow best? d. gray ss with
												813	green gray - red mottled
												814	rusty red mottling
												815	in orange in red color d. gray red
												816	d. gray sandstone with dred/orange mottling
												817	d. gray/yellow
												818	siderite concretion, 3 1/2 cm x
												819	3 on siderite
												820	siderite



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Leg/ Recovery	Brot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												820	l. gray, yellowish
												821	ripples
												822	dark brown - yellow gray immature pebbles
												823	
												824	more horizontal org. drapes preserved
												825	
												826	org. material bands, aren. ls
												827	shaly siderite sub mm mica flakes?
												828	0.4" siderite layer
												829	fractured from drilling
												830	l. gray, clayey, crumbly siltstone/ mudstone

Leg/Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												830	0.3" bed. biot. w/ ss charcoal fragments clay? moving 10% with ss? biot. m. gray siltst. with gray ss shaly + biot
												831	biot. ss. w/ m. s. mixed with mm scale, d. in gray siltstone beds
												832	charcoal fragm. diffuse boundaries rootlets faint ripples org drapes
												833	org. drapes diffuse boundaries irregular (unconsolidated top)
												834	charcoal fragm. bed 2 mm sandy forsets laterolithic m-d gray
												835	dispersed grains in org. matrix up to v.c. graded shaly base irregular, diffuse org material, carb shale
												836	carb. cemented isolated shaly of 1/4" ss-siltstone and mm-scale burrows?
												837	hor. laminated org. mat m. gray siltstone, fine faint crumbly, carb. conc. fine vitic. coal crumbly siltst, org rich
												838	laminated, wavy, to slightly rippled isolated shaly + brown
												839	d. brown org. parallel carb conc., conc. bed crumbly, gypsum org mats
												840	mm scale laminated d. brown org drapes

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
					does not fit							850	mildly fin clayey immature psol
												851	
												852	med grey clay
												853	
												854	med grey clay
												855	d. brown carb shale with white (carb/gypsum) stringers
												856	fossil c' carb shale
												857	carb shale
												858	ltf ss hor. laminated occ. ripple
												859	w.s. heterolithic w/ ss. w.s. mm-scale sub-vert burrows 8mm burrow heterolithic
												860	1cm cgl heterolithic. 1cm vert burrows mm scale laminae + ripple org drapes
												861	cm scale burrows and undulating bedding planes
												862	clayey, carb shale, does not fit. yellow
												863	med grey tan carb shale, clayey
												864	1 cu. ltf ss.
												865	drill mud infilled carb shale, d. grey/brown/black

light
fitz

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												900	char coal frags siderite concretions
												901	pieces char coal flakes on x beds sharp contact on shales lf ss w ripple CRL and 0.5-0.7 cm v mv ss w follow - in grain silty shale clayey?
does not fit												902	rip up clast layer, d. grain d. grey dense shale finely laminated
												903	d. brown shale, silty clayey
												904	clayey, silty shale m. brown mm-scale ripples / ss
												905	d. grey silty shale clayey?
												906	m. grey silty shale
												907	more clayey
												908	yellowish-grey siderite d. brown-grey clayey nitstone slightly
												909	
												910	

slightly clayey

Leg/ Recovery	Bot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												910	carb shale & brown
													slightly coarser, less elongated
												911	vs vlf ss 0.7 cm ϕ burrows vert
												912	0.5 cm burrows mm-scale burrows
												913	cm-scale, heterolithic light fine cm-scale 0.3 mm ϕ
												914	charcoal fragments 4 cm ripple picks
												915	d. gray fissile shale 1 cm siderite
												916	mm-scale white silty layers mm scale laminated clayey at base carb shale silty / dry shale
												917	sid d. gray carb shale
												918	fissile carb shale
												919	fractured, clayey carb shale
												920	

light fine

light fine

light

with shale in
coal fragments on drapes

Leg/Recovery	Bit?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												930	d. brown-grey clayey
												931	isolated ripple faint siderite d. brown fissile carb shale
												932	mixed cracks?
												933	ws l grey luf ss, heterolithic with CRL, 2cm s ripples in diff. directions heterolithic abundant //
												934	heterol SSD base m. grey silty, faint sid developn d. brown carb shale 1 cm l grey rippled int
												935	SSD w/ ss ws 2m: sid? carb shale mm-scale carb layers d. brown carb shale internal SSD mm-scale
												936	Sharp top luf ss, wa, carb lithic fragments charcoal flakes cm-scale fault calcite lined fracture set pyrite, upup luf ss, d. brown heterolithic, mm-scale
												937	SSD + // d. grey shale
												938	d. grey shale d. brown carb shale fissile
												939	smooth, m. grey shale with concoidal fract. s sid fissile d. brown carb shale
												940	d. grey silty shale smooth

no fine

faint fine

show carb fine cemented

l. fine
on v. ss
but not shale

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												940	d. brown carb shale with ripple silt shifera
												941	d brown carb shale fissile shifera lightls fine shifera grayish d grey silt d grey smoother clayey shale to black carb crust on 2 cm
												942	d grey fissile shale with shell fragment d brown - yellow fissile shale
												943	d brown - black fissile shale to coal with gypsum 5 cm bone coal, with vert fract d grey - black with 0.5 cm ripples black carb shale with Pyrite
												944	black carb shale with mm-scale coal lenses Whitish underclay? →
												945	d brown with clays d brown - whitish carb shale black shale d brown with clays
												946	black coal silty waves d brown fissile carb shale black underclay? → underclay? →
												947	l brown - grey silty shale
												948	l brown grey silty shale d grey clayey, smooth
												949	l brown - grey silty shale d grey - brown (w/ ss or rootlets) d brown shalen w.s. of s. charcoal fragment → roots? orange mottled Fe stains?
												950	m grey clay with sticks + coal



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Leg/ Recovery	Bot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												950	
													black coal (coalified root)
												951	d brown carb shale black coal black shale
													black d brown carb shale coalified root
												952	d brown a brown - black
												953	black grey carb shale coal
												954	black carb shale black / dark vitreous coal
												955	6 cm bone coal black
												956	d brown carb shale m m scale burrows at base 4 cm coal
												957	d brown carb shale coal black carb shale + coal
												958	l. tan clay d brown carb shale layered coal d brown 3-4 cm limestone bed
												959	2 grey layer coal ball in d brown carb shale
												960	d brown carb shale

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												960	black bone coal
													d. brown
												961	
												962	
												963	l. grey - tan carb. shale grey-brown d. brown
												964	l. brown carb shale
												965	l. brown l. grey siltstone w. slickensides and ls
												966	white clay infiltrated by drill mud
													wt. l. v. ss. - does not firm
												967	1 cm carb bed black l. brown darker ?
													l. brown l. b.
												968	l. b.
													d. brown
												969	d. grey-black carb. shale not tightly rippled 0.5cm gypsum bone coal
												970	black coal

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												970	pyrite
												971	brown - tan with coalif
												972	d brown coal
												973	d brown coal/carb shale
												974	black
												975	6 cm carb coal black carb shale coal
												976	light gray, l. brown black carb shale w. black shing
												977	light tan
												978	brown carb shale black
												979	← fossil here! brown/black coalif, carbonate d brown pyrite d brown - black shale
												980	coal, white

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
Drafting error! numbers off (re-labeled)													
												987.7	m. grey
													d. brown carb shale, fissile
													m. grey silty shale
												988.5	d. grey-brown carb shale
												989	mud cracks? macrofossils
													d. brown carb shale smooth
													carb concretion
												990	d. brown carb shale
													some mm scale org droppings
												991	
													d. brown carb shale
													d. brown
												992	
													m. grey shale with abundant siderites
												993	
													d. brown shale
												993.7	4cm
												994	d. brown shale, clayey d. grey w. slicks finely laminated
												994.7	- 2cm siderite
												995	
												995.5	
												996	
													d. brown fissile carb shale
												996.6	

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												996	
												996.6	lie →
												997	d. brown fissile carb shale uvf ss rippled. carb con. d
												998	d. gray carb shale
												999	d. gray lam. carb shale m-d. gray smooth, shale no slick.
												1000	d. brown fossil
												1001	d. gray coal d
												1002	pyrite? metal shan?
												1003	slightly rippled clayey / grey-black coal laminated black coal
												1004	d. brown clayey black shale
												1005	clayey, fractured 5cm black bone coal black lam. 6cm bone coal

1000.75' bone?
gypsum?

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1005	brown + black coal
												1006	bone coal 3 in bone coal gyp jammed coal due to dilly? coal in top in on top of s. SSD throughout green concretions? org. rich layer rootlets?
												1007	burrows? med grey - bio
												1008	brown - grey fractured
												1009	d. brown shale ↑ air
												1010	

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1020	carb shale d grey - yellow/tan
												1021	coal fragments d brown
												1022	d grey - black fine carb shale m grey l grey
												1023	d grey - black carb shale sandy grains l grey small burrows
												1024	m grey
												1025	tan - grey, sand ripple
												1026	l grey, immature pool
												1027	l grey / tan / clayey org. rich
												1028	l grey SSD with
												1029	heterochthec ss lt + org drapes up to scale m-g org rich drapes white - grey - oolitic ss bedded m-ps up to w/c * org. drapes
												1030	m - coarse ps ss, carbaceous pyritised, smells like H ₂ S interbedded with vitric con. coal
												1031	blechy / some coal

White Sand?

Leg/Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1030	black carb shale siltstone sh. grs 3-8 mm ↓
												1031	vitric sand ssd - silty - tan d. brown carb shale d. brown
												1032	fissile carb shale d. brown fissile carb shale
												1033	
												1034	tan - gray/yellow clayey
												1035	clayey / shaly orange concretions (Fe?)
												1036	orange coner. / mottling? w/ ss w/ s. l. gray fractured / clayey org draper brow
												1037	d. ssd brown org draper diagonal crayfish U. con. d orange mottles org draper + outbed u.c. clasts p's of ss
												1038	u. org mat material mm - scale / lates org. mat
												1039	d. gray - yellow org mats? lf - mf ss
												1040	abundant dispersed org. fragments
												1041	



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												1040	l. grey, dispersed ^{small scale} of flakes
												1041	l. con. gray fishy with plant fragments, laminated
												1042	leaf matter? some v. outside fold spans clasts
												1043	l. gray - d. gray heterolithic, laminated ss
												1044	heterolithic bit
												1045	bit. rootlets?
												1046	l. on gray diffuse boundary with l. on pocket w. fold spans coal/black layer
												1047	n.c. putrice
												1048	heavily laminated with abundant org/plant/leaf fragments
												1049	diffuse boundary
												1050	w/ ss fracture 2cm offset? coal/leaf?
												1051	d. gray - l. gray heterolithic laminated l. v. - w. ss (some w/ clasts)
												1052	bit. leaf mat/org mats

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1060	
													clayey yellow
												1061	coal drapes drill mud
				no for								1062	m gray luf ss, polygonal cracks with ag.
												1063	
													leaf mats + vitr coal mm
												1064	m brown clayey, ssd
													vitr. coal
												1065	
													d. gray/black black org with porula & med
													yellow d. gray luf ss, clayey rootlets
												1067	yellow-tan idem.
													less clayey, l gray muf - muf ss
												1068	light biot?
													of rich mats siderite
												1069	heterolithic mm-scale luf ss - silt and some leaf mats biot.
													m gray luf ss - silt some coals
												1070	

sand
can

no for
light for
fine
light for
fine

Leg/ Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1070	2-8mm burrows plant mat?
												1071	min-scale burrows plant m gray brown-gray 1 v 5s m gray layered siltstone
												1072	l. gray shale
												1073	yellow-green l. gray siltstone d. gray fissile carb shale
												1074	d. brown carb shale coal stringers
												1075	d. brown - m gray carb shale
												1076	d. gray carb shale w. abundant coal
												1077	d. brown clayey carb sh
												1078	coal black carb shale
												1079	slightly clayey carb sh
												1080	min - 0.5 cm scale coal layer
												1081	d. brown carb shale
												1082	coal stringers

Amiblene
1 cm
fite
fite
mofite

1-3 mm sized Amiblene

⊕ ⊖

Leg/ Recovery	Bot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1080	
													d. brown carb shale
												1081	black carb shale w. coal stringers
												1082	fine, carb shale d. brown brown clayey sl.
												1083	fine, pulverized d. brown carb shale clayey?
												1084	d. brown carb shale grey-white clayey pulverized
												1085	d. brown carb shale/ coal
												1086	coal
												1087	pyrite ssp. carb stringers in (w/ ss) coal stringers diffuse top. ls. tubular coal / carb shale mats
												1088	plant mats? m. 1. grey, m. ss, at base w/s mid m. scale plant mats 1-2 cm spaced
												1089	green concretions (??) oily m.
												1090	syn sed 5 cm 3 fault carb. fragments d. grey, brown carb shale

Leg/ Recovery	Blot?	Soil	Cobble	Granula	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1090	d. brown carb shale slayer whiter carb shale ↑ d. brown ↓ coal shijers - black carb shale
												1091	orange mottles? / concretion
												1092	1. m gray siltstone
												1093	orange concretions / mottles
												1094	l. brown, clayey fissile shale
												1095	d. brown carb shale
												1096	
												1097	W. coal fragments darker brown diffuse to
												1098	coal fragm. mm - scab carb shijer / root? abundant w. m 2-4 cm intervals separated by thin mm scale
												1099	diffuse top outsized v.c. grains dispersed (white, angular mowing) carb shale w. diffuse grain p.s. dispersed grains abundant charcoal white grains diffuse internal boundaries
												1100	



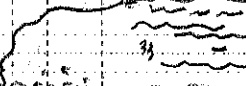

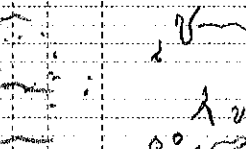
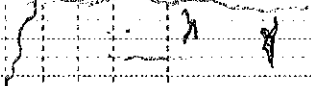
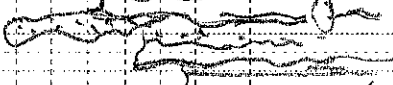
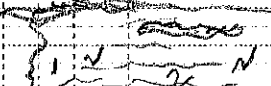
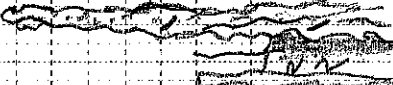
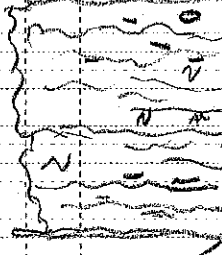
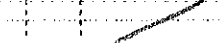
Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1100	roots very ps diffuse grains, white up to granule grains angular, subangular
												1101	m. gray - yellow clayey silty
												1102	
												1103	d. grey - red shale
												1104	burrow filled w. calcified grains
												1105	orange concretions
												1106	slightly clayey & rootlets, small ag. spec.
												1107	org. frag. ss
												1108	pieces of org material with non concretion around it
												1109	l. grey w/ ss
												1110	heterolithic m-l grey 1/2 ss with burrow
												1111	m. grey silts with mini-scale burrows
												1112	pyrite
												1113	l. g. w/ 1/2 ss w. ripples + cal

Leg/ Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1110	heterolithic 1/4 ss d. grey carb shale
												1111	v.c. with abundant white org. clasts, mowing?
												1112	low angle x-bedding rotated? org. frag m.
												1113	uvf ss with mud drapes and burrows
												1114	x beds w. org. drapes m.s. ss grey - w. grey 1 grey ss w. local ripple less m.s. 2 cm ripples in soft sediment unconsolidated
												1115	
												1116	Sid
												1117	d. grey silt. w. silt & clay + org. draps
												1118	d. grey w. orange mottles? w. some oversized gran
												1119	Orange conch. FE org. frag m.
												1120	clayey. gn-yellow ss uvf ss/granite frags (pink, glassy) org. dispersed in sed. ps ss 1cm bed breaks

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1120	
													pockets of coarse grains/granules lf ss with dispersed grains white / marl
												1121	x beds char coal.
												1122	d. grey chert / densely clasts.
													d. grey carb. sh. w. coal stringers bedded like a extensively burrowed ss cap. v. fine 1 mm d. brown carb. sh. d. grey carb. sh.
												1123	
													Small shell fragments fuz w. siderite concretions
												1124	
													d. grey carb shale / clayey w. coal stringers
												1125	
													d. brown carb shale w. coal stringer
												1126	
													d. brown carb shale d. brown clayst.
												1127	
													lf ss w. s infiltrated w. drill mud?
												1128	
													core stuck in barrel
												1129	
													lf ss w. s d. grey / yellow siltst
												1130	d. brown carb shale

Leg/Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1140	large d. carb vitic
												1141	diffuse top
												1142	lgy carb shale/clay brown clayey shale
												1143	d. brown sh coal stringers
												1144	lgy clayey shale w. coal stringers
												1145	d. gray-brown carb
												1146	black carb shale w coal stringers
												1147	coal
												1148	brown + mgreen
												1149	org
												1150	?
												1151	rootlets?
												1152	ext. biol. some med. root carb w. rootlets/org mat. mg. oversized brn clast
												1153	d. gray carb sh w. dispersed grains (med)
												1154	orange

Leg/ Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1160	Black carbon w. coal sh + 2 or 3 cm tonolite w rhy bas
												1161	
												1162	
												1163	org. mat. lining fossils?
												1164	l. grey ss
												1165	
												1166	l. brown ss w. rootlets & coal
												1167	
												1168	1cm
												1169	heteroch. ss w. alien d. branner
												1170	heteroch. ss w. H. f. ss

Log/ Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1190	d. br. carbon
												1191	amber? harder l. brown carb shale
												1192	carb org fragments
												1193	orange conc. w/ comp burrows
												1194	dispersed out-sized carb or concn. burrows + root
												1195	± 1 ft. burrows w. granules cray fish
												1196	kerolite = 1/4 ss d. gray - gray w. burrows
												1197	org. fragment
												1198	org. fragment
												1199	pyrite abundant org frag m m. gray w. burrows + org fragment
												1200	

Leg/ Recovery	Blot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1200	d. brown clayey carb shale
													m. gray silts
												1201	d. gray carb sh with coal shijgs
													m. gray clay st. with shale sides
												1202	d. brown carb shale
												1203	
												1204	w. coal
												1205	clayey d. brown brown carb sh black carb shale
												1206	d. brown carb shale
												1207	black carb shale d. brown
												1208	clayey
												1209	d. brown carb sh coal shijgs in d. brown carb sh gyfs
												1210	

Lag/Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1210	Med. brown clay to carb. shale
												1211	Med. brown carb. shale
												1212	d. brown SSD, burrows, ss
												1213	ss, org. frags
												1214	in grey ss. Biot
												1215	lateralitic biot ss with root fragments
												1216	
												1217	lateralitic ss 1- m grey ss
												1218	aren lateralitic
												1219	org. drages org. mat
												1220	pyrite? lateralitic
												1221	burrowed ss w. org. frags

Leg/ Recovery	Biot?	Soil	Cobble	Granule	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Shale	MD (ft)	Notes
												1230	
													ps w/ ss w. abundant org drogs
												1231	very silicified granule congl.
												1232	
													l. gray
												1233	bone coal
												1234	
												1235	
												1236	T.D.