



CLIENT	IDNR									BORING#	
PROJECT NAME_									_	Northing	1022062.791
PROJECT LOCATION	ON Booneville	e, Indiana							_	Easting	2905710.665
										JOB#	170DR00045
	DRILLING and SA	AMPLING IN	FORMA	TION		-					TEST DATA
Date Started _	4/4/17	Hammer	Wt		140	_lbs.					
Date Completed	4/4/17	Hammer	Drop _		30	_in.					
Drill Foreman	Gary Lauber	Spoon Sa	ampler C	DD	2	_in.				est, nts	
Inspector		Rock Cor	e Dia.	1	.875	_in.				on Te emer	
Boring Method	HSA/RC	Shelby Tu	ube OD			_in.		ohics phics		etratic	
SO	IL CLASSIFICATION	 I	, f		Ī		Туре	r Grap ry Gra	water	d Pen er 6 ir	φ
	CE ELEVATION 421		Stratum Elevation, ft	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Remarks
Topsoil with			420.5	1.0	0 0	ωz	S	ა¤ ∏	G	<u> </u>	т.
7///	graver - mt ′, brown, moist		7-20.5	1.0	-				Ţ		
	, ,										
					5 -						
					-	=					
			140.5	44.0	10 -						
SILTY CLAY		wn. mottled	410.5	11.0							
with black, p	lastic, slightly sticky, cent, trace gravel				-	1					
non-enerves	cent, trace graver		405.0	40.5	15	1	SS	X		3-6-9	
CLAY, light of	gray, mottled with bro	wn. plastic.	405.0	16.5							
sticky, slight	ly moist, non-efferves	scent	401.9	19.6		2	SS	X		2-3-14	
SHALE, san	dy, brown, soft		399.5	22.0	20 -	<u> </u>				2014	
SHALE, grav			_ 399.5	22.0	-						
	,, ,		396.2	25.3	25 -	3	SS	×		50/.5	
SHALE, dark	gray, soft, unweathe	ered	-		25	1	RC	H			RC #1 from 25.3 ft to 26.3 ft; RQD=0%
					-	2	RC				RC #2 from 26.3 ft to 31.3 ft; Rec.=100%; RQD=60%
			390.2	31.3	30 -						
SHALE, dark	 c gray, soft and very s	 soft,	·		=	3	RC				RC #3 from 31.3 ft to 36.3 ft; Rec.=98%;
weathered, h	nighly broken		388.2	33.3	:	1					RQD=0%
broken	gray, unweathered,	moderately			35 -						
- decompos	ed at 35.5 ft				-	4	RC				RC #4 from 36.3 ft to 41.3 ft; Rec.=96%; RQD=16%
					40 -						NQD-10%
D-#			380.2	41.3	140	_		H			Occupant to the prime of the constant of
Bottom of Bo	oring at 41.3 ft										Grouted boring at completion.
								Ш			

Sample Type

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Depth to Groundwater

 Noted on Drilling Tools _____ ft.

__ ft.

After 12 hours **2.5** ft.

☑ Cave Depth

Boring Method



CLIENT	IDNR	BORING #	BH-2
PROJECT NAME	Site 2295	Northing	1022944.983
PROJECT LOCATION	Booneville, Indiana	Easting	2905746.104
_	·	JOB#	170DR00045

DRILLING and SAMPLING INFORMATION **TEST DATA 140** lbs. 4/4/17 **Date Started** Hammer Wt. 4/4/17 **30** in. Date Completed Hammer Drop **2** in. Drill Foreman Gary Lauber Spoon Sampler OD Standard Penetration Test, Blows per 6 in. Increments **1.875** in. Inspector Rock Core Dia. Sampler Graphics Recovery Graphics Boring Method HSA/RC Shelby Tube OD Sample Type Groundwater SOIL CLASSIFICATION Stratum Elevation, Remarks Stratum Depth, ft Sample No. Depth Scale, SURFACE ELEVATION 450.083 449.9 0.2 Topsoil - 3" 1 SS 3-4-8 CLAY, brown and mottled with dark brown, stiff, slightly plastic, slightly sticky, slightly 445.6 4.5 2 SS 3-5-6 moist, non-effervescent, trace gravel 444.1 6.0 SILTY CLAY, brown with black, stiff, plastic, 3 SS 5-20-23 slightly sticky, slightly moist SHALE, dark brown and blackish brown. 4 SS 8-50/.5 weathered, fissile, dry 439.6 10.5 10 - light gray and sandy from 9 ft 5 SS 35-50/.3 SHALE, gray, decomposed, dry SS 6 28-50/.2 15 7 SS 25-50/.3 8 SS 40-50/.3 429.9 20.2 20 SHALE, gray, unweathered, soft and 1 RC RC #1 from 20.2 ft to 21.4 ft; Rec.=83%; moderately hard, with calcareous and RQD=33% RC 2 fossiliferous sections RC #2 from 21.4 ft to 26.4 ft; Rec.=100%; 425.5 24.6 RQD=40% 25 SHALE, dark gray, soft, highly broken 3 RC RC #3 from 26.4 ft to 31.4 ft; Rec.=34%; RQD=0% 30 419.1 31.0 SHALE, gray, soft RC #4 from 31.4 ft to 36.4 ft; Rec.=100%; 4 RC - dolomite from 31.2 ft to 34.2 with dark gray RQD=52% 415.9 34.2 sandy clay seam from 33.5 ft to 33.8 ft 35 SHALE, dark gray, unweathered, moderately hard, fossiliferous at 38.4 ft 5 RC RC #5 from 36.4 ft to 41.4 ft; Rec.=100%; RQD=64% 410.5 39.6 40 COAL, black, with pyrite 6 RC RC # 6 from 41.4 ft to 46.4 ft; Rec.=100%; RQD=8% 45 402.8 47.3 7 RC RC #7 from 46.4 ft to 49.4 ft; Rec.=93%; 402.3 47.8 UNDERCLAY, light gray, sandy RQD=60% 400.7

Sample Type

SS - Driven Split Spoon ST - Pressed Shelby Tube

CA - Continuous Flight Auger

RC - Rock Core

CU - Cuttings

CT - Continuous Tube

Depth to Groundwater

Noted on Drilling Tools

At Completion Ground level ft. ∇ ▼ After hours ft.

☑ Cave Depth ft. **Boring Method**

HSA - Hollow Stem Augers

CFA - Continuous Flight Augers

DC - Driving Casing MD - Mud Drilling

HA - Hand Auger





CLIENT	IDNR									BORING #_	BH-2
PROJECT NAME										Northing _	1022944.983
PROJECT LOCATION		Indiana								Easting _	2905746.104
										JOB#	170DR00045
	DRILLING and SAI	MPLING INF	ORMA	TION		-					TEST DATA
Date Started	4/4/17	Hammer V	Vt.		140	lbs.					
	4/4/17										
Drill Foreman	Gary Lauber	Spoon Sar	mpler C	DD	2	in.				sst, nts	
Inspector		Rock Core	Dia.	1.	875	in.				on Te	
Boring Method _	HSA/RC	Shelby Tu	be OD			in.		hics		etratic	
SOIL	CLASSIFICATION		'n, ff	_ _ =	<u>.</u>		Type	er Grap	lwater	rd Pen oer 6 ir	8
	(continued)		Stratum Elevation, ft	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Remarks
SILTSTONE, li	ight gray, unweather	ed,	0, 11	0,2				ΪŢ			Grouted boring at completion.
Bottom of Bori											
Sample Type					pth to C	<u> </u>	<u> </u>				Boring Method

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core
CU - Cuttings
CT - Continuous Tube

• Noted on Drilling Tools _____ ft.

▼ After _____ hours _____ ft.

☑ Cave Depth ft.





CLIENT	IDNR									BORING#	BH-3
PROJECT NAME Site 2295										Northing _	1023499.566
PROJECT LOCATIO	N Booneville, In	diana								Easting _	2905761.91
										JOB#	170DR00045
	DRILLING and SAMF	LING IN	FORMA	TION							TEST DATA
Date Started	4/5/17	Hammer	Wt.			lbs.					
Date Completed		Hammer				in.					
Drill Foreman		Spoon Sa				in.				st,	
Inspector	-	Rock Cor	e Dia.	1.8	75	in.				n Te	
Boring Method _	HSA/RC	Shelby Tu	ube OD			in.		Sics		ratio	
							be	raphi	ē	enet 3 in.	
SOIL	. CLASSIFICATION		on, ft	ے ≓	#	ø	e Ty	er G	dwat	ard P	rks
SURFACE ELEVATION 469.313			Stratum Elevation, ft	Stratum Depth, ft	Depth Scale,	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Remarks
SILTY CLAY,	brown, moist				=						Soils classified based on visual
					-						observations during drilling operations.
3			463.3	6.0	5 -				⊻		
SAND, with sil	t and clay, orange brow	 n			_						
3											
引 然			457.3	12.0	10 -						
SHALE, sand	y, black, soft		_ 437.3	12.0	-						
			454.3	15.0	15						
SHALE, gray,	weathered										
1											
===					20 -						
					_						
SHALE, dark	gray, unweathered, soft,		443.8	25.5	25 –						
moderately ha	rd, calcareous and fosil	iferous			-						
Sections					30 -						
					=	1	RC	H			RC #1 from 30.5 ft to 31.7 ft; Rec.=92%; RQD=33%
					-	2	RC	Ш			RC #2 from 31.7 ft to 36.7 ft; Rec.=100%;
#			432.8	36.5	35 -			Ш			RQD=90%
SHALE, dark	gray, unweathered, soft		- 102.0	00.0	-	3	RC	Ħ			RC #3 from 36.7 ft to 41.7 ft; Rec.=92%;
					10 =			Ш			RQD=52%
#					40 -						
1			426.1	43.2		4	RC				RC #4 from 41.7 ft to 46.7 ft; Rec.=96%; RQD=56%
SHALE, black	, 		423.7	45.6	45						
SHALE, dark of scalcareous	gray, moderately hard,		423.1	46.2 47.2	=	5	RC				RC #5 from 46.7 ft to 51.7 ft; Rec.=100%;
SHALE, black	, unweathered		 				1.0				RQD=40%
Sample Typ			- 1	De	pth to 0	Groun	dwate	er		I	Boring Method

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

 Noted on Drilling Tools _____ **4.8** ft.

▼ After ____ hours _ ____ ft. ☑ Cave Depth ft.





LIENT	IDNR									BORING #_	BH-3
ROJECT NAME	Site 2295									Northing _	1023499.566
ROJECT LOCATIO	N Booneville,	Indiana								Easting _	2905761.91
										JOB#	170DR00045
	DRILLING and SA	MPLING IN	ORMA	TION							TEST DATA
Date Started	4/5/17	Hammer \	₩t.			lbs.					
Date Completed		Hammer I				in.					
Drill Foreman	Gary Lauber	Spoon Sa	mpler C	D		in.				est, nts	
Inspector		Rock Core	e Dia.	1.8	875	in.				on Te	
Boring Method _	HSA/RC	Shelby Tu	ibe OD			in.		Sampler Graphics Recovery Graphics		Standard Penetration Test, Blows per 6 in. Increments	
			#				ype	Grap	ater	Pene	
SOIL	CLASSIFICATION		afion,	h,ft	e in	ble	ple T	pler	Groundwater	dard 's pe	Remarks
	(continued)		Stratum Elevation, ft	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sam	Grou	Stan Blow	Rem
COAL, black,	with pyrite				=						
			415.5	53.8	=	6	RC				RC #6 from 51.7 to 56.7 ft; Rec.=100%; RQD=76%
	, <u>light gray</u>	/	414.9	54.4	55 -						10%
	ight gray, unweather	ed,	412.6	56.7	=						Grouted boring at completion.
Bottom of Bori											Grouted Borning at completion.
Sample Typ	 De			Dei	oth to C	<u></u> Groun	<u>dwate</u>	<u> </u>			Boring Method

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Noted on Drilling Tools **4.8** ft.

_ft.

▼ After _____ hours ___ ft. ☑ Cave Depth





CLIE	ENT	IDNR									BORING #_	BH-4
PRC	JECT NAME	Site 2295									Northing _	1022242.424
PRC	JECT LOCATIO	N Booneville	, Indiana								Easting	2906200.962
											JOB#	170DR00045
		DRILLING and SA	AMPI ING INI	ORMA	TION						_	TEST DATA
_						440	[TEOT BATA
	ate Started	3/29/17					- 1					
	ate Completed		Hammer I	-			- I				_	
	rill Foreman _										Fest, ents	
	•								m		ion rem	
В	oring Method _	HSA/RC	Shelby Tu	ibe OD	oe ODin.				ohics iphics		netrat n. Inc	
	SOIL	CLASSIFICATION		, f				Туре	- Grap	vater	d Pen er 6 ir	σ
				Stratum Elevation, ft	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Remarks
	71	E ELEVATION 436		St	St. O	လို င်	Sa	Sa	Sa	ซ้	# H	Ä.
	SILTY CLAY,	dark gray, very mois	st									Soils classified based on visual
				433.4	3.5	-						observations during drilling operations.
1	SILTY CLAY,	DIOWII, MOISI				5 -						
3						_						
				427.9	9.0							
1	SILTY CLAY,	brown, moist to slig	intiy moist			10 -						
1						-						
#				421.9	15.0	15 -						
#	SHALE, gray,	weathered				15						
1				417.8	19.1	-				⊻		
4	SHALE, black	 , unweathered		417.0	19.1	20 -	1	SS RC	×		40-50/.2	RC #1 from 19.1 ft to 21.2 ft; Rec. =95%;
1		mination from 19.9 ft	t to 20.2 ft	414.5	22.4		1	RC	Н			RQD=0% RC #2 from 21.2 ft to 26.2 ft; Rec.=20%;
1	VOID - OPEN						2	1.0	Ш			RQD=0%
#	_			411.5	25.4	25 -			Ш			
1	VOID - FILLEI	D				=	3	RC	Ħ			RC #3 from 26.2 ft to 31.2 ft; Rec.=0%
1				407.0	29.9	=			Ш			
	UNDERCALY			407.0	29.9	30 -			Ш			
						-	4	RC				RC #4 from 31.2 ft to 36.2 ft; Rec.=94%;
Ę	× SILTSTONE	gray, unweathered,		402.9	34.0	-			Ш			RQD=60%
= × ×	hard	gray, unweathered,	inoderately	400.7	36.2	35 -			ļ.			
	Bottom of Bor	ing at 36.2 ft										Installed PVC riser with a screen from 23.4 ft to 33.4 ft at completion.

Sample Type

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Depth to Groundwater

Noted on Drilling Tools **18.2** ft.

After _____ hours ____ ft. ☑ Cave Depth

Boring Method



CLIENT	IDNR	BORING #	BH-5
PROJECT NAME	Site 2295	Northing	1022588.169
PROJECT LOCATION_	Booneville, Indiana	Easting	2906197.794
		IOP #	170DR00045

									JOB#	170DR00045
	DRILLING and SA	MPLING INF	ORMA	TION						TEST DATA
Date Started	3/30/17	Hammer \	Nt.		140 lbs.					
	3/30/17	Hammer I			30 in.					
•	Gary Lauber		-		2 in.				1, 3, 3, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	
	<u> </u>				.875 in.				nent	
Boring Method		Shelby Tu	_				SS		atior	
						ي ا	aphic raph	<u>.</u>	enetr in. I	
SOIL	. CLASSIFICATION		Stratum Elevation, ft	um h, ft	h e, ft ple	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test. Blows per 6 in. Increments	Remarks
	E ELEVATION 447	.818		Stratum Depth, ft	Depth Scale, ft Sample	Sam	Sam	Grou	Stan	Rem
Topsoil - 4"			447.5	0.3	1	ss			2-3-2	
∃ // reddish brown	brown to dark brown , mottled, plastic, slig ervescent, small pied	ahtly sticky.			5 = 2	ss			2-3-3	
and shale	OAL spoil, black		441.8	6.0	3	SS	X		3-7-12	
非二	- — — — — — — — n and orange brown,		439.3	8.5	4	ss			6-10-13	
weathered			436.8	11.0	10	1				
	gray and orange, we	athered	435.3	12.5	= 5	SS	X		7-19-27	
SHALE, gray,	unweathered unweathered, mode		433.3 432.3	14.5 15.5	15 = 1	RC				DC #1 from 14 5 ft to 16 9 ft. Dog =540/.
calcareous			431.0	16.8		1	Æ			RC #1 from 14.5 ft to 16.8 ft; Rec.=54%; RQD=45%
SHALE, dark (weathered, so	gray and black, sligh ft	tly	428.0	19.8	2	RC	Н			RC #2 from 16.8 ft to 21.8 ft; Rec.=86%; RQD=62%
SHALE, gray,	slightly weathered, s	oft, with 4"	427.2	20.6	20 =					
calcareous lar	nination		425.3	22.5	3	RC	┢			RC #3 from 21.8 ft to 26.8 ft; Rec.=14%;
- I I I I I I I I I I I I I I I I I I I	unweathered				25 —		Ш			RQD=0%
	- Low Recovery	,					Ц			
]					4	RC	Ш			RC #4 from 26.8 ft to 31.8 ft; Rec.=0%; RQD=0%
1					30 =			ロ		
4					5	RC		-		RC #5 from 31.8 ft to 36.8 ft; Rec.=20%;
1			413.0	34.8	35 -					RQD=0%
	, fissile		412.0	35.8	35 =					
VOID			408.6	39.2	6	RC				RC #6 from 36.8 ft to 41.8 ft; Rec.=52%; RQD=0%
SHALE, black		-	408.4	39.4	40 =					1140-070
× × UNDERCLAY			407.7 406.0	40.1 41.8	1	-	Ц			Installed PVC riser with a screen from
SILTSTONE, moderately ha	light gray, unweathe ird	red,								28.4 ft to 38.4 ft at completion.
Bottom of Bor										
Sample Tyr					oth to Grou					Roring Method

Sample Type

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Depth to Groundwater

Noted on Drilling Tools **31.3** ft.

▼ After ____ hours _____ ft. ☑ Cave Depth ft. **Boring Method**





CLIE	NT	IDNR									BORING #_	BH-6
PRC	JECT NAME	Site 2295								_	Northing _	1022994.25
PRC	JECT LOCATIO	N Booneville,	Indiana								Easting	2906209.244
											JOB#	170DR00045
		DRILLING and SAM	APLING IN	ORMA	TION							TEST DATA
_							[
	ate Started	4/3/17	Hammer \	· · · · · ·			lbs.					
		<u>4/3/17</u>	Hammer I				in.					
	rill Foreman _		Spoon Sa				in.				Test	
	· —	LIOA/DO	Rock Core				.		ý		tion .	
В	oring Method _	HSA/RC	Shelby Tu	ibe OD			in.		ohics aphic		netrai n. Inc	
	SOIL	. CLASSIFICATION		#				Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test Blows per 6 in. Increments	ω
		02/1001110/111011		Stratum Elevation, ft	Stratum Depth, ft	Depth Scale, ft	Sample No.	nple	npler	nnd	ndar ws p	Remarks
	SURFAC	E ELEVATION 457.0)58	Stra	Stra	Dep Sca	San No.	San	San	Gro	Sta _l Blo	Rer
	Topsoil - 4"			456.8	0.3							Caile algorified based on visual
	SILTY CLAY,	brown				-						Soils classified based on visual observations during drilling operations.
						5 —						
										፟∇		
						10 -				<u> </u>		
					12.0		- 1					
	SILTY CLAY,			443.6	13.5							
1	moderately we	brown and gray, highly eathered, fissile, soft,	with			15 -	1	RC				RC#1 from 15.2 ft to 16.3 ft; Rec.=100%;
#	siltstone seam	ns, decomposed from	24 ft				2	RC	П			RQD=0%
1							_					RC #2 from 16.3 ft to 21.3 ft; Rec.=100%; RQD=0%
1						20 —			Ш			
1							3	RC				RC #3 from 21.3 ft to 26.3 ft; Rec.=90%; RQD=0%
1				432.0	25.1	25 —						NQD-070
#	SHALE, dark	gray, slightly weather	 ed			25 _	_		HE			
1						-	4	RC				RC #4 from 26.3 ft to 31.3 ft; Rec.=98%; RQD=68%
#	SHALE gray			427.5	29.6	30 —						
1	SHALE, gray,	unweathered, calcare		425.8 424.6	31.3 32.5		5	RC	Н			RC #5 from 31.3 ft to 36.3 ft; Rec.=100%;
1		gray, moderately weat	hered	1.2	02.0	-		110				RQD=32%
1		ely hard at calcareous				35 -						
#							6	RC	Н			RC #6 from 36.3 ft to 41.3 ft; Rec.=78%;
1						=	1					RQD=20%
非	_			416.3	40.8	40 =	1					
非	SHALE, gray,	unweathered, modera	ately hard,	415.8	41.3		7	RC				RC #7 from 41.3 ft to 46.3 ft; Rec.=118%;
非	SHALE, black		'									RQD=54%; Recovered 0.9 ft from previous RC
#		410.6	46.5	45 -						p. 5.1.545		
	COAL, black,	broken				=	8	RC				RC #8 from 46.3 ft to 51.3 ft; Rec.=100%; RQD=0%

Sample Type

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Depth to Groundwater

Noted on Drilling Tools

9.3 ft.

▼ After _____ hours

_ ft. ☑ Cave Depth ft. **Boring Method**





CLIENT	IDNR									BORING #_	BH-6
PROJECT NAME	Site 2295									Northing _	1022994.25
PROJECT LOCATION	N Booneville,	Indiana								Easting _	2906209.244
										JOB#	170DR00045
	DRILLING and SAI	MPLING IN	FORMA	TION							TEST DATA
Date Started	4/3/17	Hammer	Wt.			lbs.					
Date Completed	4/3/17	Hammer				in.					
Drill Foreman	Gary Lauber	Spoon Sa	mpler C	D		in.				est, nts	
		Rock Cor	e Dia.	1.	875	in.				on Te	
Boring Method _	HSA/RC	Shelby Tu	ıbe OD			in.		hics		etratic . Incr	
SOIL	CLASSIFICATION		n on, ft	u #	¥	υ	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	rks
	(continued)		Stratum Elevation, ft	Stratum Depth, ft	Depth Scale, ft	Sample No.	Samp	Samp	Groun	Stand	Remarks
SILTSTONE, G Bottom of Bori	gray		403.1	54.0 54.5 56.3	55 -	9	RC				RC #9 from 51.3 ft to 56.3 ft; Rec.=100%; RQD=44% Grouted boring at completion.
Sample Typ	ρ			Del	oth to G	Groun	dwate				Boring Method

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Noted on Drilling Tools **9.3** ft.

_ ft.

▼ After ____ hours ____ ft. ☑ Cave Depth





CLIENT	IDNR									BORING #_	BH-7
PROJECT NAME	Site 2295								_	Northing _	1022255.235
PROJECT LOCATION	ON Booneville,	Indiana							_	Easting _	2906726.04
									_	JOB#	170DR00045
	DRILLING and SAI	MPLING INI	FORMA	TION		Г					TEST DATA
Date Started	3/27/17	Hammer \	Wt		140	lbs.					
Date Completed	3/27/17	Hammer	Drop _		30	in.					
Drill Foreman _	Gary Lauber	Spoon Sa	mpler C	DD	2	in.				est, nts	
Inspector		Rock Cor	e Dia.	1.	875	in.				on T	
Boring Method	HSA/RC	Shelby Tu	ıbe OD			in.		ohics aphics		netrati . Incr	
SOI	L CLASSIFICATION		n, ft	_ =	ب.		Type	er Grag ery Gra	water	rd Per oer 6 ii	ŵ
SURFAC	CE ELEVATION 430.0	072	Stratum Elevation, f	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Remarks
□ // mottled, plast	Y, strong brown and be tic, slightly sticky, mois	eige, st,			=	1	SS	X		3-5-6	
non-efferveso	cent		424.1	6.0	5 —	2	SS	X	⊽	3-4-4	
CLAY (decon	nposed shale), brown sow, plastic, slightly stic	and				3	SS			3-4-7	
moist, non-ef	fervescent		419.6	10.5	10 -	4	SS			4-5-8	
CLAY (decon	nposed shale), dark br vn, plastic, slightly stic	own and kv. moist.	ıl -	10.5		5	SS	X		7-50	
non-efferveso	ent				=	6	SS	×		50/.4	
	k, dry, broken iliferous, calcareous, a	and	414.8	15.3	15 -	1	RC				RC #1 from 15 ft to 16.4 ft; Rec.=100%;
moderately ha	ard					2	RC	П			RQD=0%
COAL, black,	broken, with pyrite				20 —						RC #2 from 16.4 ft to 21.4 ft; Rec.=90%; RQD=7%
					20 =			Æ			
			406.3	23.8	=	3	RC				RC #3 from 21.4 ft to 26.4 ft; Rec.=100%; RQD=44%
∃ × × SILTSTONE,	gray, unweathered, m	oderately	403.7	26.4	25 -						
I * *	ring at 26.4 ft		403.7	20.4							Grouted boring at completion.
				<u> </u>							
Sample Ty	<u>pe</u>			<u>De</u>	pth to G	<u> Froun</u>	dwate	<u>er</u>			Boring Method

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger RC - Rock Core CU - Cuttings

CT - Continuous Tube

Noted on Drilling Tools **5.0** ft. ___ ft.

ft.

▼ After _____ hours ☑ Cave Depth





CLIENT	IDNR	BORING#	BH-8
PROJECT NAME	Site 2295	Northing	1022590.088
PROJECT LOCATION _	Booneville, Indiana	Easting	2906728.027
_			170DR00045

										JOB#	170DR00045
	DRILLING and SA	DRILLING and SAMPLING INFORMATION									TEST DATA
Date Started 3/28/17 Hammer V					ı	bs.					
Date Completed 3/28/17 Hammer I											
· ————		ampler ODin.							st,		
		e Dia. 1.875 in.			- 11				men Te		
		ibe ODin.				cs			atior		
						e	aphir	<u></u>	enetr in. I		
SOIL CLASSIFICATION		Stratum Elevation, ft	um h, ft	e, ft	be Die	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Remarks	
SURFACE ELEVATION 441.418		Stratu	Stratum Depth, ft	Depth Scale,	No.	Sam	Sam	Grou	Stan	Rem	
SILTY CLAY, brown, moist, with rock fragments SILTY CLAY, brown, slightly moist, with rock fragments ILIMESTONE, dark gray, unweathered, hard / SHALE, brown and gray, moderately weathered, soft - limesone lamination at 12.2 ft SHALE, dark gray, unweathered, calcareous SHALE, dark gray, soft with fragments of limestone - limestone lamination from 20.6 ft to 20.9 ft - calcareous shale from 23 ft to 24 ft SHALE, black, moderately hard, highly broken, limestone lamination at 26.6 ft LIMESTONE, dark beige gray, unweathered, moderately hard SHALE, black, unweathered COAL, black, broken, with pyrite SILTSTONE, light gray, unweathered, with pyrite SILTSTONE, light gray, unweathered, unfractured, thinly laminated SILTSTONE, light gray, unweathered, unfractured, thinly laminated Bottom of Boring at 40.9 ft		434.4 431.0 430.5 425.4 422.6 417.4 414.0 413.3 411.3 405.8 405.0	7.0 10.4 10.9 16.0 18.8 24.0 27.4 28.1 30.1 35.6 36.4 40.9	5 10 15 20 25 30 35 40 40 40	1 2 3 4 5	RC RC RC		₩.		Soils classified based on visual observations during drilling operations. RC #1 from 10.4 ft to 15.9 ft; Rec.=63%; RQD=49% RC #2 from 15.9 ft to 20.9 ft; Rec.=98%; RQD=50% RC #3 from 20.9 ft to 25.9 ft; Rec.=80%; RQD=34% RC #4 from 25.9 ft to 30.9 ft; Rec.=98%; RQD=34% RC #5 from 30.9 ft to 35.9 ft; Rec.=96%; RQD=0% RC #6 from 35.9 ft to 40.9 ft; Rec.=98%; RQD=98% Grouted boring at completion.	
	е Туре				oth to Gr						Boring Method

Sample Type

SS - Driven Split Spoon ST - Pressed Shelby Tube CA - Continuous Flight Auger

RC - Rock Core CU - Cuttings

CT - Continuous Tube

Depth to Groundwater

ft.

Noted on Drilling Tools

23.8 ft.

▼ After ____14 hours **24.4** ft. ☑ Cave Depth

Boring Method