

PROJECT NUMBER 177556.SA.FE **BORING NUMBER**

MW-185

SHEET 1 of 4

SOIL BORING LOG

PROJECT: Memphis Depot Remedial Investigation Plan LOCATION: Memphis, TN

DRILLING CONTRACTOR: Prosonic Corporation

DRILLING METHOD/EQUIPMENT: Rotosonic Drilling

OVERBURDEN THICKNESS: DEPTH DRILLED INTO ROCK: N/A

WATER LEVELS: START: 10/26/2005 END: 10/27/2005 LOGGER: Mike Karafa/ATI

	I EVELS:	1111200.		START:	10/26/2005 END: 10/27/2005	LOGGER: Mike Karafa/ATL		
WATER LEVELS : DEPTH BELOW SURFACE (FT)				STANDARD	SOIL DESCRIPTION	COMMENTS		
				PENETRATION	SOIL DESCRIPTION	COMMENTS		
	SAMPLE INTERVAL (FT) RECOVERY (FT) #/TYPE			TEST RESULTS 6"-6"-6"	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS,		
					OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	TESTS, AND INSTRUMENTATION. FID (ppm)		
				(N)	0-1: SILT, soil, brown, grass roots	FID (ppm) 1.1		
5	0-16	100%	N/A	N/A	1-3: SILT, brown, loose, dry, gravel 3-13: SILT, brown, damp, stiff, loess 13-17: SILT, brown, damp, stiff, w/ sandy clay gray mottles, pea-sized gravel	54.6 32.8		
20	16-26	100%	N/A	N/A	17-18: GRAVELLY SAND, brownish orange, loose, fine to v. course grain, wet, gravel pea-sized to 3" 18-18.5: GRAVELLY SAND, light gray, fine to medium grain, damp, gravel up to 3" 18.5-20.5: SANDY SILTY CLAY, orange and gray mottles, stiff, damp 20.5-31: SILTY SAND, some clay, orange, loose, wet, fine to medium grain	4.2		
30	26-36	100%	N/A	N/A	30-31: (GRAVEL, pea-sized to 2") 31-35: SAND, orange, loose, fine grain, damp	0.0		



MW-185.xls

PROJECT NUMBER 177556.SA.FE BORING NUMBER

MW-185

SHEET 2 of 4

SOIL BORING LOG

PROJECT: Memphis Depot Remedial Investigation Plan LOCATION: Memphis, TN

DRILLING CONTRACTOR: Prosonic Corporation

DRILLING METHOD/EQUIPMENT: Rotosonic Drilling

OVERBURDEN THICKNESS: DEPTH DRILLED INTO ROCK: N/A

WATER LEVELS: START: 10/26/2005 END: 10/27/2005 LOGGER: Mike Karafa/ATI

SAMPLE INTERVAL (FT)		LEVELS:			START :		LOGGER: Mike Karafa/ATL	
RECOVERY_EFT_ RESULTS						SOIL DESCRIPTION	COMMENTS	
### RESULTS RE	SAMPLE INTERVAL (FT)							
100% N/A N/A N/A 35-35. SAND, crange, fine to course grain, loose, damp, grain,								
100% N/A N/A 35-35; SAND, crange, fine to course grain, loose, damp, grawd up to 1*; that 35-36; SAND, crange, loose, fine grain, damp, da				#/TYPE				
28-36 100% N/A N/A N/A								
35.35.5 SAND, orange, fine to course grain, loose, damp, grain damp					(IV)	WINERALOGT.	гід (ррііі)	
35.35.5 SAND, orange, fine to course grain, loose, damp, grain damp]	
35-35.5 SAND, orange, fine to course grain, loose, damp. gravel up to 1°, chert 35-36.5 SAND, orange, loose, fine grain, damp 0.0 36-38 SAND, orange, loose, fine grain, damp, chert up to 0.0 1° 38-38.5 SAND, orange, loose, fine to course grain, 38-38.5 SAND, orange, medium grain, loose, fine to course grain, 0.0 38-34.5 SAND, orange, medium grain, loose, damp to wet 0.0 45	35	35 26-36			N/A		-	
35.5-36: SAND, orange, loose, fine grain, damp 0.0 0.0 12 36-38: SAND, orange, loose, course grain, damp, chert up to 0.0 0.0 12 38-38.5. SAND, orange, loose, course grain, damp, chert up to 0.0 0.0 12 38-38.5. SAND, crange, medium grain, loose, fine to course grain, 0.0 0.0 38.5.43: SAND, orange, medium grain, loose, damp to wet 0.0 0.0 145-34.5. SAND, orange, v. course grain, loose, damp to wet 0.0 145-35: SAND, orange, fine to medium grain, loose, damp 0.0 0.0 145-35: SAND, orange, fine to medium grain, loose, damp 0.0 0.0 145-36: SAND, orange, fine to medium grain, loose, damp 0.0 0.0 145-36: SAND, orange, fine to medium grain, loose, damp 0.0 0.0 145-36: SAND, orange, fine to subrounded 155-36: SAND, light gray, fine grain, loose, damp 0.0 0.0 156-36: SAND, light gray, fine grain, loose, damp 0.0 0.0 156-36: SAND, light gray, fine grain, loose, damp 0.0 0.0 156-36: SAND, light gray, fine grain, loose, damp 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	_						0.0	
36-38: SAND, orange, loose, course grain, damp, chert up to 0.0 1 38-38: SAND, orangesh white, loose, fine to course grain, damp to wet 0.0 38.5-43: SAND, orange, medium grain, loose, damp to wet 0.0 43.5-43: SAND, orange, medium grain, loose, damp to wet 0.0 43-44.5: SAND, orange, v. course grain, loose, damp to wet 0.0 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 45.5-1: SAND, orange, fine to medium grain, loose, damp 0.0 55.5-1 46-56 100% N/A N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5' to pea-sized chert, angular to subrounded 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 56-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 56-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 57.5-1 68-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 58-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 58-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 58-66: SILTY SAND, light gray, fine grain, loose, damp 5.0	_		gravel up to 1", chert			-		
38-38.5: SAND, orangish white, loose, fine to course grain, damp to wet 38.5-43: SAND, orange, medium grain, loose, damp to wet 0.0 36-46 100% N/A N/A N/A 43-44.5: SAND, orange, we course grain, loose, damp to wet 0.0 43-44.5: SAND, orange, v. course grain, loose, damp to wet 0.0 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 465						36-38: SAND, orange, loose, line grain, damp 36-38: SAND, orange, loose, course grain, damp, chert up to		
According to wet According t	_					1"	_	
According to wet According t	_					38-38.5: SAND, orangish white, loose, fine to course grain.	0.0	
40		_			damp to wet	_		
43-44.5: SAND, orange, v. course grain, loose, damp to wet 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 46-56 100% N/A N/A S1-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 54.5" to pea-sized chert, angular to subrounded 54.5" do pea-sized chert, angular to subrounded 54.5" do pea-sized chert, angular to subrounded 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 5.0 60	40 -				38.5-43: SAND, orange, medium grain, loose, damp to wet	0.0		
43-44.5: SAND, orange, v. course grain, loose, damp to wet 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55							_	
43-44.5: SAND, orange, v. course grain, loose, damp to wet 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 44.5-51: SAND, orange, fine to medium grain, loose, damp 0.0 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55	_	36.46	100%	NI/A	N/A		_	
44.5-51: SAND, orange, fine to medium grain, loose, damp 44.5-51: SAND, orange, fine to medium grain, loose, damp 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5' to pea-sized chert, angular to subrounded 55	_	30-40	10070	IN/A	IN/A		_	
44.5-51: SAND, orange, fine to medium grain, loose, damp 44.5-51: SAND, orange, fine to medium grain, loose, damp 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5' to pea-sized chert, angular to subrounded 55	_						_	
44.5-51: SAND, orange, fine to medium grain, loose, damp 44.5-51: SAND, orange, fine to medium grain, loose, damp 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5' to pea-sized chert, angular to subrounded 55	_					43-44 5: SAND orange v course grain loose damn to wet		
50						40-44.5. Orange, v. course grain, loose, damp to wet		
50	45 -					44 E E4. CAND around fine to modition around leave deman	-	
- 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)	-					44.5-51. SAND, orange, line to medium grain, loose, damp	0.0	
- 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)	_						_	
- 46-56 100% N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)	_						-	
- 46-56 100% N/A N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)]	
- 46-56 100% N/A N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)	_						-	
- 46-56 100% N/A N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)							_	
- 46-56 100% N/A N/A N/A 51-54.5: GRAVELLY SILTY SAND, orange, fine to v. course grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55 _ 54.5-66: SILTY SAND, light gray, fine grain, loose, damp 50 _ 60 _ 61: (SAME AS ABOVE, orange)	50 -						_	
grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55	30						_	
grain, saturated, loose, gravel and cobbles up to 4.5" to pea-sized chert, angular to subrounded 55		46.56	1000/	NI/A	NI/A			
4.5" to pea-sized chert, angular to subrounded 55	_	40-50	100%	N/A	N/A		0.0	
60							_	
60	-						-	
60	1 _]]	
60	55					EA E CC. CII TV CAND light group for a second large days	-	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0	33]				ס4.כ-סס: אוב זי אאמט, ווgnt gray, tine grain, loose, damp	5.0	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0] -]	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0	-	•					-	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0]	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0	-						-	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0							_	
60-61: (SAME AS ABOVE, orange) 0.0 61-66: (SAME AS ABOVE, less silt, light gray) 0.0	60							
61-66: (SAME AS ABOVE, less silt, light grav) 0.0	- OO —	1				60-61: (SAME AS ABOVE, orange)		
] =	FG 00	1000/	NI/A	N1/A			
_ S0-00 10070 1N/A 1N/A	-	56-66	100%	N/A	N/A		-	
]]	
	_						_	
	-	1					-	
	65]	
65	05	-						



PROJECT NUMBER 177556.SA.FE **BORING NUMBER**

MW-185

SHEET 3 of 4

SOIL BORING LOG

PROJECT: Memphis Depot Remedial Investigation Plan LOCATION: Memphis, TN

DRILLING CONTRACTOR: Prosonic Corporation

DRILLING METHOD/EQUIPMENT: Rotosonic Drilling

OVERBURDEN THICKNESS: DEPTH DRILLED INTO ROCK: N/A

WATER LEVELS: START: 10/26/2005 END: 10/27/2005 LOGGER: Mike Karafa/ATI

WATER	LEVELS :			START:	10/26/2005 END: 10/27/2005	LOGGER: Mike Karafa/ATL	
DEPTH BELOW SURFACE (FT)				STANDARD	SOIL DESCRIPTION	COMMENTS	
	SAMPLE INTI		Γ)	PENETRATION			
	RECOVERY (FT) #/TYPE			TEST RESULTS 6"-6"-6"	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE,	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.	
				(N)	MINERALOGY. 66-68: SILTY CLAY, gray and orange mottles, sticky to stiff,	FID (ppm)	
- - - -					0.0 		
70					68-68.5: SILTY SAND, gray, fine grain, loose, saturated 68.5-69: SILTY CLAY, gray and orange mottles, sticky to stiff, wet 69-86: SILTY SAND, gray w/ orange bands, fine grain, loose, damp	0.0	
- - - - -	66-76	66-76 100% N/A N/A		- - - - - -			
75 	75 <u>-</u> - - - -				76-81: (SAME AS ABOVE, wet)	0.0	
80 - - 80	76-86	100%	N/A	N/A	79: (3" thick, SANDY CLAY lense, sticky to stiff, fine grain, gray and orange mottles)81-86: (SAME AS 76-81', saturated)	0.0	
85						- - - - - - -	
90					86-94: SILTY SAND, some clay, gray and orange, loose	Lost 86-96' sample downhole, went back in and retrieved 0.0	
 95	86-96	100%	N/A		94-94.5: SILTY SAND, dark gray, sticky, wet 94.5-95: SILTY CLAY, dark gray, stiff, damp to wet 95-106: SILTY CLAY, some sand, stiff, dark gray, damp	0.0 	
- - - - -	96-106	100%	N/A	N/A		- - - - -	



PROJECT NUMBER 177556.SA.FE BORING NUMBER

MW-185

SHEET 4 of

SOIL BORING LOG

PROJECT : Memphis Depot Remedial Investigation Plan LOCATION : Memphis, TN							ELEVATION:		
DRILLING CONTRACTOR: Prosonic Corporati								NAME OF DRILLER:	Adam Marshall
DRILLING	G METHOD/	EQUIPME	ENT:	Rotosonic Drilling	I			SIZE/TYPE OF BIT:	4 X 6"
OVERBU	JRDEN THIC	KNESS:		DEPTH DRILLED INTO ROCK : N/A				TOTAL DEPTH OF BORING: 106 ft-bgs	
WATER I	LEVELS :			START:	10/26/2005	END :	10/27/2005	LOGGER: Mike Karafa/A	TL
DEPTH BE	ELOW SURFA	CE (FT)		STANDARD		SOIL DESCRIPTION		COMMENTS	
	SAMPLE INTE	ERVAL (FT)	PENETRATION					
RECOVERY (FT)			TEST	SOIL NAME, USCS GROUP SYMBOL, COLOR,			DEPTH OF CASING, DRILLING RATE,		
	#/TYPE RESULTS MOISTURE CONTENT,				NT, RELATIVE DENSITY	,	DRILLING FLUID LOSS,		
	6"-6" OR CONSISTENCY, SOIL STRUCTURE,					TESTS, AND INSTRUMENTATION.			
			(N)	MINERALOGY.			FID (ppm)		
100 _									_
_									_
_									_
									_
_	– 96-106 100% N/A		N/A					_	
						=			
405 -									=
105									
_								TD @ 106' BG	S

MW-185.xls A-3