APPENDIX 2AA LOGS OF BORINGS

RBS COL 2.0-30-A This appendix contains the entire set of geotechnical boring logs and a legend with Boring Log Terminology and Symbols for the RBS Unit 3 site investigations conducted between November 14, 2006 and December 13, 2006; between January 12, 2007 and June 13, 2007; and between February 21, 2008 and March 25, 2008.

BORING LOG TERMINOLOGY AND SYMBOLS

See ASTM D2488 & D2487 for details on standard practice
for description and identification of soils

GENERAL

SPT	-Split Barrel Sampler / Standard Penetration Test
TW	-Thin-Walled Tube Sampler
RNG	-Ring lined Sampler
BAG	-Bag Sample
CS	-Continuous Barrel Sampler
N Value	-Indicates the number of blows to drive an SPT sampler 12 inches with a 140-pound weight falling 30 inches (See ASTM D1586 or D6066).
-------	-Dashed line in classification column indicates approximate or gradational change.
	-Solid line in classification column indicates observed change
PP	-Unconfined compresive strength as estimated by pocket penetrometer.
TV	-Undrained shear strength as estimated by torvane.
Frequent	-More than one per 6" of thickness
Occasional	-One or less per 6" of thickness.
Parting	-0 to 1/8" (3mm) in thickness
Seam	-1/8" to 3" (3mm to 75mm) in thickness
Mottled	-Irregular variation in colors
Ferrous	-Having appreciable quantities of iron oxide
Nodule	-Small, more or less rounded body, generally harder than sample matrix

ABBREVIATIONS

@	-At
w/	-With
~	-Approximately
&	-And
WOR	-Weight of Rods
WOH	-Weight of Hammer
ID	-Inside Diameter
OD	-Outside Diameter
NR	-Not Recorded
COD	-Clean Out Depth
NA	-Not Applicable

SYMBOLS

Water table at boring completion

Depth to caving

Water table during drilling

Split-barrel Sampler (Standard Penetration Test)

Thin-walled Sampler

Pressuremeter Test Interval

Ring Lined sampler

Continuous Barrel Sampler

Bag sample

Riser Pipe

Screened Interval

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BORING LOG

BORING NO. MW-1

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 18277.9' E 14632.8'	126.3 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		126		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy; strong brown (7.5YR 5/6); moist; trace roots	Boring advanced with 6-1/4" drag bit using bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2		124			
														4		122			
														6		120			
														8		118			
SPT	1	4	8	10	18	1.1								10		116		grading firm to hard (hard; white lean clay at bottom 3"-4")	
														12		114			
														14		112			
														16		110			
														18		108			
SPT	2	4	4	7	11	1.5								20		106		grading greenish-gray (GLEY1 5/1 10Y); hard (very hard; white lean clay at bottom 2"-3" of sampler; dryer, powdery when pressed between fingers)	
														22		104			
														24		102			
														26		100			
														28		98			
														30					

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 18277.9' E 14632.8'	126.3 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	4	6	9	15	1.6								30		96		grading light greenish-gray (GLEY1 8/1 10Y); silt seam	PP = 3.25 tsf. Lost drilling fluid circulation between 30'-40'.
														32		94			
														34		92			
																		35.0	
														36		90			
														38		88			
SPT	4	4	7	8	15	1.0								40		86		Silty SAND (SM) - 70% fine sand; 30% fines with no plasticity; pale yellow (5Y 8/3); medium dense; moist; clay seam	
														42		84			
														44		82			
														46		80			
														48		78			
STP	5	5	8	8	16	1.2								50		76		grading about 75% fine to medium sand; about 25% fines	
														52		74			
														54		72			
														56		70			
														58		68			
														60					

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BORING LOG

BORING NO. MW-1

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 18277.9' E 14632.8'	126.3 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	7	9	11	20	1.2								60		66		grading about 80% fine to medium, subangular and subrounded sand; about 20% fines with no plasticity; reddish-yellow (5YR 6/8); medium dense; moist; clay seam	
														62		64			
														64		62			
														66		60			
														68		58			
SPT	7	7	7	10	17	1.3								70		56		grading about 65% fine to medium, subangular and subrounded sand; about 25% fines, nonplastic; light red (2.5YR 6/8); medium dense; wet; homogeneous	
														72		54			
														74		52			
																		75.0	
														76		50			
														78		48			
SPT	8	12	29	35	64	1.1								80		46		Well graded SAND with Silt (SW-SM) - About 90% fine to coarse, subangular sand; about 10% fines; yellow (10YR 7/6); very dense; wet; clay seam; trace gravel with maximum size 1"	
														82		44			
														84		42			
																		85.0	
														86		40			
														88		38			
														90					

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BORING LOG

BORING NO. MW-1

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 18277.9'	E 14632.8'	126.3 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	19	29	22	51	1.2								90	36	Clayey GRAVEL with Sand (GC) - About 65% fine to coarse, subangular and subrounded gravel with maximum size 3/4"; about 20% fines with high plasticity, high toughness, no dilatancy; about 15% fine to coarse, subangular and subrounded sand; pale yellow (2.5Y 7/4); dense; wet	Based on cuttings, coarse sand and gravel found from 90'-100'.
														92	34		
																91.0	
														94	32	Silty SAND (SM) - About 80% fine to coarse, subangular and subrounded sand; about 20% fines with no plasticity; yellow (10YR 7/6); dense; wet	
																95.0	
														96	30		
														98	28		
SPT	10	16	19	19	38	0.9								100	26	Poorly graded SAND with Silt (SP-SM) - 89% fine to medium sand; 11% fines; light red (2.5 YR 7/8); dense; wet; clayey gravel seam at top of sampler	
														102	24		
														104	22		
														106	20		
														108	18		
SPT	11	14	15	14	29	0.9								110	16		
																111.0	
														112	14	Poorly graded SAND (SP) - About 95% fine to medium sand; about 5% fines; pale yellow (2.5Y 8/4); medium dense; wet	Bottom of boring @ 111.5'. Groundwater level not recorded. Boring caved to 108'. Monitoring well MW-1 constructed.
														114	12		
														116	10		
														118	8		
														120			

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BORING LOG

BORING NO. MW-2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17667.5'	E 16195.9'	96.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, grass surface	Plant Grid	11/14/06	11/18/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		96		Lean CLAY with Sand (CL) - About 85% fines with medium plasticity, medium toughness, no to slow dilatancy; about 10% fine to coarse sand; about 5% coarse, hard gravel with maximum size 1 inch; brown; moist	Boring advanced using 6" tricone bit, NWJ rod, and natural mud as drilling fluid. SPT performed using a 140-lb automatic hammer.
														2		94			
														4		92			
														5.0					
														6		90			
														8		88			
SPT	1	3	5	4	9	1.3								10		86		Clayey SAND (SC) - 60% fine sand; 40% fines with low plasticity; yellowish brown (10YR 5/8); loose; moist	
														12		84			
														14		82			
														15.0					
														16		80			
														18		78			
SPT	2	8	13	16	29	1.2								20		76		Poorly graded SAND (SP) - About 90% fine to medium, angular to subrounded sand; about 10% fines; yellow-orange; medium dense; moist	
														22		74			
														24		72			
														25.0					
														26		70			
														28		68			
														30					

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17667.5'	E 16195.9'	96.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, grass surface	Plant Grid	11/14/06	11/18/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	6	8	9	17	1.0								30		66		Silty SAND (SM) - About 60% fine to medium, angular to subrounded sand; about 30% fines; about 10% fine, subangular to rounded, hard gravel with maximum size 0.5"; yellowish-orange; medium dense; wet; homogeneous	
														32		64			
														34		62			
														36		60			
														38		58			
SPT	4	17	32	20	52	1.1								40		56		grading to about 70% sand; about 20% fine to coarse gravel with maximum size 0.5"; about 10% fines; very dense	Very hard drilling.
														42		54			
														44		52			
																		45.0	
														46		50			
														48		48			
SPT	5	7	9	14	23	1.2								50		46		Clayey SAND (SC) - About 70% fine to coarse, rounded sand; about 25% fines; trace fine gravel w/ seams of firm, medium toughness, high plasticity fines @ 51.4' and 51'; yellowish brown (10YR 5/8); medium dense; wet	Boring continued using bentonite as drilling mud, and using a 4.25" tricone bit.
														52		44			
														54		42			
														56		40			
														58		38			At 58' very hard drilling. Came back on
														60					

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BORING LOG

BORING NO. MW-2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17667.5' E 16195.9'	96.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, grass surface	Plant Grid	11/14/06	11/18/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	2	5	13	18	1.3								60		36		Fat CLAY with Sand (CH) - 83% fines with high plasticity, high toughness, no dilatancy, high strength; 17% fine sand; yellowish-brown; moist	11/17/06 and redrilled from 49'. Clays and sands found based on cuttings to 60'. Drill Rig: Simco 2800 HS (HT). Boring advanced using 6-1/4" drag bit and NWJ rods; rotary wash method with drilling mud. SPT obtained using automatic hammer.
														62		34		61.0 Silty SAND (SM) - About 60% fine sand; about 40% fines with nonplastic; orange to red; wet; a clay seam; (ferrous material)	
														64		32			
														66		30			
														68		28			
SPT	7	30	33	45	78	1.4								70		26		grading pieces of subrounded gravel found in parts of the sampler with maximum size 1"; yellowish-brown and red	
														72		24			
														74		22			Based on cuttings gravels and sands are present from 70'-80'.
																		75.0	
														76		20			
														78		18			
SPT	8	20	34	41	75	0.7								80		16		Poorly graded SAND with Silt and Gravel (SP-SM) - 70% fine to coarse, subangular to subrounded sand; 22% fine, subangular to subrounded, hard gravel with maximum size 3/4"; 8% fines with nonplastic; yellowish-red, brown and gray; wet	
														82		14			
														84		12			
																		85.0	
														86		10			
														88		8			Based on cuttings gravels and sands are present 80'-90'.
														90					

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BORING LOG

BORING NO. MW-2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17667.5'	E 16195.9'	96.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, grass surface	Plant Grid	11/14/06	11/18/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	18	23	25	48	0.7								90		6		Poorly graded SAND (SP) - 87% fine to coarse, subangular sand; 9% fine to coarse, subangular to subrounded, hard gravel with maximum size 3/4"; 4% fines; reddish-yellow; wet	
														92		4			Bottom of boring @ 91.5'. Groundwater level not recorded. Boring caved to 84'. Monitoring well MW-2 constructed.
														94		2			
														96		0			
														98		-2			
														100		-4			
														102		-6			
														104		-8			
														106		-10			
														108		-12			
														110		-14			
														112		-16			
														114		-18			
														116		-20			
														118		-22			
														120					

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BORING LOG

BORING NO. MW-3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15876.6' E 12902.3'	135.9 ft (MSL)	116.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	C. P. Jiang CPJ	J. Liljegren JAL

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
							0		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy; yellowish-brown (10YR 5/4); moist; trace roots	Boring advanced with 6-1/4" drag bit using bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
							2	134		
							4	132		
							6	130		
							8	128		Red silty sand and clay found based on cuttings from 0-10'.
SPT	1	10	14	17	31	1.3	10	126	grading hard; seams of light greenish-gray clay	
							12	124		Clay found based on cuttings.
							14	122		
									15.0	
							16	120		
							18	118		
SPT	2	6	7	7	14	1.5	20	116	Fat CLAY (CH) - About 100% fines with high plasticity; dark yellowish-brown (10YR 4/4); hard	PP = 4 tsf.
							22	114		
							24	112		
									25.0	Lost drilling fluid circulation between 20'-30'.
							26	110		
							28	108		
							30	106		

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15876.6'	E 12902.3'	135.9 ft (MSL)	116.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	C. P. Jiang CPJ	J. Liljegren JAL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	4	5	6	11	1.5								30				Sandy Lean CLAY (CL) - About 70% fines with medium plasticity, medium toughness, no dilatancy; about 30% fine to medium, subangular sand; olive yellow (2.5Y 6/6); firm; moist; sand seams	Based on cutting, sand and clay between 30'-40'.
														32		104			
														34		102			
																		35.0	
														36		100			
														38		98			
SPT	4	10	11	15	26	1.4								40		96		Silty SAND (SM) - About 70% fine to medium, subangular and subrounded sand; about 30% fines with rapid dilatancy; light red (2.5YR 7/8); medium dense; moist; pockets of white sand	
														42		94			
														44		92			
																		45.0	
														46		90			
														48		88			
SPT	5	6	7	9	16	1.5								50		86		Clayey SAND (SC) - 65% fine sand; 35% fines with medium plasticity, medium toughness, no dilatancy; light greenish-gray (GLEY1 8/1 10Y); firm; moist	
														52		84			
														54		82			
																		55.0	
														56		80			
														58		78			
														60		76			

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BORING LOG

BORING NO. MW-3

SHEET 3 OF 5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15876.6'	E 12902.3'	135.9 ft (MSL)	116.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	5	5	4	9	0.9								60				SILT with Sand (ML) - About 80% fines with low plasticity, low toughness, slow dilatancy; about 15% fine sand; pale yellow (5Y 8/2) to white (5Y 8/1); firm; moist; clay seam, silt seams	
														62		74			
														64		72			
																		65.0	
														66		70			
														68		68			
SPT	7	6	7	5	12	1.5								70		66		Clayey SAND (SC) - 68% fine to medium sand; 32% fines with low plasticity; white (5Y 8/1); firm; moist; sand seam	
														72		64			
														74		62			
														76		60			
														78		58			
SPT	8	7	7	7	14	0.9								80		56		grading light red (2.5YR 6/8)	
														82		54			
														84		52			
																		85.0	
														86		50			
														88		48			
														90		46			

6/27/2007 10:12 AM River Bend-Hydro

BLACK & VEATCH

BORING LOG

BORING NO. MW-3

SHEET 4 OF 5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15876.6' E 12902.3'	135.9 ft (MSL)	116.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	7	9	10	19	1.3								90				Silty SAND (SM) - About 60% fine to medium sand; about 40% fines with no plasticity; light red (2.5YR 6/8); medium dense; moist; homogeneous	
														92		44			
														94		42			
														96		40			
														98		38			
SPT	10	7	7	13	20	1.0								100		36		grading red (10R 5/6); clay seams < 1/16"	
														102		34			
														104		32			
														106		30			
														108		28			
SPT	11	13	11	11	22	1.0								110		26		grading red (10R 5/6); wet; sand seams; clayey gravel seam at top of sampler about 2" thick; (coarse, subangular and subrounded, hard gravel with maximum size 1")	
														112		24			
														114		22			
SPT	12	4	6	8	14	1.8								116		20		grading 80% fine sand; 20% fines; red (10R 5/6); wet	
														118		18			Bottom of boring @ 116.5'. Groundwater level not recorded. Monitoring well
														120		16			

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BORING LOG

BORING NO. MW-3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15876.6'	E 12902.3'	135.9 ft (MSL)	116.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														120					MW-3 constructed.
														122		14			
														124		12			
														126		10			
														128		8			
														130		6			
														132		4			
														134		2			
														136		0			
														138		-2			
														140		-4			
														142		-6			
														144		-8			
														146		-10			
														148		-12			
														150		-14			

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BORING LOG

BORING NO. MW-4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16333.0' E 16401.4'	93.6 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; next to a storage yard	Plant Grid	11/16/06	11/17/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY
SPT	1	3	2	4	6	1.0
SPT	2	5	6	5	11	1.4

CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30

ELEVATION (FEET): 92, 90, 88, 86, 84, 82, 80, 78, 76, 74, 72, 70, 68, 66, 64

GRAPHIC LOG

CLASSIFICATION OF MATERIALS

Undifferentiated overburden

10.0

Clayey SAND (SC) - 70% fine, subangular sand; 30% fines with low plasticity, medium toughness, no to low dilatancy, medium strength; trace coarse, subangular to subrounded gravel with maximum size 1"; yellowish-gray; loose; moist

15.0

Silty SAND (SM) - About 85% fine sand; about 15% fines, nonplastic; yellowish-gray; moist; homogeneous

25.0

REMARKS

Boring advanced using 6-1/4" drag bit w/ rotary wash method. SPT performed using a 140-lb automatic hammer.

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16333.0'	E 16401.4'	93.6 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; next to a storage yard	Plant Grid	11/16/06	11/17/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	5	6	6	12	1.0								30	62	Poorly graded SAND (SP) - About 95% fine sand; about 5% fines; light gray and orange red; moist	
														32	60		
														34	58		
														36	56		
														38	54		
SPT	4	5	6	7	13	1.3								40	52		
														42	50		
														44	48		
														45.0			
														46	46		
														48	44		
SPT	5	21	39	45	84	1.2								50	42	Well graded SAND (SW) - About 95% fine to medium, subangular, reddish sand; about 5% fines; red; moist; rusty smell (ferrous material)	
														52	40		
														54	38		
														56	36		
														58	34		
														60			

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BORING LOG

BORING NO. MW-4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16333.0' E 16401.4'	93.6 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; next to a storage yard	Plant Grid	11/16/06	11/17/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JJL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	19	20	23	43	1.0								60		32		grading trace coarse gravel	Based on cuttings - clay and gravel were encountered from about 62' to 69'. Change back to sand layer at about 70'.
														62		30			
														64		28			
														66		26			
														68		24			
SPT	7	8	12	18	30	1.2								70		22		grading orange	
														72		20			
														74		18			
														76		16		75.0	
														78		14			
SPT	8	11	12	12	24	0.9								80		12		Silty SAND (SM) - 80% fine to coarse, subangular sand; 15% fine with nonplastic, slow dilatancy; about 5% fine grained gravel; yellowish-brown; moist; homogeneous	
														82		10			
														84		8		85.0	
														86		6			
														88		4			
														90					

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BORING LOG

BORING NO. MW-4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16333.0'	E 16401.4'	93.6 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; next to a storage yard	Plant Grid	11/16/06	11/17/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JML

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	5	9	5	14	0.7								90				Silty SAND with Gravel (SM) - About 55% fine to coarse, subangular sand; about 30% fines with low plasticity, low toughness, slow dilatancy; about 15% fine to coarse, subangular to subrounded gravel with maximum size 1-3/8"; reddish-brown; moist	
														92		2			Bottom of boring @ 91.5'. Groundwater level not recorded. Boring caved to 88.3'. Monitoring well MW-4 constructed.
														94		0			
														96		-2			
														98		-4			
														100		-6			
														102		-8			
														104		-10			
														106		-12			
														108		-14			
														110		-16			
														112		-18			
														114		-20			
														116		-22			
														118		-24			
														120		-26			

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BORING LOG

BORING NO. MW-5
SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16206.7' E 14546.1'	130.7 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope; grass and shrubs	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														0	130	Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy, medium to high dry strength; brown (7.5YR 4/4); moist	Boring advanced with 5-7/8" baffle bit using bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2	128		
														4	126		
														6	124		
														8	122		
SPT	1	7	13	19	32	1.0								10	120	grading yellowish-brown (10YR 5/6); very hard; dry	
														12	118		
														14	116		
																15.0	
														16	114		
														18	112		
SPT	2	4	7	11	18	1.4								20	110	Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy, high dry strength; light brownish-gray (10YR 6/2) with red (10R 4/6) stains	
														22	108		
														24	106		
																25.0	
														26	104		
														28	102		
														30			

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BORING LOG

BORING NO. MW-5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16206.7' E 14546.1'	130.7 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope; grass and shrubs	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING								
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	18	23	31	54	1.1								30	100	Sandy SILT (ML) - About 70% fines with low plasticity, low toughness, rapid dilatancy; about 30% fine sand; light gray with red colored seams; moist	Field sample smaller than recommended.
														31.0			
														32	98	Silty SAND (SM) - About 70% fine to medium, subrounded sand; about 30% fines; well graded; yellow (10YR 7/8); very dense; moist	
														34	96	@31.5' grading reddish-yellow	
														36	94		
														38	92		
SPT	4	4	7	10	17	1.4								40	90	grading about 60% fine, subrounded sand; about 40% fines with low plasticity, low toughness, rapid dilatancy; poorly graded; light brownish-gray; medium dense; moist	
														41.0			
														42	88	Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; light gray with red stains; hard; moist	
														44	86		
														46	84		
														48	82		
SPT	5	3	3	6	9	1.5								50	80	grading dark red (10R 3/6); firm; interlayered with silty sand (SPT 4)	
														52	78		
														54	76		
														55.0			
														56	74		
														58	72		
														60			

BLACK & VEATCH

BORING LOG

BORING NO. MW-5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16206.7'	E 14546.1'	130.7 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope; grass and shrubs	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JRL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	6	8	8	16	0.9								60		70		Clayey SAND (SC) - 80% fine, subrounded sand; 20% fines with low plasticity; well graded; red (10R 5/8) and tan; medium dense; moist	
														62		68			
														64		66			
																		65.0	
														66		64			
														68		62			
SPT	7	10	10	10	20	0.7								70		60		Poorly graded SAND with Silt and Gravel (SP-SM) - 73% fine to coarse, subrounded to rounded sand; 17% fine gravel; 10% fines; pink (7.5YR 7/4); medium dense; moist @ 71' grading fine to medium grained; light gray (7.5YR 7/1)	
														72		58			
														74		56			
																		75.0	
														76		54			
														78		52			
SPT	8	21	38	32	70	0.6								80		50		Poorly graded SAND with Silt (SP-SM) - 85% fine to medium, subrounded to rounded sand; 9% fines; 6% fine gravel; pinkish-gray (7.5YR 7/2); very dense; wet grading reddish-brown @ 81.3'	Field sample size smaller than recommended.
														82		48			
														84		46			
														86		44			
														88		42			
														90					

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BORING LOG

BORING NO. MW-5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16206.7'	E 14546.1'	130.7 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope; grass and shrubs	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	21	45	42	87	0.7								90		40		grading medium to coarse sand	
														92		38			
														94		36			
																		95.0	
														96		34			
														98		32			
SPT	10	16	19	19	38	0.9								100		30		Well graded SAND with Silt (SW-SM) - 80% fine to coarse, subangular to rounded sand; 12% fine, subrounded to rounded gravel, few particles broke with 3 hammer blows with maximum particle size 0.5"; 8% fines; various colors; dense; wet	Bottom of boring @ 101.5'. Groundwater level not recorded. Boring caved to 98'. Monitoring well MW-5 constructed.
														102		28			
														104		26			
														106		24			
														108		22			
														110		20			
														112		18			
														114		16			
														116		14			
														118		12			
														120					

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BORING LOG

BORING NO. MW-6

SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16040.7' E 17991.0'	93.0 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; near crest of slope	Plant Grid	11/28/06	11/28/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GMC	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		92		Lean CLAY with Sand (CL) - About 85% fines with medium plasticity, medium toughness, no dilatancy; about 15% fine to medium, subangular sand; trace subrounded gravel, maximum size 1"; trace roots; dark yellowish-brown (10YR 4/6); moist (fill)	Boring advanced using 6-1/4" drag bit w/ rotary wash method. SPT performed using a 140-lb automatic hammer. Based on driller and cuttings, first 3' sandy clay and from 3'-10' clay.
														2		90			
														3.0				CLAY; gray	
														4		88			
														6		86			
														8		84			
														10		82		Clayey SAND (SC) - About 70% fine sand; about 30% fines with medium plasticity, medium toughness, low to no dilatancy; light greenish-gray (GLEY1 8/1 10Y); medium dense; moist; homogeneous	
SPT	1	7	12	14	26	1.4								12		80			
														14		78			
														15.0					
														16		76			
														18		74			
														20		72		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; dark red (10R 3/6); soft; moist	
SPT	2	3	6	4	10	1.3								21.0					
														22		70		Silty SAND (SM) - About 80% fine to medium, subangular sand; about 20% fines with no plasticity; trace, subrounded gravel with maximum size 3/8"; pockets of clay scattered throughout the soil mass; reddish-yellow (7.5YR 7/8); stratified sand and clay.	
														24		68			
														25.0					
														26		66			
														28		64			
														30					

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BORING LOG

BORING NO. MW-6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16040.7' E 17991.0'	93.0 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; near crest of slope	Plant Grid	11/28/06	11/28/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	3	4	7	11	1.4	30	62	Clayey SAND (SC) - 74% fine to medium, subrounded and subangular sand; 26% fines with low plasticity; dark red (10R 3/6); medium dense; moist; stratified fine sand layers	
							32	60		
							34	58	35.0	
							36	56		
							38	54		
SPT	4	3	3	4	7	1.5	40	52	Silty SAND (SM) - About 85% fine sand; about 15% fines, nonplastic; reddish-yellow (7.5YR 6/8); loose; moist; homogeneous	
							42	50		
							44	48		
							46	46		
							48	44		
SPT	5	14	25	28	53	0.7	50	42	grading fine to coarse, subangular sand; very dense	
							52	40		
							54	38		
							56	36		
							58	34		
							60			

CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

GRAPHIC LOG

BLACK & VEATCH

BORING LOG

BORING NO. MW-6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16040.7'	E 17991.0'	93.0 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; near crest of slope	Plant Grid	11/28/06	11/28/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GMM	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	4	4	5	9	1.2								60		32		grading about 60% fine sand; about 40% fines with nonplastic; light red (10R 6/8) with laminated yellow (2.5Y 7/8); loose; wet	
														62		30			
														64		28			
																		65.0	
														66		26			
														68		24			
SPT	7	2	4	7	11	1.8								70		22		Clayey SAND (SC) - 78% fine sand; 22% fines with low plasticity, low toughness, slow dilatancy; light red (10R 7/6); medium dense; wet; sandy at bottom few inches of sampler	
														72		20			
														74		18			
																		75.0	
														76		16			
														78		14			
SPT	8	10	10	11	21	0.7								80		12		Poorly graded SAND with Silt and Gravel (SP-SM) - 72% fine to coarse, subangular and subrounded sand; 20% subrounded and subangular, fine gravel with maximum size 3/8"; 8% fine with no plasticity; reddish-yellow (7.5YR 6/8); medium dense; wet	
														82		10			
														84		8			
														86		6			
														88		4		88.0	Driller felt clay around 88'.
														90					

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BORING LOG

BORING NO. MW-6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16040.7' E 17991.0'	93.0 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; near crest of slope	Plant Grid	11/28/06	11/28/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	5	6	9	15	1.8	90		2		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; light greenish-gray (GLEY1 8/1 10Y) with laminated reddish-yellow (7.5YR 6/8); firm; moist	
							92		0		90.7 Clayey SAND (SC); about 60% fine sand; about 40% fines with medium plasticity, medium toughness, no dilatancy; pale yellow (5Y 8/2) with pockets of reddish-yellow (7.5YR 6/8); moist	Bottom of boring @ 91.5'. Groundwater level not recorded. Boring caved to 86.5'. Monitoring Well MW-6 constructed.
							94		-2			
							96		-4			
							98		-6			
							100		-8			
							102		-10			
							104		-12			
							106		-14			
							108		-16			
							110		-18			
							112		-20			
							114		-22			
							116		-24			
							118		-26			
							120					

CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

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BORING LOG

BORING NO. MW-7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15709.1'	E 18426.8'	88.8 ft (MSL)	103.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; inside woods	Plant Grid	11/19/06	11/20/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JR

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		88		SAND	Boring advanced using 6-1/4" drag bit w/ rotary wash method; drilling mud used. SPT performed using a 140-lb automatic hammer. Based on cuttings, sand between 0-10'.
														2		86			
														4		84			
														6		82			
														8		80			
														10		78		10.0	
SPT	1	4	9	10	19	1.1								12		76		Silty SAND (SM) - About 85% fine sand; about 15% fines with nonplastic; yellow (2.5Y 7/8); medium dense; moist; homogeneous	Based on cuttings, sand and gravel between 10'-20'.
														14		74			
														16		72			
														18		70			
														20		68			
SPT	2	6	9	12	21	0.6								22		66		grading about 65% fine to medium, subangular sand; about 35% fines with nonplastic; yellowish-red (5YR 5/8) to red (2.5YR 5/8)	Based on cuttings, red sand from 20'-30'.
														24		64			
														26		62			
														28		60			
														30					

BLACK & VEATCH

BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15709.1'	E 18426.8'	88.8 ft (MSL)	103.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; inside woods	Plant Grid	11/19/06	11/20/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	5	6	6	12	0.7								30	58	grading brownish-yellow (10YR 6/8)	
														32	56		
																	Based on driller, clay layer between 32'-34'.
														34	54		
																35.0	
														36	52		
														38	50		
SPT	4	3	2	3	5	1.8								40	48	Fat CLAY (CH) - About 90% fines with high plasticity, high toughness, no dilatancy; about 10% fine sand; light greenish-gray (GLEY1 8/1); firm; moist; homogeneous	
																40.5	
														42	46	Clayey SAND (SC) - About 55% fine sand; about 45% fines with medium plasticity, medium toughness, no dilatancy; brownish-yellow (10YR 6/8); moist; homogeneous	
														44	44		
																45.0	Based on driller, interlayered sand and clay (more sand than clay) between 40'-50'.
														46	42		
														48	40		
SPT	5	3	3	5	8	1.5								50	38	Fat CLAY (CH) - 89% fines with high plasticity, high toughness, no dilatancy; 11% fine sand; light greenish-gray (GLEY1 8/1); firm; moist; homogeneous	
														52	36		
														54	34		
														56	32		
														58	30		
														60			

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BORING LOG

BORING NO. MW-7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15709.1'	E 18426.8'	88.8 ft (MSL)	103.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; inside woods	Plant Grid	11/19/06	11/20/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	5	6	7	13	1.8								60		28		grading pale yellow (5Y 8/4)	
														62		26		62.5	
														64		24			
SPT	7	2	3	3	6	1.8								66		22		Fat CLAY with Sand (CH) - About 75% fines with high plasticity, high toughness, no dilatancy; about 25% fine sand; pale yellow (5Y 8/3); firm; moist; seams of yellow silt (laminated)	
														68		20		67.5	
SPT	8	3	4	4	8	1.8								70		18		Fat CLAY (CH) - About 95% fines with high plasticity, high toughness, no dilatancy; about 5% fine sand; light greenish-gray (GLEY1 8/1); firm; a clayey sand seam and orange-red sand seams in parts of the layer	
														72		16		72.5	
														74		14		Clayey SAND (SC) - 54% fine sand; 46% fines with low plasticity; light gray and orange; loose; wet; lense of sandy material (2"-3" thick)	
SPT	9	2	3	5	8	1.8								76		12			
														78		10			
SPT	10	1	3	3	6	1.8								80		8		grading light red (10R 7/8); clay layer about 3"-4" at bottom of sampler	
														82		6			
														84		4			
SPT	11	1	2	3	5	0.3								86		2		grading with trace subangular gravel with maximum size 1"	
														88		0		87.5	
														90					

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BORING LOG

BORING NO. MW-7
SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15709.1'	E 18426.8'	88.8 ft (MSL)	103.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; inside woods	Plant Grid	11/19/06	11/20/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JRL

SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORING: CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	12	5	8	14	22	1.4								90	-2	Silty SAND (SM) - About 65% fine sand; about 35% fines with low plasticity, low toughness, slow dilatancy; light red (10R 7/8); medium dense; wet; laminated sand and silt layers	
														92	-4		
														92.5			
														94	-6		
SPT	13	24	32	43	75	1.1								96	-8	Poorly graded SAND with Silt (SP-SM) - 81% fine to coarse, subangular sand; 10% fines, nonplastic; 9% fine to coarse, subangular to subrounded gravel with maximum size 3/4"; yellow (2.5Y 7/8); very dense; wet	
														97.5			
														98	-10		
SPT	14	16	30	37	67	0.8								100	-12	Poorly graded SAND with Silt and Gravel (SP-SM) - 66% fine to coarse, subangular sand; 29% fine to coarse, subangular and subrounded gravel with maximum size 1-1/4"; 5% fines; brownish-yellow (10YR 6/8); very dense; wet	
														102	-14		
														104	-16		Bottom of boring @ 103'. Groundwater level not recorded. Boring caved to 96'. Drilled to 103' to set well. Monitoring Well MW-7 constructed.
														106	-18		
														108	-20		
														110	-22		
														112	-24		
														114	-26		
														116	-28		
														118	-30		
														120			

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BORING LOG

BORING NO. MW-8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15203.3' E 14960.3'	138.8 ft (MSL)	121.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JR

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														0	138	Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy; brown (7.5YR 4/3); moist; trace roots	Boring advanced with 6-1/4" bit using natural mud and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2	136		
														4	134		
																5.0	
														6	132		
														8	130		
SPT	1	4	5	4	9	1.2								10	128	Silty SAND (SM) - 64% fine sand; 36% fines with no plasticity; strong brown (7.5YR 5/6); loose; moist; homogeneous	
														12	126		
														14	124		
														16	122		
														18	120		
SPT	2	10	10	12	22	1.5								20	118	grading about 70% fine to medium, subangular and subrounded sand; about 30% fines with no plasticity; red (2.5YR 4/8); medium dense	
														22	116		
														24	114		
														26	112		
														28	110		
														30			

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BORING LOG

BORING NO. MW-8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15203.3' E 14960.3'	138.8 ft (MSL)	121.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	10	10	9	19	1.3								30		108		grading reddish-yellow (5YR 6/8); medium dense; wet clay and gravelly clay seams (perched water)	
														32		106			
														34		104			
																		35.0	
														36		102			
														38		100			
SPT	4	3	4	23*	27	1.8								40		98		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; light greenish-gray (GLEY1 8/1 5GY); firm; moist; silt seams	*Three blow counts for first 3".
																		41.0	
														42		96		Poorly graded SAND (SP) - About 95% fine sand; about 5% fines; white; dense; moist	
														44		94			
																		45.0	
														46		92			
														48		90			
SPT	5	8	9	10	19	0.6								50		88		Silty SAND (SM) - About 80% fine to medium, subangular and subrounded sand; about 20% fines with no plasticity; reddish-yellow (7.5YR 6/8); medium dense	
														52		86			
														54		84			
																		55.0	
														56		82			
														58		80			
														60					

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BORING LOG

BORING NO. MW-8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15203.3'	E 14960.3'	138.8 ft (MSL)	121.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	4	5	5	10	1.3								60		78		Clayey SAND (SC) - 70% fine sand; 30% fines with low plasticity; light greenish-gray (GLEY1 8/1 10Y); loose; moist	
														62		76			
														64		74			
														66		72			
														68		70			
SPT	7	4	3	4	7	1.3								70		68		grading 65% fine sand; 35% fines with medium plasticity, medium toughness, no dilatancy; white (5Y 8/1)	
														72		66			
														74		64		75.0	
														76		62			
														78		60			
SPT	8	8	11	14	25	0.9								80		58		Silty SAND (SM) - About 75% fine to medium sand; about 25% fines with no plasticity; light greenish-gray (GLEY1 8/1 10Y); medium dense; moist; clay seam	
														82		56			
														84		54			
														86		52			
														88		50			
														90					

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BORING LOG

BORING NO. MW-8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15203.3' E 14960.3'	138.8 ft (MSL)	121.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	7	7	7	14	1.5								90	48	grading about 60% fine sand; about 40% fines; wet	
														92	46		
														94	44		
														96	42		
														98	40		
																99.0	
SPT	10	25	35	32	67	0.7								100	38	Well graded SAND with Silt (SW-SM) - 85% fine to coarse, subangular and subrounded sand; 10% fines; 5% gravel with maximum size 3/4"; pale yellow (2.5Y 8/3); very dense; wet	Driller felt gravel from 102' to 106'.
														102	36		
														104	34		
														106	32		
														108	30		
SPT	11	13	15	16	31	0.9								110	28	grading very pale yellow (10YR 7/4) and white (5Y 8/1); dense; gravel seam with maximum size 1-1/4"	
														112	26		
														114	24		
														116	22		
														118	20		
														120			

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BORING LOG

BORING NO. MW-8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15203.3' E 14960.3'	138.8 ft (MSL)	121.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	12	11	12	12	24	0.6								120		18		grading pale yellow (2.5Y 8/3); medium dense; gravel seam with maximum size 1".	
														122		16			Bottom of boring @ 121.5'. Groundwater level not recorded. Boring caved to 118.5'. Monitoring well MW-8 constructed.
														124		14			
														126		12			
														128		10			
														130		8			
														132		6			
														134		4			
														136		2			
														138		0			
														140		-2			
														142		-4			
														144		-6			
														146		-8			
														148		-10			
														150					

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BORING LOG

BORING NO. MW-9

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14737.2'	E 17805.0'	102.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to weeds; ≈30' from ditch	Plant Grid	11/15/06	11/15/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		102		Undifferentiated overburden	Boring advanced using 3-7/8" drag bit (NWJ rods) with bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2		100			
														4		98			
														6		96			
														8		94			
														10		92		10.0	
SPT	1	3	4	5	9	1.5								12		90		Fat CLAY (CH) - About 95% fines with high plasticity, high strength, no dilatancy, medium toughness; about 5% fine sand; brown; moist; homogeneous	
														14		88			
														16		86			
														18		84			
														20		82		grading light gray; lense of fine sand at bottom of spoon	
SPT	2	5	6	7	13	1.3								22		80			
														24		78		25.0	
														26		76			
														28		74			
														30					

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BORING LOG

BORING NO. MW-9

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14737.2'	E 17805.0'	102.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to weeds; ≈30' from ditch	Plant Grid	11/15/06	11/15/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	17	29	27	56	1.0								30	72	Poorly graded SAND (SP) - About 90% fine to medium, subangular sand; about 5% subangular to subrounded, coarse gravel; about 5% fines; light gray and yellowish-red; very dense; moist	
														32	70		
														34	68		
														36	66		
														38	64		
SPT	4	11	11	11	22	1.3								40	62	grading medium dense; with 6" thick gravelly sand on top of sampler	Unclear if gravelly sand is native or slough.
														42	60		
														44	58		
																45.0	
														46	56		
														48	54		
SPT	5	8	5	4	9	1.1								50	52	Sandy Elastic SILT (MH) - About 60% fines with low plasticity, low toughness; slow dilatancy, low strength; about 40% fine sand; yellowish-brown; wet; homogeneous	
														52	50		
																52.5	
														54	48		
SPT	6	3	1	1/12"	1	1.8								56	46	Clayey SAND (SC) - 65% fine sand: 35% fines with low plasticity; yellowish-brown w/some ferrous material; very loose; wet; homogeneous	
																57.5	
														58	44		
														60			

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BORING LOG

BORING NO. MW-9

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14737.2'	E 17805.0'	102.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to weeds; ≈30' from ditch	Plant Grid	11/15/06	11/15/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JN

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	7	3	3	6	9	1.3								60		42		Fat CLAY (CH) - About 90% fines with high plasticity; high toughness; no dilatancy, high strength; about 10% fine sand; light brown and red (ferrous); firm; moist; w/ pieces of coarse gravel	
														62		40			
														64		38			
														66		36			
														68		34			
														70		32			
SPT	8	9	15	16	31	0.5								72		30			
														74		28			
														76		26			
														78		24			
														80		22		grading light gray; no gravel	
SPT	9	5	5	6	11	1.8								82		20			
														84		18			
														86		16			
														88		14			
														90					

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BORING LOG

BORING NO. MW-9

SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14737.2' E 17805.0'	102.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to weeds; ≈30' from ditch	Plant Grid	11/15/06	11/15/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	10	WOR	WOR		5	5	1.8	90		12		grading very soft to firm	
								92		10			
								94		8			
								96		6			
								98		4			
								100		2			
SPT	11	3	4	3	7	1.8						grading firm	
								102		0			
								104		-2			
								106		-4			
								108		-6			
								110		-8			
SPT	12	0	7	9	16	1.8							
								112		-10			Bottom of boring @ 111.5'. Groundwater level not recorded. Boring backfilled with bentonite pellets to 60'. Monitoring well MW-9 constructed.
								114		-12			
								116		-14			
								118		-16			
								120					

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BORING LOG

BORING NO. MW-10

SHEET 1 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14869.9' E 17037.7'	107.4 ft (MSL)	161.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to a water treatment	Plant Grid	11/20/06	11/21/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JJL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		106		Undifferentiated sediments	Boring advanced using 3-7/8" drag bit w/ rotary wash method. SPT performed using a 140-lb automatic hammer.
														2		104			
														4		102		5.0	Clay based on cuttings.
														6		100			
														8		98			
SPT	1	3	4	5	9	1.2								10		96		Lean CLAY (CL) - 96% fines with medium plasticity, medium toughness, no dilatancy, high dry strength; 4% fine to medium sand; strong brown (7.5YR 4/6); firm; moist; homogeneous	
														12		94			
														14		92		15.0	
														16		90			
														18		88			
SPT	2	13	16	18	34	1.1								20		86		Silty SAND (SM) - About 60% fine sand; about 40% fines with low plasticity, low toughness, no to slow dilatancy; white; dense; moist; homogeneous	
														22		84			
														24		82		25.0	
														26		80			
														28		78			
														30					

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BORING LOG

BORING NO. MW-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14869.9' E 17037.7'	107.4 ft (MSL)	161.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to a water treatment	Plant Grid	11/20/06	11/21/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	3	3	4	7	1.5								30		76		Fat CLAY (CH) - About 95% fines with high plasticity, high toughness, no dilatancy; about 5% fine sand; light gray to white; hard; moist; homogeneous	
														32		74			
														34		72			
														36		70			
														38		68			
SPT	4	5	6	6	12	0.9								40		66		Silty SAND (SM) - 85% fine to medium, subangular sand; 15% fines with nonplastic; yellow (10YR 7/8) and reddish-yellow (7.5YR 7/8); medium dense; moist	
														42		64			
														44		62			
														46		60			
														48		58			
SPT	5	8	8	10	18	0.8								50		56			
														52		54			
														54		52			
														56		50			
														58		48			
														60					

35.0

55.0

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14869.9'	E 17037.7'	107.4 ft (MSL)	161.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to a water treatment	Plant Grid	11/20/06	11/21/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	20	20	25	45	0.9								60	46	Well graded SAND (SW) - About 95% fine to coarse, subangular sand; about 5% fines, trace gravel with maximum size 3/4"; light bluish-gray (GLEY2 8/1); dense; wet; homogeneous	
														62	44		
														64	42		
																65.0	Driller felt clay at 65'.
														66	40		
														68	38		
SPT	7	3	4	5	9	1.5								70	36	Fat CLAY (CH) - About 95% fines with high plasticity, high toughness, no dilatancy; about 5% fine sand; light greenish-gray (GLEY1 8/1); firm; moist; homogeneous	
														72	34		
														74	32		
														76	30		
														78	28		
SPT	8	6	8	13	21	1.5								80	26	grading hard; dark bluish-gray (GLEY2 4/1)	
														82	24		
														84	22		
														86	20		
														88	18		
														90			

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BORING LOG

BORING NO. MW-10

SHEET 4 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14869.9' E 17037.7'	107.4 ft (MSL)	161.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to a water treatment	Plant Grid	11/20/06	11/21/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JML

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	7	10	16	26	1.5								90		16		grading hard; dark bluish-gray	
														92		14			
														94		12			
														96		10			
														98		8			
SPT	10	10	14	20	34	1.5								100		6		grading hard; dark bluish-gray	
														102		4			
														104		2		105.0	
														106		0			
														108		-2			
SPT	11	14	18	19	37	1.5								110		-4		Silty SAND (SM) - 85% fine sand; 15% fines with nonplastic; light greenish-gray (GLEY1 7/1 10Y); dense; moist	
														112		-6			
														114		-8		115.0	
														116		-10			
														118		-12			
														120					

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BORING LOG

BORING NO. MW-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14869.9' E 17037.7'	107.4 ft (MSL)	161.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to a water treatment	Plant Grid	11/20/06	11/21/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GMC	J. Liljegren JML

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	12	12	16	20	36	1.5								120	-14	Fat CLAY (CH) - About 95% fines with high plasticity, high toughness, no dilatancy; about 5% fine sand; bluish-gray (GLEY2 5/1 10BG) and yellow (5Y 7/8); hard; moist	
														122	-16		
														124	-18		
														126	-20		Borehole stays open overnight.
														128	-22		
SPT	13	12	14	17	31	1.8								130	-24	grading trace sand; bluish-gray	
														132	-26		
														134	-28		
														136	-30		
														138	-32		
SPT	14	14	15	18	33	1.8								140	-34		
														142	-36		
														144	-38		
														146	-40		
														148	-42		
														150		145.0	

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BORING LOG

BORING NO. MW-10
SHEET 6 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14869.9' E 17037.7'	107.4 ft (MSL)	161.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to a water treatment	Plant Grid	11/20/06	11/21/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	10	10	13	23	1.8								150		-44		Lean CLAY (CL) - 100% fines with low plasticity; bluish-gray (GLEY2 5/1 10BG) and yellow (5Y 7/8); hard; moist; soft silty clay seams; few sands; blocky clay in the seams; firm; mixture of yellowish-brown and light blue-gray in the clay matrix	
														152		-46			
														154		-48			
														156		-50			
														158		-52			
SPT	16	9	10	15	25	1.5								160		-54		grading firm; brownish-yellow	
														162		-56			Bottom of boring @ 161.5'. Groundwater level not recorded. Borehole backfilled with bentonite pellets to 112.1'. Monitoring well MW-10 constructed.
														164		-58			
														166		-60			
														168		-62			
														170		-64			
														172		-66			
														174		-68			
														176		-70			
														178		-72			
														180					

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BORING LOG

BORING NO. MW-11

SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13650.8'	E 13154.9'	135.7 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to woods	Plant Grid	11/30/06	12/1/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														0	134	Clayey GRAVEL with Sand (GC) - About 60% fine to coarse, subangular and subrounded, hard gravel with maximum size 1-1/4"; about 20% fines with high plasticity, high toughness, no dilatancy; about 20% fine to coarse, subangular and subrounded sand; dark gray (10YR 4/1); moist; (fill)	Boring advanced using 6-1/4" drag bit and NWJ rods w/ rotary wash method . SPT performed using a 140-lb automatic hammer.
														5.0			
SPT	1	6	8	8	16	1.5								10	126	Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy; brownish-yellow (10YR 6/8); hard; moist; homogeneous (fill)	
														16.0	120		Driller felt sand at 16'.
SPT	2	15	22	31	53	1.3								20	116	Well graded SAND with Silt (SW-SM) - About 90% fine to coarse, subangular and subrounded sands; about 10% fines with no plasticity; red (2.5YR 5/8); very dense; moist	
														27	108		Driller felt clay at 27'.
														30	106		

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BORING LOG

BORING NO. MW-11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13650.8' E 13154.9'	135.7 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to woods	Plant Grid	11/30/06	12/1/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														30		grading fine to medium sand; light red (2.5YR 7/6); wet	
																31.0	
SPT	3	11	12	10	22	1.0								32	104	Fat CLAY (CH) - 100% fines with high plasticity, high toughness, no dilatancy; red (10R 4/6) and dark gray and brownish-yellow; hard; moist	
														34	102		
																35.0	
														36	100		
														38	98		
														40	96		
SPT	4	5	5	7	12	1.5										Lean CLAY (CL) - 100% fines with medium plasticity, medium toughness, no dilatancy; brownish-yellow (10YR 6/8) and white; firm; moist; stratified white clay layers	
														42	94		
														44	92		
																45.0	
														46	90		
														48	88		
														50	86		
SPT	5	4	5	7	12	1.5										Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; dark red (10R 3/6) and some light greenish-gray (GLEY1 8/1 5GY); firm; moist; silt seams	
														52	84		
														54	82		
																55.0	
														56	80		
														58	78		
														60	76		

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BORING LOG

BORING NO. MW-11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13650.8' E 13154.9'	135.7 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to woods	Plant Grid	11/30/06	12/1/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang EA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	2	3	2	5	1.5								60				Lean CLAY (CL) - 100% fines with medium plasticity, medium toughness, no dilatancy; brownish-yellow (10YR 6/8) laminated with light greenish-gray (GLEY1 8/1 5GY) and some red (10R 5/6); soft; moist; laminated silt and clay	
														62		74			
														64		72			
																		65.0	
														66		70			
														68		68			
														70		66			
SPT	7	2	5	5	10	1.8												Silt (ML) - About 100% fines with no to low plasticity and toughness, slow dilatancy; red (10R 5/8); moist; clay seams; thin layer of dark red fat clay from about 70.7'-71'	
														72		64			
														74		62			
																		75.0	
														76		60			
														78		58			
														80		56		Silty SAND (SM) - About 60% fine to medium sand; about 40% fine with no plasticity; light red (10R 7/8); medium dense; wet; homogeneous	
SPT	8	10	10	10	20	1.0													
														82		54			
														84		52			
																		85.0	
														86		50			
														88		48			
														90		46			

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BORING LOG

BORING NO. MW-11
SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13650.8' E 13154.9'	135.7 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat; grass surface; close to woods	Plant Grid	11/30/06	12/1/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JRL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	8	9	11	20	1.1								90		44		Clayey SAND (SC) - 73% fine to very fine sand; 27% fines with low plasticity; light red (10R 7/8) and brownish-yellow (10YR 6/8); medium dense; wet; silt seams	
														92		42			
														94		40			
																		95.0	
														96		38			
														98		36			
SPT	10	7	8	10	18	1.0								100		34		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; dark red (10R 3/6) and some light greenish-gray (GLEY1 8/1 5GY); firm; moist; silt seams	
														102		32		101.0	
														104		30		Silty SAND (SM) - About 75% fine to coarse, subangular and subrounded sand; about 25% fines with no plasticity; brownish-yellow (10YR 6/8); medium dense; wet	
														106		28			
														108		26			
SPT	11	15	18	18	36	0.7								110		24		grading 90% fine to medium sand; 10% fines; light red (10R 7/8); dense; trace gravel with maximum size 3/8".	
														112		22			
														114		20			
														116		18			Bottom of boring @ 115'. Groundwater level not recorded. Monitoring Well MW-11 constructed.
														118		16			
														120					

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BORING LOG

BORING NO. MW-12

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13076.3' E 15047.2'	124.9 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slope to southwest	Plant Grid	12/11/06	12/12/06

LOGGED BY	CHECKED BY	APPROVED BY
Cheng-Ping Jiang CPJ	G. Mergia GTM	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		124		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy; brownish-yellow (10YR 6/6); dry; trace roots	Boring advanced with 6" drag bit using bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2		122			
														4		120			
																		5.0	
														6		118			
														8		116			
SPT	1	6	9	13	22	1.2								10		114		Lean CLAY with Sand (CL) - About 80% fines with medium plasticity, medium toughness, no dilatancy; about 20% fine sand; brownish-yellow (10YR 6/6); hard; moist	
														12		112			
														14		110			
																		15.0	
														16		108			
														18		106			
SPT	2	13	19	11	30	0.7								20		104		Silty SAND (SM) - 87% fine to coarse sand; 13% fines; reddish-yellow (5YR 7/8); medium dense; moist	
														22		102			
														24		100			
																		25.0	
														26		98			
														28		96			
														30					

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BORING LOG

BORING NO. MW-12

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13076.3'	E 15047.2'	124.9 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slope to southwest	Plant Grid	12/11/06	12/12/06

LOGGED BY	CHECKED BY	APPROVED BY
Cheng-Ping Jiang CJ	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING							DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD						
SPT	3	4	12	12	24	1.0								30		94		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; light bluish-gray (GLEY2 8/1); hard; moist	
														32		92			
														34		90			
																		35.0	
														36		88			
														38		86			
SPT	4	50	103	143	246	1.2								40		84		Silty SAND (SM) - 80% fine to medium sand; 20% fines; light bluish-gray (GLEY2 8/1); very dense; moist; homogeneous	
														42		82			
														44		80			
														46		78			
														48		76			
SPT	5	16	24	32	56	0.7								50		74		grading with clay seam	
														52		72			
														54		70			
														56		68			
														58		66			
														60					

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BORING LOG

BORING NO. MW-12

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13076.3' E 15047.2'	124.9 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slope to southwest	Plant Grid	12/11/06	12/12/06

LOGGED BY	CHECKED BY	APPROVED BY
Cheng-Ping Jiang CPJ	G. Mergia GM	J. Liljegren JWL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	9	11	13	24	0.6								60		64		grading white (GLEY1 8/1); medium dense; homogeneous	
														62		62			
														64		60			
														66		58			
														68		56			
SPT	7	22	35	44	79	0.4								70		54		grading yellow (10YR 7/6); very dense	
														72		52			
														74		50			
														76		48			
														78		46			
SPT	8	14	18	19	37	0.4								80		44		grading dense; w/trace fine, angular gravel	
														82		42			
														84		40			
														86		38			
														88		36			
														90					

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BORING LOG

BORING NO. MW-12

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13076.3' E 15047.2'	124.9 ft (MSL)	115.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slope to southwest	Plant Grid	12/11/06	12/12/06

LOGGED BY	CHECKED BY	APPROVED BY
Cheng-Ping Jiang CPJ	G. Mergia GM	J. Liljegren JL

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	13	15	20	35	0.4	90	34	grading about 80% fine to coarse sand; about 20% fines; yellow (10YR 7/6); dense; w/trace fine, angular gravel	
							92	32		
							94	30		
							96	28		
							98	26		
SPT	10	11	13	16	29	0.5	100	24	grading 85% fine to medium sand; 15% fines; yellow (10YR 7/6); medium dense; wet	
							102	22		
							104	20	105.0	
							106	18		
							108	16		
SPT	11	25	40	40	80	0.8	110	14	Well graded SAND with Gravel (SW) - About 80% fine to coarse sand; about 20% fine, angular gravel; yellow (10YR 7/6); very dense; wet	
							112	12		
							114	10		
							116	8		Bottom of boring @ 115'. Groundwater level not recorded. Boring caved to 106.4'. Monitoring well MW-12 constructed.
							118	6		
							120			

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BORING LOG

BORING NO. MW-13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13786.6' E 17241.8'	103.0 ft (MSL)	131.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	11/28/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														0	102	Silty SAND with Gravel (SM) - About 60% fine to medium, rounded to subrounded sand; about 20% fine, subangular, elongated, hard gravel; about 20% fines with medium plasticity, medium toughness; poorly graded; dark yellowish brown (10YR 4/6); moist; maximum size 1.25"	Boring advanced with 3.25" baffle bit. SPT performed using a 140-lb automatic hammer.
														2	100		
														4	98		
																5.0	
														6	96		
														8	94		
SPT	1	5	5	7	12	1.5								10	92	Lean CLAY (CH) - About 100% fines with low plasticity; light olive brown (2.5YR 5/4); firm; moist	
														12	90	grading light gray	Change in color based on cuttings.
														14	88		
														16	86		
														18	84		
SPT	2	6	6	6	12	1.5								20	82	grading gray (2.5YR 6/1); moist; blocky; with about 5% sand	
														22	80		
														24	78		
														26	76		
														28	74		
														30			

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BORING LOG

BORING NO. MW-13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13786.6' E 17241.8'	103.0 ft (MSL)	131.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	11/28/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														30	72	grading reddish-gray; very hard	
																31.0	
SPT	3	3	12	28	40	1.5								32	70	Poorly graded SAND (SP) - About 95% sand, fine, subrounded to rounded sand; about 5% fines; reddish-gray; dense; moist	Field sample smaller than recommended.
														34	68		
																35.0	
														36	66		
														38	64		
														40	62	Poorly graded SAND with Gravel (SP) - 70% fine to coarse, angular sand; 30% fine, angular to rounded, hard gravel; light gray; medium dense; moist	
SPT	4	8	14	12	26	1.0								42	60		
														44	58		
																45.0	
														46	56		
														48	54		
														50	52	Silty SAND (SM) - 85% fine to medium, subrounded to rounded sand; 15% fines; poorly graded; yellowish-brown (10YR 5/8); medium dense; wet	Field sample smaller than recommended.
SPT	5	7	11	15	26	0.8								52	50		
														54	48		
																55.0	
														56	46		
														58	44		Clay encountered @ 58' (cuttings).
														60			

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BORING LOG

BORING NO. MW-13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13786.6'	E 17241.8'	103.0 ft (MSL)	131.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	11/28/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	3	3	6	9	1.5								60		42		SILT (ML) - About 95% fines with low plasticity, low toughness; slow dilatancy; about 5% sand; light greenish gray (GLEY1 7/1); firm; moist	
														62		40			
														64		38			
														66		36			
														68		34			
SPT	7	6	7	7	14	1.5								70		32		grading to no dilatancy	
														72		30			
														74		28		75.0	
														76		26			
														78		24			
SPT	8	6	8	12	20	1.7								80		22		SILT with sand (ML) - About 80% fines with low plasticity, low toughness, rapid dilatancy; about 20% fine sand; very dark greenish-gray (GLEY1 3/1); hard; moist	
														82		20			
														84		18		85.0	
														86		16			
														88		14			
														90					

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BORING LOG

BORING NO. MW-13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13786.6' E 17241.8'	103.0 ft (MSL)	131.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	11/28/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JML

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	6	12	21	33	1.4								90		12		Fat CLAY with Sand (CH) - 80% fines with high plasticity; 20% fine sand; very dark greenish gray (GLEY1 3/1); very hard; moist; with fine, subrounded sand seam @ 91.2', with silt	
														92		10			
														94		8			
														96		6			
														98		4			
SPT	10	11	17	24	41	1.7								100		2		grading 78% fines; 22% fine sand; brittle	
														102		0			
														104		-2		105.0	
														106		-4			
														108		-6			
SPT	11	11	16	25	41	1.5								110		-8		Silty SAND (SM) - 52% fine, subrounded sand; 48% fines with medium plasticity, medium toughness; poorly graded; pale olive (5Y 6/3); dense; wet	
														112		-10			
														114		-12		115.0	
														116		-14			
														118		-16			
														120					

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BORING LOG

BORING NO. MW-13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 13786.6' E 17241.8'	103.0 ft (MSL)	131.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	11/28/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JL

SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORING: CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	12	14	16	17	33	1.7								120		-18		Fat CLAY (CH) - About 95% fines with high plasticity, high toughness, high dry strength; about 5% fine sand; pale olive (5YR 6/3); very hard; moist; w/occasional ferrous stains	
														122		-20			
														124		-22		125.0	
														126		-24			
														128		-26			
SPT	13	7	8	10	18	1.5								130		-28		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness; pale olive (5YR 6/3); hard; moist; w/occasional ferrous spots	
														132		-30			Bottom of boring @ 131.5'. Groundwater level not recorded. Boring backfilled with bentonite pellets to 115'. Monitoring well MW-13 constructed.
														134		-32			
														136		-34			
														138		-36			
														140		-38			
														142		-40			
														144		-42			
														146		-44			
														148		-46			
														150					

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BORING LOG

BORING NO. MW-14

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14426.4'	E 15283.6'	136.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, shrubs, small trees	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	C. P. Jiang CPJ	J. Liljegren JML

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		136		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, slow dilatancy, low dry strength; brown (7.5YR 4/3); moist; with little organic content	Boring advanced with 6" drag bit using natural mud as drilling mud. SPT performed with a 140-lb automatic hammer.
														2		134			
														4		132			
																		—5.0—	
														6		130			
														8		128			
SPT	1	11	15	20	35	1.0								10		126		Clayey SAND (SC) - 75% fine to coarse, subrounded sand; 25% fines with medium plasticity; trace fine to coarse angular to subangular gravel, fractured with one hammer blow; well graded; yellowish-red to red; dense; moist	
														12		124			
														14		122			
														16		120			
														18		118			
SPT	2	17	31	36	67	1.1								20		116		grading 72% fine sand; 28% fines with low plasticity; yellow and red; very dense	
														22		114			
														24		112			
																		—25.0—	
														26		110			
														28		108			
														30					

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BORING LOG

BORING NO. MW-14

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14426.4' E 15283.6'	136.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, shrubs, small trees	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	5	4	6	10	1.8								30		106		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy, high dry strength; greenish-gray (GLEY1 5/1) and black; firm; moist	
														32		104			
														34		102			
														36		100			
														38		98			
SPT	4	3	4	8	12	1.5								40		96		grading light greenish-gray (GLEY1 7/1) and light brown (7.5YR 6/4)	
														42		94			
														44		92			
																		45.0	
														46		90			
														48		88			
SPT	5	43	75	120	195	1.1								50		86		Poorly graded SAND (SP) - About 100% fine to medium, subrounded sand; very pale brown (10YR 8/4) to white; very dense; moist	
														52		84			
														54		82			
																		55.0	
														56		80			
														58		78			
														60					

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14426.4'	E 15283.6'	136.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, shrubs, small trees	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	C. P. Jiang CPJ	J. Liljegren JN

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	12	16	15	31	0.9								60		76		Clayey SAND (SC) - 85% fine to coarse, subrounded to rounded sand; 14% fines with high plasticity; 1% fine gravel; well graded; white; dense; wet; with occasional pocket of high plasticity gray clay	
														62		74			
														64		72			
																		65.0	
														66		70			
														68		68			
SPT	7	13	24	29	53	0.6								70		66		Well graded SAND with Clay (SW-SC) - About 90% fine to coarse, subrounded sand; about 10% fines; brownish-yellow (10YR 6/8); very dense; wet	
														72		64			
														74		62			
																		75.0	
														76		60			
														78		58			
SPT	8	9	14	20	34	0.5								80		56		Clayey SAND (SC) - 76% fine to medium, subrounded to rounded sand; 24% fines; well graded; pale yellow (2.5Y 7/4); dense; wet	
														82		54			
														84		52			
														86		50			
														88		48			
														90					

BLACK & VEATCH

BORING LOG

BORING NO. MW-14

SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 14426.4' E 15283.6'	136.1 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, shrubs, small trees	Plant Grid	12/04/06	12/05/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ABlanco	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	5	5	9	14	0.8								90		46		grading 75% fine, subrounded to rounded sand; 25% fines; poorly graded; brownish-yellow (10YR 6/8); medium dense	
														92		44			
														94		42			
														96		40			
														98		38			
SPT	10	21	36	31	67	0.7								100		36		grading about 85% fine to coarse, subrounded sand; about 15% fines; pale yellow (2.5Y 7/4); very dense	
														102		34			
														104		32			
																		105.0	
														106		30			
														108		28			
SPT	11	12	15	12	27	0.4								110		26		Poorly graded SAND with Clay and Gravel (SP-SC) - 66% fine to coarse, subrounded sand; 24% fine, subrounded to rounded gravel; 10% fines; light yellowish-brown (2.5Y 6/2); medium dense; wet	Bottom of boring @ 111.5'. Groundwater level not recorded. Monitoring well MW-14 constructed.
														112		24			
														114		22			
														116		20			
														118		18			
														120					

BLACK & VEATCH

BORING LOG

BORING NO. MW-15

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12760.2'	E 14299.4'	134.7 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/12/06	12/13/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		134		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, slow dilatancy; brown (10YR 4/3); moist; with some organic matter	Boring advanced with 6-1/4" drag bit using natural soil and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2		132			
														4		130			
																		—5.0—	
														6		128			
														8		126			
SPT	1	4	6	8	14	1.4								10		124		Lean CLAY with Sand (CL) - About 80% fines with medium to high plasticity, medium toughness; about 20% fine sand; yellowish-red (5YR 4/6); firm; moist	
														12		122			
														14		120			
																		—15.0—	
														16		118			
														18		116			
SPT	2	10	16	18	34	1.4								20		114		Clayey SAND (SC) - About 70% fine, subangular sand; about 30% fines with medium plasticity; poorly graded; strong brown (7.5YR 5/8) and light greenish-gray (GLEY1 7/8); dense; moist	
														22		112			
														24		110			
																		—25.0—	
														26		108			
														28		106			
														30					

BLACK & VEATCH

BORING LOG

BORING NO. MW-15

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12760.2' E 14299.4'	134.7 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/12/06	12/13/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	C. P. Jiang	J. Liljegren

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	3	4	5	9	1.8								30		104		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; reddish-black (10R 2.5/1); firm; moist	
														32		102			
														34		100			
																		35.0	
														36		98			
														38		96			
SPT	4	15	12	7	19	1.3								40		94		Clayey SAND (SC) - 59% fine to medium sand; 41% fines with medium to high plasticity, medium toughness; poorly graded; light greenish-gray (GLEY1 8/1); medium dense; moist	
														42		92			
														44		90			
														46		88			
														48		86			
SPT	5	5	5	6	11	1.5								50		84		grading	
																		50.8	
														52		82		Sandy Lean CLAY (CL) - About 60% fines with medium plasticity, medium toughness; about 40% fine, subangular to subrounded sand; reddish-yellow (7.5YR 6/8); firm; moist	Stopped overnight after sampling.
														54		80			
																		55.0	
														56		78			
														58		76			
														60					

BLACK & VEATCH

BORING LOG

BORING NO. MW-15

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12760.2'	E 14299.4'	134.7 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/12/06	12/13/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	4	6	6	12	1.1								60		74		Clayey SAND (SM) - About 60% fine to medium, subrounded sand; about 40% fines; poorly graded; red (10R 5/6) and very pale brown (10YR 8/2); medium dense; moist; with seams and pockets of yellow and white sand	
														62		72			
														64		70			
														66		68			
														68		66			
SPT	7	5	6	5	11	1.6								70		64		grading 72% fine, subrounded sand; 28% fines with medium plasticity, low toughness; red (10R 5/6) and white (7.5YR 8/1)	
														72		62			
														74		60			
														76		58			
														78		56			
SPT	8	11	13	12	25	1.3								80		54		grading 86% fine to medium, subrounded sand; 14% fines; well graded; light red (10R 6/6) and pinkish white (7.5YR 8/2); with seams of sandy clay	
														82		52			
														84		50			
														86		48			
														88		46			
														90					

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BORING LOG

BORING NO. MW-15

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12760.2' E 14299.4'	134.7 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/12/06	12/13/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	C. P. Jiang CPJ	J. Liljegren JAL

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	14	15	17	32	0.9	90	44	grading about 75% medium to coarse, rounded to subrounded sand; about 20% fines; about 5% fine, subrounded, hard gravel; strong brown (7.5YR 5/8); dense; wet; with occasional clay partings and pockets	
							92	42		
							94	40		
							96	38		
							98	36		
SPT	10	13	12	17	29	0.7	100	34	grading about 80% fine to medium sand; about 20% fines; light greenish-gray (GLEY1 8/1); medium dense; wet	Some gravel at top of sample.
							102	32		
							104	30		
							106	28		
							108	26		
SPT	11	8	8	9	17	1.1	110	24	grading 84% fine to medium, subrounded sand; 16% fines	Some gravel found at top of sample.
							112	22		Bottom of boring @ 111.5'. Groundwater level not recorded. Boring caved to 108.6'. Monitoring well MW-15 constructed.
							114	20		
							116	18		
							118	16		
							120			

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BORING LOG

BORING NO. MW-16

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12839.6'	E 11119.8'	99.4 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; grass and shrubs	Plant Grid	11/30/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GMC	J. Liljegren JJL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		98		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, slow dilatancy, high dry strength; dark yellowish-brown; moist	Boring advanced with 5-7/8" baffle bit using Variflo QD and water as drilling fluid. SPT performed using a 140- lb automatic hammer.
														2		96			
														4		94			
														6		92			
														8		90			
SPT	1	3	4	4	8	1.5								10		88		grading w/occasional fine gravel size particles; black; fractured with one hammer blow; blocky; w/frequent ferrous spots	
														12		86			
														14		84			
														16		82			
														18		80			
SPT	2	7	9	11	20	0.9								20		78		grading light gray (2.5Y 7/1)	
														22		76			
														24		74			
														26		72			
														28		70			
														30					

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BORING LOG

BORING NO. MW-16

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12839.6' E 11119.8'	99.4 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; grass and shrubs	Plant Grid	11/30/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	G. Mergia GM	J. Liljegren JAL

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	5	7	8	15		30		grading light gray; firm	
								30.8	SILT (ML) - About 100% fines with low plasticity, low toughness, rapid dilatancy; light gray (2.5Y 7/1); moist	
							32	68		
							34	66		
								35.0		
							36	64		
							38	62		Driller noting layers of hard materials and soft materials.
								60		
SPT	4	6	8	9	17	1.2	40		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness; light brownish-gray (2.5Y 6/2)	
								58		
							42		SILT (ML) - About 100% fines with no plasticity, low toughness, rapid dilatancy; light brownish-gray (2.5Y 6/2); firm; moist	
							44	56		
								45.0		
							46	54		
							48	52		
								50		
SPT	5	5	5	9	14	0.7	50		Fat CLAY (CH) - About 100% fines with high plasticity, high toughness; light brownish-gray (2.5Y 6/2)	
							52	48		
							54	46		
							56	44		
							58	42		
							60	40		

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BORING LOG

BORING NO. MW-16

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12839.6' E 11119.8'	99.4 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; grass and shrubs	Plant Grid	11/30/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	4	1	2	3	1.6								60		38		grading light gray (2.5Y 7/2); soft; wet; with clayey, fine sand seam, light gray and ferrous spot	
														62		36			
														64		34			
																		65.0	
														66		32			
														68		30			
SPT	7	9	17	21	38	0.9								70		28		Silty SAND (SM) - 83% fine to coarse, subrounded sand; 15% fines; 2% fine gravel; poorly graded; pale yellow (2.5Y 7/3); dense; wet; with fat clay parting surrounded by ferrous colored material	
														72		26			
														74		24			
														76		22			
														78		20			
SPT	8	12	20	21	41	0.7								80		18		grading 83% fine to medium, subrounded sand; 17% fines; brownish-yellow (10YR 6/8) and pale yellow; with occasional light gray fat clay partings	
														82		16			
														84		14			
																		85.0	
														86		12			
														88		10			
														90					

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BORING LOG

BORING NO. MW-16
SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12839.6' E 11119.8'	99.4 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; grass and shrubs	Plant Grid	11/30/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	G. Mergia	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	10	13	17	30	1.2								90				Well graded GRAVEL (GW) - About 95% fine to coarse, subangular to subrounded gravel, particle chipped with 3 hammer blows; about 5% fines; various colors; medium dense; wet	
														92		8		91.0 Clayey SAND (SC) - About 80% fine to medium, subrounded sand; about 20% fines; well graded; brownish-yellow (10YR 6/8) and pale yellow; with occasional light gray fat clay partings	Bottom of boring @ 91.5'. Groundwater level not recorded. Monitoring well MW-16 constructed.
														94		6			
														96		4			
														98		2			
														100		0			
														102		-2			
														104		-4			
														106		-6			
														108		-8			
														110		-10			
														112		-12			
														114		-14			
														116		-16			
														118		-18			
														120		-20			

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BORING LOG

BORING NO. MW-17

SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12520.6' E 12941.8'	124.0 ft (MSL)	106.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, close to woods	Plant Grid	12/01/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														0		124	
														2		122	
														4		120	
														5.0			
														6		118	
														8		116	
SPT	1	13	14	15	29	1.1								10		114	
														12		112	
														14		110	
														15.0			
														16		108	
														18		106	
SPT	2	5	5	6	11	1.3								20		104	
														22		102	
														24		100	
														25.0			
														26		98	
														28		96	
														30		94	

CLASSIFICATION OF MATERIALS	REMARKS
Clayey GRAVEL with Sand (GC) - About 60% fine to coarse, subangular and subrounded gravel with maximum size 1"; about 25% fines with high plasticity, high toughness, no dilatancy; about 15% fine to coarse, subangular and subrounded sand; dark gray (Fill)	Boring advanced with 6-1/4" bit using bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
Silty SAND (SM) - About 65% fine to medium, subangular and subrounded sand; about 35% fines with no to low plasticity; light red (2.5YR 6/8); medium dense; moist; homogeneous	
Clayey SAND (SC) - 75% fine sand; 25% fines with low plasticity; light red (2.5YR 7/8); medium dense; moist; 2"-3" silty sand at bottom of sampler (fine sand)	
	Driller felt clay at 25'.

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BORING LOG

BORING NO. MW-17

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12520.6' E 12941.8'	124.0 ft (MSL)	106.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, close to woods	Plant Grid	12/01/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	WOR	2	3	5	1.5								30		94		Lean CLAY with Sand (CL) - About 85% fines with medium plasticity, medium toughness, no dilatancy; about 15% fine sand; light greenish-gray (GLEY1 8/1 10Y); firm; moist	
														32		92			
														34		90			
																		35.0	
														36		88			
														38		86			
SPT	4	3	4	6	10	1.5								40		84		Clayey SAND (SC) - About 60% fine to medium sand; about 40% fines with medium plasticity, medium toughness, no dilatancy; white (GLEY1 8/1 N); loose; moist	
														42		82			
														44		80			
																		45.0	Driller felt clay at 45'.
														46		78			
														48		76			
SPT	5	5	5	6	11	1.0								50		74		Silty SAND (SM) - About 70% fine to medium sand; about 30% fines with no plasticity; pale yellow (2.5Y 8/3); medium dense; moist	Driller felt interlayered clay and sand layers. Based on cuttings, clay and sand found.
														52		72			
														54		70			
														56		68			
														58		66			
														60		64			

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BORING LOG

BORING NO. MW-17

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12520.6'	E 12941.8'	124.0 ft (MSL)	106.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, close to woods	Plant Grid	12/01/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GMC	J. Liljegren JAL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	5	8	10	18	1.0								60		64		grading light red (2.5YR 7/6); sand seam at bottom of sampler about 2" thick	
														62		62			
														64		60			Driller felt clay from 65' to 69'.
														66		58			
														68		56			
SPT	7	7	7	8	15	1.2								70		54		grading light red (2.5YR 6/6); wet	
														72		52			
														74		50			
																		75.0	
														76		48			
														78		46			
SPT	8	11	20	23	43	1.1								80		44		Well graded SAND with Silt (SW-SM) - About 90% fine to coarse, subangular and subrounded sand; about 10% fines with no plasticity; light red (2.5YR 6/6) and yellow (10YR 8/8); dense; moist	
														82		42			
														84		40			
																		85.0	
														86		38			
														88		36			
														90		34			

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BORING LOG

BORING NO. MW-17

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 12520.6' E 12941.8'	124.0 ft (MSL)	106.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, close to woods	Plant Grid	12/01/06	12/01/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	7	7	10	17	1.0								90		34		Clayey SAND (SC) - 83% fine sand; 17% fines with low plasticity; light red (10R 6/6); medium dense; wet; homogeneous	
														92		32			
														94		30			
																		95.0	
														96		28			
														98		26			
SPT	10	8	11	13	24	1.1								100		24		Silty SAND (SM) - 85% fine, subangular and subrounded sand; 15% fines with no plasticity; light red (10R 7/6); medium dense; wet; homogeneous	
														102		22			
														104		20			
SPT	11	16	21	29	50	0.8								106		18		grading about 85% fine to coarse, subangular and subrounded sand; about 15% fines with no plasticity; dense; wet; clay seam	Bottom of boring @ 106.5'. Groundwater level not recorded. Monitoring well MW-17 constructed.
														108		16			
														110		14			
														112		12			
														114		10			
														116		8			
														118		6			
														120		4			

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BORING LOG

BORING NO. MW-18

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11831.1'	E 14403.1'	113.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco MAB	C. P. Jiang CPJ	J. Liljegren JHL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														0	112	Lean CLAY (CL) - About 100% fines with medium to low plasticity, slow dilatancy; light yellowish-brown (10YR 6/4); moist; with some organic material; (Loess)	Boring advanced with 6-1/4" drag bit using bentonite and water as drilling mud. SPT performed with a 140-lb automatic hammer.
														2	110		
														4	108	5.0	
														6	106		
														8	104		
SPT	1	4	4	4	8	0.9								10	102	Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy, high dry strength; yellowish-brown (10YR 5/4); firm; moist	
														12	100		
														14	98		
														16	96		
														18	94		
SPT	2	3	3	5	8	1.5								20	92	grading light greenish-gray (GLEY1 7/1)	
														22	90		
														24	88		
														26	86		
														28	84		
														30			

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BORING LOG

BORING NO. MW-18

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11831.1'	E 14403.1'	113.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	C. P. Jiang	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	11	32	41	73	1.5								30	82	31.0 Fat CLAY with Sand (CH) - About 85% fines with high plasticity, high toughness, no dilatancy; about 15% fine sand; gray (7.5YR 6/1); moist	Field sample smaller than recommended.
														32	80	31.5 Poorly graded SAND with Clay (SP-SC) - About 90% fine to medium, subangular sand; about 10% fines; white (5YR 8/1); very dense; dry	
														34	78	35.0	
														36	76		
														38	74		
SPT	4	5	5	6	11	1.3								40	72	Clayey SAND (SC) - 84% fine to medium, subangular to subrounded sand; 16% fines; poorly graded; light greenish-gray (GLEY1 8/1); medium dense; moist	
														42	70		
														44	68		
														46	66		
														48	64		
SPT	5	5	6	6	12	1.3								50	62		
														52	60		
														54	58	55.0	
														56	56		
														58	54		
														60			

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BORING LOG

BORING NO. MW-18

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11831.1'	E 14403.1'	113.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	C. P. Jiang	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	15	24	27	51	1.2								60		52		Poorly graded SAND with Silt (SP-SM) - 94% fine to coarse, subrounded sand; 6% fines; reddish-yellow (7.5YR 6/8) and pale yellow (2.5Y 7/3); very dense; moist	
														62		50			
														64		48			
																		65.0	
														66		46			
														68		44			
SPT	7	5	6	6	12	1.1								70		42		Clayey SAND (SC) - About 60% fine to medium, subrounded sand; about 40% fines; poorly graded; pale yellow (2.5Y 7/3) and yellow (2.5Y 7/8); medium dense; wet; with brownish-yellow seams	
														72		40			
														74		38			
														76		36			
														78		34			
SPT	8	6	8	9	17	1.1								80		32		grading about 80% sand; about 20% fines; yellow (2.5Y 7/6)	
														82		30			
														84		28			
																		85.0	
														86		26			
														88		24			
														90					

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BORING LOG

BORING NO. MW-18
SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11831.1' E 14403.1'	113.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface	Plant Grid	12/02/06	12/02/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	C. P. Jiang CPJ	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	13	15	18	33	0.8								90		22		Well graded SAND with Clay (SW-SC) - About 85% fine to coarse, subrounded sand; about 10% fines; about 5% fine gravel; pale yellow (2.5Y 7/3); dense; wet	
														92		20			
														94		18			
																		95.0	
														96		16			
														98		14			
SPT	10	13	20	23	43	0.7								100		12		Poorly graded SAND with Clay (SP-SC) - 90% fine to medium, subrounded sand; 10% fines; yellow (2.5Y 7/6); dense; wet; with brown seams	
														102		10			Bottom of boring @ 101.5'. Groundwater level not recorded. Boring caved to 97.2'. Monitoring well MW-18 constructed.
														104		8			
														106		6			
														108		4			
														110		2			
														112		0			
														114		-2			
														116		-4			
														118		-6			
														120					

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BORING LOG

BORING NO. MW-19

SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11496.3' E 11167.7'	112.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	11/29/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		112		Clayey GRAVEL (GC) - About 60% fine to coarse, subangular and subrounded, hard gravel with maximum size 1"; about 20% fines with medium plasticity, medium toughness, no dilatancy; about 20% fine to coarse, subangular and subrounded sand; dark gray; moist (Fill)	Boring advanced with 6-1/4" bit w/ rotary wash method. SPT performed using a 140-lb automatic hammer.
														2		110			
														4		108			
														5.0					
														6		106			
														8		104			
SPT	1	2	2	3	5	1.5								10		102		Lean CLAY (CL) - About 100% fines with medium plasticity, medium toughness, no dilatancy; yellowish-brown (10YR 5/6); firm; moist; homogeneous	
														12		100			
														14		98			
														15.0					
														16		96			
														18		94			
SPT	2	4	9	13	22	1.5								20		92		Fat CLAY with Sand (CH) - 57% fines with high plasticity; 43% fine to medium sand; mixture of red (10R 5/8) and brownish-yellow (10YR 6/8) with some light gray; hard; moist	
														22		90			
														24		88			
														25.0					
														26		86			
														28		84			
														30					

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11496.3' E 11167.7'	112.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	11/29/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	3	7	8	8	16	1.2								30		82	
														32		80	
														34		78	
														36		76	
														38		74	
SPT	4	5	7	7	14	1.3								40		72	
														42		70	
														44		68	
														46		66	
														48		64	
SPT	5	3	3	4	7	1.8								50		62	
														52		60	
														54		58	
														56		56	
														58		54	
														60			

CLASSIFICATION OF MATERIALS	REMARKS
Clayey SAND (SC) - 77% fine to medium, subangular and subrounded sand; 23% fines with low plasticity, low toughness, no dilatancy; light red (10R 6/8), yellow (10YR 7/8), and white; medium dense; moist	Based on driller, interlayered sand and clay from 30'-40'.
grading light red and yellow	
45.0	Based on driller, clay at 45'.
Fat CLAY (CH) - About 100% fines with high plasticity, high toughness, no dilatancy; laminated light greenish-gray (GLEY1 8/1 10Y) and light red (2.5YR 7/8); firm; moist	
51.0	
Elastic SILT (MH) - About 90% fines with medium plasticity, medium toughness, no dilatancy; about 10% fine to coarse, black sand; pale yellow (2.5Y 8/3); wet	
55.0	

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BORING LOG

BORING NO. MW-19
SHEET 3 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11496.3' E 11167.7'	112.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	11/29/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	7	12	9	21	0.6								60		52		Silty SAND (SM) - 80% fine to medium, subangular sand; 20% fines with no plasticity; light red (10R 6/8) and yellow (2.5Y 7/8); medium dense; wet	
														62		50			
														64		48			
														66		46			
														68		44			
SPT	7	11	15	18	33	0.8								70		42		grading about 85% fine to coarse, subangular sand; about 15% fines with no plasticity; dense; moist	
														72		40			
														74		38			
																		75.0	
														76		36			
														78		34			
SPT	8	21	33	40	73	0.6								80		32		Poorly graded SAND with Silt (SP-SM) - 90% fine to medium, subangular sand; 9% fines with no plasticity; 1% subangular and subrounded gravel; yellowish-red (5YR 5/8); very dense; wet	
														82		30			
														84		28			
														86		26			
														88		24			Driller felt clay @ 88'.
														90					

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BORING LOG

BORING NO. MW-19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11496.3' E 11167.7'	112.2 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, grass surface, inside woods	Plant Grid	11/29/06	11/29/06

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	G. Mergia GM	J. Liljegren JM

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	8	8	20	28	1.0								90		22		grading medium dense; with interlayered lean clay from about 90.7' to 91' (0.3' thick) of dark red (10R 3/6)	
														92		20			Bottom of boring @ 91.5'. Groundwater level not recorded. Monitoring well MW-19 constructed.
														94		18			
														96		16			
														98		14			
														100		12			
														102		10			
														104		8			
														106		6			
														108		4			
														110		2			
														112		0			
														114		-2			
														116		-4			
														118		-6			
														120					

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BORING LOG

BORING NO. MW-20

SHEET 1 OF 3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11979.8' E 8383.7'	46.5 ft (MSL)	73.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Clover, flat lying east of road	Plant Grid	03/11/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy PM	E. C. Ang ECA	J. Liljegren JAL

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		46		Poorly graded SAND (SP) - About 90% fine to medium sand; about 5% fine gravel; about 5% fines; light red (2.5YR 6/8); moist	Boring advanced with 5-7/8" baffle bit. SPT performed w/ automatic hammer using unlined samplers and plastic catchers. No sample @ 5'. Offset 19.0' N.
														2		44			
														4		42			
														6		40			
														8		38			
														10		36		10.0	
SPT	1	6	12	18	30	1.0								12		34		Poorly graded SAND w/Silt (SP-SM) - About 85% fine to medium sand; about 10% fines; about 5% fine gravel; mottled red (2.5YR 4/6) to yellowish-red (5YR 5/8); medium dense; moist	
														14		32			
														16		30			
														18		28		18.0	Driller reports water @ about 18'.
														20		26		Fat CLAY (CH) - About 100% fines w/high plasticity, high toughness, no dilatancy; dark greenish-gray (GLEY2 4/1) w/wood chips in clay; soft; moist grading to wet; loose @ 21.4'	
SPT	2	5	6	3	9	0.7								22		24			
														24		22			Driller reports clay as thick as 2' w/abundant wood chips.
														26		20			
														28		18			
														30					

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BORING LOG

BORING NO. MW-20
SHEET 2 OF 3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11979.8' E 8383.7'	46.5 ft (MSL)	73.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Clover, flat lying east of road	Plant Grid	03/11/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy JNL for PM	E. C. Ang ECA	J. Liljegren JNL

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	1	0	2	2	1.0								30		16		grading to dark greenish-gray (GLEY1 4/1); very soft; wet; abundant wood pieces	
														32		14			
														34		12			
														36		10			
														38		8			
SPT	4	WOH	WOH	1	1	1.0								40		6		grading w/ LL-90, PI=66, natural moisture contents= 65%, no wood in sample	
														42		4			
														44		2			
														46		0			
														48		-2			From cuttings grading to more pieces; wood pieces carbonized.
														50		-4		50.0	
SPT	5	WOH	2	5	7	1.1								52		-6		Lean CLAY (CL) - About 95% fines w/low plasticity, LL=41, PI=21, low toughness, slow dilatancy; about ≤ 5% fine sand; dark greenish-gray (GLEY1 4/1); soft; wet, natural moisture content=41%	Stopped drilling @ 51.5' - hold for decision to deepen boring.
														54		-8			
														56		-10			
														58		-12			
														60					

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BORING LOG

BORING NO. MW-20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 11979.8' E 8383.7'	46.5 ft (MSL)	73.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Clover, flat lying east of road	Plant Grid	03/11/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy JAL for PM	E. C. Ang ECA	J. Liljegren JAL

SOIL SAMPLING								ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	11	15	15	30	1.5									60	-14	Lean CLAY w/Gravel (CL) - About 85% fines w/low plasticity, low toughness, no dilatancy; about 15% medium to fine, subangular, flat, elongated, poorly graded gravel; very dark greenish-gray (GLEY1 5GY 4/1); medium dense; wet	03/27/06 Boring caved 1.5' below ground surface; water level @ 1.5' below ground surface. Driller says silt @ 58' and sand @ 60'.
															62	-16		
															64	-18		
															66	-20		
															68	-22		
															70	-24	60.6 Poorly graded SAND (SP) - About 95% fine to medium, subangular, poorly graded sand; about 5% fines; greenish-gray (GLEY1 10Y 5/1); medium dense; wet 70.0	
SPT	7	3	2	2	4	1.2									72	-26	Sandy Lean CLAY (CL) - 65% fines w/low plasticity, LL=24, PI=10; 35% predominantly fine, subangular sand; low toughness, rapid dilatancy; very dark gray (GLEY1 10Y 3/1); very loose; wet, natural moisture content=27%	
															74	-28		Bottom of boring @ 73.0'. Water level @ 1.25' on 03/28/07. Monitoring well MW-20 constructed.
															76	-30		
															78	-32		
															80	-34		
															82	-36		
															84	-38		
															86	-40		
															88	-42		
															90			

BLACK & VEATCH

BORING LOG

BORING NO. MW-21
SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 10958.7' E 12204.0'	104.9 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	C. P. Jiang CPJ	J. Liljegren JNL

SAMPLING							CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		104		Lean CLAY (CL) - About 100% fines with low plasticity, low toughness, slow dilatancy, low dry strength; brown (7.5YR 4/4); moist; with some organic matter; blocky	Boring advanced with 6" drag bit using bentonite and water as drilling mud. SPT performed using a 140-lb automatic hammer.
														2		102			
														4		100			
																		—5.0—	
														6		98			
														8		96			
SPT	1	7	11	11	22	0.8								10		94		Sandy Lean CLAY (CL) - 61% fines with medium plasticity, medium toughness; 37% fine to medium sand; light yellowish-brown; hard; dry; (Loess)	
														12		92			
														14		90			
																		—15.0—	
														16		88			
														18		86			
SPT	2	4	6	8	14	1.5								20		84		Lean CLAY with Sand (CL) - About 80% fines with low plasticity; about 20% fine sand; light greenish-gray (GLEY1 8/1); firm; moist; with red stains @ 21.2' sand grading fine to medium grained; reddish-yellow (7.5YR 6/8)	
														22		82			
														24		80			
																		—25.0—	
														26		78			
														28		76			
														30					

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BORING LOG

BORING NO. MW-21

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 10958.7'	E 12204.0'	104.9 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	C. P. Jiang	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	3	6	9	10	19	0.6								30		74		Clayey SAND (SC) - About 60% fine to medium, angular to subrounded sand; about 40% fines; poorly graded; reddish-yellow (7.5YR 7/8); medium dense; moist	
														32		72			
														34		70			
														36		68			
														38		66			
SPT	4	7	9	9	18	0.7								40		64		grading light red (2.5YR 6/6) @41' grading fine grained	
														42		62			
														44		60			
														46		58			
														48		56			
SPT	5	6	8	10	18	0.8								50		54		grading 54% fine to medium, subrounded sand; 46% fines; wet; with layers of coarse, subrounded, white and reddish-yellow sand	
														52		52			
														54		50			
														56		48			
														58		46			
														60					

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BORING LOG

BORING NO. MW-21

SHEET 3 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 10958.7' E 12204.0'	104.9 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	C. P. Jiang	J. Liljegren

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	6	7	10	11	21	0.9								60		44			
														62		42			
														64		40			
																		65.0	
														66		38			
														68		36			
SPT	7	12	15	12	27	0.8								70		34		Well graded SAND with Clay (SW-SC) - About 90% fine to coarse, subrounded sand; about 10% fines; light red (2.5YR 6/6); grading to reddish-yellow (7.5YR 7/8) @ 71'; medium dense; wet	
														72		32			
														74		30			
																		75.0	
														76		28			
														78		26			
SPT	8	13	18	21	39	0.7								80		24		Clayey SAND (SC) - 81% fine to medium, subrounded to rounded sand; 19% fines; poorly graded; light red (7.5YR 6/6); dense; wet; with occasional red clay pocket and rounded, fine gravel	
														82		22			
														84		20			
														86		18			
														88		16			
														90					

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BORING LOG

BORING NO. MW-21

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 10958.7' E 12204.0'	104.9 ft (MSL)	91.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs	Plant Grid	12/03/06	12/03/06

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AWB	C. P. Jiang CPJ	J. Liljegren JAL

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	9	12	15	18	33	1.1								90		14		90.5 Clayey GRAVEL (GC) - About 80% fine to coarse, subrounded, elongated gravel, particle fractured with 3 hammer blows; red and light brown; dense; wet 91.0 Clayey SAND (SC) - About 80% fine to medium, subrounded to rounded sand; about 20% fines; well graded; light red; dense; wet	Bottom of boring @ 91.5'. Ground water level not recorded. Monitoring well MW-21 constructed.

92 12
94 10
96 8
98 6
100 4
102 2
104 0
106 -2
108 -4
110 -6
112 -8
114 -10
116 -12
118 -14
120

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BORING LOG

BORING NO. EB/TSC-01

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16691.9' E 16707.9'	93.8 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, gravel surface (edge of road)	Plant Grid	01/13/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)
SPT	01	13	13	10	23	1.0								0		
																92
SPT	02	5	7	6	13	0.9								2		
																90
SPT	03	3	6	6	12	0.7								4		
																88
SPT	04	2	3	4	7	0.9								6		
																86
SPT	05	5	4	6	10	0.7								8		
																84
SPT	06	5	6	6	12	1.0								10		
																82
SPT	07	5	8	8	16	0.7								12		
																80
SPT	08	6	8	10	18	0.9								14		
																78
														16		
																76
														18		
																74
														20		
																72
														22		
																70
														24		
																68
														26		
																66
														28		
																64
														30		

GRAPHIC LOG

CLASSIFICATION OF MATERIALS

[Fill]

Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~15% fine sand; ~5% fine to coarse, angular gravel; various pieces fractured after 2 blows; moist; hard; red (10R 4/6)

1.5

Poorly graded SAND w/clay (SP-SC) - ~60% fine to coarse, subrounded to rounded sand; ~30% fine to coarse, angular to subrounded gravel; ~10% fines; wet; medium dense; light brown (7.5YR 6/4)

2.5

Lean CLAY w/gravel (CL) - ~80% fines w/medium plasticity, medium toughness, slow dilatancy; ~15% fine to coarse, subangular to rounded gravel; moist; hard; yellowish-brown (10YR 5/4) and light greenish-gray (GLEY1 7/1)

4.5

[Port Hickey]

Clayey SAND (SC) - ~60% fine to medium, subangular to subrounded sand; ~40% fines; moist; medium dense; poorly graded; brownish-yellow (10YR 6/6) @7.5' grading w/84% sand; 16% fines; natural moisture content = 13%; loose; pale yellow (10YR 7/4)

12.5

[Citronelle (upper)]

Clayey SAND (SC) - ~86% fine to medium, subrounded to rounded sand; 14% fines w/LL=18, PL= 11, PI=7; moist, natural moisture content = 17%; medium dense; well graded; yellowish-brown (10YR 5/8)

grading to ~60% sand; ~35% fines; ~5% fine gravel

27.5

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.

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BORING LOG

BORING NO. EB/TSC-01

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16691.9'	E 16707.9'	93.8 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, gravel surface (edge of road)	Plant Grid	01/13/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco GMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	11	11	12	23	0.5								30		Well graded SAND w/clay and gravel (SW-SC) - 71% fine to coarse, subrounded to rounded sand; 18% fine to coarse, subangular to rounded gravel; various particles fractured w/1 hammer blow; 11% fines; moist, natural moisture content = 10%; medium dense; brownish-yellow (10YR 6/6)	
														32	62		
														34	60		
																35.0	
SPT	10	6	6	8	14	1.0								36	58	Clayey SAND (SC) - ~80% fine to coarse, subrounded to rounded sand; ~20% fines; moist; medium dense; poorly graded; brownish-yellow (10YR 6/8)	Bottom of boring @ 36.5'. Fluid level @ 11' @ completion of drilling on 01/13/07. Boring did not cave. Water not encountered on 01/14/07. Boring backfilled w/cement-bentonite grout by tremie method on 01/14/07.
														38	56		
														40	54		
														42	52		
														44	50		
														46	48		
														48	46		
														50	44		
														52	42		
														54	40		
														56	38		
														58	36		
														60	34		

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BORING LOG

BORING NO. EB/TSC-03

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16820.4'	E 16706.8'	94.1 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel road	Plant Grid	01/13/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	01	50/4"	50/4"	-	+50	0.5									0		94	
SPT	02	5	11	11	22	0.8									2		92	
SPT	03	9	11	8	19	1.2									4		90	
SPT	04	2	4	5	9	0.9									6		88	
SPT	05	2	4	3	7	1.1									8		86	
SPT	06	3	4	5	9	0.9									10		84	
SPT	07	5	6	6	12	0.6									12		82	
SPT	08	4	5	5	10	0.9									14		80	
															16		78	
															18		76	
															20		74	
															22		72	
															24		70	
															26		68	
															28		66	
															30			

CLASSIFICATION OF MATERIALS

[Fill]
Silty SAND w/gravel (SM) - 51% fine to medium, angular to rounded sand; 29% fine to coarse, angular to subangular gravel; 20% fines; moist, natural moisture content = 7%; very dense; poorly graded; bluish-gray (GLEY2 6/1)

2.5

Lean CLAY (CL) - ~90% fines w/medium plasticity, high toughness; ~5% fine sand; ~5% fine gravel; moist; hard; light greenish-gray (GLEY1 7/1) and dark yellowish-brown (10YR 6/4)

4.5

[Port Hickey]
Clayey SAND (SC) - 85% fine to medium, subrounded sand; 15% fines; moist, natural moisture content = 8%; medium dense; poorly graded; yellow (10YR 7/6)

@ 7.5' grading loose; w/gravel size fat clay balls

grading to ~80% subrounded to rounded sand; ~20% fines; pale yellow (10YR 8/3); w/strong brown (7.5YR 5/8) seams (possibly ferrous)

14.0

[Citronelle (upper)]
Clayey SAND (SC) - ~80% fine to medium, subrounded to rounded sand; ~15% fines; ~5% fine gravel; loose; moist; pale yellow (10YR 8/3)

grading ~5% coarse gravel (only two rounded pieces); medium dense

grading to 87% sand; 13% non-plastic fines; gravel grades out

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud.
SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT-01 field sample smaller than recommended.
SPT-03 gravel on top of sample (slough).
Note: Gravel road @ boring location was being repaired during drilling.

SPT-08 gravel @ top of sample (slough).

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BORING LOG

BORING NO. EB/TSC-03

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16820.4'	E 16706.8'	94.1 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel road	Plant Grid	01/13/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	5	8	9	17	0.4								30	64		
														32	62		
														34	60		At end of boring, compactor started to pass right beside work zone.
SPT	10	5	6	7	13	0.7								36	58		Bottom of boring @ 36.5'. Fluid level @ 6.1' @ completion of drilling on 01/13.07. Boring caved @ 34.5'. Water level not encountered on 01/14/07. Boring backfilled w/ cement-bentonite grout by tremie method on 01/14/07.
														38	56		
														40	54		
														42	52		
														44	50		
														46	48		
														48	46		
														50	44		
														52	42		
														54	40		
														56	38		
														58	36		
														60			

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BORING LOG

BORING NO. EB/TSC-04

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16943.5' E 16707.8'	94.3 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	01/13/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Sandy Lean CLAY w/gravel (CL) - ~60% fines w/ medium plasticity, medium toughness; ~20% fine to medium, subangular to rounded sand; ~20% fine to coarse, angular gravel; moist; hard; red (2.5YR 4/8) — 1.0	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. TW-03, tube is bent on bottom.
Well graded SAND w/gravel (SW) - ~80% fine to coarse, subangular to subrounded sand; ~15% fine to coarse, subrounded, elongate gravel; ~5% fines; moist; medium dense; light yellowish-brown (10YR 6/4) — 2.5	
Sandy Lean CLAY (CL) - ~70% fines w/medium plasticity, medium toughness; ~25% fine sand; ~5% fine gravel; moist; hard; greenish-gray (GLEY1 4/1) and light yellowish-brown (10YR 6/4) — 4.5	
Clayey SAND (SC) - 80% fine sand; 15% fines w/LL= 23, PL=15, PI=8; moist, natural moisture content = 37%; greenish-gray (GLEY1 6/1) and light yellowish-brown (10YR 6/4) — 7.5	
[Port Hickey] Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; moist; loose; brownish-yellow (10YR 6/6); w/fat clay pockets — 10.0	
Clayey SAND (SC) - ~79% fine, angular to subrounded sand; 21% fines; moist, natural moisture content = 12%; loose; poorly graded; light gray (10YR 7/1) and brownish-yellow @ top 0.7' of sample @15' grading ~80% fine to medium, subangular to subrounded sand; ~20% fines; medium dense; brownish-yellow (10YR 6/6) — 18.0	
[Citronelle (upper)] Clayey SAND (SC) - ~80% fine to medium, subangular to subrounded sand; ~20% fines; moist; medium dense; poorly graded; brownish-yellow (10YR 6/6); w/ rounded broken cobble	
grading to ~70% fine to medium, subangular to subrounded sand; ~30% fines — 27.5	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	01	14	15	12	27	0.9							
SPT	02	5	12	11	23	0.9							
TW	03	-	-	-	-	1.5							
SPT	04	2	3	4	7	1.5							
SPT	05	3	3	4	7	1.2							
SPT	06	3	6	6	12	1.1							
SPT	07	6	9	7	16	0.6							
SPT	08	5	7	8	15	0.6							

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BORING LOG

BORING NO. EB/TSC-04

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16943.5' E 16707.8'	94.3 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	01/13/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	09	6	8	7	15	1.1								30		64	
														32	C	62	
														34		60	
SPT	10	6	6	5	11	0.7								36		58	
														38		56	
														40		54	
														42		52	
														44		50	
														46		48	
														48		46	
														50		44	
														52		42	
														54		40	
														56		38	
														58		36	
														60			

CLASSIFICATION OF MATERIALS

Clayey GRAVEL w/sand (GC) - 54% fine to coarse, angular to rounded gravel; few particles fractured w/one hammer blow; 34% fine to coarse sand; 12% fines w/high plasticity, medium toughness; moist; medium dense; dark yellowish-brown (10YR 4/4)

30.7

Clayey SAND (SC) - ~70% fine to medium, subrounded sand; ~30% fines; moist; medium dense; yellowish-brown (10YR 5/6)
@35.0' grading to ~60% sand; ~40% fines

REMARKS

Sample SPT 9A - gravel.
Sample SPT 9B - sand.

Bottom of boring @ 36.5'. Fluid level @ 3.9' @ completion of drilling. Boring caved @ 32.7'. Water not encountered on 01/14/07. Boring backfilled with cement bentonite grout by tremie method on 01/14/07.

BLACK & VEATCH

BORING LOG

BORING NO. EB/TSC-05

SHEET 1 OF 2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16965.7' E 16768.5'	93.8 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Asphalt pavement; flat lying	Plant Grid	01/14/07	03/12/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING						
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	01	4	3	3	6	1.2							
SPT	02	2	3	2	5	0.3							
SPT	03	WOH	-	-	0	NR							
SPT	04	3	3	6	9	1.2							
SPT	05	4	4	2	6	1.1							
SPT	06	4	4	3	7	0.9							
TW	07	-	-	-	-	1.3							

DEPTH (FEET)	ELEVATION (FEET)
0	
2	92
4	90
6	88
8	86
10	84
12	82
14	80
16	78
18	76
20	74
22	72
24	70
26	68
28	66
30	64

CLASSIFICATION OF MATERIALS

[Existing Road]
Asphalt and Gravel
1.0
[Fill]
Clayey SAND (SC) - 63% fine to medium, subrounded to rounded sand; 37% fines w/medium plasticity, medium toughness; moist, natural moisture content = 17%; loose; yellowish-brown (10YR 5/8); w/light greenish-gray (GLEY1 7/1) clay pockets
1.5
Lean CLAY (CL) - ~80% fines w/medium plasticity, medium toughness; ~20% fine sand; moist; firm; very pale brown (10YR 7/3)
@ 2.5' grading to ~100% fines w/no dilatancy; light greenish-gray (GLEY1 7/1) and very pale brown (10YR 7/4); w/gravel piece @ top; blocky
@ 5' grading to mostly light greenish-gray; w/frequent very pale brown spots; blocky
@5.7 to 6' Void
10.0
[Port Hickey]
Silty SAND (SM) - ~70% fine, subangular, sand; 30% fines; moist, natural moisture content = 24%; loose; reddish-yellow (7.5YR 6/8); w/clay partings @ 0.1' thick from 10.7' to 10.9'
grading to yellow (10YR 8/8) w/occasional iron stains
20.0
Lean CLAY w/sand (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; ~10% fine sand; moist; firm; reddish-yellow (7.5YR 7/8)
20.3
[Citronelle (upper)]
Poorly graded SAND (SP) - ~90% fine sand; ~5% fines; ~5% fine gravel; wet; reddish-yellow (7.5YR 7/8)
25.0
Poorly graded SAND w/clay (SP-SC) - 70% coarse to fine, subangular sand; 17% fine gravel; 13% fines; wet, natural moisture content = 13%; medium dense; reddish-yellow (5YR 7/8)

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
@ 5' - SPT performed, loss of circulation, stopped drilling. Void suspected. Cleaned up; found 4" conduit from depth of 5'-8" to 6'.
Resumed drilling 03/12/07. No water in boring. Set casing to 10' below ground surface. No sample @ 7.5' due to caving condition in upper 10'.
@ 23' Driller noted more clay.

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BORING LOG

BORING NO. EB/TSC-05

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16965.7' E 16768.5'	93.8 ft (MSL)	36.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Asphalt pavement; flat lying	Plant Grid	01/14/07	03/12/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	08	3	4	2	6	1.1								30					
																62			
														32					
																60			
														34					
SPT	09	5	5	5	10	0.7										58			Field sample smaller than recommended.
														36					Bottom of boring @ 36.5'. Fluid level at ground surface at completion of drilling. Boring caved to 6.2' after removal of steel casing. No water level obtained after borehole cave-in. Boring was backfilled w/ cement and water.
																56			
														38					
																54			
														40					
																52			
														42					
																50			
														44					
																48			
														46					
																46			
														48					
																44			
														50					
																42			
														52					
																40			
														54					
																38			
														56					
																36			
														58					
																34			
														60					

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BORING LOG

BORING NO. TB-06

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16685.4' E 16927.5'	94.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	02/20/07	03/05/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~15% fine, subrounded to rounded sand; ~5% fine, rounded gravel; moist; hard; brownish-yellow (10YR 6/8)	Boring advanced with 3-7/8" baffle bit w/NW rods using bentonite and water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. Sample SPT-1 clayey gravel.
1.5	
Clayey GRAVEL (GC) - ~70% fine, angular to subrounded gravel; ~20% fines w/medium plasticity, medium toughness; ~10% fine, subrounded to rounded sand; moist; medium dense; poorly graded; yellowish-brown (10YR 5/4)	
2.5	
Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~15% fine, subrounded to rounded sand; ~5% fine, subrounded gravel; moist; firm; brownish-yellow (10YR 6/6) and light greenish-gray (GLEY1 8/1 10Y); homogeneous	
4.5	
[Loess] Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, slow dilatancy; moist; firm; dark yellowish-brown (10YR 7/4); w/light gray spots and frequent black spots; homogeneous	@ 10' PP = 1.5 tsf TV = 0.5 tsf
7.5	
[Port Hickey] Lean CLAY (CL) - ~100% fines w/LL=30, PI=13, medium toughness, slow dilatancy; moist, natural moisture content = 21%; firm; dark yellowish-brown (10YR 7/4); w/light gray spots @ 10' grading to low toughness; light gray spots grade out	
12.5	
Clayey SAND (SC) - 72% fine, subrounded to rounded sand; 21% fines w/medium plasticity, medium toughness; 7% fine gravel; moist, natural moisture content = 14%; medium dense; poorly graded; yellowish-brown (10YR 5/6) @ 15.5' grading to pale yellow (2.5Y 7/4); yellow (2.5Y 7/6) @ tip of sampler grading to ~70% sand; ~30% fines; yellow (10YR 7/8)	Mud was thickened.
@25.0' grading to ~60% sand; 40% fines; loose	

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	ELEVATION (FEET)
							SPT	01	5	12	11	23	1.0	0	94
														2	92
							SPT	02	3	4	5	9	0.9	4	90
							SPT	03	3	6	9	15	1.1	6	88
							SPT	04	6	6	8	14	0.7	8	86
							TW	05	-	-	-	-	1.6	10	84
														12	82
														14	80
							SPT	06	4	5	6	11	0.9	16	78
														18	76
							SPT	07	4	6	8	14	0.7	20	74
														22	72
														24	70
							SPT	08	3	2	3	5	0.7	26	68
														28	66
														30	

BLACK & VEATCH **BORING LOG**

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16685.4' E 16927.5'	94.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	02/20/07	03/05/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	2	8	10	18	1.0								30		64		30.5 [Citronelle (upper)] Fat CLAY (CH) - ~90% fines w/medium plasticity, high toughness, no dilatancy; ~5% fine sand; ~5% coarse, angular gravel; moist; hard; yellow (10YR 7/6) 31.0 Sandy Lean CLAY (CL) - ~60% fines w/medium plasticity; ~30% fine sand; ~10% fine, subrounded to rounded gravel; moist; hard; reddish-yellow (7.5YR 6/8); w/frequent sandy clay pockets 32.5 Clayey SAND (SC) - 71% fine, subrounded to rounded sand; 18% fines w/medium plasticity, medium toughness; 11% fine gravel; moist, natural moisture content = 18%; loose; yellow (10YR 7/6); w/frequent sandy clay pockets and occasional ferrous seams grading wet; sandy clay pockets and ferrous seams grade out	Camera broke; no photo. Sample 9A - Clay. Sample 9B - Sandy lean clay.
														32		62			
														34		60			
SPT	10	5	5	4	9	0.9								36		58	C		
														38		56			
SPT	11	2	2	4	6	0.8								40		54			
														42		52			
														44		50			
SPT	12	3	2	4	6	0.7								46		48			Loss of circulation @ 45'. Regained circulation quickly.
														48		46		47.5	
SPT	13	3	3	3	6	0.7								50		44		Poorly graded SAND w/silt (SM) - 91% fine to medium, subrounded to rounded sand; 9% fines w/no plasticity; wet; loose; yellow (2.5Y 8/6); w/occasional ferrous partings	Mud was thickened. Gravel @ top of sampler (slough).
														52		42			
														54		40		53.5	
SPT	14	3	3	4	7	0.9								56		38		Silty SAND (SM) - ~70% fine sand; ~30% fines w/low plasticity; loose; wet; light gray (2.5Y 7/2); w/frequent yellow partings and black spots	
														58		36			
														60				59.0	

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16685.4' E 16927.5'	94.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	02/20/07	03/05/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	2	2	3	5	0.9								60		34		Poorly graded SAND w/silt (SP) - ~92% sand; 8% fines w/no plasticity; loose; wet; pale yellow (2.5Y 8/2) @60.5 to 61' porous zone; (2 to 3mm diameter pores) @ 61' grading yellow (10YR 7/8)	SPT-15 gravel on top of sampler (slough). Visible voids 2-3mm diameter between 60.5 & 61'; possible sample disturbance.
														62		32			
														64		30			
SPT	16	5	7	9	16	1.0								66		28		grading to 85% fine to medium sand; 9% fine to coarse, angular to rounded gravel; 6% fines; medium dense; yellow (2.5Y 8/8); homogeneous	
														68		26		68.5	
SPT	17	6	9	11	20	0.7								70		24		Poorly graded GRAVEL w/sand (GP) - ~80% fine to coarse, angular to rounded gravel w/some elongate particles, few particles fractured w/1 hammer blow; ~15% fine to coarse, subrounded to rounded sand; ~5% fines; wet; medium dense; yellowish-brown (10YR 5/8); homogeneous	SPT-17 coarse gravel on top of sampler (slough).
														72		22			
														74		20			
SPT	18	16	20	13	33	0.8								76		18		76.0 [Citronelle (lower)] Well graded SAND w/silt and gravel (SW-SM); ~70% fine to coarse, subrounded to rounded sand; ~20% fine, angular to subrounded gravel; ~10% fines; wet; dense; yellowish-brown (10YR 5/8); homogeneous	Field sample smaller than recommended.
														78		16		78.0	
SPT	19	24	37	50/5"	+50	1.2								80		14		Silty SAND (SM) - ~80% fine to medium, subrounded to rounded sand; ~15% fines; ~5% coarse gravel; wet; very dense; brownish-yellow (10YR 6/8); w/ferrous material	@ 80' @ COD check, sampler tip 0.7' above COD. Hole caved in to ~75' while redrilling. Mud thickened. Stopped overnight. Water level measured @ 35.3' on 02/21/07. Cave in measured @ 60'.
														82		12			
														84		10			
SPT	20	27	23	36	59	0.9								86		8		gravel grades to fine, subrounded to rounded gravel; w/ferrous seam @ 85.7'	
														88		6		89.0	SPT-20 coarse gravel on top of sampler (slough).
														90					

BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16685.4' E 16927.5'	94.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	02/20/07	03/05/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	21	30	39	69	1.0								90		4		Poorly graded SAND w/gravel and silt (SP) - 85% fine to coarse, angular to rounded sand; 9% fine, angular to subrounded gravel; 6% fines; very dense; wet; brownish-yellow (10YR 6/8); w/ferrous seam @ 90.9'	SPT-21 coarse gravel on top of sampler (slough).
														92		2		92.5	
														94		0			
SPT	22	33	39	37	76	1.4								96		-2		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; < 5% fines; wet; very dense; brownish-yellow (10YR 6/6); homogeneous	Sample 22A - SP. Sample 22B - GW. Sample 22C - Gravel w/black matrix.
																		95.6	
														98		-4		Well graded GRAVEL (GW) - ~85% fine to coarse, angular to subrounded gravel; ~10% fine to medium, subrounded to rounded sand; < 5% fines; wet; very dense; brownish-yellow (10YR 6/6); homogeneous @ 96.2' gravel grades to fine; w/black matrix	
																		97.5	
SPT	23	9	15	11	26	0.8								100		-6		Poorly graded SAND w/clay and gravel (SW-SC) - 46% fine to coarse, angular to rounded gravel; few particles fractured w/1 hammer blow; 49% medium to coarse, rounded sand; 5% fines; wet; medium dense; brownish-yellow (10YR 6/8); w/occasional clayey gravel pockets	Loss of circulation @ 100'; ~700 gallons of mud and water were placed. COD performed, sampling OK. Still losing some water.
														102		-8			
														104		-10		102.5	
SPT	24	5	5	6	11	0.9								106		-12		Poorly graded GRAVEL (GP) - 69% fine to coarse, subangular to rounded gravel; 23% fine to coarse sand; 8% fines; wet; medium dense; brownish-yellow (10YR 6/8); w/occasional reddish clayey gravel pockets	SPT-23 coarse gravel on top of sampler (slough). Drilled to 105'; hole caving in; more mud placed in hole. ~1100 gal of water placed in hole @ 105'. COD performed +0.4'; sampler tip depth -0.5'.
														108		-14			
														110		-16		grading dense; clayey gravel pockets grade out	
SPT	25	11	17	17	34	0.6								112		-18			
																		113.0	
														114		-20			@ 110' hole keeps caving in; filled it w/fresh mud and will wait until the morning. Water level @ 39' below ground surface. Advancing 4.5" surface casing w/ tungsten carbide drag bit. No
SPT	26	23	44	30	74	0.6								116		-22		Well graded GRAVEL w/sand (GW) - ~80% fine to coarse, angular to subangular gravel; ~15% fine to coarse sand; ~5% fines; wet; very dense; strong brown (7.5YR 5/6)	
														118		-24			
														120					

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BORING LOG

BORING NO. TB-06

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16685.4' E 16927.5'	94.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	02/20/07	03/05/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)
SPT	27	15	18	45	63	0.7								120		-26
														122		-28
														124		-30
SPT	28	14	10	15	25	0.8								126		-32
														128		-34
														130		-36
TW	29	-	-	-	-	NR								132		-38
														134		-40
SPT	30	9	9	12	21	1.1								136		-42
														138		-44
														140		-46
SPT	31	11	10	12	22	1.3								142		-48
														144		-50
														146		-52
TW	32	-	-	-	-	1.7								148		-54
														150		

GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
	grading very dense; w/silty gravel partings	center plug in the casing. Drilling fluid in direct contact w/ soil. Casing advanced to 105'; losing fluid at rate ~100 gpm. Drill casing is "sandlocking" due to low upward fluid around drill steel. Water level @ 39' below ground surface @ end of drilling on 02/27/07. No water level inside casing on 02/28/07. 4.5" casing drilled and driven to 125.0'. Sample recovery from TW-29 not recorded (NR). TV = 2.5 tsf
	123.5	
	Silty GRAVEL (GM) - ~80% fine to coarse, angular to subangular gravel; ~20% fines; wet; medium dense; light red (2.5YR 6/8)	
	128.0	
	Lean CLAY w/sand (CL) - ~70% fines w/LL=35, PI=23; medium toughness, no dilatancy; ~30% angular to subangular sand; moist, natural moisture content = 20%; firm; dark red (2.5YR 3/6)	
	133.0	
	Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular to subrounded sand; ~10% fines; wet; medium dense; strong brown (7.5YR 5/6)	
	140.3	Driller says in sand possibly.
	Poorly graded SAND (SP) - ~95% fine, subangular sand; <5% fines; wet; medium dense; very pale brown (10YR 7/4)	
	141.4 [Pascagoula]	
	Lean CLAY (CL) - ~100% fines w/medium plasticity, high toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1)	
	grading w/ medium toughness	PP > 4.5 tsf TV = 2.5 tsf

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BORING LOG

BORING NO. TB-06

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16685.4' E 16927.5'	94.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	02/20/07	03/05/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/P. Murphy	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	12	16	20	36	1.5								150		-56		grading very hard	
														152		-58			
														154		-60			
TW	34	-	-	-	-	1.7								156		-62		grading ~95% fines w/LL=31, PI=15; ~5% fine sand; natural moisture content =19%; grayish-green (GLEY1 5/2)	PP > 4.5 tsf TV = 2.25 tsf
														158		-64			
														160		-66		160.0 SILT (ML) - ~95% fines w/low plasticity, low toughness; slow dilatancy; moist; hard; grayish-green (GLEY1 4/2) 160.5	
SPT	35	9	14	16	30	1.6								162		-68		Silty SAND (SM) - ~80% fine, subangular to subrounded sand; ~20% fines; moist; medium dense; dark olive brown (2.5Y 4/4)	
														164		-70		163.5	
SPT	36	13	16	20	36	1.1								166		-72		Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular sand; ~10% fines; wet; medium dense; olive brown (2.5Y 4/4)	
														168		-74		168.0	
SPT	37	3	4	7	11	1.5								170		-76		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; loose; olive brown (2.5Y 4/3) 170.7	
														172		-78		Lean CLAY (CL) - ~95% fines w/medium plasticity, low toughness, no dilatancy; < 5% fines; olive brown (2.5Y 4/4)	Bottom of boring @ 171.5'. Fluid level @ ground surface @ completion of drilling. Deviation survey attempted on 03/01/07. Boring caved to 36.5'. Boring backfilled w/cement bentonite grout by tremie pipe method on 03/05/07.
														174		-80			
														176		-82			
														178		-84			
														180					

BLACK & VEATCH

BORING LOG

BORING NO. TB-06A

SHEET 1 OF 5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16681.4' E 16925.6'	94.6 ft (MSL)	145.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	03/16/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JPL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
0		94		Undifferentiated Overburden (See Boring Log TB-06)	Boring advanced to 12' w/2-15/16" tricone bit w/NW rods using water and bentonite as drilling mud.
2		92			
4		90			
6		88			
8		86			
10		84			Pressuremeter test No. 12 performed at 10'. Continued w/2-15/16 tri-cone bit to 23'.
12		82			
14		80			
16		78			
18		76			
20		74			Pressuremeter test No. 13 performed at 21'. Installed 4.5" casing to 20'. Boring advanced w/3-7/8" baffle bit to 28'.
22		72			
24		70			
26		68			
28		66			Below 28', boring advanced by flushing w/drill
30					

BLACK & VEATCH

BORING LOG

BORING NO. TB-06A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16681.4' E 16925.6'	94.6 ft (MSL)	145.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	03/16/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
30		64			fluid w/o rotating bit 32'. Pressuremeter test No. 14 performed at 30'. Boring advanced by flushing w/drill fluid w/o rotating bit to 42'.
32		62			
34		60			
36		58			
38		56	C		
40		54			Pressuremeter test No. 15 performed at 40'. Boring advanced w/3-7/8" baffle bit to 49'.
42		52			
44		50			
46		48			
48		46			
50		44			Below 49', continued w/2-15/16" tricone bit to 53'. Pressuremeter test No. 16 performed at 51'. Boring advanced w/3-7/8" baffle bit to 59'.
52		42			
54		40			
56		38			
58		36			
60					

BLACK & VEATCH

BORING LOG

BORING NO. TB-06A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16681.4' E 16925.6'	94.6 ft (MSL)	145.0 (feet)

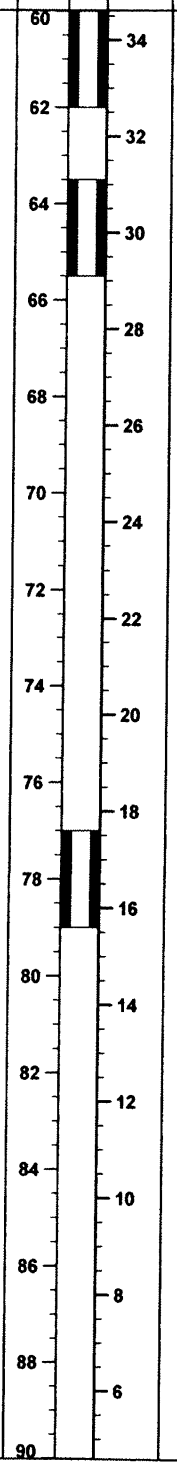
SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	03/16/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS



Below 59', advanced w/2-15/16" tricone bit to 63'. Pressuremeter test No. 17 performed at 61'. Continued w/2-15/16" tricone bit to 66'. Pressuremeter test No. 18 performed at 64.5'. Boring advanced w/3-7/8" baffle bit to 76'.

Below 76', advanced w/2-15/16" tricone bit to 80'. Pressuremeter test No. 19 performed at 78'. Boring advanced w/2-15/16" tricone bit to 96'.

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BORING LOG

BORING NO. TB-06A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16681.4' E 16925.6'	94.6 ft (MSL)	145.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	03/16/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
90		4			Hole caved in to 92'. Pressuremeter test No. 20 performed at 91'. Boring advanced w/3-7/8" baffle bit. Hole keeps caving in. Stop drilling on 03/16/07.
92		2			
94		0			
96		-2			
98		-4			
100		-6			
102		-8			Continue drilling on 03/17/07. Installed 4.5" casing to 125'. Boring advanced w/3-7/8" baffle bit to 129'.
104		-10			
106		-12			
108		-14			
110		-16			
112		-18			
114		-20			
116		-22			
118		-24			
120					

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BORING LOG

BORING NO. TB-06A
SHEET 5 OF 5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16681.4' E 16925.6'	94.6 ft (MSL)	145.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface, close to edge of excavation	Plant Grid	03/16/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
120		-26			
122		-28			
124		-30			
126		-32			
128		-34			
130		-36			Below 129', advanced w/2-15/16" tricone bit to 135'.
132		-38			
134		-40			Pressuremeter test No. 21 performed at 133.5'. Boring advanced w/2-15/16" tricone bit to 145'.
136		-42			
138		-44			
140		-46			
142		-48			Pressuremeter test No. 22 performed at 142.5'.
144		-50			
146		-52			Bottom of boring at 145'. Water level not recorded. Boring caved to 38.0'. Boring backfilled w/cement bentonite grout on 03/20/07.
148		-54			
150					

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BORING LOG

BORING NO. TB-07

SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16838.7'	E 16926.8'	93.6 ft (MSL)	96.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	01/12/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	Mark Petersen MMP

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	01	2	3	5	8		1.4								0			
															2		92	
TW	02	-	-	-	-		1.6								4		90	
SPT	03	7	5	8	13		1.3								6		88	
SPT	04	4	6	7	13		1.1								8		86	
															10		84	
SPT	05	7	9	10	19		1.1								12		82	
															14		80	
SPT	06	3	6	7	13		1.0								16		78	
															18		76	
SPT	07	5	5	6	11		0.9								20		74	
															22		72	
SPT	08	11	12	12	24		0.3								24		70	
															26		68	
															28		66	
															30		64	

CLASSIFICATION OF MATERIALS

[Fill]
Sandy Lean CLAY (CL) - ~70% fines w/medium plasticity, slow dilatancy, low toughness; ~30% fine sand; moist; firm; light greenish-gray (GLEY1 8/1) and light brown

grading to ~60% fines; ~40% fine sand

7.0

[Port Hickey]
Clayey SAND (SC) - ~70% fine, angular to subrounded sand; ~30% fines w/low plasticity, low toughness; moist; medium dense; poorly graded; light greenish-gray (GLEY1 8/1); w/brownish-yellow (10YR 6/8) pockets
@10.0' grading to ~80% fine to coarse, subrounded sand; ~20% fines; wet; well graded; light greenish-gray (GLEY1 8/1) and very pale brown (10YR 7/3); w/ hydrocarbon odor

grading to ~70% fine to medium, subrounded to rounded sand; ~30% fines; yellowish-brown (10YR 5/6); w/fat clay layer at top of sample

22.5

Sandy Lean CLAY (CL) - ~60% fines w/medium plasticity, low toughness; 40% fine to medium, subrounded sand; moist; hard; yellowish-brown (10YR 5/8)

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.

Field sample smaller than recommended.

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BORING LOG

BORING NO. TB-07

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16838.7' E 16926.8'	93.6 ft (MSL)	96.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	01/12/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JAL	Mark Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	7	10	11	21	0.9								30		62		[Citronelle (upper)] Clayey SAND (SC) - ~70% fine to medium, subangular to subrounded sand; ~25% fines; ~5% fine gravel; moist; medium dense; yellowish-brown (10YR 5/6)	SPT-09 gravel found @ top of sampler (slough).
														32		60			
														34					
																		34.5	
SPT	10	7	9	9	18	0.8								36		58		Poorly graded SAND w/clay (SP-SC) - 82% coarse to fine sand; 10% fines; 8% fine gravel, moist; medium dense; yellowish-brown (10YR 5/6); w/silty sand parting @ 36'	
														38		56			
																		38.0	
																54			
SPT	11	6	7	9	16	0.8								40		52		Clayey SAND (SC) - ~60% sand; ~40% fines w/low plasticity, low toughness; wet; medium dense; yellowish-brown (10YR 5/6)	
														42		50			
																		42.5	
														44					
SPT	12	8	11	15	26	1.0								46		48		Clayey SAND with gravel (SC) - ~60% fine to coarse, rounded sand; ~25% fines w/high plasticity; ~15% fine, rounded gravel; wet; medium dense; well graded; yellowish-brown (10YR 5/6)	
																		47.5	
														48		46			
														50		44		Clayey SAND (SC) - ~82% fine to medium, subrounded to rounded sand; 18% fines w/LL=23, PL= 12, PI=11, low toughness; wet, natural moisture content = 31%; firm; yellowish-brown (10YR 5/8); w/gravel size fat clay particles	Loss of circulation @50'.
SPT	13	1	3	5	8	1.1								52		42			
																		52.5	
														54		40			
																		Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, slow dilatancy	
SPT	14	7	9	8	17	0.8								56		38			
																		55.5	
																		Sandy Lean CLAY w/gravel (CL) - ~60% fines w/ medium plasticity, low toughness; ~25% fine to medium, subrounded to rounded sand; ~15% fine gravel; wet; hard; yellowish-brown (10YR 5/8)	
														58		36			
																		55.7	
														60		34		Clayey SAND (SC) - ~70% fine to medium,	

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BORING LOG

BORING NO. TB-07

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16838.7'	E 16926.8'	93.6 ft (MSL)	96.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	01/12/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	Mark Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														60		subrounded to rounded sand; ~30% fines; wet; medium dense; well graded; very pale brown (10YR 7/3)	
															32		
														62			
															30		
														64			
SPT	15	14	32	41	73	1.2									28		
														66			
SPT	16	28	44	46	90	1.0									26		
														68			
															24		
														70			
SPT	17	10	11	12	23	0.9									22		
														72			
															20		
														74			
SPT	18	10	26	25	51	0.6									18		
														76			
															16		
														78			
															14		
SPT	19	12	20	20	40	0.0								80			
															12		
														82			
															10		
														84			
SPT	20	15	26	40	66	0.9									8		
														86			
															6		
														88			
															4		
														90			

[Citronelle (lower)]

60.0

Poorly graded SAND (SP) - 93% fine to coarse, subrounded to rounded sand; ~7% nonplastic fines; wet, natural moisture content = 12%; very dense; well graded; very pale brown (10YR 7/3)

67.5

Poorly graded SAND w/gravel (SP) - 43% fine to coarse, subrounded to rounded, elongate gravel (few particles fractured w/1 hammer blow); 51% fine to coarse, subrounded to rounded sand; 6% fines; wet; medium dense; pale brown (10YR 6/3)

73.0

Well graded GRAVEL w/sand and clay (GW-GC) - ~50% gravel; ~40% medium to coarse sand; ~10% fines; very dense; pale brown (10YR 6/3)

Bentonite, water added.

SPT-19 cobble @ tip of sampler; no recovery.

82.5

Well graded SAND (SW) - 88% medium to coarse, rounded sand; 6% fine, rounded to subrounded gravel; 6% fines; wet, natural moisture content = 12%; very dense; light brown (7.5YR 6/4); w/0.2' seam of gravel fragments @ top of sample

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BORING LOG

BORING NO. TB-07

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16838.7'	E 16926.8'	93.6 ft (MSL)	96.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	01/12/07	01/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	Mark Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	23	50/5"	-	+50	1.0								90				grading to ~95% fine to coarse, subrounded to rounded sand; ~5% fines; brownish-yellow (10YR 6/6)	
																		90.5	
														92		2		Well graded GRAVEL w/sand (GW) - ~50% fine to coarse, angular to subrounded gravel (few particles fractured w/2 blows); ~45% fine to coarse, angular to subrounded sand; ~5% fines; wet; very dense; yellowish-brown (10YR 5/6)	
														94		0			
																		93.5	
SPT	22	14	24	30	54	1.1								96		-2		Poorly graded GRAVEL - ~90% fine, angular to subrounded gravel (various particles fractured w/1 hammer blow); ~10% fine to coarse sand; wet; very dense; yellowish-brown (10YR 5/6)	Sample 22A - gravel Sample 22B - sand
																		95.7	
														98		-4		Poorly graded SAND w/gravel (SW) - 74% fine to coarse, subrounded to rounded sand; 22% fine gravel; 4% fines; wet; very dense; light yellowish-brown (10YR 6/4)	Bottom of boring @ 96.5'. Fluid level @ 38.8' @ completion of drilling. Boring caved to 39.6'. No water level recorded on 01/14/07. Boring backfilled with cement-bentonite grout by tremie method on 01/14/07.
														100		-6			
														102		-8			
														104		-10			
														106		-12			
														108		-14			
														110		-16			
														112		-18			
														114		-20			
														116		-22			
														118		-24			
														120		-26			

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BORING LOG

BORING NO. TB-08

SHEET 1 OF 9

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy	J. Liljegren	M. Petersen

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	CLASSIFICATION OF MATERIALS	REMARKS
							0		94									[Fill]	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
TW	01	-	-	-	-	0.7	2		92									Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; soft; light greenish-gray (GLEY1 8/1)	
																		2.5	
SPT	02	WOH	2	2	4	0.7	4		90									Poorly graded SAND (SP) - ~90% coarse to medium, subangular to subrounded sand; ~≤ 5% fine, subangular gravel; ~5% fines; moist; very loose; light reddish-brown (5YR 6/4)	
																		2.9	
TW	03	-	-	-	-	2.0	6		88									Lean CLAY (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; ~10% fine sand; moist; firm; light reddish-brown (5YR 6/4)	
																		4.0	
SPT	04	4	6	11	17	1.3	8		86									SILT w/sand (ML) - ~85% fines w/low plasticity, low toughness, slow dilatancy; ~15% fine sand; moist; firm; reddish-brown (5YR 5/3) @ 8.1' grading w/~20% sand; w/fine gravel parting @ 8.3'	@ 2.5' PP = 3.0 tsf TV = 1.1 tsf @5.0' PP = 4.0 tsf TV = 1.0 tsf
																		8.4	
SPT	05	5	6	6	12	0.9	10		84									[Port Hickey] Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; moist; medium dense; reddish-brown (5YR 4/4); w/traces of organic material in tip of sampler @ 10.0' grading strong brown (7.5YR 5/8)	
							12		82									12.5	
							14		80										
TW	06	-	-	-	-	1.5	16		78									Clayey SAND (SC) - ~85% fine, subangular sand; ~15% fines; moist; medium dense; poorly graded; reddish-brown (5YR 4/4); intermixed w/Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; stiff; light greenish-gray (GLEY1 8/1)	PP = 4.5 tsf TV = 0.5 tsf
							18		76										
																		19.3	
SPT	07	7	9	10	19	1.1	20		74									Poorly graded SAND w/clay (SP) - ~90% fine, subangular sand; ~10% fines; moist; medium dense; strong brown (7.5YR 5/8) w/thin partings of Fat Clay ~0.02' thick	
							22		72										
																		23.5	
							24		70										
SPT	08	6	9	12	21	1.5	26		68									Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; stiff; reddish-yellow (7.5YR 7/8) @ 25.8' 0.1' thick seam of poorly graded SAND (SP) - ~95% fine, subangular sand; ≤ 5% fines; moist; medium dense; strong brown (7.5YR 5/8) @ 26.5' poorly graded sand seam; clay appears varved	
							28		66										
							30											27.5	

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														30	64	[Citronelle (upper)]	
SPT	09	10	12	11	23	1.0										Well graded SAND (SW) - ~90% coarse to fine, subangular sand; ~5% fine gravel; ~5% fines; moist; medium dense; brownish-yellow (10YR 6/8)	
														32	62		
																32.5	
														34	60		
SPT	10	8	12	10	22	1.1								36	58	Poorly graded SAND (SP) - ~100% fine, subangular sand; wet; medium dense; strong brown (7.5YR 5/8)	
														38	56		
														40	54		
SPT	11	8	7	6	13	1.2											
														42	52		
														44	50		
SPT	12	10	24	26	50	1.8								46	48	grading dense	
														48	46		
																48.5	
														50	44	Silty SAND (SM) - 76% fine, subangular to subrounded sand; 18% non-plastic fines; 6% fine gravel; moist; loose; strong brown (7.5YR 5/8)	
SPT	13	5	5	5	10	1.0								52	42		
														54	40		
																grading medium dense; reddish-yellow (5YR 7/8)	
SPT	14	6	8	14	22	1.1								56	38		
																57.5	
														58	36		
														60			

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	10	13	14	27	0.9								60		34		Well graded SAND (SW) - ~95% coarse to fine, subangular sand; ~≤ 5% fine gravel; wet; medium dense; brownish-yellow (10YR 6/6)	
														62		32			
														64		30			
																		65.0 [Citronelle (lower)]	
SPT	16	28	18	23	41	1.1								66		28		Well graded SAND w/gravel (SW) - ~85% fine, subangular sand; ~15% fine gravel; ≤ 5% fines; wet; dense; reddish-yellow (5YR 7/8)	
																		65.4	
														68		26		Poorly graded SAND w/gravel (SP) - ~85% coarse to fine, subangular sand; ~15% fine gravel; wet; dense; light gray (5YR 7/1)	
														70		24		70.0	
SPT	17	8	18	22	40	1.0												Well graded SAND w/gravel (SW) - 79% coarse to fine, subangular sand; 17% fine, subangular, elongate gravel; 4% fines; wet; dense; reddish-yellow (5YR 6/8) to darker reddish-brown (5YR 3/7)	
														72		22			
														74		20			
SPT	18	17	21	20	41	1.0								76		18			@ 76.5' stopped drilling 4:15 p.m. 03/06/07; fluid level @ ground surface. Fluid level recorded @ 1' on 03/07/07. Boring caved to 55'.
														78		16			
SPT	19	20	24	27	51	0.9								80		14		grading very dense	
														82		12			
														84		10			
SPT	20	18	33	42	75	0.8								86		8		grading light brown (7.5YR 6/3)	
														88		6			
														90					

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	12	26	25	51	0.9								90		4		grading w/ ~85% subangular to subrounded sand; ~15% fine, subangular, flat, elongated gravel; wet; very dense; white (7.5YR 8/1)	> 0.4' slough to clean out depth. Pushed sampler through slough < 0.4' sampler depth.
														92		2			
														94		0			
SPT	22	26	44	45	89	0.9								96		-2			Field sample smaller than recommended.
														98		-4			
																		98.5	
SPT	23	15	27	31	58	0.6								100		-6		Well graded SAND (SW) - ~95% coarse to fine, subrounded to subangular sand; ~5% fines and gravel; wet; very dense; pink (7.5YR 7/4)	Field sample smaller than recommended.
														102		-8			
														104		-10			
SPT	24	16	23	30	53	0.5								106		-12			
														108		-14			
														110		-16			
SPT	25	17	24	26	50	1.2								112		-18			
																		112.5	
														114		-20			
SPT	26	21	35	36	71	0.9								116		-22		Well graded SAND w/gravel (SW) - ~80% coarse to fine, subangular sand; ~20% fine, subangular, flat and elongated gravel; wet; very dense; pink (7.5YR 7/4)	
														118		-24			
														120				117.5	

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	27	30	33	63	1.5								120		-26		Poorly graded SAND w/clay (SP-SC) - ~80% coarse to fine, subangular sand; ~10% fine, subangular gravel; ~10% fines; wet; very dense; dark reddish-brown (5YR 2.5/2)	Stopped drilling after SPT-28. Water level @ ground surface @ end of drilling on 03/07/07.
														122		-28			
																		122.5	
														124		-30			
SPT	28	5	7	10	17	0.8								126		-32		Clayey SAND (SC) - ~82% fine, subangular sand; 18% fines; wet; loose; poorly graded; pinkish-white (5YR 8/2) w/iron staining	Water level @ 39.0' on 03/08/07. Boring caved to 39'.
																		127.5	
														128		-34			
SPT	29	13	16	15	31	1.3								130		-36		Poorly graded SAND (SP) - ~95% fine, subangular to subrounded sand; ~5% fines; wet; dense; pinkish-gray (5YR 7/2); w/frequent iron stains/partings	
														132		-38			
																		133.0 [Pascagoula]	
														134		-40			
SPT	30	9	13	16	29	1.5								136		-42		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; greenish-gray (GLEY1 6/1); w/frequent iron stains and occasional organic material	
														138		-44			
														140		-46			
TW	31	-	-	-	-	1.5												grading w/LL=48, PI=28, natural moisture content = 20%	PP > 4.5 tsf TV = 0.3 tsf
														142		-48			
														144		-50			
																		145.5	
SPT	32	9	16	20	36	1.5								146		-52		Lean CLAY (CL) - ~95% fines w/LL=47, PI=26, medium toughness, no dilatancy; ~5% fine sand; very hard; moist, natural moisture content = 24%; dark greenish-gray (GLEY1 4/1)	
														148		-54			
														150					

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	33	-	-	-	-	1.5								150		-56		grading to ~90% fines; ~10% fine sand; firm	PP > 4.5 tsf TV = 0.3 tsf
														152		-58			
																		152.5	
														154		-60			
SPT	34	13	21	25	46	1.5								156		-62		Silty SAND (SM) - ~80% fine, subrounded sand; ~20% fines; moist; dense; light reddish-brown (2.5YR 7/4)	
																		157.5	
														158		-64			
TW	35	-	-	-	-	2.0								160		-66		SILT (ML) - ~90% fines w/medium plasticity, low toughness, slow dilatancy; ~10% fine sand; moist; hard; dark greenish-gray (GLEY1 4/1)	PP > 4.5 tsf TV = 0.3 tsf
														162		-68			
														164		-70			
SPT	36	11	15	15	30	1.6												grading to ~95% fines w/low plasticity; ~5% fine sand; moist; hard; dark greenish-gray (GLEY1 4/1)	
														166		-72			
																		165.9	Stopped overnight after SPT-36. Fluid level recorded @ 39.0' on 03/09/07.
														168		-74		Lean CLAY (CL) - ~95% fines w/low plasticity, low toughness, slow dilatancy; ~5% fine sand; moist; hard; dark greenish-gray (GLEY1 4/1); w/occasional iron stains	
														170		-76			
TW	37	-	-	-	-	1.9												grading w/ ~100% fines w/LL=42, PI=18; medium toughness, no dilatancy; moist, natural moisture content = 31%	PP > 4.5 tsf TV = 0.3 tsf
														172		-78			
																		172.5	
														174		-80			
SPT	38	16	28	28	56	1.0								176		-82		Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular to subrounded sand; ~10% fines; wet; very dense; pale brown (10YR 6/3)	
														178		-84			
														180					

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy wpm	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	39	20	28	27	55	1.3								180		-86			Camera malfunction; no photo of SPT-39.
														182		-88			
																		182.5	
														184		-90			
SPT	40	27	38	39	77	1.3								186		-92		Poorly graded SAND (SP) - ~95% fine, subangular to subrounded sand; ~5% fines; wet; very dense; very pale brown (10YR 8/2); w/fat clay (CH) parting @ 185.1' to 185.2' (100% fines w/high plasticity, high toughness, no dilatancy; moist; very hard; light gray [10YR 7/2]); w/occasional iron stains ~0.05' thick	
														188		-94	C		
														190		-96		grading pale brown (10YR 8/2)	
SPT	41	26	35	40	75	1.2								192		-98			
														194		-100			Driller reported clay layer 1' to 1-1/2' thick @ 193'.
SPT	42	36	46	50/5	+50	0.8								196		-102		grading w/fat clay partings @ 195.1' to 195.3'; and occasional iron stains	
																		197.5	
														198		-104			Driller reported clay @ 198'.
TW	43	-	-	-	-	1.9								200		-106		Elastic SILT w/sand - ~85% fines w/medium plasticity, medium toughness, no dilatancy; ~15% fine sand; moist; firm; greenish-gray (GLEY1 5/1)	PP > 4.5 tsf TV = 0.3 tsf
														202		-108			
														204		-110			
SPT	44	9	12	14	26	1.5								206		-112		grading w/LL=49, PI=23; natural moisture content = 31%	
																		207.5	
														208		-114			
														210					

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	45	-	-	-	-	1.9								210		-116		Fat CLAY (CH) - ~95% fines w/LL=49, PI=26, medium toughness, no dilatancy; ~≤ 5% fine sand; moist, natural moisture content = 15%; hard; greenish-gray (GLEY1 5/1)	PP > 4.5 tsf TV = 2.0 tsf
														212		-118			
														214		-120			
SPT	46	9	12	14	26	1.5								216		-122			
														218		-124			
TW	47	-	-	-	-	1.8								220		-126		grades ~90% fines w/high plasticity, high toughness; ~10% fine sand; very dark greenish-gray (GLEY1 3/1) w/occasional carbonized wood fragments	PP = 4.25 tsf TV = 2.5 tsf
														222		-128		—222.5—	
														224		-130			
SPT	48	8	11	13	24	2.0								226		-132		SILT (ML) - ~90% fines w/high plasticity, medium toughness, no dilatancy; ~10% fine sand; moist; hard; dark grayish-green (GLEY1 4/1); w/occasional carbonized wood fragments	Samples A and B Wood fragments preserved in sample.
														228		-134		—227.5—	
														230		-136		Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand; moist; very hard; very dark greenish-gray (GLEY1 3/1)	
TW	49	-	-	-	-	1.6								232		-138			
														234		-140			
SPT	50	12	17	20	37	2.2								236		-142		grading to ~100% fines w/LL=51, PI=27, natural moisture content = 26%	
														238		-144			Bottom of boring @ 236.5'. Water level @ ground surface @ end of drilling. Boring caved to 188.6'.
														240					

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BORING LOG

BORING NO. TB-08

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17010.5' E 16882.2'	94.2 ft (MSL)	236.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, gravel surface	Plant Grid	03/06/07	03/10/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy JPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
240		-146			Water level @ 39.0' on 03/10/07. Deviation survey performed on 03/10/07. Boring backfilled w/ cement bentonite grout by tremie method on 03/10/07.
242		-148			
244		-150			
246		-152			
248		-154			
250		-156			
252		-158			
254		-160			
256		-162			
258		-164			
260		-166			
262		-168			
264		-170			
266		-172			
268		-174			
270					

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BORING LOG

BORING NO. TB-09

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16703.8' E 17040.3'	66.9 ft (MSL)	66.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, at bottom of slope	Plant Grid	03/11/07	03/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Clayey SAND (SC) - ~80% fine to medium, subangular to subrounded sand; ~15% fines w/medium plasticity; ~5% fine gravel; wet; loose; yellow (10YR 7/6); w/ frequent organic matter	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
-2.5-	
[Citronelle (upper)] Poorly graded SAND w/clay (SP-SC) - ~85% fine to medium, subangular to subrounded sand; ~10% fines; ~5% fine gravel; wet; loose; yellow (10YR 7/6)	
-7.0-	
Clayey SAND (SC) - ~70% fine to medium, subangular to subrounded sand; ~15% fines w/medium plasticity; ~15% fine to coarse, rounded gravel; wet; very loose; yellow (10YR 7/6); w/fat clay seam @ 8.6'	Field sample smaller than recommended.
-9.5-	
Poorly graded SAND w/clay and gravel (SP) - 55% sand; 32% fine, subangular to subrounded gravel; 13% fines; loose; moist, natural moisture content = 15%; yellow (10YR 7/6); w/clay seam @ 11'	
	SPT-06 no recovery; SPT-06 sampler was pushed back into hole to gather sample. Slough (clayey gravel w/ sand) recovered. Slough photographed. Bentonite added.
-17.5-	
Poorly graded SAND w/clay (SP-SC); ~90% fine to medium, subangular to rounded sand; ~10% fines; ≤ 5% fine gravel; wet; medium dense; brownish-yellow (10YR 6/8); w/gravelly clay w/sand seam @ top of sample and frequent clayey sand balls	
-22.5-	
Silty SAND (SM) - ~84% fine, subangular to rounded sand; 16% fines w/low plasticity; wet; very loose; poorly graded; yellow (10YR 8/6); w/fat clay seam @ 25.4'	

SPT	01	2	3	3	6	0.9								0		66	
														2			
SPT	02	2	4	5	9	0.9								4		64	
SPT	03	3	4	3	7	0.9								6		62	
SPT	04	1	2	2	4	0.5								8		60	
SPT	05	3	3	4	7	0.8								10		58	
SPT	06	2	2	3	5	0.0								12		56	
														14		54	
														16		52	
SPT	07	4	12	10	22	1.0								18		50	
														20		48	
SPT	08	3	2	2	4	1.3								22		46	
														24		44	
														26		42	
														28		40	
														30		38	

1/15/2008 5:43 PM River Bend- Geotechnical

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BORING LOG

BORING NO. TB-09

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16703.8' E 17040.3'	66.9 ft (MSL)	66.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, at bottom of slope	Plant Grid	03/11/07	03/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	3	5	7	12	1.1								30		36		grading medium dense; well graded	
														32		34		32.5	
SPT	10	9	10	14	24	0.6								34		32		Well graded SAND (SW) - ~95% fine to coarse, angular to rounded sand; ~5% fines w/no plasticity; ≤ 5% fine gravel; wet; medium dense; yellow (10YR 7/6)	
														36		30			
														38		28			
SPT	11	14	23	26	49	1.1								40		26		grading dense @ 40.7' - grading yellowish-brown (10YR 5/8)	
																		41.1 [Citronelle (lower)]	Field sample smaller than recommended.
														42		24		Well graded GRAVEL w/clay and sand (GW-GC) - ~60% fine to coarse, angular to rounded gravel; ~30% fine to coarse, angular to rounded sand; ~10% fines; moist; very dense; very pale brown (10YR 8/3)	
														44		22		42.5	
SPT	12	12	18	27	45	0.9								46		20		Well graded SAND (SW) - ~90% fine to coarse, subangular to rounded sand; ~5% fines; ~5% fine to coarse, subangular to rounded gravel; wet; dense; very pale brown (10YR 8/4); w/yellow (10YR 7/8) seam @ 46.2'	SPT-12 coarse, rounded gravel @ top of sample (slough).
														48		18			
														50		16		grading w/sandy clay w/gravel seam @ 50.4'	
SPT	13	4	14	24	38	1.2												51.2	
														52		14		Poorly graded GRAVEL w/clay and sand (GP-GC) - ~60% fine to coarse, subrounded to rounded gravel; ~30% fine to coarse, angular to rounded sand; ~10% fines; wet; dense; yellow (10YR 7/6)	Field sample smaller than recommended.
														54		12			
SPT	14	7	11	19	30	0.9								56		10		grading w/frequent clayey sand w/gravel seams grading yellowish-brown (10YR 5/8)	SPT-14 coarse gravel @ top of sample (slough).
																		57.5	
														58		8			
														60					

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BORING LOG

BORING NO. TB-09

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16703.8'	E 17040.3'	66.9 ft (MSL)	66.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, at bottom of slope	Plant Grid	03/11/07	03/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	19	31	45	76	0.9								60		6		Well graded SAND w/clay (SW-SC) - ~90% fine to coarse, subangular to rounded sand; ~10% fines; ≤ 5% fine gravel; wet; very dense; yellowish-brown (10YR 5/8); w/occasional black spots	Coarse gravel @ top of sampler (slough).
														62		4		62.5	
														64		2		Clayey GRAVEL w/sand (GC) - ~50% fine to coarse, angular to subrounded gravel; ~30% fine to coarse, subangular to rounded sand; ~20% fines; wet; very dense; yellowish-brown (10YR 5/8)	
SPT	16	11	29	37	66	0.9								66		0			Coarse gravel @ top of sample (slough).
														68		-2			Bottom of boring @ 66.5'. Water level @ ground surface @ completion of drilling. Boring caved @ 8.5'. Boring backfilled w/cement bentonite grout by pouring from surface on 03/14/07.
														70		-4			
														72		-6			
														74		-8			
														76		-10			
														78		-12			
														80		-14			
														82		-16			
														84		-18			
														86		-20			
														88		-22			
														90					

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BORING LOG

BORING NO. TB-10
SHEET 1 OF 11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0'	E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	4	4	3	7	1.1								0	66	[Fill] Clayey SAND (SC) - ~80% fine to medium, subangular to subrounded sand; ~20% fines w/medium plasticity; moist; loose, poorly graded; yellow (10YR 7/6)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	2	2	3	5	0.9								2	64	2.5 [Citronelle (upper)] Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subangular to subrounded sand; ~10% fines; wet; loose; yellow (10YR 7/6)	
SPT	03	2	2	8	10	0.8								4	62		
SPT	04	8	14	15	29	1.0								6	60	5.9 Sandy Lean CLAY (CL) - ~60% fines w/medium plasticity; ~60% fine to medium, subangular to rounded sand; wet; loose; poorly graded; brownish-yellow (10YR 6/6); w/occasional fat clay balls	
SPT	05	6	14	17	31	1.2								8	58	7.0 Silty SAND (SM) - ~70% fine to coarse, subrounded to rounded sand; ~25% fines w/low plasticity; ~5% fine gravel; wet; medium dense; poorly graded; yellow (10YR 7/8)	
SPT	06	2	2	5	7	0.8								10	56	9.5 Clayey SAND (SC) - ~60% fine to medium, subangular to subrounded sand; ~40% fines w/medium plasticity; < 5% gravel; wet; dense; poorly graded; yellow (10YR 7/8); w/frequent sandy clay seams	
SPT	07	5	11	14	25	0.7								12	54	12.5 Silty SAND w/gravel (SM) - 66% fine to medium, subangular to rounded sand; 17% non-plastic fines; 17% coarse gravel; wet; loose; poorly graded; yellow (10YR 7/8)	Field sample smaller than recommended.
SPT	08	3	6	6	12	1.2								14	52		
														16	50	17.5 Poorly graded SAND w/silt (SP-SM) - ~90% fine to coarse, subangular to rounded sand; ~10% fines; <5% fine gravel; wet; medium dense; brownish-yellow (10YR 6/8)	
														18	48		
														20	46		
														22	44	22.5 Silty SAND (SM) - ~80% fine, subangular to rounded sand; ~20% fines w/high plasticity; wet; medium dense; poorly graded; yellow (10YR 7/6)	
														24	42		
														26	40		
														28	38		
														30			

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	6	10	18	28	0.9								30		36		grading to ~80% fine to coarse sand; ~15% fines; ~5% fine gravel; well graded; yellowish-brown (10YR 5/8); w/gravelly clay seam @ top of sample	
														32		34		32.5	
SPT	10	8	15	18	33	0.8								34		32		Well graded SAND w/silt (SW-SM) - ~80% fine to coarse, subangular to rounded sand; ~10% fines; ~10% fine, angular to subrounded gravel; wet; dense; yellowish-brown (10YR 5/8); w/sandy gravel seam @ 36.2'	
														36		30		37.5 [Citronelle (lower)]	
SPT	11	10	16	22	38	0.6								38		28		Well graded SAND w/gravel (SW) - ~60% fine to coarse, angular to rounded sand; ~35% fine to coarse, angular to rounded gravel; ~5% fines; wet; dense; yellow (10YR 7/6)	SPT-11 gravel on top of sample (slough).
														40		26			
														42		24			
SPT	12	17	21	25	46	1.0								44		22		grading to ~70% sand; ~25% gravel; ~5% fines	
														46		20		47.5	
SPT	13	10	18	26	44	0.8								48		18		Well graded SAND (SW) - ~90% fine to coarse, subrounded to rounded sand; ~5% fine gravel; ~5% fines; wet; dense; brownish-yellow (10YR 6/8)	
														50		16		52.5	
SPT	14	7	8	16	24	0.9								52		14		Clayey SAND w/gravel (SC) - 66% fine to coarse, subrounded to rounded sand; 18% fines w/medium plasticity; 16% fine to coarse, subangular to subrounded gravel; wet; medium dense; well graded; very pale brown (10YR 7/4); w/frequent clay balls; homogeneous	
														54		12			
														56		10			
														58		8			
														60					

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BORING LOG

BORING NO. TB-10
SHEET 3 OF 11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	22	46	50/5"	+50	1.1								60		6		Well graded GRAVEL w/sand (GW) - ~70% fine to coarse, angular to rounded gravel; ~25% fine to coarse, angular to rounded sand; ~5% fines; wet; very dense; brownish-yellow (10YR 6/6)	Sample 15A - Gravel. Sample 15B - Sand.
														62		4		61.0 — Poorly graded SAND (SP) - ~95% fine to coarse, subangular to rounded sand; ~5% fines; wet; very dense; poorly graded; pale yellow (2.5Y 8/4); grading dark yellowish-brown (10YR 4/6) @ 61.3'	
														64		2		62.5 — Well graded SAND w/silt (SW-SM) - ~90% fine to coarse, subangular to rounded sand; ~10% fines; < 5% fine gravel; wet; very dense; dark brown (10YR 5/3)	SPT-16 coarse gravel on top of sample (slough).
SPT	16	16	24	35	59	1.0								66		0		67.5 — Clayey SAND w/gravel (SC) - ~60% fine to coarse, angular to rounded sand; ~25% fines w/no plasticity; ~15% fine, angular to subrounded gravel; wet; very dense; well graded; dark yellowish-brown (10YR 4/6)	SPT-17 coarse gravel and sand @ top of sampler (slough).
														68		-2			
SPT	17	18	31	49	80	0.8								70		-4			
														72		-6			
SPT	18	50/5"	-	-	NA	0.0								74		-8			SPT-18 clean-out depth checked @ 75.0', sample tip depth check indicated 0.5' slough. N-value considered not applicable (NA) due to excessive slough. Redrilled to 75.3'; SPT-19 performed.
SPT	19	44	50/5"	-	+50	0.7								76		-10		77.5 —	
														78		-12			
SPT	20	25	35	42	77	1.0								80		-14		Well graded SAND w/silt (SW-SM) - ~85% fine to coarse, angular to rounded sand; ~10% fines w/no plasticity; ~5% fine gravel; wet; very dense; strong brown (10YR 5/6)	
														82		-16		82.5 —	
														84		-18			
SPT	21	18	37	50/5"	+50	1.1								86		-20		Poorly graded SAND w/clay and gravel (SP-SC) - ~70% fine to medium, subrounded to rounded sand; ~20% fine to coarse, angular to rounded gravel; ~10% fines w/medium plasticity; wet; very dense; strong brown (10YR 5/8)	
														88		-22		87.5 —	
														90					

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BORING LOG

BORING NO. TB-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	22	15	24	30	54	1.2								90		-24		Poorly graded SAND w/clay (SP-SC) - ~90% medium to coarse, subrounded to rounded sand; ~10% fines; < 5% fine gravel; wet; very dense; strong brown (7.5YR 5/8); grading to fine to medium sand; pale yellow (2.5Y 8/4) @ 91.1'	
														92		-26			
														94		-28			
SPT	23	14	13	21	34	1.2								96		-30		grading w/frequent gray clay balls and clayey gravel seam @ 96.2'	
																		97.5	
														98		-32			
SPT	24	5	10	11	21	1.0								100		-34		Clayey GRAVEL (GC) - 49% fine to coarse, subrounded to rounded gravel; 37% fine to medium sand; 14% fines w/medium plasticity, wet; medium dense; poorly graded; very pale brown (10YR 8/4); w/frequent clay balls	
														102		-36		102.5	
														104		-38			
SPT	25	7	9	14	23	0.6								106		-40		Fat CLAY (CH) - ~95% fines w/LL=55, PI=37, high toughness, no dilatancy; ~5% fine sand; wet, natural moisture content = 21%; hard; pink (7.5YR 8/3); w/frequent sand pockets and partings	
																		107.5	
														108		-42			
SPT	26	19	30	36	66	1.1								110		-44		Poorly graded SAND (SP) - ~95% fine to medium, subangular to rounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 8/3)	Stopped overnight after SPT-26. Fluid level recorded @ 5' on 03/13/07.
														112		-46			
																		113.5 [Pascagoula]	Clay encountered @ 113' as per driller's observation.
TW	27	-	-	-	-	0.0								114		-48			TW-27 tube extremely bent; will continue w/ SPT.
SPT	28	6	12	18	30	1.5								116		-50		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; high dry strength; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent black and ferrous spots; and frequent silt pockets	
														118		-52			
														120					

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BORING LOG

BORING NO. TB-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0'	E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	29	-	-	-	-	0								120		-54		grading w/high toughness; w/occasional clay pockets; black spots and silt pockets grade out	TW-29 tube bent; could only be pushed 1'. Some sand @ bottom of tube. Will follow w/SPT.
SPT	30	9	15	17	32	1.8								122		-56			SPT-30 gravel @ top of sampler (slough).
																		—123.5—	
														124		-58		Lean CLAY (CL) - ~100% fines w/LL=34, PI=19, low toughness, no dilatancy; low dry strength; moist, natural moisture content = 23%; light greenish-gray (GLEY2 7/1 5BG)	PP > 4.5 tsf
TW	31	-	-	-	-	1.9								126		-60			TV = 0.6 tsf
														128		-62			
														130		-64		grading hard; greenish-gray (GLEY1 5/1 5G)	
SPT	32	8	13	14	27	1.8								132		-66			
														134		-68			PP > 4.5 tsf
TW	33	-	-	-	-	1.9								136		-70			TV = 0.6 tsf
														138		-72			
														140		-74		grading w/medium toughness, slow dilatancy; very hard	
SPT	34	13	17	22	39	1.8								142		-76			@ 142' change in color as per driller's observation.
														144		-78		grading w/LL=40, PI=17, low toughness, medium dry strength; moist, natural moisture content = 22%; hard; pale yellow (5Y 7/3); w/frequent ferrous spots	PP > 4.5 tsf
TW	35	-	-	-	-	2.1								146		-80			TV = 0.5 tsf
																		—147.5—	
														148		-82			
														150					

BLACK & VEATCH

BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	36	12	21	21	42	1.2								150		-84		Poorly graded SAND (SP) - ~95% fine, subangular to subrounded sand; ~5% fines w/no dilatancy; wet; dense; light gray (5Y 7/2); w/elastic silt seam @ 151.2'	
														152		-86			
														154		-88			
SPT	37	20	27	31	58	1.1								156		-90		grading fine to medium; very dense	
														158		-92			
														160		-94		grading subangular to rounded; w/ferrous seam @ 161' and ferrous parting @ 160.6'	
SPT	38	35	47	50/5"	+50	1.1								162		-96			
														164		-98			
																		165.4	
SPT	39	25	17	18	35	1.5								166		-100		Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, no dilatancy; moist; very hard; light gray (5Y 7/1); w/frequent ferrous spots and gravelly clay seam @ 165.1'	
														168		-102			
														170		-104		grading w/LL=26, PI=10, rapid dilatancy; natural moisture content = 22%; firm; light gray (5Y 7/2); w/frequent ferrous spots	PP = 3.25 tsf TV = 0.3 tsf
TW	40	-	-	-	-	1.8								172		-106			
														174		-108			
SPT	41	15	21	24	45	1.4								176		-110		grading very hard	
														178		-112			
														180					

BLACK & VEATCH

BORING LOG

BORING NO. TB-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren SAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Poorly graded SAND (SP) - ~95% fine, subangular to subrounded sand; ~5% fines; wet; light gray (5Y 7/2)	TW-42 tube could only be pushed 15". PP = 0.5 tsf TV = 0.1 tsf
182.5	
Elastic SILT (MH) - ~100% fines w/medium plasticity, low toughness, rapid dilatancy; wet; hard; light gray (5Y 7/2)	Stopped overnight after SPT-43. Fluid level recorded @ 5' on 03/14/07.
187.5	
Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subangular to subrounded sand; ~10% fines w/low plasticity; wet; light gray (5Y 7/2); w/frequent ferrous stains	PP = 0.75 tsf TV = 0.1 tsf
192.5	
Poorly graded SAND (SP) - ~95% fine to medium, subangular to rounded sand; ~5% fines; wet; dense; light gray (5Y 7/2) ; w/occasional ferrous stains	
198.5	
Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subangular to rounded sand; ~10% fines; wet; dense @ 200.6' grading w/liquid consistency; w/frequent gravel size clay balls; < 5% fine gravel	Sample 46A - SP-SC. Sample 46B - Soil w/liquid consistency.
grading fine; very dense; fine gravel size clay balls grade to occasional; gravel grades out	
207.5	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
TW	42	-	-	-	-	1.5							
SPT	43	5	6	13	19	1.8							
TW	44	-	-	-	-	1.8							
SPT	45	15	19	23	42	1.1							
SPT	46	12	18	21	39	1.8							
SPT	47	18	27	28	55	1.1							

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BORING LOG

BORING NO. TB-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JDL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; very hard; greenish-gray (GLEY1 5/1 5G)	Clay encountered @ 210'.
grading w/LL=55, PI=34, natural moisture content = 23%	PP > 4.5 tsf TV = 0.5 tsf
217.5	
Lean CLAY (CL) - ~100% fines w/medium plasticity, high toughness, no dilatancy; moist; very hard; dark greenish-gray (GLEY1 4/1 5G); w/frequent calcareous (strong reaction w/HCl) nodules	No catcher used on SPT sample.
grading w/low plasticity, low toughness, slow dilatancy; hard	TW-51 tube could only be pushed 11". Tube bent. PP = 4.0 tsf TV could not be performed. Photo indicates depth of 225' to 227'; it should read 225' to 225.9'. Drilling stopped on 03/14/07. Drilling restarted on 03/27/07 using 6" tricone bit.
grading w/LL=30, PI=14; very hard; w/silt (ML) layer between 230' and 230.4'	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	48	10	17	20	37	1.8							
TW	49	-	-	-	-	1.7							
SPT	50	17	21	27	48	1.9							
TW	51	-	-	-	-	0.6							
SPT	52	17	23	33	56	1.7							

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BORING LOG

BORING NO. TB-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco DMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
240		-174			Clean, coarse sand slough.
242		-176			
244		-178			
246		-180			
248		-182			
250		-184			
252		-186			
254		-188			
256		-190			
258		-192			
260		-194			
262		-196			
264		-198			
266		-200			
268		-202			
270					

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BORING LOG

BORING NO. TB-10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
270		-204			Coarse sand in slough.
272		-206			
274		-208			
276		-210			
278		-212			
280		-214			Coarse sand in slough. Change in soil as per driller's observation. Pressure not increasing much during drilling.
282		-216			
284		-218			
286		-220			
288		-222			
290		-224			Coarse sand on slough.
292		-226			
294		-228			
296		-230			
298		-232			
300					

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BORING LOG

BORING NO. TB-10
SHEET 11 OF 11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16793.0' E 17040.5'	67.2 ft (MSL)	310.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat gravel pad adjacent to toe of slope	Plant Grid	03/12/07	05/03/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														300		-234			Coarse sand on slough.
														302		-236			
														304		-238			
														306		-240			
														308		-242			
														310		-244			Bottom of boring @310.0'. Fluid level @ ground surface @ end of drilling. Fluid level not encountered on 05/02/07. Boring caved @ 4'. Boring cleaned to 238'. Deviation survey performed on 05/02/07. Boring backfilled w/cement bentonite grout by tremie method on 05/03/07.
														312		-246			
														314		-248			
														316		-250			
														318		-252			
														320		-254			
														322		-256			
														324		-258			
														326		-260			
														328		-262			
														330					

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BORING LOG

BORING NO. TB-10A

SHEET 1 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy UPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														0		62	
														2		60	
														4		58	
														6		56	
														8		54	
														10		52	
														12		50	
														14		48	
														16		46	
														18		44	
														20		42	
														22		40	
														24		38	
														26		36	
														28		34	
														30			

CLASSIFICATION OF MATERIALS

Poorly graded SAND (SP) - ~95% medium to fine sand; ~5% fines; pale yellow (2.5YR 8/2)

grading to light gray (7.5YR 7/1)

REMARKS

Boring advanced with 6-1/4" tricone bit using bentonite mud as drilling fluid. SPT performed using automatic hammer w/ unlined sampler and plastic catcher. Sampling from drill cuttings. No preservation of drill cuttings.

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)
30	32
32	30
34	28
36	26
38	24
40	22
42	20
44	18
46	16
48	14
50	12
52	10
54	8
56	6
58	4
60	

43.5
[Citronelle (lower)]

Poorly graded SAND (SP) - ~90% medium to fine, subangular sand; ~10% fine, subangular, elongated gravel; brown (7.5YR 4/4)

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JN	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
60		2			
62		0			
64		-2			
66		-4			
68		-6			
70		-8		trace clay balls in cuttings	
72		-10			
74		-12			
75.0				Poorly graded GRAVEL (GP) - medium to fine, subangular gravel; w/some sand	Fluid loss @ 75'; increasing mud viscosity to ~58 seconds (marsh funnel); ~2500 gallons.
76		-14			
78		-16			
80		-18			
82		-20			
84		-22			
86		-24			
88		-26			
90					

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy wpm	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS
90	-28	SAND; light gray (7.5YR 7/1) — 90.0
92		
94	-30	
96	-32	
98	-34	
100	-36	
102	-38	GRAVEL; reddish-brown (2.5YR 4/3) — 102.0
104	-40	
106	-42	SAND; coarse to medium; reddish-brown (2.5YR 4/3) — 105.0
108	-44	
110	-46	
112	-48	
114	-50	
116	-52	
118	-54	
120	-56	

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)
120	
	-58
122	
	-60
124	
	-62
126	
	-64
128	
	-66
130	
	-68
132	
	-70
134	
	-72
136	
	-74
138	
	-76
140	
	-78
142	
	-80
144	
	-82
146	
	-84
148	
	-86
150	

grading yellowish-red (5YR 5/6)

130.0

GRAVEL; strong brown (7.5YR 5/6)

137.0

[Pascagoula]

CLAY; greenish-gray (GLEY1 5GY 6/1)

140.0

SAND w/clay chips

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BORING LOG

BORING NO. TB-10A

SHEET 6 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
150				SAND	Driller reports silt @ 150' to 155'.
152		-88			
154		-90			
156		-92			
158		-94			
160		-96			
				160.0	
162		-98		GRAVEL; medium to coarse, subangular, w/trace of coarse sand; strong brown (7.5YR 4/6)	
164		-100			
166		-102			
168		-104			
170		-106			
				170.0	
172		-108		SAND; medium to fine; w/fines of dark-greenish gray clay chips (GLEY1 10Y 4/1)	
174		-110			
176		-112			
178		-114			
180		-116			

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren SAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180					
		-118			
182					
		-120			
184					
		-122			
186					
		-124			
188					
		-126			
190					
		-128			
192					
		-130			
194					
		-132			
196					
		-134			
198					
		-136			
200					Driller reports clay @ 200' to 202'. No clay chips in drilling fluid.
		-138			
202					
		-140			
204				grades to fine grained	
		-142			
206					
		-144			
208					
		-146			
210					

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy wpm	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														210				grades to greenish-gray fines	
														212		-148			
														214		-150			
														216		-152			
														218		-154			
														220		-156		220.0	
																		GRAVEL (GP)	
														222		-158			
														224		-160			
														226		-162			
														228		-164			
														230		-166			
SPT	1	5	22	18	40	0.9										-168		grading ~95% medium to coarse, subangular to subrounded, flat, elongated gravel (3/4" to 1-1/4" maximum size); ~5% sand; moist; reddish-brown (2.5YR 4/4); loose	Stopped drilling; water level @ ground surface on 05/03/07. On 05/04/07, water level @ 2' above ground surface. On 05/05/17, water level @ 0.9' above ground surface, boring caved to 14'. Boring advanced to 260' w/94mm (3.7") core barrel w/bit as center plug.
														232				230.3	
																-170		Lean CLAY (CL) - ~100% fines; medium plasticity, low toughness, no dilatancy; wet; very hard; dark greenish-gray (GLEY1 10GY 3/1)	
														234		-172			
														236		-174			
														238		-176			
														240					

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														240					
														242		-178			
														244		-180			
														246		-182			
														248		-184			
														250		-186			
														252		-188			
														254		-190			
														256		-192			
														258		-194			
														260		-196			Boring advanced below 260' w/ 6-1/4" tricone bit.
														262		-198			
														264		-200			
														266		-202			@ 265' sand caving-in binding drill string; drill string removed 05/05/07. Boring caved 05/06/07; boring cleaned w/4-1/2" tricone and advanced to
														268		-204			
														270		-206			

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
270					340'.
		-208			
272					
		-210			
274				grading light greenish-gray (GLEY1 10GY 7/1)	
		-212			
276					
		-214			
278					
		-216			
280					
		-218			
282					
		-220			
284					
		-222			
286					
		-224			
288					
		-226			
290					
		-228			
292					
		-230			
294					
		-232			
296					
		-234			
298					
		-236			
300					

BLACK & VEATCH

BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy wpm	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
300					
302		-238			
304		-240			
306		-242			
308		-244			
310		-246			
312		-248			
314		-250			
316		-252			
318		-254			
320		-256			
322		-258			
324		-260			
326		-262			
328		-264			
330		-266			

BLACK & VEATCH

BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy JNL & WPM	J. Liljegren JDL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	2	-	-	-	-	1.4								340.0		-276		Silty SAND (SM) - ~80% fine, subangular sand; ~20% fines; low plasticity, medium toughness, no dilatancy; wet; medium dense; very dark greenish-gray (GLEY1 5G 3/1)	PP = 2.25 tsf Drill string removed to sample; boring caved to 160'. Boring washed to 340'. Mud viscosity confirmed @ 58 seconds based on Marsh funnel. Stopped drilling on 5/6/07. Boring caved on 5/7/07, redrilled to 340; boring caved to 305'. EZ-Mud added to stabilize hole overnight on 5/7/07. Boring caved to 16' on 5/11/07; water level @ 14'. Advanced 6-7/8" OD temporary steel casing to 16'. Boring washed w/ 4-1/2" tricone to 140'. Casing driven to 180' w/ casing hammer. Water level @ ground surface on 5/11/07. Water level

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
360					@14.6' on 5/12/07; casing advanced to 240'. Boring cleaned to 340'; sample obtained.
362		-298			
364		-300			
366		-302			
368		-304			
370		-306			
372		-308			
374		-310			
376		-312			
378		-314			
380		-316			
382		-318			
384		-320			
386		-322			
388		-324			
390		-326			

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BORING LOG

BORING NO. TB-10A

SHEET 14 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														390					
														392		-328			
														394		-330			
														396		-332			
														398		-334			
														400		-336			
														402		-338			
														404		-340			
														406		-342			
														408		-344			
														410		-346			
														412		-348			
														414		-350			
														416		-352			
														418		-354			
														420		-356			

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WSM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	3	-	-	-	-	1.8								440		-376		440.0 — Poorly graded SAND (SP) - ~95% fine, subangular sand; ~< 5% fines; moist; dark greenish-gray (GLEY1 10Y 4/1)	Stopped drilling @ 430' on 05/12/07; water level @ 25.0'. PP = 1.5 tsf TV = 0.5 tsf w/ standard vane SPT advanced w/ non-standard hammer.
SPT	4	10	10	-	10	1.0								442		-378			

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
450				CLAY; w/trace carbonized wood; dark greenish-gray	Driller reports slightly harder drilling @ 450'.
452		-388			
454		-390			
456		-392			
458		-394			
460		-396		carbonized wood grades out	
462		-398			
464		-400			
466		-402			
468		-404			
470		-406			
472		-408			
474		-410			
476		-412			
478		-414			
480		-416			

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy wpm	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
480					
482		-418			
484		-420		grading w/< 5% sand	
486		-422			
488		-424			
490		-426			
492		-428			
494		-430			
496		-432			
498		-434			
500		-436			
502		-438			
504		-440			
506		-442			
508		-444			
510		-446			

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy lapm	J. Liljegren JLL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
510				grading to mottled red and dark greenish-gray	
		-448			
512					
		-450			
514					
		-452			
516					
		-454			
518					
		-456			
520					
		-458			
522				grading dark grayish-green	
		-460			
524					
		-462			
526					
		-464			
528					
		-466			
530					
		-468			
532					
		-470			
534					
		-472			
536					
		-474			
538					
		-476			
540					

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WSP M	J. Liljegren JLL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	5	-	-	-	-	0.6								540 542 544 546 548 550 552 554 556 558 560 562 564 566 568 570		-478 -480 -482 -484 -486 -488 -490 -492 -494 -496 -498 -500 -502 -504 -506		Lean CLAY (CL) - ~100% fines; w/ LL=30, PI=18; medium toughness, no dilatancy; moist; hard; very dark grayish-green (GLEY1 5G 2.5/2)	PP > 4.5 tsf TV = 5.5 tsf Bottom of boring @ 552.0'. Fluid level @ 53.3' upon completion of borehole. Attempted to install 3" OD schedule 40 PVC casing; could not get past 380'. Boring redrilled to 550'; casing could not get past 300'. Boring redrilled to 550; PVC casing installed to 550'. Boring annulus grouted by tremie method using 1 sack centent : 1 sack bentonite : 75 gallons water mix. 300 gallons of grout used to grout to 240' on 5/16/07. Temporary steel casing removed; additional 135 gallons of grout placed to

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BORING LOG

BORING NO. TB-10A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16816.7' E 17121.7'	63.6 ft (MSL)	552.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, slopes west to drainage	Plant Grid	05/03/07	05/17/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WP M	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
570					backfilled to ground surface on 05/17/07.
572		-508			
574		-510			
576		-512			
578		-514			
580		-516			
582		-518			
584		-520			
586		-522			
588		-524			
590		-526			
592		-528			
594		-530			
596		-532			
598		-534			
600		-536			

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BORING LOG

BORING NO. TB-10B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16836.7' E 17128.7'	65 ft (estimated)	75.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, by pump pond inside excavation	Plant Grid	03/18/08	03/25/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
0		64		[Fill] Poorly graded SAND w/gravel	Boring advanced w/6" tricone bit using air as drilling fluid to install 6" ID (6-7/8" OD) temporary casing to 15.3'. Below bottom of temporary casing, boring advanced w/6" tricone bit using bentonite mud as drilling fluid. Boring logged by cuttings, no sample preservation. Based on cuttings, water level encountered during drilling @ 7.5'. Driller noted clayey layer between 14.0' and 15.0'.
2		62			
4		60			
6		58			
8		56		grading wet; brownish yellow	
9.0					
10		54		Clayey SAND w/gravel; wet; yellowish brown	
12		52		gravel grades out grading w/gravel	
14		50			
16				16.0 [Engineered Fill]	
18		48			
20		46			Mud viscosity (Marshall flume) @ start of rotary wash drilling was 43 seconds.
22		44		Poorly graded SAND (SP); ~85% fine to coarse, subangular to rounded sand; ~10% fine, angular to subrounded gravel; ~5% fines; wet; light yellowish brown (7.5Y 6/3)	
24		42			
26		40			
28		38			
30		36			

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BORING LOG

BORING NO. TB-10B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16836.7' E 17128.7'	65 ft (estimated)	75.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, by pump pond inside excavation	Plant Grid	03/18/08	03/25/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAZ	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
30		34		grading to 90% sand, ~5% gravel; ~5% fines	@37.0' drill bit clogged. Partly cleared by raising drill stem and flushing. Drill stem pulled out of hole, clog was rubber piece from mud system. While pulling the drill bit out, the temporary casing pulled out ~1.5'. While putting the drill bit back into the hole, the top of casing was pushed ~1.5' below ground surface; casing repositioned. @ 41.0 to 43.0' loss of circulation. Rods lifted to place N-Seal. Mud observed coming out of cracks @ the ground surface about 6.0' from hole. One bag of N-Seal placed in mud system; still loss of circulation. Three bags of N-Seal were mixed in 50 gallons of mud and fed directly into the hole. Drilled down to 70.0' and more mud @ surface was observed about 25.0' from hole.
32		32			
34		30			
36		28			
38		26			
40		24			
42		22			
44		20			
46		18			
48		16			
50		14			
52		12			
54		10			
56		8			
58		6			
60					

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BORING LOG

BORING NO. TB-10B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16836.7' E 17128.7'	65 ft (estimated)	75.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, by pump pond inside excavation	Plant Grid	03/18/08	03/25/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														60		4	
														62		2	
														64		0	
														66		-2	
														68		-4	
														70		-6	
														72		-8	
														74		-10	
														76		-12	
														78		-14	
														80		-16	
														82		-18	
														84		-20	
														86		-22	
														88		-24	
														90			

65.0

[Citronelle (Lower)]

Poorly graded SAND (SP); ~100% medium subangular to rounded sand; wet; pale yellow (2.5Y 7/4)

@ 75.0' 3 bags of N-Seal were mixed in 100 gallons of mud to seal the hole. The mud was placed in the hole. After 15 minutes, drilling was attempted and mud continued to come out of ground surface cracks. Drilling stopped.

Boring abandoned @ 75.0' depth. Temporary casing removed on 03/25/08. Fluid level not measured. Boring backfilled w/cement-bentonite grout by tremie method on 03/25/08.

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BORING LOG

BORING NO. TB-11

SHEET 1 OF 3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16947.8' E 17082.5'	65.9 ft (MSL)	66.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; road surface	Plant Grid	02/08/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	11	17	20	37	1.1								0		[Fill] Clayey SAND (SC) - ~75% fine to medium, subrounded sand; ~20% fines; ~5% fine to coarse, subrounded gravel; moist; dense; poorly graded; brownish-yellow (10YR 6/8); homogeneous, w/clayey sand parting @ ~1.5'	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	9	17	18	35	0.8								2	64		
														4	62	@ 3.5' grading to ~70% fine sand; ~30% fines; gravel grades out	
SPT	03	13	27	35	62	1.0								5.0		Poorly graded SAND w/clay (SP-SC) - ~80% fine to coarse sand; ~10% fines; ~10% fine to coarse, angular to subrounded gravel; moist; very dense	
														6	60		
SPT	04	11	26	30	56	0.9								7.5		Clayey SAND (SC) - ~80% fine to medium, subrounded to rounded sand; ~15% fines; ~5% coarse, rounded gravel; moist; very dense; brownish-yellow (10YR 6/8)	
														8	58		
SPT	05	8	10	15	25	0.8								9.5		Silty SAND (SM) - 70% fine to coarse, subangular to rounded sand; 18% fines w/medium plasticity, medium toughness; 12% fine gravel; medium dense; brownish yellow (10YR 6/8)	
														10	56		
														12	54		
														14	52		
SPT	06	5	12	17	29	0.8								16	50	grading to ~70% sand; ~20% fines, ~10% fine, angular to subrounded, flat gravel; wet; w/clayey sand parting @ ~16.3'	SPT-06 gravel and clay ball on top of sample (slough).
														17.5			
														18	48		
SPT	07	10	25	36	61	1.1								20	46	Well graded SAND (SW) - 91% fine to coarse, subangular to rounded sand; 6% fines; 3% fine gravel; wet, natural moisture content = 11%; very dense; pale yellow (2.5Y 7/3)	SPT-07 gravel on top of sampler (slough).
														22	44		
														24	42		
SPT	08	8	23	26	49	1.2								26	40	sand w/clay seam @ 26.0' and fine to coarse, subangular to rounded gravel seam @ 25.5'	
														27.5		[Citronelle (upper)]	
														28	38		
														30	36		

6/13/2008 10:18 AM River Bend- Geotechnical

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BORING LOG

BORING NO. TB-11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16947.8' E 17082.5'	65.9 ft (MSL)	66.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; road surface	Plant Grid	02/08/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	7	15	19	34	0.9								30				Well graded SAND w/clay (SW-SC) - ~80% fine to coarse, subrounded to rounded sand; ~10% fine, subrounded gravel; ~10% fines; wet; dense; yellow (10YR 7/8); homogeneous	SPT-9 gravel @ top of sampler (slough).
														32		34			
														34		32			
SPT	10	7	19	20	39	1.0								36		30		grading to ~85% sand; ~10% fines; ~5% fine, subangular to rounded, elongate to flat gravel @ 36.2' grading yellowish-red (5YR 5/8)	@ 35' mud had too much sand; tub had to be emptied and more mud mixed.
														38		28		38.0 [Citronelle (lower)]	
SPT	11	7	11	16	27	0.6								40		26		Well graded SAND (SW) - 94% coarse to medium sand; 4% fine gravel; 2% fines; wet, natural moisture content = 15%; medium dense; strong brown (7.5YR 5/8)	SPT-11 gravel on top of sampler (slough).
														42		24		42.5	
														44		22			
SPT	12	6	8	7	15	1.1								46		20		Clayey SAND (SC) - 90% fine to medium, subrounded to rounded sand; 10% fines w/LL=21, PI=10; wet, natural moisture content = 20%; medium dense; brownish-yellow (10YR 5/8)	RNG-13 lined ring sampler pushed. Only recovery was slough (coarse gravel). Piece of broken cobble observed.
RNG	13	-	-	-	-	0								48		18		47.5	
SPT	14	11	17	25	42	1.2								50		16		Poorly graded SAND w/clay (SP-SC) - ~85% fine to medium, subrounded to rounded sand; ~10% fines; ~5% fine to coarse, subangular to rounded gravel; wet; dense; yellow (10YR 7/8)	Hole caved in @ 50'.
														52		14			
														54		12			
SPT	15	3	4	15	19	1.3								56		10		55.2 Poorly graded SAND (SW) - 98% fine, subrounded to rounded sand; 2% fines; wet, natural moisture content = 20%; medium dense; yellow (10YR 7/8)	SPT-15 sampled poorly graded sand.
														58		8		55.8 Poorly graded SAND w/clay (SP-SC) - ~85% fine to medium, subrounded to rounded sand; ~10% fines; ~5% fine gravel; wet; medium dense; yellow (10YR 7/8)	
														60		6		57.5	

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BORING LOG

BORING NO. TB-11

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16947.8' E 17082.5'	65.9 ft (MSL)	66.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level; road surface	Plant Grid	02/08/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ONB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	16	10	15	24	39	0.9								60				Well graded SAND (SW) - ~100% fine to coarse, subrounded to rounded sand; wet; dense; pale yellow (2.5Y 8/2); w/clay parting @ 60.5'	
														62		4			
														64		2		63.5	
SPT	17	8	20	33	53	1.5								66		0		Well graded SAND w/gravel (SW) - ~85% fine to coarse, subrounded to rounded sand; ~15% fine, subangular to rounded gravel; wet; very dense; yellow (2.5Y 8/2); w/fine gravel seam @ 65.2' and sandy clay balls @ 65.6' and 65.8'	Bottom of boring @ 66.5'. Fluid level recorded @ 4' @ completion of drilling. Boring caved @ 9.5'. Water not encountered on 02/09/07. Boring backfilled w/ cement bentonite grout on 02/09/07.
														68		-2			
														70		-4			
														72		-6			
														74		-8			
														76		-10			
														78		-12			
														80		-14			
														82		-16			
														84		-18			
														86		-20			
														88		-22			
														90		-24			

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BORING LOG

BORING NO. FWS-19

SHEET 1 OF 2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17155.7' E 16743.1'	93.6 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, side of road	Plant Grid	1/14/07	1/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KTWB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~20% fine, subrounded to rounded sand; moist; hard; light yellowish-brown (2.5Y 6.4) and greenish-gray (GLEY1 6/1) w/some gravel @ tip of sampler	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling fluid. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
2.5	
Lean CLAY (CL) - 90% fines w/medium plasticity, medium toughness; ~10% fine sand; wet; soft; greenish-gray (GLEY1 6/1) and brownish-yellow sand (10YR 6/8) w/black spots	
4.5	
Well graded SAND (SW) - ~90% fine to coarse, subangular to rounded sand; ~10% fine, subangular gravel; wet; very loose; very pale brown (10YR 7/3) and gravel of various colors	@ 7.5': Sample A - sand. Sample B - clay.
7.0	
Clayey SAND (SC) - ~60% fine to medium, subrounded to rounded sand; ~40% fines w/medium plasticity, medium toughness; moist; loose; light greenish-gray (GLEY1 7/1)	
8.0	
[Port Hickey] Lean CLAY w/sand (CL) - ~75% fines w/medium plasticity, medium toughness; ~25% fine to medium, subrounded to rounded sand; moist; firm; brownish-yellow (10YR 6/4) w/gray sand pockets	
@10.0' grading w/~75% fines w/LL=44, PI=25; ~25% fine sand laminated within clayey matrix; natural moisture content = 27%; hard; clay matrix is red (2.5YR 7/8); sands are light greenish-gray (GLEY1 8/1) and brownish-yellow (10YR 6/8)	Sample 6A - clayey soil. Sample 6B - sandy soil.
@15.0' grading w/~70% fines; ~30% sand; firm; brownish-yellow (10YR 6/8); w/some red clay gravel-size particles and occasional grey sand laminations	
16.0	
Clayey SAND (SC) - ~60% very fine to medium, subrounded sand; ~40% fines w/medium plasticity; moist; medium dense; yellowish-brown (10YR 5/8)	
17.5	
[Citronelle (upper)] Clayey SAND (SC) - ~70% fine to coarse, subangular to rounded sand; ~30% fines; moist; yellowish-brown (10YR 5/8)	
@25.0' grading to ~80% sand; ~20% fines	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	01	3	7	10	17	1.0							
SPT	02	3	1	1	2	1.2							
SPT	03	3	2	1	3	0.4							
SPT	04	3	5	5	10	1.4							
SPT	05	4	4	5	9	1.4							
SPT	06	4	6	7	13	1.5							
SPT	07	5	5	7	12	1.0							
SPT	08	6	8	7	15	0.9							

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BORING LOG

BORING NO. FWS-19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17155.7' E 16743.1'	93.6 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, side of road	Plant Grid	1/14/07	1/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	09	10	11	8	19	0.4								30		62	
														32			
														34		60	
SPT	10	4	7	6	13	0.9								36		58	
														38		56	
														40		54	
SPT	11	16	30	38	68	0.7								42		52	
														44		50	
SPT	12	3	10	10	20	1.1								46		48	
														48		46	
														50		44	
SPT	13	10	12	11	23	1.3								52		42	
														54		40	
														56		38	
														58		36	
														60		34	

CLASSIFICATION OF MATERIALS

@30' grading to ~70% fine to coarse, subrounded to rounded sand; ~30% fines w/medium plasticity; wet; w/ occasional fine gravel-size clay balls

@35' grading to fine to medium sand; clay balls grade out

38.0

Poorly graded SAND w/clay (SP-SC) - ~85% fine to coarse sand; ~10% fines; ~5% fine, subrounded gravel; moist; very dense; yellowish-brown (10YT 5/8); w/occasional red clay partings

45.0

Fat CLAY w/sand (CH) - 51% fines w/LL=61, PI=30, low toughness, no dilatancy; ~49% fine to medium, subrounded to rounded sand; wet, natural moisture content = 41%; hard; pale yellow (25Y 7/3); sand arranged in large pockets

45.5

Clayey SAND (SC) - ~85% medium to coarse, subrounded to rounded sand; ~15% fines; wet; medium dense; brownish-yellow (10YR 6/8) w/fine gravel-sized clay balls

@50' grading to ~70% fine to coarse sand; ~30% fines; strong brown (7.5YR 5/8) @ 50.8' and brownish-yellow (10YR 6/8) below 51'

REMARKS

Sample 12A - clay.
Sample 12B - sand.

Bottom of boring @ 51.5'. Fluid level @ 10.6' @ completion of drilling. Boring caved @ 48.5'. Water level @ 38.0' on 1/15/06. Boring was backfilled with cement bentonite grout by tremie pipe method on 01/15/07.

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BORING LOG

BORING NO. CB-22

SHEET 1 OF 8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Poorly graded SAND (SP) - ~95% fine to medium sand; ~5% fines; moist; loose; yellowish-brown (10YR 5/8)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
2.3 [Port Hickey (top stratum)] Fat CLAY (CH) - ~90% fines w/high plasticity, high toughness, no dilatancy; ~10% fine sand; moist; firm; greenish-gray (GLEY1 6/1)	
4.5 Lean CLAY (CL) - ~90% fines w/LL=38, PI=23; ~10% sand; stiff; natural moisture content = 14%; in situ dry density = 117 pcf	
7.5 [Port Hickey] Clayey SAND (SC) - ~60% fine sand; ~40% fines w/medium plasticity, medium toughness, slow dilatancy; moist; loose; yellow (10YR 7/6) @10.0' grading to ~70% sand; ~30% fines w/slow dilatancy; medium dense; very pale brown (10YR 8/2)	
12.5 Silty SAND (SM) - ~70% fine sand; ~30% fines w/low plasticity, low toughness, slow dilatancy; moist; loose; yellow (10YR 7/8)	
17.0 Poorly graded SAND (SP) - ~95% fine to medium, subrounded to subangular sand; ~5% fines; moist; loose; yellow (10YR 7/8)	
21.5 Clayey SAND (SC) - ~70% fine sand; 30% fines w/medium plasticity, medium toughness; moist; loose; yellowish-red (5YR 5/8)	

SPT	01	3	4	3	7	1.0								0		94	
SPT	02	2	3	6	9	0.9								2		92	
TW	03	-	-	-	-	2.0								4		90	
SPT	04	5	5	5	10	1.1								6		88	
SPT	05	6	7	4	11	0.8								8		86	
SPT	06	4	5	5	10	0.6								10		84	
SPT	07	2	2	3	5	0.7								12		82	
SPT	08	2	3	3	6	0.8								14		80	
														16		78	
														18		76	
														20		74	
														22		72	
														24		70	
														26		68	
														28		66	
														30			

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BORING LOG

BORING NO. CB-22

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
grading to fine to coarse sand	SPT 9A - sand SPT 9B - clay
30.5	
Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; firm; reddish-yellow (7.5YR 7/6)	
33.0	
[Citronelle (upper)]	
Clayey SAND (SC) - ~80% fine sand; ~20% fines w/medium plasticity, medium toughness; moist; loose; reddish-yellow (7.5YR 6/8)	
43.0	
Poorly graded SAND w/silt (SP-SM) - 90% medium, subrounded to rounded sand; 10% fines w/low plasticity, low toughness; moist; dense; Cu=6.0, Cc= 0.016; strong brown (7.5YR 5/8)	
48.5	
Silty SAND (SM) - ~86% fine to medium, subrounded to rounded sand; 14% fines w/low plasticity, low toughness, rapid dilatancy; moist; loose; yellow (10YR 7/8); w/few fine gravel on top	
grading to 67% fine to medium sand; 33% fines	
58.0	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	09	3	3	6	9	1.1							
SPT	10	5	5	5	10	1.0							
SPT	11	3	2	8	10	1.1							
SPT	12	9	20	29	49	0.8							
SPT	13	3	3	3	6	0.6							
SPT	14	2	3	5	8	0.9							

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BORING LOG

BORING NO. CB-22

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	15	3	3	2	5	0.6								60		34	
														62		32	
														64		30	
SPT	16	3	3	4	7	0.5								66		28	
														68		26	
SPT	17	4	5	6	NA	0.6								70		24	
														72		22	
														74		20	
SPT	18	4	7	8	NA	0.6								76		18	
														78		16	
SPT	19	3	5	7	NA	1.2								80		14	
														82		12	
														84		10	
SPT	20	8	10	11	NA	1.0								86		8	
														88		6	
														90			

CLASSIFICATION OF MATERIALS

Poorly graded SAND (SP) - ~93% fine to medium, subrounded to rounded, sand; 7% fines; wet; loose; yellow (10YR 6/6); w/0.1' gravel lens

68.0

[Citronelle (lower)]

Poorly graded GRAVEL (GP) - ~95% fine to coarse, subangular to subrounded gravel; ~5% fine sand; wet; loose; yellowish-brown (10YR 5/8)

73.0

Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; medium dense; brownish-yellow (10YR 6/6)

76.1

Well graded GRAVEL (GW) - ~95% fine to coarse, subangular to subrounded gravel; ~5% fines; wet; medium dense; yellowish-brown (10YR 5/8)

grading to ~100% gravel

83.0

Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; medium dense; brownish-yellow (10YR 6/8)

85.8

Well graded GRAVEL (GW) - ~95% fine to coarse, subrounded to angular gravel; ~5% fines; wet; medium dense; yellowish-brown (10YR 5/8)

REMARKS

Fluid level @ 26' on 1/25/07 @ start of drilling.

Below 68.0', N-values in sands and gravels are considered not applicable (NA) since clean-out depths were not measured according to ASTM D6066 and sample photos suggest material sampled was slough. Interval from 75.0 to 141.5' was re-sampled. See adjacent boring CB-22A for N-values and stratigraphy.

SPT 18A - sand
SPT 18B - gravel

SPT 20A - sand
SPT 20B - gravel

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BORING LOG

BORING NO. CB-22

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	6	8	8	NA	0.5								90		4			SPT 21A - gravel SPT 21B - sand
																		91.2 Well graded SAND (SW) - ~95% fine to coarse, rounded to subangular sand; ~5% fines; wet; medium dense; very pale brown (10YR 7/4)	
														92		2			
																		93.5	
														94		0			
SPT	22	10	10	10	NA	0.8												Well graded GRAVEL w/sand (GW) - ~70% fine to coarse, subangular to angular gravel; ~30% fine to coarse, subangular to angular sand; wet; medium dense; yellowish-brown (10YR 5/8)	
														96		-2			
														98		-4			
																		100.0	
SPT	23	9	17	19	NA	1.3								100		-6		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; very pale brown (10YR 8/4)	SPT 23A - sand SPT 23B - gravel
																		101.0	
														102		-8		Well graded GRAVEL (GW) - ~90% fine to coarse, angular to subangular gravel; ~10% fine to medium, subrounded to rounded sand; wet; dense; yellowish-brown (10YR 5/8)	
														104		-10		103.0	
SPT	24	9	9	12	NA	0.6												Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; medium dense; very pale brown (10YR 8/4)	
														106		-12			
														108		-14		108.0 Well graded GRAVEL (GW) - ~90% fine to coarse, subangular to subrounded gravel; ~10% fine to medium sand; wet; loose; yellowish-brown (10YR 5/8)	
														110		-16		110.7	
SPT	25	4	5	5	NA	1.3												Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1); stratified w/fine to medium sand	SPT 25A - gravel SPT 25B - clay PP = 2.4 tsf
														112		-18			
														114		-20			
SPT	26	WOH	WOH	WOH	NA	0.1								116		-22			Fat clay in sampler catcher.
														118		-24		118.0	
														120					

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BORING LOG

BORING NO. CB-22

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	6	5	5	10	1.5								120		-26		Fat CLAY w/sand (CH) - ~85% fines w/high plasticity, high toughness, no dilatancy; ~15% fine sand; wet; firm; greenish-gray (GLEY1 8/1)	
														122		-28			
														124		-30		—123.5—	
SPT	28	2	1	1	NA	1.1								126		-32		Silty SAND (SM) - 83% fine sand; 17% fines; wet; very loose; light gray (10YR 7/2)	
														128		-34			
SPT	29	4	4	6	NA	0.6								130		-36		grading loose	
														132		-38		—133.0— [Pascagoula]	
														134		-40			
SPT	30	5	8	13	21	1.1								136		-42		Fat CLAY (CH) - ~95% fines w/high plasticity, high toughness, no dilatancy; ~5% fine sand; moist; hard; light greenish-gray (GLEY1 8/1)	
														138		-44			
SPT	31	12	17	19	36	1.4								140		-46		grading very hard	PP > 4.5 tsf
														142		-48			
														144		-50			
SPT	32	19	18	21	39	1.5								146		-52		grading very pale brown (10YR 7/3) @ 145.9' grading pale green (GLEY1 6/2)	SPT 32A - brown clay SPT 32B - green clay
														148		-54		—148.0—	
														150					

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BORING LOG

BORING NO. CB-22

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	33	-	-	-	-	1.6								150		-56		Fat CLAY w/sand (CH) - ~85% fines w/LL=55, PI=29, high toughness, no dilatancy; ~15% fine sand; moist, natural moisture content = 24%; hard; in situ dry density =103 pcf; pale green (GLEY1 6/2)	TV = 0.45 tsf
														152		-58			
																		153.0	
														154		-60			
SPT	34	9	14	19	33	1.5								156		-62		Fat CLAY (CH) - ~95% fines w/high plasticity, high toughness, no dilatancy; ~5% fine sand; moist; very hard; pale green (GLEY1 6/2)	PP = 4.5 tsf TV = 0.45 tsf
														158		-64			
																		158.0	
														160		-66			
TW	35	-	-	-	-	2.2								162		-68		Lean CLAY (CL) - ~85% fines w/medium plasticity, high toughness; ~15% fine sand; moist; hard; grayish-green (GLEY1 5/2)	PP > 4.5 tsf
																		163.0	
														164		-70			
SPT	36	11	8	14	22	1.5								166		-72		Fat CLAY (CH) - ~90% fines w/high plasticity, high toughness, no dilatancy; ~10% fine sand; moist; hard; greenish-gray (GLEY1 5/1)	PP = 3.75 tsf
														168		-74			
																		168.0	
														170		-76			
TW	37	-	-	-	-	0.9								172		-78		Lean CLAY (CL) - ~100% fines w/LL=34, PI=15, low toughness; rapid dilatancy; moist, natural moisture content = 24%; in situ dry density = 104 pcf; hard; greenish-gray (GLEY1 5/1)	PP > 4.5 tsf
																		173.0	
														174		-80			
SPT	38	15	24	23	47	1.5								176		-82		Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; dense; greenish-gray (GLEY1 5/1)	Below 175.0' sample photos suggest sampled material is not slough and N-values are correct.
														178		-84			
														180					

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BORING LOG

BORING NO. CB-22

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	39	18	27	32	59	1.5								180		-86		grading very dense grading yellow (2.5Y 7/6)	
														182		-88			
																		—183.0—	
														184		-90			
SPT	40	26	34	40	74	1.0								186		-92		Poorly graded SAND w/silt (SP-SM) - ~90% fine sand; ~10% fines; wet; very dense; yellow (2.5Y 7/6)	
														188		-94			
														190		-96			
SPT	41	27	32	37	69	0.9								192		-98			
														194		-100			
SPT	42	35	45	50	95	1.0								196		-102			
														198		-104		—198.0—	
														200		-106		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness; moist; hard; grayish-green (GLEY1 5/2)	PP = 4.0 tsf
TW	43	-	-	-	-	2.0								202		-108			
																		—203.5—	
														204		-110			
SPT	44	11	18	25	43	1.3								206		-112		Silty SAND (SM) - ~70% fine sand; ~30% fines w/low plasticity, low toughness, rapid dilatancy; wet; dense; grayish-green (GLEY1 5/2)	
														208		-114		—208.0—	
														210					

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BORING LOG

BORING NO. CB-22

SHEET 8 OF 8

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17166.0' E 16783.1'	94.7 ft (MSL)	211.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass surface, slight slope on south	Plant Grid	1/24/07	1/26/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	45	23	33	33	66	0.9								210		-116		Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; very dense; greenish-gray (GLEY1 5/1)	
														212		-118			Bottom of boring @ 211.5'. Fluid level @ 85.1'. Cave-in depth @ 190.0' on 1/27/07. Cave-in depth @ 22.0' on 02/19/07. Deviation survey performed on 02/19/07. Boring backfilled w/ cement bentonite grout on 02/20/07.
														214		-120			
														216		-122			
														218		-124			
														220		-126			
														222		-128			
														224		-130			
														226		-132			
														228		-134			
														230		-136			
														232		-138			
														234		-140			
														236		-142			
														238		-144			
														240					

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BORING LOG

BORING NO. CB-22A

SHEET 1 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17175.9' E 16787.7'	94.5 ft (MSL)	141.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grassy surface @ top of slope	Plant Grid	05/08/07	05/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Undifferentiated overburden (See Boring CB-22)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.

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BORING LOG

BORING NO. CB-22A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17175.9' E 16787.7'	94.5 ft (MSL)	141.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grassy surface @ top of slope	Plant Grid	05/08/07	05/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
30		64			
32		62			
34		60			
36		58			
38		56			
40		54			
42		52			
44		50			
46		48			
48		46			
50		44			
52		42			
54		40			
56		38			
58		36			
60					

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BORING LOG

BORING NO. CB-22A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17175.9' E 16787.7'	94.5 ft (MSL)	141.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grassy surface @ top of slope	Plant Grid	05/08/07	05/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	01	14	17	20	37	0.9								75.0		19	
SPT	02	12	11	15	26	0.7								80		14	
SPT	03	15	18	22	40	0.9								86		8	

CLASSIFICATION OF MATERIALS	REMARKS
[Citronelle (lower)] Poorly graded SAND (SP) - ~85% fine to medium, subangular to subrounded sand; ~5% fines; ~10% fine to coarse, subrounded to rounded gravel; maximum size 1-1/4"; wet; dense; brownish-yellow (10YR 6/6)	
77.5 Well graded GRAVEL w/sand (GW) - ~70% fine to coarse, angular to rounded gravel; maximum size 1-1/4"; ~25% fine to medium, subrounded to rounded sand; ~5% fines; wet; medium dense; brownish-yellow (10YR 6/6)	Sample 2A - GW Sample 2B - SW Field sample smaller than recommended. @ 81.2'
81.2 Well graded SAND (SW) - ~90% fine to coarse, subrounded to rounded sand; ~5% fine gravel; ~5% fines; wet; medium dense; pale yellow (2.5Y 8/6)	Field sample smaller than recommended.
82.5 Poorly graded SAND w/gravel (SP) - 81% fine to coarse, subrounded to rounded sand; 14% fine to coarse, angular to rounded gravel; maximum size 1"; few particles fractured w/2 hammer blows; 5% fines; wet; dense; brownish-yellow (10YR 6/8); w/clay coating on gravel particles	
87.5	

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BORING LOG

BORING NO. CB-22A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17175.9' E 16787.7'	94.5 ft (MSL)	141.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grassy surface @ top of slope	Plant Grid	05/08/07	05/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	04	9	11	16	27	0.5								90		4		Poorly graded SAND (SP) - ~90% fine to coarse, subrounded to rounded sand; ~5% fine gravel; ~5% fines; wet; medium dense; very pale brown (10YR 7/4)	SPT-04 coarse gravel @ top of sample (slough). Field sample smaller than recommended.
														92		2			
														94		0			
SPT	05	15	18	20	38	0.7								96		-2		grading w/89% fine sand; 7% fine gravel; 4% fines; dense	
														98		-4			
SPT	06	20	26	25	51	0.8								100		-6		grading very dense; pale yellow (2.5Y 7/4)	
														102		-8			
														104		-10			
SPT	07	20	28	34	62	0.9								106		-12		grading w/sandy gravel seam @ 106' and occasional clay balls	
																		—107.0—	
SPT	08	22	26	29	55	1.1								108		-14		Clayey SAND (SC) - ~80% fine to coarse, subrounded to rounded sand; ~10% fines; ~10% fine to coarse, subrounded to rounded gravel; flat and elongated; maximum size 1.25"; wet; very dense; brownish-yellow (10YR 6/8); w/clay coating on gravel	
SPT	09	6	5	7	12	1.1								110		-16		—109.5— Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; firm; light greenish-gray (GLEY1 8/1 10Y) and red (2.5YR 5/6); w/seam of ferrous material (silt) @ top of sample @112.5' grading w/LL=50, PI=32; natural moisture content = 31%; red color grades out	
														112		-18			
SPT	10	3	4	7	11	1.7								114		-20			
SPT	11	2	4	6	10	1.8								116		-22		grading w/frequent gravel; w/fine, clayey sand seam @ 115.4'	
																		—117.0—	
SPT	12	4	4	6	10	1.7								118		-24		SILT (ML) - ~100% fines w/low plasticity, low toughness, rapid dilatancy, low dry strength; light greenish-gray (GLEY1 8/1 10Y); w/frequent clay partings and ferrous partings; w/clay & gravel seam @	
														120					

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BORING LOG

BORING NO. CB-22A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17175.9' E 16787.7'	94.5 ft (MSL)	141.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grassy surface @ top of slope	Plant Grid	05/08/07	05/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	13	6	12	17	29	0.9								120	-26	tip of sampler 119.5 Silty SAND (SM) - ~70% fine, subangular to rounded sand; ~30% fines w/no plasticity; wet; medium dense; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous partings and clay parting @ 120.9' @ 122.5' clay parting grades out	
SPT	14	7	10	16	26	1.1								122	-28		
														124	-30	124.5 Poorly graded SAND w/silt (SP) - ~89% fine sand; 11% nonplastic fines; wet; dense; pinkish-white (7.5YR 8/2); ferrous partings grade to occasional; w/occasional clay balls (fine gravel size)	
SPT	15	15	20	21	41	1.0								126	-32		
SPT	16	12	17	22	39	1.2								128	-34	127.0 Silty SAND (SM) - ~80% fine to medium sand; ~20% fines; wet; dense; pinkish-white (7.5YR 8/2); clay balls grade out	
SPT	17	16	21	25	46	1.1								130	-36		
														132	-38		
														134	-40		
SPT	18	8	11	16	27	1.9								136	-42	135.0 [Pascagoula] Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy, high dry strength; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous spots and sandy clay seam @ top of sampler	
														138	-44		
SPT	19	12	14	19	33	2.0								140	-46	sandy clay seam grades out; grading very hard	
														142	-48		Bottom of boring @ 141.5'. Fluid level @ ground surface at completion of drilling. Deviation survey performed on 05/08/07. Fluid level @ 22.0' on 05/09/07. No cave-in. Boring backfilled w/cement bentonite grout by tremie pipe
														144	-50		
														146	-52		
														148	-54		
														150			

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BORING LOG

BORING NO. CB-22A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17175.9' E 16787.7'	94.5 ft (MSL)	141.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grassy surface @ top of slope	Plant Grid	05/08/07	05/09/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
150		-56			method on 05/09/07.
152		-58			
154		-60			
156		-62			
158		-64			
160		-66			
162		-68			
164		-70			
166		-72			
168		-74			
170		-76			
172		-78			
174		-80			
176		-82			
178		-84			
180					

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BORING LOG

BORING NO. CB-23

SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17196.9' E 16919.8'	64.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/13/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Silty SAND (SM) - ~70% fine to medium, subrounded to rounded sand; ~25% fines w/low plasticity; ~5% fine to coarse, subangular to subrounded gravel; moist; medium dense; poorly graded; brownish-yellow (10YR 5/8); homogeneous	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. @ 2.5' Gravel on top of sample (slough).
4.5 [Citronelle (upper)] Silty SAND (SM) - ~70% fine to medium, subrounded to rounded sand; ~25% fines w/low plasticity; ~5% fine, subangular to subrounded gravel; moist; dense; brownish-yellow (10YR 5/8)	
grading wet; medium dense; w/occasional sandy clay seams	
12.5 Clayey SAND (SC) - ~70% fine to medium, subrounded to rounded sand; ~30% fines w/medium plasticity, medium toughness; wet; medium dense; poorly graded; brownish-yellow (10YR 6/8)	
grading w/82% fine sand; 18% fines w/LL=20, PI=9; natural moisture content = 21%; yellow (2.5Y 7/6); w/ light red and light gray seams	
grading fine to medium sand; w/frequent black spots; light red and light gray seams grade out	Sample 7A - SM. Sample 7B - Black sand (25.2'). Field sample smaller than recommended. Possible organics.
26.2 Poorly graded SAND w/clay (SP-SC) - 87% fine to coarse, subrounded to rounded sand; 13% fines; wet, natural moisture content = 19%; medium dense; very dark grayish-brown (2.5Y 3/2)	
28.0 [Citronelle (lower)]	

SPT	01	3	6	9	15	1.1								0		64	
														2		62	
SPT	02	WOR	4	12	16	0.7								4		60	
SPT	03	11	18	24	42	1.3								6		58	
														8		56	
SPT	04	7	13	16	29	0.7								10		54	
														12		52	
SPT	05	7	9	17	26	1.0								14		50	
														16		48	
SPT	06	4	5	6	11	0.8								18		46	
														20		44	
SPT	07	5	10	17	27	1.0								22		42	
														24		40	
														26		38	
														28		36	
														30			

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BORING LOG

BORING NO. CB-23

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17196.9' E 16919.8'	64.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/13/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ANB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Citronelle (lower)] Poorly graded SAND w/silt (SP-SM) - ~80% fine to coarse, subrounded to rounded sand; ~10% fine to coarse, subangular to subrounded gravel; ~10% fines; wet; medium dense; yellow (10YR 7/6)	
SPT 08 6 13 15 28 0.8	
grading to 90% sand; 4% fines; 6% fine gravel; natural moisture content = 11%; very pale brown (10YR 8/3)	
SPT 09 5 9 14 23 0.8	
grading pale yellow (2.5Y 8/3)	SPT-10 coarse gravel @ top of sampler (slough).
SPT 10 12 14 14 28 0.7	
	SPT-11 coarse gravel @ top of sampler (slough).
SPT 11 7 13 15 28 0.6	
47.5	
Well graded GRAVEL w/sand (GW) - ~60% fine to coarse, subangular to subrounded elongate gravel (few particles broke w/3 hammer blows); ~40% fine to coarse, subrounded to rounded sand; wet; dense; yellow (10YR 7/6) and brownish-yellow (10YR 6/8); homogeneous	Sample 12A - Gravel Sample 12B - Sand Field sample smaller than recommended. Stopped overnight after SPT-13. Fluid level measured @ 1' on 02/14/07.
SPT 12 12 19 20 39 1.2	
50.8	
Poorly graded SAND w/silt (SP-SM) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; dense; very pale brown (10YR 8/3) @55.0' grading to ~85% sand; ~10% fines; ~5% fine, subangular to rounded gravel; yellow (2.5Y 8/6); homogeneous	
SPT 13 10 20 23 43 0.9	
57.5	Boring caved @ 4'.

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BORING LOG

BORING NO. CB-23

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17196.9' E 16919.8'	64.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/13/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	14	9	17	19	36	1.0								60		4		Well graded SAND w/silt (SW-SM) - ~80% fine to coarse, subrounded to rounded sand; ~10% fines; ~10% fine to coarse, angular to rounded gravel; wet; dense; pale yellow (2.5Y 8/3); w/frequent gravel size clay balls	
														62		2			
														64		0			
RNG	15	24	36	44	80	0.8								66		-2		grading to ~85% sand; ~10% fines; ~5% fine, subangular to rounded gravel; homogeneous; clay balls grade out	Ring sampling performed w/3" OD split sampler using 2.5" ID rings and plastic catcher. Sampler driven, disturbed sample..
														67.5					
														68		-4			
SPT	16	11	24	35	59	1.1								70		-6		Poorly graded SAND (SP) - 95% fine to medium, subrounded to rounded sand; 3% fines; 2% fine gravel; wet, natural moisture content = 15%; very dense; pale yellow (2.5Y 8/4)	
														72		-8			
														72.5					
														74		-10			
SPT	17	19	39	40	79	1.0								76		-12		Well graded SAND (SW) - ~95% fine to coarse, subangular to rounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 8/3); homogeneous	SPT-17 coarse gravel on top of sampler (slough).
														77.5				[Pascagoula]	
														78		-14			
SPT	18	6	8	10	18	1.8								80		-16		Lean CLAY (CL) - ~100% fines w/LL=49, PI=27, high toughness, no dilatancy; moist, natural moisture content = 27%; hard; light greenish-gray (GLEY1 10Y 8/1) w/occasional ferrous spots	
														82		-18			
														84		-20			
SPT	19	6	6	9	15	1.7								86		-22		grading w/LL=41, PI=24, medium toughness; natural moisture content = 29%; firm; light greenish-gray (GLEY1 10Y 8/1); w/frequent ferrous spots and stains and occasional fine sand and silt partings	@85' Sand encountered as per driller's observations.
														88		-24			
														90					

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BORING LOG

BORING NO. CB-23

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17196.9' E 16919.8'	64.2 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/13/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	20	-	-	-	-	1.6								90		-26		grading w/LL=42, PI=24, natural moisture content = 29%	Mix of clay and fine gravel @ top of tube (slough). Clay observed @ top of tube; clayey sand @ bottom of tube.
															C			90.8	
														92		-28		Clayey SAND (SC) - ~80% fine, subrounded to rounded sand; ~20% fines; wet; light greenish-gray (GLEY1 10Y 8/1)	
														94		-30			
SPT	21	17	28	36	64	1.0								96		-32		grading to ~85% medium sand; ~15% fines; yellow (2.5Y 8/6); w/frequent seams of ferrous material; occasional seams of pale yellow sand; lean clay seam at 95.0'	@ 95' Sand and fine to coarse gravel @ top of sampler (slough).
														98		-34			
																		98.5	
SPT	22	11	16	20	36	0.9								100		-36		Silty SAND (SM) - ~65% fine, subrounded to rounded sand; ~35% fines; wet; dense; pale yellow (2.5Y 8/4); w/frequent ferrous clay seams and occasional pinkish stains	
														102		-38			Bottom of boring @ 101.5'. Fluid level @ ground surface at completion of drilling. Deviation survey performed on 02/14/07. Boring caved @ 92.1'. Boring was backfilled w/ cement bentonite grout by tremie method on 02/14/07.
														104		-40			
														106		-42			
														108		-44			
														110		-46			
														112		-48			
														114		-50			
														116		-52			
														118		-54			
														120					

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BORING LOG

BORING NO. RB-24

SHEET 1 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WP ML	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	8	12	16	28	0.9								0		66		[Engineered Fill] Poorly graded SAND (SP) - ~95% fine to medium, subangular sand; ~5% fines; moist; medium dense; strong brown (7.5YR 5/8)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	8	14	14	28	1.2								2		64		grading w/≤ 5% coarse, subangular gravel	
SPT	03	10	14	17	31	1.2								4		62			
SPT	04	10	16	22	38	1.0								6		60		grading w/subangular to subrounded sand; dense; reddish-brown (7.5YR 5/8)	
SPT	05	11	15	14	29	1.3								8		58			
														9.5					
														10		56		[Citronelle (upper)] Poorly graded SAND (SP) - ~95% fine to medium, subangular to subrounded sand; ~5% fines; moist; medium dense; reddish-yellow (7.5YR 7/8) to strong brown (7.5YR 3/4); w/clayey gravel parting @ 10.3'	
														12		54			
														14		52			
														15.0					
SPT	06	2	6	12	18	0.7								16		50		Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular sand; ~10% fines w/no plasticity, low toughness, no dilatancy; moist; medium dense; yellowish-red (5YR 5/8)	
														18.2					
SPT	07	6	6	7	13	0.9								20		46		Well graded SAND w/silt (SW) - ~88% coarse to fine sand; 12% fines; ≤5% fine gravel; moist, natural moisture content = 14%; medium dense; yellowish-red (5YR 5/8)	
														22		44			
														23.2					
														24		42			
RNG	08	10	14	18	32	1.0								26		40		Poorly graded SAND w/silt (SP) - 84% fine sand; 16% fines w/low toughness, slow dilatancy; moist, natural moisture content = 17%; dense; pale yellow (2.5YR 8/4)	Ring sampling performed w/3" OD split sampler and 2.5" ID rings 6" long; sampler driven, disturbed sample.
														28		38			
														30		36			

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BORING LOG

BORING NO. RB-24

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	8	12	15	27	0.7								30		36		grading w/≤ 5% coarse, subangular gravel; medium dense; light yellowish-brown (10YR 6/4)	
														32		34			
														34		32			
SPT	10	8	13	15	28	0.7								36		30			@ 35' overdrilled sampling depth by 0.5'.
														38		28			
SPT	11	9	21	23	44	0.7								40		26		grading dense	
														42		24			
														44		22			
SPT	12	6	9	16	25	0.7								46		20		grading w/3% silt, ≤5% coarse, subangular gravel; yellowish-brown (10YR 5/6); wet, natural moisture content = 10%; medium dense	
														48		18		48.0 [Citronelle (lower)]	
SPT	13	12	15	20	35	0.9								50		16		Poorly graded SAND (SP) - ~95% coarse to medium sand; ~5% silt w/trace of coarse, subangular gravel; wet; dense; yellowish-brown (10YR 5/6)	
														52		14			
														54		12			
SPT	14	13	25	26	51	0.9								56		10		grading w/~5% fine, subangular gravel; ≤ 5% silt w/ slow dilatancy; very dense	
														58		8			
														60		6			

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BORING LOG

BORING NO. RB-24

SHEET 3 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	7	18	25	43	0.9								60		6		grading dense	
														62		4			
														64		2			
SPT	16	19	28	44	72	1.3								66		0		grading w/coarse gravel; light reddish-brown (5YR 6/3)	
														68		-2			
														70		-4			
SPT	17	23	42	50	92	1.2												@ 71' grades w/occasional coarse gravel partings	
														72		-6			
														74		-8			
SPT	18	17	30	50	80	0.8								76		-10			
														78		-12			
														80		-14		gravel partings grade out	
SPT	19	13	25	20	45	0.9													
														82		-16			
																		83.0	
														84		-18			
SPT	20	13	20	20	40	0.6												Well graded GRAVEL (GW) - ~95% coarse to medium, subangular gravel; ~5% fine sand and fines w/medium plasticity; dense; wet; pinkish-white (7.5YR 8/2)	
														86		-20			
														88		-22			
														90		-24			

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BORING LOG

BORING NO. RB-24

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	10	8	9	17	1.8								90		-24		90.0 Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand; wet; hard; pale yellow (2.5Y 8/3)	Thickness called by driller.
														92		-26		92.5	
														94		-28			
SPT	22	8	11	16	27	1.0								96		-30		Poorly graded SAND (SP) - ~95% fine sand; ~5% fines w/rapid dilatancy; medium dense; wet; olive yellow (2.5YR 6/6)	
														98		-32			
SPT	23	9	9	15	24	1.5								100		-34		grading w/~91% sand, 9% fines; w/gravel parting (coarse, subrounded elongate, wet) @ 100'	
														102		-36		@ 101.5' grading w/~95% medium to fine sand; ~5% fines w/slow dilatancy; pinkish-white (7.5YR 8/2)	
														104		-38			
SPT	24	9	16	21	37	1.1								106		-40			
														108		-42		108.5 [Pascagoula]	
SPT	25	5	6	7	13	1.5								110		-44		Lean CLAY (CL) - 84% fines w/medium plasticity, medium toughness, no dilatancy; 16% fine sand; moist; hard; light greenish-gray (GLEY1 8/1 10Y)	
														112		-46			
														114		-48			
TW	26	20	-	-	-	1.9								116		-50		grading w/95% fines; ~5% fine sand coarse gravel piece (1-1/4", subangular) @ 115.3'	
														118		-52			
														120		-54			

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BORING LOG

BORING NO. RB-24
SHEET 5 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING											
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	10	13	16	29	1.5								120		-54		grading w/~5% fine to medium sand; very hard	
														122		-56			
														124		-58			
TW	28	-	-	-	-	2.0								126		-60		grading w/LL=31, PI=15; mottled w/frequent iron stains	PP = 3.9 tsf TV = 0.9 tsf
														128		-62			
SPT	29	12	14	18	32	1.5								130		-64		grading greenish-gray (GLEY2 6/1)	
														132		-66			
														134		-68			
TW	30	-	-	-	-	2.0								136		-70			PP > 4.5 tsf TV = 0.6 tsf
														138		-72			
SPT	31	14	18	22	40	1.5								140		-74			
														142		-76			
																		143.0	
														144		-78			
SPT	32	18	16	30	46	1.1								146		-80		Silty SAND (SM) - ~70% fine, subangular sand; ~30% fines w/low plasticity, low toughness, no dilatancy; moist; dense; dark greenish-gray (GLEY1 4/2)	
														148		-82			
														150		-84			

BLACK & VEATCH

BORING LOG

BORING NO. RB-24

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	18	28	40	68	1.1								150		-84		grading very dense	
														152		-86			
																		153.0	
														154		-88			
SPT	34	40	50/5"	-	50+	0.8								156		-90		Poorly graded SAND (SP) - ~95% fine, subrounded, elongated sand; ~5% fines; wet; very dense; gray (10YR 6/1)	
														158		-92			
														160		-94		grading w/≤5% coarse gravel	
SPT	35	28	50	-	50+	0.9								162		-96			
														164		-98			
SPT	36	33	34	50/5"	50+	1.4								166		-100			
														168		-102			
														170		-104			
SPT	37	43	50/5"	-	50+	1.1								172		-106			
																		173.0	Driller noted soil change from poorly graded sand to clay. PP > 4.5 tsf TV = 1.5 tsf
														174		-108			
TW	38	-	-	-	-	2.0								176		-110		SILT (ML) - ~95% fines w/medium plasticity, low toughness, rapid dilatancy; ~5% fine sand; moist; hard; dark greenish-gray (GLEY1 4/1)	
														178		-112			
																		179.0	
														180		-114			

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BORING LOG

BORING NO. RB-24
SHEET 7 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy VDM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	39	9	10	18	28	1.8								180		-114		Fat CLAY (CH) - ~95% fines w/LL=62, PI=35; ~5% fine sand; moist, natural moisture content = 31%; hard; dark greenish-gray (GLEY1 4/1)	
														182		-116			
														183.5					
														184		-118		Lean CLAY (CL) - ~95% fines w/medium plasticity, high toughness, no dilatancy; ~5% fine sand; moist; hard; dark greenish-gray (GLEY1 4/1)	PP ≥ 4.5 tsf TV = 0.6 tsf
TW	40	-	-	-	-	2.0								186		-120			
														188		-122			
SPT	41	7	9	11	20	1.5								190		-124			
														192		-126			
														193.0					
														194		-128		Fat CLAY (CH) - ~100% fines w/LL=57, PI=34, high toughness, no dilatancy; natural moisture content = 30%; very hard; dark greenish-gray (GLEY2 3/1)	PP ≥ 4.5 tsf. TV = 1.3 tsf
TW	42	-	-	-	-	2.0								196		-130			
														198		-132			
														200		-134			PP ≥ 4.5 tsf TV = 2.0 tsf
SPT	43	11	16	23	39	1.5								202		-136			
														204		-138			
TW	44	-	-	-	-	1.8								206		-140			Pushed TW-44 1.8' to refusal.
														208		-142			
														210		-144			

BLACK & VEATCH **BORING LOG**

BORING NO. RB-24
SHEET 8 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	45	14	18	20	38	2.1								210		-144		grading very hard; dark bluish-gray (GLEY2 4/1)	
														212		-146			
														214		-148			
TW	46	-	-	-	-	1.5								216		-150		grading w/occasional calcareous nodules	Pushed TW-46 1.5' to refusal. PP > 4.5 tsf TV = 0.8 tsf
														218		-152			
														220		-154		grading greenish-black (GLEY2 2.5/1)	
SPT	47	14	19	24	43	1.7												220.6	
														222		-156		SILT (ML) - ~100% fines w/low plasticity, low toughness, no dilatancy; moist; soft; greenish-black (GLEY2 2.1/1)	
																		223.1	Water level @ 8.0' on 02/22/07.
														224		-158			
TW	48	-	-	-	-	1.5								226		-160		Lean CLAY (CL) - ~100% fines w/medium plasticity, high toughness, no dilatancy; moist; very hard; greenish-black (GLEY2 2/1)	Pushed TW-48 1.5' to refusal. PP > 4.5 tsf TV = 0.8 tsf
														228		-162			
														230		-164			
SPT	49	15	20	22	42	1.5								232		-166		grading pinkish-white (10R 8/2) mottled w/iron stains; dark brown root-like structures	
																		233.5	
														234		-168		Fat CLAY (CH) - ~100% fines w/LL=65, PI=36; natural moisture content = 33%; very hard; pinkish-white (10YR 8/2); mottled w/iron stains	
TW	50	-	-	-	-	1.7								236		-170			Pushed TW-50 1.7' to refusal. PP > 4.5 tsf TV = 1.3 tsf
														238		-172			
														240		-174			

BLACK & VEATCH

BORING LOG

BORING NO. RB-24
SHEET 9 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WRM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	51	12	16	17	33	1.5									240		-174		grading to light greenish-gray (GLEY1 7/1)	
															242		-176			
															244		-178			
TW	52	-	-	-	-	1.9									246		-180		grading w/medium toughness, no dilatancy; greenish-gray (GLEY1 6/1); mottled w/frequent iron stains	PP > 4.5 tsf TV = 1.3 tsf
															248		-182			
SPT	53	12	17	23	40	1.7									250		-184	C		
															252		-186			
																			253.0	
															254		-188			
TW	54	-	-	-	-	1.3									256		-190		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; very hard; greenish-gray (GLEY1 6/1); w/occasional iron staining	Pushed TW-54 1.3' to refusal. PP > 4.5 tsf TV = 1.1 tsf
															258		-192			
															260		-194		grading to reddish-brown (2.5YR 4/3)	
SPT	55	16	20	24	44	1.5									262		-196			
															264		-198			
TW	56	-	-	-	-	1.5									266		-200		grading w/LL=44, PI=24; natural moisture content = 22%	Pushed TW-56 1.5' to refusal. PP = 0.45 tsf TV = 0.8 tsf
															268		-202			
															270		-204			

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BORING LOG

BORING NO. RB-24
SHEET 10 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17096.2' E 16973.0'	66.0 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass, flat lying	Plant Grid	02/20/07	02/22/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WLP M	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	57	14	26	24	50	1.4								270		-204		grading w/occasional thin partings of subangular fine sand; fines w/medium plasticity, low toughness, no dilatancy; dark greenish-gray (GLEY1 4/1)	
														272		-206			Bottom of boring @ 271.5'. Fluid level measured at 10.3' at completion of drilling. Boring caved @ 250.2'. Deviation survey proformed. Boring was backfilled w/ cement bentonite grout on 02/22/07.
														274		-208			
														276		-210			
														278		-212			
														280		-214			
														282		-216			
														284		-218			
														286		-220			
														288		-222			
														290		-224			
														292		-226			
														294		-228			
														296		-230			
														298		-232			
														300		-234			

1/29/2008 4:40 PM River Bend- Geotechnical

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	01	43	27	23	50	1.2								0		66	
SPT	02	15	19	22	41	1.1								2		64	
SPT	03	11	18	15	33	1.1								4		62	
SPT	04	10	18	23	41	1.2								6		60	
SPT	05	13	24	24	48	1.1								8		58	
SPT	06	8	13	15	28	1.1								10		56	
SPT	07	5	5	5	10	0.6								12		54	
SPT	08	3	5	7	12	1.0								14		52	
														16		50	
														18		48	
														20		46	
														22		44	
														24		42	
														26		40	
														28		38	
														30			

CLASSIFICATION OF MATERIALS

[Engineered Fill]
Well graded SAND w/gravel (SW) - ~65% fine to coarse, subangular to subrounded sand; ~35% fine to coarse, subrounded gravel; hard; moist; very dense; light gray (5Y 7/1)

1.5

[Citronelle (upper)]
Silty SAND (SM) - ~85% fine to medium, subrounded to subangular sand; ~15% fines w/no plasticity; dense; moist; yellow (10YR 7/8)
@2.5' grading w/trace gravel w/maximum size 3/4"
@5.0' grading brownish-yellow (10YR 6/8) w/trace of fine, subangular to subrounded gravel; w/maximum size 3/4"
grading brownish-yellow (10YR 6/8)

grading reddish-yellow (7.5YR 7/8)

13.0

Clayey SAND (SC) - ~70% fine to medium, subrounded to subangular sand; ~30% fines w/low plasticity, low toughness; medium dense; moist; reddish-yellow (7.5YR 6/8)

18.0

Silty SAND (SM) - 84% fine sand; 13% fines w/LL=20, PI=7; 3% fine gravel; loose; wet, natural moisture content = 18%; yellow (2.5Y 7/8)

grading w/85% fine sand; 15% fines w/LL=20, PI=10; natural moisture content = 22%; yellow (10YR 7/8); medium dense

28.0

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Poorly graded SAND w/silt (SP-SM); ~90% fine to coarse, subangular to subrounded sand; ~10% fines w/no plasticity; medium dense; wet; brownish-yellow (10YR 6/8); occasional pieces of gravel, fractured w/ one hammer blow w/maximum size 1-1/2"	Driller felt interlayer of sand and gravel from 30' to 35'.
33.0	
Well graded SAND (SW) - ~95% fine to coarse, subangular to subrounded sand; ~5% fines; medium dense; wet; light gray (2.5Y 7/2); fine to coarse, subrounded to subangular, gravel w/maximum size 1-1/2" found between 35.8' to 36.0'.	
grading w/91% fine to coarse sand; 6% fine, subrounded gravel; w/maximum size 5/8"; 3% fines; yellow (10YR 7/6); w/seam of coarse, subrounded gravel from 40.8' to 40.9'	
43.0 [Citronelle (lower)]	
Poorly graded SAND (SP) - ~100% fine to medium, subangular to subrounded sand; medium dense; wet; yellow (2.5Y 7/6); w/seam of fine to coarse, subrounded gravel from 45.8' to 45.9'	
grading pale yellow (2.5Y 7/3)	
51.0 Poorly graded GRAVEL (GP) - ~90% fine to coarse, subangular to subrounded gravel; w/maximum size 1-1/4"; ~10% fine to medium sand; very dense; wet; yellowish-brown (10YR 5/8)	
51.3 Poorly graded SAND (SP) - 91% fine to medium, subangular to subrounded sand; 7% fines; 2% fine gravel; medium dense; wet, natural moisture content = 18%; pale yellow (2.5Y 8/2)	Samples 14 to 17 - sample depths taken in these photographs are actually 5' less than what was written.

SPT	09	8	7	10	17	0.8								30		36	
														32		34	
														34		32	
SPT	10	9	13	15	28	0.9								36		30	
														38		28	
SPT	11	9	14	14	28	1.2								40		26	
														42		24	
														44		22	
SPT	12	7	15	15	30	1.1								46		20	
														48		18	
SPT	13	17	24	28	52	1.3								50		16	
														52		14	
														54		12	
SPT	14	5	13	15	28	0.8								56		10	
														58		8	
														60			

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6'	E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
RNG	15	18	38	42	80	1.1								60		6		grading very dense	RNG-15 was driven; sample is disturbed based on field observation. RNG-15A 60.5'-61.0'. RNG-15B 61.0'-61.5'. RNG-15C - remaining sample put in jar.
SPT	16	9	24	33	57	1.1								62		4			
														64		2			
														66		0		grading fine to coarse sand; very dense; pale yellow (5Y 7/3); pieces of gravel scattered throughout the sample, w/maximum size 1"	
														68		-2			
SPT	17	12	27	42	69	1.3								70		-4		grading pale yellow (2.5Y 7/3); w/frequent pieces of gravel scattered through the sample, w/maximum size 3/4"	
														72		-6			
														74		-8			
SPT	18	13	11	11	22	0.7								76		-10		grading w/95% medium to fine sand; 3% fine gravel; 2% fines; medium dense	
														78		-12			
														80		-14		grading very dense @ 81.0' grading fine to coarse sand; brownish-yellow (10YR 6/6)	Some white clay found based on cuttings between 80' and 85'. Frequent subrounded gravel found between 80' and 85'.
SPT	19	17	30	25	55	1.1								82		-16			
																		83.0	
														84		-18			
SPT	20	14	19	27	46	0.7								86		-20		Poorly graded GRAVEL w/sand & clay (GC) - 47% fine to coarse, subangular to subrounded gravel, w/ maximum size 1-1/2"; 45% fine to coarse, subangular to subrounded sand; 8% fines; dense; wet, natural moisture content = 13%; pale yellow (2.5Y 7/4)	
														88		-22			
														90					

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BORING NO. RB-25
SHEET 4 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	14	18	14	32	0.8								90		-24		grading w/fines w/high plasticity; light greenish-gray clay seam about 2" thick at bottom of sample	Driller felt clay, sand, and gravel between 90' and 95'.
														92		-26			
																		93.0	
														94		-28			
SPT	22	11	12	13	25	1.0								96		-30		Silty SAND (SM) - 83% fine sand; 17% fines w/no plasticity; medium dense; wet, natural moisture content = 24%; pale yellow (2.5Y 7/3)	
														98		-32			
																		98.0	
														100		-34			
SPT	23	14	17	18	35	0.9												Poorly graded SAND (SP) - ~95% fine to medium, subangular to subrounded sand; ~5% fines; dense; wet; light gray (2.5Y 7/2)	
														102		-36			
																		103.0	
														104		-38			
SPT	24	11	20	16	36	0.9								106		-40		Silty SAND (SM) - ~85% fine sand; ~15% fines w/no plasticity; dense; wet; pale yellow (2.5Y 8/2)	
														108		-42			
														110		-44			
																		110.4 [Pascagoula]	
SPT	25	10	11	16	26	1.4								112		-46		Lean CLAY (CL) - ~100% fines w/LL=40, PI=20, medium toughness, no dilatancy; hard; moist, natural moisture content = 26%; pale yellow (5Y 8/3), w/ laminated strong brown (7.5YR 5/8) silt seams	Continued drilling below 111.5' on 02/10/07. Fluid level @ ground surface.
														114		-48			
SPT	26	12	15	18	33	1.7								116		-50		grading pale yellow (5Y 8/3) with reddish-yellow (7.5YR 6/8) stains; no silt seam	
														118		-52			
														120					

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	27	-	-	-	-	1.5								120		-54		grading w/LL=47, PI=21; natural moisture content = 24%; light gray (5Y 7/2); homogeneous	Push about 1.5' prior to lifting drill rig. PP > 4.5 tsf. TV = 4.25 tsf. TW-27, tube bottom was dented.
														122		-56			
														124		-58			
																		125.2	
SPT	28	9	16	27	43	1.5								126		-60		Clayey SAND (SC) - ~60% fine sand; ~40% fines w/ no to low plasticity; light gray (5Y 7/1)	
														128		-62			
																		130.1	
SPT	29	12	15	18	33	1.7								130		-64		Lean CLAY w/sand (CL) - ~85% fines w/medium plasticity, medium toughness, no dilatancy; ~15% fine sand; hard; moist; pale yellow (5Y 7/3); w/sandy clay seams	
														132		-66			
														134		-68			
																			PP > 4.5 tsf. TV = 2.5 tsf.
TW	30	-	-	-	-	2.0								136		-70			
																		136.0	
														138		-72		Lean CLAY (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; ~10% fine sand; hard; moist; grayish-green (GLEY1 5G 5/2); powdery when pressed between fingers	
																		138.5	
SPT	31	8	9	17	26	1.5								140		-74		Sandy Lean CLAY (CL) - ~70% fines w/LL=38, PI=20, medium toughness, no dilatancy; ~30% fine sand; firm; moist, natural moisture content = 30%; greenish-gray (GLEY1 5G 5/1)	
														142		-76			
																		141.0	
																		Lean CLAY (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; ~10% fine sand; hard; moist; grayish-green (GLEY1 5G 5/2); powdery when pressed between fingers	
														144		-78			Driller felt sand @ ~144'.
																		144.0	
SPT	32	23	28	28	56	1.2								146		-80		Silty SAND (SM) - ~70% fine sand; ~30% fines w/no plasticity; very dense; moist; greenish-gray (GLEY1 SG 5/1); lean clay seams	Driller felt sand between 145' and 150'.
														148		-82			
																		148.0	
														150					

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	20	23	32	55	1.2								150	-84	Poorly graded SAND (SP) - ~95% fine to medium, subangular to subrounded sand; ~5% fines; very dense; wet; greenish-gray (GLEY1 10GY 5/1)	
														152	-86		
														154	-88		
SPT	34	41	46	44	90	1.2								156	-90	grading 92% fine to medium sand; 8% fines; natural moisture content = 21%; pale olive (5Y 6/3)	
														158	-92		
SPT	35	28	50	50/5"	50+	0.9								160	-94	grading pale olive (5Y 6/4)	
														162	-96		
														164	-98		
SPT	36	37	53	50/5"	50+	1.1								166	-100	grading pale olive (5Y 6/3); a piece of coarse, subrounded gravel found w/maximum size 1-1/4"	
														168	-102		
																—168.5—	
SPT	37	26	41	50/5"	50+	1.2								170	-104	Poorly graded SAND w/silt (SP-SM) - ~90% fine sand; ~10% fines w/no plasticity; very dense; wet; pale olive (5Y 6/3) @ 171.4' grading greenish-gray (GLEY1 5G 5/1)	Driller felt clay @ 169'. Driller felt clay seams between 170' to 175'.
														172	-106		
														174	-108		
																—173.5—	
SPT	38	9	13	16	29	1.7								176	-110	Fat CLAY (CH) - ~100% fines w/LL=54, PI=26, medium toughness, no dilatancy; hard; moist; greenish-gray (GLEY1 5G 5/1); homogeneous	
														178	-112		
														180			
																—179.0—	

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	39	9	12	15	27	1.7								180		-114		Sandy SILT (ML) - ~60% fines w/no to low plasticity; ~40% fine sand; moist; greenish-gray (GLEY1 10GY 5/1)	
																		181.0	
														182		-116		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; hard; moist; greenish-gray (GLEY1 10GY 5/1)	
														184		-118			
SPT	40	6	9	12	21	1.9								186		-120			
														188		-122		188.0	
														190		-124		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; hard; moist; dark greenish-gray (GLEY1 10GY 4/1)	PP > 4.5 tsf TV = 6.25 tsf
TW	41	-	-	-	-	2.0								192		-126			
																		193.5	
														194		-128			
SPT	42	4	8	11	19	2.0								196		-130		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; hard; moist; very dark gray (7.5YR 3/1); wood fragments scattered throughout the sample (no organic odor)	Stored using 2 jars: SPT-42A and SPT-42B. PP = 3.0 tsf
														198		-132			
														200		-134		grading w/LL=46, PI=23, high toughness; greenish-gray (GLEY1 5G 5/1)	PP > 4.5 tsf TV = 7.5 tsf
TW	43	-	-	-	-	2.0								202		-136			Continued drilling below 202' on 02/11/07. Fluid level @ 2' below ground.
														204		-138			
SPT	44	13	18	22	40	1.8								206		-140			
														208		-142			
														210					

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6'	E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	45	-	-	-	-	1.8								210		-144			TW-45: Pushed about 1.7' prior to lifting drill rig. PP > 4.5 tsf TV = 4 tsf
														212		-146			
														214		-148			
SPT	46	16	19	23	42	1.8								216		-150		grading w/occasional calcareous nodules w/strong reaction w/HCl.	
														218		-152			
TW	47	-	-	-	-	1.6								220		-154		grading w/LL=40, PI=20, medium toughness; moist, natural moisture content = 32%; mixture of olive (5Y 5/3) and greenish-gray (GLEY1 5G 5/1); pieces of gravel sized calcareous nodule w/strong reaction w/HCl at bottom of tube	TW-47 - Pushed about 1.3' prior to lifting drill rig, bottom of tube deformed. PP > 4.5 tsf
														222		-156			
														224		-158			
																		225.0	
SPT	48	18	22	24	46	1.8								226		-160		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; hard; moist; greenish-gray (GLEY1 5G 5/1); w/frequent calcareous pockets w/ strong reaction w/HCl	
														228		-162			
																		228.0	
TW	49	-	-	-	-	1.6								230		-164		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; hard; moist; light greenish-gray (GLEY1 10Y 8/1)	TW-49 - Pushed 1.5' prior to lifting drill rig. PP > 4.5 tsf TV = 7.5 tsf
														232		-166			
																		233.0	
														234		-168			
SPT	50	14	16	20	36	1.8								236		-170		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; hard; moist; light gray (5Y 7/2) and (5YR 7/3)	
														238		-172			
														240					

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BORING NO. RB-25
SHEET 9 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	51	-	-	-	-	1.8								240		-174		grading dark grayish-brown (2.5Y 4/2)	TW-51 - Pushed 1.7' prior to lifting drill rig PP > 4.5 tsf TV = 3.25 tsf
														242		-176			
																		243.0	
														244		-178			
SPT TW	52 53	9 -	13 -	17 -	30 -	0 1.4								246		-180		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; hard; moist; light greenish-gray (GLEY1 5GY 7/1); w/occasional calcareous nodule; iron oxide stains	SPT-52 - No recovery; pushed TW-53 to recover sample; tube ~0.5' deeper than SPT-52. TW-53 - Sample was extruded in the field for logging. From TW-53, it can be seen that SPT-52 had slipped back into the hole.
														248		-182			
																		248.5	
TW	54	-	-	-	-	1.5								250		-184		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; mixture of light greenish-gray (GLEY1 10GY 5/1) and light brown (7.5YR 6/4); w/gravel sized calcareous nodule	
														252		-186			
														254		-188			
SPT	55	16	23	31	54	1.8								256		-190		grading very hard; w/frequent calcareous nodules	TW-54 - Pushed 1.4' prior to lifting drill rig. PP > 4.5 tsf TV = 7.5 tsf TW-54 - Tube base dented.
														258		-192			
TW	56	-	-	-	-	1.2								260		-194			TW-56 - Pushed 1.1' prior to lifting drill rig; tube base deformed @ 2" from bottom. Need to cut tube to get sample. Continued drilling below 261' on 02/12/07; fluid level @ 2.5'.
														262		-196			
																		263.0	
														264		-198			
SPT	57	14	17	23	40	1.8								266	C	-200		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; hard; moist; greenish-gray (GLEY1 10GY 6/1); w/silt seams ~3/4" thick @ 266.3' grading olive brown (2.5Y 4/3)	
														268		-202			
														270					

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BORING LOG

BORING NO. RB-25

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17075.6' E 16999.7'	66.6 ft (MSL)	271.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; flat, dry	Plant Grid	02/09/07	02/12/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	58	-	-	-	-	1.8								270		-204		grading w/LL=39, PI=21; natural moisture content = 18%	TW-58 - Pushed ~1.8' prior to lifting drill rig.
														272		-206			Bottom of boring @ 271.8'. Drilling mud level @ 8' at completion of drilling. Boring caved @ 265.9'. Deviation survey performed. Boring backfilled w/cement bentonite grout by tremie method on 02/12/07.
														274		-208			
														276		-210			
														278		-212			
														280		-214			
														282		-216			
														284		-218			
														286		-220			
														288		-222			
														290		-224			
														292		-226			
														294		-228			
														296		-230			
														298		-232			
														300					

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BORING LOG

BORING NO. RB-26

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17080.0' E 17082.3'	68.8 ft (MSL)	125.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface w/some shrubs	Plant Grid	02/06/07	02/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	11	11	15	26	1.2								0		68		[Fill] Clayey GRAVEL w/sand (GC) - ~50% fine to coarse, subangular to subrounded gravel (few particles broke w/1 hammer blow); ~25% fine to medium, subangular to subrounded sand; ~25% fines w/medium plasticity, medium toughness, wet; medium dense; brown gravel and light red (10R 6/8) sand and clays	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	7	17	20	37	0.8								2		66			
SPT	03	9	14	16	30	1.0								4		64		1.0 Clayey SAND (SC) - ~75% fine to medium, subrounded to rounded sand; ~20% fines w/medium plasticity, medium toughness; ~5% fine, subrounded to rounded gravel; moist; dense; brownish-yellow (10YR 6/8) @ 2.5' gravel grading to fine to coarse @ 5.0' gravel grading to fine; wet; medium dense @ 7.5' grading w/76% predominantly fine sand; 13% fines w/LL=20, PL=11, PI=9; 11% fine gravel; dense	SPT-01 field sample smaller than recommended. Piece of concrete found between 0' and 0.5' depth. SPT-03 gravel on top of sample (slough).
SPT	04	9	16	21	37	1.0								6		62			
SPT	05	10	17	20	37	0.9								8		60			
SPT	06	10	27	45	72	1.1								10		58		grading to ~60% sand; ~30% fines; ~10% fine to coarse, subangular to subrounded gravel	SPT-04 gravel on top of sampler (slough).
SPT	07	9	21	30	51	1.0								12		56			
SPT	08	11	30	42	72	1.0								14		54			
														16		52		16.0 [Engineered Fill] Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 7/9)	SPT-06 gravel on top of sample (slough). Sample 6 @ SW. Field sample smaller than recommended. SPT-07 gravel on top of sample (slough).
														18		50			
														20		48			
														22		46			
														24		44			
														26		42			
														28		40			
														30					

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BORING LOG

BORING NO. RB-26
SHEET 2 OF 5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17080.0' E 17082.3'	68.8 ft (MSL)	125.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface w/some shrubs	Plant Grid	02/06/07	02/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	14	31	40	71	1.3								30		38		grading to ~90% sand; ~5% fines; ~5% fine to coarse, subangular to rounded gravel; w/fine to coarse, angular to rounded gravel seam @ 30.2'	
														32		36			
														34		34			
SPT	10	17	42	50/5	+50	1.6								36		32		grading to ~95% sand; ~5% fines, w/fine, subangular to rounded gravel seam @ 35.5'	
														38		30			
SPT	11	11	22	30	52	1.1								40		28		grading to ~90% sand; ~5% fines; ~5% fine, subrounded elongate to flat gravel	
														42		26			
														44		24			
SPT	12	23	36	33	69	1.1								46		22		grading to ~95% sand; ~5% fines; yellow (2.5Y 7/6)	Mud was thickened @ 45'. SPT-12 field sample smaller than recommended.
																		46.1 [Citronelle (lower)]	
														48		20		Clayey SAND (SC) - ~80% fine to medium, subrounded to rounded sand; ~20% fines; wet; very dense; poorly graded; yellow (2.5Y 7/6)	
																		47.5	
SPT	13	3	2	12	14	1.5								50		18		Poorly graded SAND (SP) - 95% medium to fine, subrounded to rounded sand; 3% fine gravel; 2% fines; wet, natural moisture content = 16%; medium dense; Cu=1.67, Cc=0.06; pale yellow (2.5Y 8/3); w/brownish-yellow parting @ 51'	SPT-13 gravel on top of sample (slough). Small voids visible on top 1' of sample. Hole caved in ~7' after sampling.
														52		16			
														54		14			
SPT	14	7	16	23	39	0.9								56		12		grading to ~95% fine to medium sand; ~5% fines; dense	
														58		10			
														60					

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BORING LOG

BORING NO. RB-26

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17080.0' E 17082.3'	68.8 ft (MSL)	125.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface w/some shrubs	Plant Grid	02/06/07	02/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco GAB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	9	12	17	29	0.9								60		8		grading to 96% medium, rounded sand; 4% fines; medium dense; Cu=1.32, Cc=0.06; pale yellow (2.5Y 8/2); w/frequent black fine sand particles	SPT-15 Gravel on top of sampler (slough). Sample has very wet consistency.
														62		6		62.5	
SPT	16	13	21	45	66	1.8								64		4		Well graded SAND (SW) - ~90% fine to coarse, subrounded to rounded sand; ~5% fines; ~5% fine to coarse, angular to rounded gravel (few particles fractured w/1 hammer blow); wet; very dense; pale yellow (2.5Y 7/3)	
														66		2			
														68		0			
SPT	17	17	23	33	56	1.5								70		-2		@ 70' gravel grading to fine	Sample 17 is SW.
																		70.7	
														72		-4		Well graded GRAVEL (GW) - ~90% fine to coarse, angular to rounded gravel (few particles fractured w/1 hammer blow); ~10% fine to coarse, subrounded to rounded sand; wet; very dense; reddish-yellow (7.5YR 6/8)	
														74		-6		71.0	
SPT	18	15	29	45	74	1.7								76		-8		Poorly graded SAND (SP) - ~90% fine to medium, subrounded to rounded sand; ~5% fines; ~5% fine gravel; wet; very dense; pale yellow (2.5Y 8/4) @ 75' grading to ~95% sand; ~5% fines; w/sandy gravel seam @ 75.8'	
														78		-10		77.5	
SPT	19	12	12	15	27	1.0								80		-12		Poorly graded SAND w/gravel (SP) - 66% fine to coarse, rounded sand; 32% fine to coarse, subangular to rounded gravel; 2% fines; wet; medium dense; Cu=11.37, Cc=0.08; very pale brown (10YR 7/4)	Hole caved-in @ ~55' while drilling to 80'. Very thick mud was mixed which clogged the pipes. Hole was re-drilled to 80' and the mud made thinner. Sample 19 is SP. @ 81.2' Field sample smaller than recommended. Hole caved in @ 80' while lowering sampler
														82		-14		81.2	
														84		-16		Clayey SAND w/gravel (SC) - ~50% fine to coarse, rounded sand; ~25% fine to coarse, subrounded to rounded gravel; ~25% fines; wet; medium dense; yellowish-brown (10YR 5/8)	
SPT	20	7	9	10	19	0.9								86		-18		85.0	
														88		-20		Well graded GRAVEL w/sand (GW) - ~80% fine to coarse, angular to rounded gravel (few particles fractured w/1 hammer blow); ~15% fine to coarse, subangular to rounded sand; ~5% fines; wet; medium dense; yellow (10YR 7/6) and yellowish-brown (10YR 5/8); w/light gray gravelly clay seam @ 86.2'	
														90					

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BORING LOG

BORING NO. RB-26

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17080.0' E 17082.3'	68.8 ft (MSL)	125.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface w/some shrubs	Plant Grid	02/06/07	02/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	7	13	13	26	0.7								90		-22		@ 90' gravelly clay seam grades out	for SPT-20. Mud thickened. Hole filled w/mud. Stopped overnight. Ground water level recorded @ 13' on 2/7/07. Coarse gravel observed while drilling from 80' to 85'. @ 90' cleanout depth 89.6'. Sampler depth ~89.4'. Redrilled. Coarse gravel on top of sample (slough). Field sample smaller than recommended. Pushed lined ring sampler @ 92.5'. Only 1' could be pushed. Used 500 gallons of water between 85' and 100'. @ 105' RNG sampler will not go through hole. Also, when hole recleaned, cave-in occurred. Drilled to 110'. No sample @ 105', although an attempt was made. @ 110' hole keeps caving in. Drilled to 115'. @ 115' sampler got stuck @ 105'. Drilled to 120'; hole not stable. Drilled to 125'; hole still not stable.
														92		-24			
RNG	22	-	-	-	-	0.2								94		-26			
SPT	23	6	12	12	24	0.7								96		-28		grading to elongate to flat gravel; medium to coarse, subrounded to rounded sand; brownish-yellow (10YR 6/6); w/frequent coarse gravel sized sandy clay balls	
														97.5					
														98		-30			
SPT	24	13	19	19	38	0.7								100		-32		Well graded GRAVEL w/clay and sand (GW-GC) - ~60% fine to coarse, angular to rounded gravel (few particles fractured w/1 hammer blow); ~30% medium to coarse, angular to rounded sand; ~10% fines; wet; dense; yellowish-brown (10YR 5/8); w/frequent sandy clay pockets	
														102		-34			
														104		-36			
														106		-38			
														108		-40			
														110		-42			
														112		-44			
														114		-46			
														116		-48			
														118		-50			
														120					

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BORING LOG

BORING NO. RB-26

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17080.0' E 17082.3'	68.8 ft (MSL)	125.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface w/some shrubs	Plant Grid	02/06/07	02/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
120		-52			
122		-54			
124		-56			Hole abandoned on 02/08/07.
126		-58			Bottom of boring @ 125.0'. Boring backfilled w/ cement bentonite grout by tremie pipe method on 02/08/07. See boring RB-26A for continuation.
128		-60			
130		-62			
132		-64			
134		-66			
136		-68			
138		-70			
140		-72			
142		-74			
144		-76			
146		-78			
148		-80			
150					

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BORING LOG

BORING NO. RB-26A

SHEET 1 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Undifferentiated Overburden (See Boring Log RB-26)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.

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BORING LOG

BORING NO. RB-26A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5'	E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ANB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														30		38			
														32		36			
														34		34			
														36		32			
														38		30			
														40		28			
														42		26			
														44		24			
														46		22			
														48		20			
														50		18			
														52		16			
														54		14			
														56		12			
														58		10			
														60					

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BORING LOG

BORING NO. RB-26A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco MMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING

ROCK CORING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														60		8			
														62		6			
														64		4			
														66		2			
														68		0			
														70		-2			
														72		-4			
														74		-6			
														76		-8			
														78		-10			
SPT	01	10	11	12	23	0.6								80		-12		80.0 [Citronelle (lower)] Well graded GRAVEL w/clay and sand (GW-GC) - ~60% fine to coarse, subangular to subrounded gravel; ~30% medium to coarse, subrounded to rounded sand; ~10% fines w/medium plasticity; wet; medium dense; yellowish-brown (10YR 5/8); w/frequent light gray clay film surrounding gravel particles @ tip	
														82		-14		82.5	
SPT	02	16	16	16	32	0.7								84		-16		Poorly graded SAND w/gravel and silt (SP-SM) - 60% fine to coarse, subrounded to rounded sand; 33% fine to coarse, angular to rounded gravel; 7% fines; wet; dense; yellowish-brown (10YR 5/8); (few particles broke w/1 hammer blow)	SPT-02 Sand and gravel layers @ top of sample (slough).
														86		-18			
														88		-20			
														90					

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BORING LOG

BORING NO. RB-26A

SHEET 4 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)

GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
	91.0	@ 90' driller indicated washing more than usual to get gravel slough out.
	Well graded GRAVEL (GW) - ~90% fine to coarse, subrounded to rounded gravel; ~5% medium to coarse, subrounded to rounded sand; ~5% fines; wet; medium dense; yellowish-brown (10YR 5/8)	
	93.5	SPT-04 Field sample smaller than recommended.
	Poorly graded GRAVEL w/clay and sand (GP-GC) - ~60% fine, angular to rounded gravel; ~30% fine to coarse, subangular to rounded sand; ~10% fines; wet; medium dense; yellowish-brown (10YR 5/8); few particles broke w/1 hammer blow; maximum size 3/4"; fines coating gravel particles	
	97.5	
	Well graded SAND w/clay (SW-SC) - ~80% fine to coarse, angular to rounded sand; ~10% fine, angular to subrounded gravel; ~10% fines w/medium plasticity; wet; medium dense; brownish-yellow (10YR 6/6); w/occasional sandy clay pockets	
	102.5	
	Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; wet; hard; white (7.5YR 8/1); w/clay w/gravel seam @ tip of sampler	
	107.0	Sand encountered @ 107' as per driller's observations.
	Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; very dense; very pale brown (10YR 8/2); w/frequent ferrous partings and gravelly sand parting @ 111'	
	112.5 [Pascagoula]	
	SILT (ML) - ~100% fines w/no plasticity, low toughness, rapid dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous partings and spots	
	115.3	
	SILT w/sand (ML) - ~80% fines w/no plasticity, low toughness, slow dilatancy; ~20% fine sand; wet; hard; gray (10YR 5/1) w/frequent black spots	
	116.0	

SPT	03	11	9	10	19	0.6
SPT	04	11	11	13	24	0.8
SPT	05	10	12	13	25	0.6
SPT	06	6	6	11	17	1.4
SPT	07	21	38	41	79	0.8
SPT	08	5	8	11	19	1.6

90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120

-22 -24 -26 -28 -30 -32 -34 -36 -38 -40 -42 -44 -46 -48 -50

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BORING LOG

BORING NO. RB-26A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	10	11	14	25	1.8								120		-52		Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, slow dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y) w/frequent ferrous and black spots and partings	
														122				grading pale yellow (5Y 8/2); w/lean clay seam @ 121'	
																-54			
														124					
																-56		grading w/medium dry strength; light greenish-gray (GLEY1 8/1 5GY)	@ 125' PP = 4.0 tsf TV = 0.9 tsf
TW	10	-	-	-	-	1.9								126					
																-58			Stopped overnight after TW-10. Fluid level recorded @ 10.5' on 03/22/07.
														128					
																-60			
														130				grading very hard; pale yellow (5Y 8/2)	
SPT	11	12	19	22	41	1.7										-62			
														132					
																-64			
														134					
																-66		grading w/LL=42, PI=21; no dilatancy; natural moisture content = 27%; greenish-gray (GLEY1 5/1 5G)	@ 135' PP > 4.5 tsf TV = 1.4 tsf Loss of circulation @ 140'. Cave-in of uppermost soils as per driller's observations. Hole stabilized w/ thicker mud.
TW	12	-	-	-	-	1.9								136					
																-68			
														138					
																-70			
														140				grading w/low plasticity, low toughness, rapid dilatancy, low dry strength	
SPT	13	11	15	20	35	1.5										-72			
														142					
																-74			
														144					
																-76			@ 145' PP = 4.0 tsf TV = 0.6 tsf
TW	14	-	-	-	-	1.9								146					
																-78			
														148					
																-80			
														150					

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BORING LOG

BORING NO. RB-26A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	9	13	17	30	1.8								150		-82		grading w/LL=42, PI=20; hard; natural moisture content = 27%	
														152		-84			
														154		-86		grading w/occasional sand pockets	PP = 3.0 tsf TV = 0.4 tsf
TW	16	-	-	-	-	2.0								156		-88			
														158		-90			
														160		-92		160.7 SILT w/sand (ML) - ~80% fines w/low plasticity, low toughness, rapid dilatancy; ~20% fine sand; moist; very hard; dark greenish-gray (GLEY1 4/1 5G)	
SPT	17	11	15	24	39	1.4								162		-94		163.0	
														164		-96			
SPT	18	8	11	17	28	1.7								166		-98		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, slow dilatancy; moist; hard; dark greenish-gray (GLEY1 4/1 5G)	Sampler tip @ 165.5'. Sample 18A - Clay Sample 18B - Silt
														168		-100		165.9 SILT (ML) - ~100% fines w/low plasticity, low toughness, rapid dilatancy; moist; hard; dark greenish-gray (GLEY1 4/1 5G)	
														170		-102			
TW	19	-	-	-	-	2.1								172		-104		171.0 Silty SAND (SM) - ~60% fine, subrounded sand; ~35% fines w/ low plasticity; ~5% fine, subrounded gravel; wet; dark greenish-gray (GLEY1 4/1 5G) 172.5	PP = 1.0 tsf TV = 0 tsf Silt @ top of tube.
														174		-106			
SPT	20	11	12	15	27	1.8								176		-108		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy, high dry strength; moist; hard; dark greenish-gray (GLEY1 4/1 5G)	
														178		-110			
														180					

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BORING LOG

BORING NO. RB-26A

SHEET 7 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	21	-	-	-	-	2.0								180		-112			PP = 3.75 tsf TV = 0.5 tsf
														182		-114		—182.5	
SPT	22	5	8	12	20	2.0								184		-116		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy, high dry strength; moist; hard; dark greenish-gray (GLEY1 4/1 5G) @ 186.3' grading to ~90% fines; ~5% sand; ~5% fine gravel; wet	SPT-22 No catcher used. Sample 22A - 185.0 to 186.3' Sample 22B - 186.3 to 186.5'
														186		-118		—187.5	
														188		-120			
TW	23	-	-	-	-	2.0								190		-122		Elastic SILT (MH) - ~100% fines w/medium plasticity, low toughness, slow dilatancy, medium dry strength; moist; hard; dark greenish-gray (GLEY1 4/1 5G)	PP = 4.0 tsf TV = 1.0 tsf
														192		-124		—192.5	
														194		-126			
SPT	24	10	14	8	22	1.7								196		-128		SILT (ML) - ~95% fines w/low plasticity, low toughness, rapid dilatancy; moist; hard; very dark greenish-gray (GLEY1 3/1 5G)	SPT-24 No catcher used. Sample 24A - Silt Sample 24B - Black clay
														198		-130		—195.4 Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; black (2.5Y 2.5/1); w/frequent dark spots and occasional wood fragments Coarse gravel piece w/mica flakes on top @ 195.6	
TW	25	-	-	-	-	1.9								200		-132		@ 196.2' grading to ~90% fines; ~5% sand; ≤ 5% fine gravel; wet; very dark greenish-gray (GLEY1 3/1 5G) @ 200.0' grading to 100% fines w/medium toughness; high dry strength; moist; greenish-gray (GLEY1 5/1 5G)	@ 200.0' PP > 4.5 tsf TV = 1.1 tsf
														202		-134			
														204		-136			
SPT	26	9	16	18	34	1.8								206		-138			SPT-26 No catcher used.
														208		-140			
														210					

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
TW	27	-	-	-	-	2.0								210	-142		PP > 4.5 tsf TV = 1.0 tsf Stopped overnight after TW-27. Fluid level recorded @ 10.5' on 03/23/07.
														212	-144		
														214	-146		
SPT	28	14	17	23	40	1.9								216	-148	grading w/high toughness; very high dry strength	SPT-28 No catcher used.
														218	-150		
TW	29	-	-	-	-	1.2								220	-152	grading very hard; w/frequent calcareous nodules (strong reaction w/HCl) and occasional light brown staining	Tube could only be pushed 14". PP > 4.5 tsf TV = 0.6 tsf
														222	-154		
														224	-156		
SPT	30	12	20	26	46	1.8								226	-158	grading greenish-gray (GLEY1 6/1 5G) and olive gray (5Y 5/2); calcareous nodules grade to fine to coarse gravel size; staining grades out	SPT-30. No catcher used.
														228	-160		
														230	-162		
TW	31	-	-	-	-	1.4								232	-164	grading w/medium toughness; light greenish-gray (GLEY1 7/1 10Y); calcareous nodules grade to fine gravel size; w/occasional dark brown spots	Tube could only be pushed 15". PP > 4.5 tsf TV = 0.8 tsf
														234	-166		
														236	-168		
SPT	32	10	15	19	34	1.9								238	-170	grading w/LL=66, PI=42; high toughness; calcareous nodules grade to occasional; dark brown spots grade to frequent	SPT-32 No catcher used.
														240			

BLACK & VEATCH **BORING LOG**

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JLL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	33	-	-	-	-	1.7								240		-172		calcareous nodules and dark brown spots grade out; grading w/frequent yellowish-brown spots	PP > 4.5 tsf TV = 0.9 tsf
														242		-174			
														244		-176			
SPT	34	8	13	18	31	0								246		-178			SPT-34 No catcher used. No recovery in SPT-34. Time (1 hr) between drilling and sampling allowed for "softening" of sample; slipped out of sampler. Will continue to 250'. Tube could only be pushed 1.5'. PP > 4.5 tsf TV = 0.8 tsf
														248		-180			
TW	35	-	-	-	-	1.4								250		-182		grading greenish-gray (GLEY1 6/1 5GY); yellowish-brown spots grade out	
														252		-184			
														254		-186			
SPT	36	14	22	26	48	1.7								256		-188		grading greenish-gray (GLEY1 6/1 5G) and grayish-brown (10YR 5/2); w/occasional white longitudinal veins	SPT-36 . No catcher used.
														258		-190			
														260		-192		Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, slow dilatancy; moist; hard; greenish-gray (GLEY1 6/1 5G)	Could only be pushed 21". Hard to pull. PP > 4.5 tsf TV = 0.6 tsf
TW	37	-	-	-	-	1.8								262		-194			
														264		-196			
														266		-198		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; very hard; brown (10YR 5/3); w/frequent greenish-gray stains	
SPT	38	13	19	24	43	1.9								268		-200			
														270					

257.5

264.5

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BORING LOG

BORING NO. RB-26A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17090.5' E 17082.4'	69.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level surface, sand	Plant Grid	03/21/07	03/24/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	39	-	-	-	-	1.5								270		-202			Tube could only be pushed 18". PP > 4.5 tsf TV = 0.8 tsf
														272		-204			Bottom of boring @ 271.5'. Fluid level @ ground surface @ completion of drilling. Boring did not cave. Deviation survey performed on 03/23/07. Fluid level recorded @ 12.6' on 03/24/07. Boring backfilled w/ cement bentonite grout by tremie pipe method on 03/24/07.
														274		-206			
														276		-208			
														278		-210			
														280		-212			
														282		-214			
														284		-216			
														286		-218			
														288		-220			
														290		-222			
														292		-224			
														294		-226			
														296		-228			
														298		-230			
														300					

BLACK & VEATCH

BORING LOG

BORING NO. RB-27

SHEET 1 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	01	7	7	10	17	1.0								0		64	
														1		63	
														2		62	
SPT	02	6	10	15	25	1.2								3		61	
														4		60	
														5		59	
SPT	03	8	11	14	25	1.1								6		58	
														7		57	
SPT	04	12	20	21	41	1.2								8		56	
														9		55	
														10		54	
SPT	05	11	14	13	27	0.9								11		53	
														12		52	
SPT	06	10	14	17	31	1.2								13		51	
														14		50	
														15			

CLASSIFICATION OF MATERIALS

[Citronelle (upper)]

Clayey SAND (SC) - ~65% fine to medium, subangular to rounded sand; ~30% fines w/medium plasticity; ~5% fine, angular to subrounded gravel; moist; medium dense; poorly graded; brownish-yellow (10YR 6/8)

grading to ≤ 5% gravel; w/pink sand parting @ 3.5'

grading to ~5% gravel; wet; dense; w/sandy clay parting @ 8.6'

grading to ~65% sand; ~25% fines; ~10% gravel; moist; medium dense; yellow (10YR 7/6)

13.2

Poorly graded SAND w/clay (SP-SC) - ~85% fine to medium, subangular to subrounded sand; ~10% fines w/medium plasticity; ~5% fine, rounded gravel; wet; dense; poorly graded; yellow (10YR 7/6)

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.

SPT-02 fine gravel on top of sampler (slough).

SPT-03 fine gravel on top of sampler (slough).

SPT-06 field sample smaller than recommended.

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5'	E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	07	9	7	12	19	1.1								15		49			
														16		48		16.0 Lean CLAY w/sand (CL) - ~70% fines w/medium plasticity, medium toughness; ~25% fine, subangular to subrounded sand; ~5% fine, rounded gravel; moist; hard; brownish-yellow (10YR 6/8); w/clayey sand seam @ 16.3'	
														17		47		17.0 Clayey SAND w/gravel (SC) - ~60% fine to coarse, subrounded to rounded sand; ~25% fines w/medium plasticity; ~15% fine, rounded gravel; wet; medium dense; poorly graded; yellowish-brown (10YR 5/8); w/black seam @ 18.3'	SPT-08 field sample smaller than recommended.
SPT	08	7	9	9	18	0.8								18		46			
														19		45		19.5	
														20		44		Gravelly Lean CLAY (CL) - ~60% fines w/medium plasticity, medium toughness; ~30% fine to medium, subrounded to rounded gravel; ~10% fine to coarse, subrounded to rounded sand; wet; firm; very pale brown (10YR 7/3); w/sandy gravel w/clay seam @ 20.5'	Sample 9A - Clay. Sample 9B - Clayey sand.
SPT	09	3	4	6	10	1.0								21		43		20.8 Clayey SAND (SC) - ~75% fine, subrounded sand; ~20% fines w/medium plasticity; ~5% fine, subangular gravel; wet ; loose; poorly graded; yellow (10YR 7/8); w/frequent black spots	SPT-09 field sample smaller than recommended.
														22		42			
SPT	10	4	5	5	10	0.9								23		41		@ 22.5' grading to ~87% sand; 13% fines; natural moisture content = 18%	
														24		40			
														25		39		25.3 Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; firm; light red (2.5YR 8/6); laminated, w/ferrous material and light gray clay, w/one gravel piece	Sample 11A - Clay. Sample 11B - Sand.
SPT	11	4	5	9	14	1.1								26		38		25.9 Poorly graded SAND (SP) - ~90% fine to medium, subangular to rounded sand; ~5% fines; ~5% fine, subrounded gravel; wet; medium dense; yellow (10YR 7/6); w/occasional black spots	SPT-11 field sample smaller than recommended.
														27		37			
SPT	12	8	12	15	27	0.6								28		36			SPT-12 field sample smaller than recommended.
														29		35			
														30				29.5	

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BORING LOG

BORING NO. RB-27

SHEET 3 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5'	E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren SNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	13	6	12	18	30	0.8								30		34		Well graded SAND w/gravel (SW) - 77% fine to coarse, subangular to subrounded sand; 17% gravel; 6% fines; wet; medium dense; very pale brown (10YR 7/4)	SPT-13 broken cobble @ top of sampler (slough).
														31		33			
														32		32		32.0	
SPT	14	3	9	14	23	0.7								33		31		Poorly graded SAND w/gravel (SP) - 78% fine to medium, subangular to subrounded sand; 17% fine to coarse, angular to subrounded gravel; 5% fines; wet; medium dense; pink (7.5YR 8/4)	SPT-14 sand w/ gravel.
														34		30		33.7	
																		Well graded SAND (SW) - ~95% fine to coarse, subangular to subrounded sand; ~5% fines; ≤ 5% gravel; wet; medium dense; very pale brown (10YR 7/4)	
														35		29		34.5	
SPT	15	6	10	12	22	0.8								36		28		Well graded SAND w/gravel (SW) - ~60% fine to coarse, subangular to subrounded sand; ~35% fine to coarse, angular to rounded gravel; ~5% fines; wet; medium dense; pale yellow (2.5Y 7/4); w/fine sand seam @ 36'	
														37		27		37.0	
SPT	16	6	12	18	30	1.2								38		26		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; medium dense; pale yellow (2.5Y 8/4); w/sandy gravel seam @ 38.2'	
														39		25			
														40		24			
SPT	17	7	20	26	46	1.2								41		23		40.8 [Citronelle (lower)] Well graded GRAVEL w/sand (GW) - ~60% fine to coarse, angular to rounded gravel; ~35% fine to coarse, angular to rounded sand; ~5% fines; wet; dense; yellowish-brown (10YR 5/8) gravel and pale yellow (2.5Y 8/4) sand	SPT-17 field sample smaller than recommended.
														42		22		41.3	
SPT	18	10	14	17	31	0.7								43		21		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; medium dense; pale yellow (2.5Y 8/4)	
														44		20		42.0	
														45				Well graded SAND w/gravel (SW) - ~80% fine to coarse, subrounded to rounded sand; ~15% fine to coarse, subangular to rounded gravel; ~5% fines; wet; dense; pale yellow (2.5Y 8/4)	
																		44.5	

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	19	8	14	18	32	1.1								45		19		Well graded SAND (SW) - ~90% fine to coarse, subrounded to rounded sand; ~5% fine gravel; ~5% fines; wet; dense; pale yellow (2.5Y 8/4); w/sandy gravel seam @ 45.7'	
														46		18			
														47		17		47.0	
SPT	20	5	14	21	35	0.8								48		16		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 8/4); w/sandy gravel seam @ top of sampler	
														49		15			
RNG	21	21	32	26	58	0.9								50		14			Ring sampling performed w/3" OD split sampler, 2-1/2" ID, 6" rings w/plastic catcher. Sampler driven, disturbed sample.
														51		13			
														52		12		52.0	
SPT	22	5	9	10	19	1.8								53		11		Poorly graded SAND (SP) - 87% fine to medium, subangular to rounded sand; 12% fine to coarse, subangular to rounded gravel; 1% fines; wet; medium dense; very pale brown (10YR 7/3) @ 53.6 grading w/~95% sand; ~5% fines; pale yellow (2.5Y 8/4)	
														54		10		54.5	
														55		9		Well graded SAND w/gravel (SW) - ~60% fine to coarse, subangular to rounded sand; ~35% fine to coarse, subangular to rounded gravel; ~5% fines; wet; medium dense; pale yellow (2.5Y 8/4)	
SPT	23	6	12	16	28	1.0								56		8			
														57		7			
														58		6		58.2	
SPT	24	7	21	24	45	1.1								59		5		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; yellow (2.5Y 8/6); w/well graded gravel seam @ top of sample	SPT-24 field sample smaller than recommended.
														60					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco MMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	25	7	13	22	35	0.9								60		4		grading very pale brown (10YR 8/3); gravel seam grades out	SPT-25 fine to coarse gravel on top of sampler (slough).
														61		3			
														62		2			SPT-26 fine gravel @ top of sampler (slough).
SPT	26	7	26	45	71	0.8								63		1			
														64		0		63.7 — Well graded SAND (SW) - ~90% fine to coarse, subangular to subrounded sand; ~5% fines; ~5% fine, subangular, gravel; wet; very dense; pale yellow (2.5Y 8/4)	Field sample smaller than recommended.
														65		-1		65.0 — Well graded SAND w/gravel (SW) - ~75% fine to coarse, subrounded to rounded sand; ~20% fine to coarse, subangular to rounded gravel; ~5% fines; wet; very dense; pale yellow (2.5Y 8/3)	
SPT	27	14	27	33	60	0.9								66		-2			
														67		-3		67.5 — Well graded SAND (SW) - ~90% fine to coarse, subangular to subrounded sand; ~5% fines; ~5% fine, subangular to rounded gravel; wet; very dense; pale yellow (2.5Y 8/3); w/fine gravel seam @ 68.2'	
SPT	28	13	27	46	73	1.3								68		-4			
														69		-5		69.5 — Poorly graded SAND (SP) - ~90% fine to medium, subrounded to rounded sand; ~5% fines; ~5% fine, subangular to rounded gravel; wet; very dense; pale yellow (2.5Y 8/2); w/fine gravel seam @ 20.8'	
SPT	29	18	31	48	79	1.3								70		-6			
														71		-7			
														72		-8		gravel seam grades out	Stopped overnight after SPT 30. Fluid level measured @ 8.6' on 02/24/07.
SPT	30	15	32	49	81	0.9								73		-9			
														74		-10			
														75					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5'	E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														75		-11		grading w/fine to coarse, subangular to rounded sandy gravel seam @ 75.4'	
SPT	31	16	23	37	60	1.0								76		-12			
														77					
																-13		grading pale yellow (2.5Y 8/4); w/fine, angular to rounded gravel seam @ 78.1'	
SPT	32	20	36	40	76	1.0								78		-14			
														79					
																-15		79.5	
														80		-16		Poorly graded GRAVEL w/sand and clay (GP) - 49% fine to coarse, angular to subrounded gravel; 39% fine to coarse, angular to rounded sand; 12% fines w/ medium plasticity, medium toughness; wet; dense; w/ yellowish-brown (10YR 5/8) gravel and white (10YR 8/ 1) clay matrix	
SPT	33	7	13	19	32	0.7								81		-17			
														82					
																-18		grading medium dense	SPT-34 fine to coarse gravel on top of sampler (slough). Field sample smaller than recommended.
SPT	34	5	12	10	22	0.4								83		-19			
														84					
																-20		84.5	
														85		-21		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous spots and sandy silt seam @ 85.6'	SPT-35 gravel on top of sampler (slough).
SPT	35	10	11	14	25	1.7								86		-22			
														87					PP = 2.75 tsf TV = 0.6 tsf
																-23		grading w/sand parting; sandy silt seam grades out	
TW	36	-	-	-	-	1.9								88		-24			
														89					
																-25		89.5	
														90					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5'	E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RWB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														90		-26		Clayey SAND (SC) - ~70% fine, subangular to subrounded sand; ~30% fines; wet; poorly graded; very pale brown (10YR 8/2); w/occasional clay balls	
TW	37	-	-	-	-	1.6								91		-27			
														92		-28		grading to ~80% sand; ~20% fines; medium dense; pinkish-white (5YR 8/2); w/frequent ferrous partings	
SPT	38	8	13	15	28	1.1								93		-29			
														94		-30			
														95		-31		grading to ~70% sand; ~30% fines; dense; pink (7.5YR 8/3)	
SPT	39	11	20	24	44	0.8								96		-32			
														97		-33		97.0	
SPT	40	16	24	26	50	0.9								98		-34		Poorly graded SAND w/clay (SP-SC) - 91% fine, subangular to subrounded sand; 9% fines; wet; dense; pink (7.5YR 8/3); w/occasional ferrous partings	SPT-40 gravel on top of sampler (slough).
														99		-35		99.5	
														100		-36		Clayey SAND (SC) - ~80% fine, subangular to subrounded sand; ~20% fines; wet; dense; poorly graded; very pale brown (10YR 8/2); w/sandy gravel seam @ 100.6'	
SPT	41	11	18	24	42	0.8								101		-37			
														102		-38		grading w/frequent ferrous partings; sandy gravel seam grades out	
SPT	42	9	15	17	32	0.8								103		-39			
														104		-40			
														105					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMD	J. Liljegren JRZ	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														105		-41		grading to ~70% fine to medium, subangular to subrounded sand; ~30% fines w/medium plasticity; wet; dense; very pale brown (10YR 8/2); w/frequent ferrous partings and fine, clayey sand seams @ 105.8'	
SPT	43	16	20	17	37	0.9								106		-42			
														107		-43			
SPT	44	17	28	31	59	0.9								108		-44		grading very dense; yellowish-brown (10YR 5/8); w/fine, sandy gravel seam @ 108.4'	
																		108.6	
														109		-45		Well graded SAND (SW) - ~95% fine to coarse, subangular to subrounded sand; ~5% fines; wet; very dense; light gray (10YR 7/2); w/dark gray parting @ 108.9'	Field sample smaller than recommended.
																		109.5 [Pascagoula]	
														110		-46		Fat CLAY (CH) - 100% fines w/LL=49, PI=26, high toughness, no dilatancy; moist, natural moisture content = 21%; very hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous sand partings and stains and frequent black spots	
SPT	45	11	14	18	32	1.8								111		-47			
														112		-48			
														113		-49		grading w/LL=68, PI=37; natural moisture content = 22%; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous spots and some gravel @ top of sample	PP ≥ 4.5 tsf TV = 0.5 tsf
TW	46	-	-	-	-	1.8								114		-50			
														115		-51		ferrous spots and gravel grade out	PP ≥ 4.5 tsf TV = 0.5 tsf
TW	47	-	-	-	-	1.8								116		-52			
														117		-53			
														118		-54			PP ≥ 4.5 tsf TV = 0.4 tsf Stopped overnight after TW-48. Fluid level measured @ 2' on 02/25/07.
TW	48	-	-	-	-	0.0								119		-55			
														120					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	49	-	-	-	-	0								120		-56		grading light greenish-gray (GLEY1 7/1 10Y)	TW-48 pushed, no recovery. Immediately followed w/SPT to determine soil type.
SPT	50	7	14	11	25	0.9								121		-57			
														122		-58		—122.0—	
																		Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, low toughness; ~20% fine sand; moist; hard; light greenish-gray (GLEY1 8/10 10Y); w/frequent ferrous partings and stains	PP ≥ 4.5 tsf TV = 0.2 tsf
TW	51	-	-	-	-	1.9								123		-59			
														124		-60			
														125		-61		—125.0—	
																		SILT (ML) - ~100% fines w/low plasticity, low toughness, rapid dilatancy; moist; hard; white (2.5Y 8/1)	PP ≥ 4.5 tsf TV = 0.1 tsf
TW	52	-	-	-	-	1.8								126		-62			
														127		-63		—127.3—	
																		Elastic SILT (MH) - ~100% fines w/medium plasticity, low toughness, slow dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y)	PP = 4.0 tsf TV = 0.4tsf
TW	53	-	-	-	-	1.9								128		-64			
														129		-65		—129.8—	
														130		-66		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent black spots	PP ≥ 4.5 tsf TV = 0.4 tsf
TW	54	-	-	-	-	1.9								131		-67			
														132		-68		—132.3—	
																		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y)	PP = 4.0 tsf TV = 0.2 tsf
TW	55	-	-	-	-	1.9								133		-69			
														134		-70			
														135				—134.8—	

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	56	-	-	-	-	1.8								135		-71		Clayey SAND (SC) - ~60% fine sand; ~40% fines w/ medium plasticity, low toughness; moist; poorly graded; greenish-gray (GLEY1 5/1 10GY)	PP = 3.75 tsf TV = 0.4 tsf
														136		-72			
														137		-73			
																		—137.3—	
TW	57	-	-	-	-	1.8								138		-74		Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, slow dilatancy; moist; hard; greenish-gray (GLEY1 5/1 10GY)	PP ≥ 4.5 tsf TV = 0.2 tsf
														139		-75			
TW	58	-	-	-	-	1.4								140		-76		grading w/low plasticity, rapid dilatancy	TW-58 could only be pushed 1.5'. PP ≥ 4.5 tsf TV = 0.2 tsf Note: Incorrect TW# on photograph; should be TW-58, not TW-57.
														141		-77			
														142		-78			
TW	59	-	-	-	-	1.8								143		-79		grading w/LL=40, PI=18; natural moisture content = 25%	@ 142.5' PP = 3.25 tsf TV could not be performed.
														144		-80			
TW	60	-	-	-	-	1.7								145		-81		grading w/medium plasticity, medium toughness, no dilatancy; dark greenish-gray (GLEY1 4/1 10GY)	PP ≥ 4.5 tsf TV = 0.35 tsf
														146		-82			
														147		-83			
																		—147.3—	
TW	61	-	-	-	-	1.0								148		-84		Silty SAND (SM) - ~80% fine, subangular to rounded sand; ~15% fines w/low plasticity; ~5% fine to coarse gravel; wet; poorly graded; dark greenish-gray (GLEY1 4/1 10GY)	TW-61 could only be pushed 1'. No PP or TV performed (sand).
														149		-85			
														150				—149.8—	

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BORING LOG

BORING NO. RB-27
SHEET 11 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	62	13	24	32	56	1.2								150		-86		Poorly graded SAND (SP) - ~95% fine, subangular to subrounded sand; ~5% fines; wet; very dense; dark greenish-gray (GLEY1 4/1 10GY); w/silt seam between 150.7' and 151.1'	
														151		-87			
														152		-88			
SPT	63	15	24	34	58	1.2								153		-89		@ 153.4' grading to light yellowish-brown (2.5Y 5/3)	SPT-63 coarse sand and fine gravel @ top of sampler (slough).
														154		-90			
														155		-91		grading fine to medium sand; pale yellow (2.5Y 7/3); w/gravelly sand seam @ 155.7'	
SPT	64	32	50	-	+50	0.7								156		-92			Photo should read RB 27 - SPT-64. Field sample smaller than recommended.
														157		-93			
SPT	65	35	50/5"	-	+50	0.8								158		-94		grading to subrounded to rounded sand; gravelly sand seam grades out	SPT-65 coarse sand and fine gravel @ top of sampler (slough).
														159		-95			
														160		-96		grading w/90% fine to medium sand; 10% fines; w/fine to coarse, rounded to subangular, sandy gravel seam @ 160.8'	
SPT	66	37	48	50	+50	1.0								161		-97			
														162		-98			
SPT	67	32	50/5"	-	+50	1.0								163		-99		grading pale yellow (2.5Y 7/3); w/fine to coarse, subangular to rounded sandy gravel seam @ 163.2'	Mud was thickened after SPT-67.
														164		-100			
														165					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														165		-101		sandy gravel seam grades out	
SPT	68	26	33	46	79	1.3								166		-102			
														167		-103		grading to fine sand	SPT-69 coarse to fine sand @ top of sampler (slough).
SPT	69	26	33	37	70	1.3								168		-104		@ 168.2' grading to fine, subangular to rounded sand; bluish-gray (GLEY2 5/1 10B); w/clay parting @ 168.2'	
														169		-105			
																		—169.5—	
														170		-106		Fat CLAY (CH) - ~100% fines w/LL=68, PI=39, high toughness, no dilatancy; moist, natural moisture content = 28%; hard; greenish-gray (GLEY2 5/1 5BG)	TW-70 could only be pushed 1.7'. PP = 4.25 tsf TV = 0.7 tsf
TW	70	-	-	-	-	1.7								171		-107			
														172		-108			
																		—172.3—	
														173		-109		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; very hard; greenish-gray (GLEY2 5/1 5BG)	PP > 4.5 tsf TV = 0.4 tsf Stopped overnight after TW-71. Fluid level measured @ 3.5' on 02/26/07.
TW	71	-	-	-	-	2.0								174		-110			
																		—174.8—	
														175		-111		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; w/very high dry strength; moist; very hard; dark greenish-gray (GLEY1 4/1 10GY); slickensided @ bottom of tube	PP = 4.25 tsf TV = 0.3 tsf
TW	72	-	-	-	-	1.9								176		-112			
														177		-113			TW-73 could only be pushed 1.9'. PP ≥ 4.5 tsf TV = 0.2 tsf
TW	73	-	-	-	-	1.9								178		-114			
														179		-115			
														180					

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BORING LOG

BORING NO. RB-27
SHEET 13 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING											
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														180		-116		Lean CLAY (CL) - ~100% fines w/medium plasticity, high toughness, no dilatancy; high dry strength; moist; very hard; dark greenish-gray (GLEY1 4/1 10GY)	PP = 4.5 tsf TV = 0.2 tsf
TW	74	-	-	-	-	1.0								181		-117			
														182		-118			
																		182.3	
														183		-119		SILT (ML) - ~95% fines w/LL=46, PI=18, low toughness, rapid dilatancy; ~5% fine sand; moist, natural moisture content = 36%; very hard; dark greenish-gray (GLEY1 4/1 10GY)	PP > 4.5 tsf TV = 0.4 tsf
TW	75	-	-	-	-	1.9								184		-120			
																		184.8	
														185		-121		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY2 5/1 10BG)	PP = 4.25 tsf TV = 0.4 tsf
TW	76	-	-	-	-	2.0								186		-122			
														187		-123			
																		187.3	
														188		-124		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY2 5/1 10BG)	PP > 4.5 tsf TV = 1.3 tsf
TW	77	-	-	-	-	2.0								189		-125			
														190		-126		grading dark greenish-gray (GLEY1 4/1 5GY); w/frequent wood fragments and black spots	PP = 4.0 tsf TV = 0.5 tsf
TW	78	-	-	-	-	1.9								191		-127			
														192		-128		grading black (2.5Y 2.5/1); wood fragments grade to occasional	PP = 4.5 tsf TV = 1.3 tsf
														193		-129			
TW	79	-	-	-	-	2.0								194		-130			
														195					

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ARB	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														195		-131		grading greenish-gray (GLEY1 5/1 10GY); wood fragments and black spots grade out	PP > 4.5 tsf TV = 1.3 tsf
TW	80	-	-	-	-	2.0								196		-132			
														197		-133			PP > 4.5 tsf TV = 0.3 tsf
TW	81	-	-	-	-	1.8								198		-134			
														199		-135			
TW	82	-	-	-	-	1.7								200		-136		grading to fines w/high toughness; greenish-gray (GLEY1 5/1 5G); w/occasional ferrous spots	TW-82 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.3 tsf
														201		-137			
														202		-138		202.0	
TW	83	-	-	-	-	1.7								203		-139		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY1 5/1 10GY)	TW-83 could only be pushed 1.8'. PP > 4.5 tsf TV = 0.8 tsf
														204		-140			
														205		-141		204.8	
TW	84	-	-	-	-	2.0								206		-142		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy, high dry strength; moist; hard; greenish-gray (GLEY1 5/1 5G)	TW-84 could only be pushed 1.9'. PP > 4.5 tsf TV = 0.5 tsf Photo should read TW 84.
														207		-143		207.3	
TW	85	-	-	-	-	1.9								208		-144		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; greenish gray (GLEY1 5/1 5G)	PP = 4.5 tsf TV = 0.8 tsf
														209		-145			
														210					

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
TW	86	-	-	-	-	1.4								210	-146	Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy, high dry strength; moist; grayish-green (GLEY1 4/2 5G); w/frequent calcareous nodules (strong reaction w/HCl)	TW-86 could only be pushed 1.5'; tube bent. PP = 4.25 tsf TV = 0.5 tsf
														211	-147		
														212	-148	calcareous nodules grade out	TW-87 could only be pushed 16". PP = 4.0 tsf TV = 1.5 tsf Stopped overnight after TW-87. Fluid level measured @ 1.8' on 02/27/07.
TW	87	-	-	-	-	1.4								213	-149		
														214	-150		
TW	88	-	-	-	-	0.0								215	-151	grading very hard; w/occasional calcareous (strong reaction w/HCl) nodules	TW-88 could only be pushed about 5"; was decided to use automatic hammer to ensure some sample for classification.
SPT	89	16	20	25	45	1.9								216	-152		
														217	-153		
TW	90	-	-	-	-	1.3								218	-154	grading w/frequent pale brown stains; frequent calcareous nodules to fine to coarse gravel size	No recovery; will perform SPT to gather some sample. TW-90 could only be pushed 13". PP = 4.25 tsf TV = 1.4 tsf
														219	-155		
																—219.5—	
														220	-156	Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; grayish-green (GLEY1 4/2 5G); w/frequent pale brown stains and frequent calcareous (strong reaction w/HCl) gravel size nodules	TW-91 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.8 tsf
TW	91	-	-	-	-	1.6								221	-157		
														222	-158		
														223	-159	grading greenish-gray (GLEY1 6/1 10Y); w/occasional calcareous (strong reaction w/HCl) nodules	TW-92 could only be pushed 22". PP > 4.5 tsf TV = 0.5 tsf
TW	92	-	-	-	-	1.8								224	-160		
														225		—224.8—	

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	93	-	-	-	-	1.5								225		-161		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 6/1 5GY)	TW-93 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.5 tsf
														226		-162			
														227		-163			TW-94 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.9 tsf
TW	94	-	-	-	-	1.4								228		-164			
														229		-165			
														230		-166		grading w/frequent calcareous nodules and pockets and occasional calcareous (strong reaction w/HCl) partings	PP > 4.5 tsf TV = 1.1 tsf
TW	95	-	-	-	-	1.8								231		-167			
														232		-168			
														233		-169		grading grayish-brown (2.5Y 5/2); w/occasional black spots and frequent light greenish-gray stains	TW-96 could only be pushed 1.5'. PP = 4.25 tsf TV = 0.9 tsf
TW	96	-	-	-	-	1.5								234		-170			
														235		-171			
														236		-172		grading light greenish-gray (GLEY1 7/1 10Y); light greenish-gray stains grade out	TW-97 could only be pushed 19". Photo label should read TW-97, not TW-96. PP > 4.5 tsf TV = 0.4 tsf
TW	97	-	-	-	-	1.7								237		-173			
																		237.0	
														238		-174		Lean CLAY (CL) - ~100% fines w/LL=36, PI=18, medium toughness, slow dilatancy; moist, natural moisture content = 24%; hard; greenish-gray (GLEY1 6/1 10Y)	TW-98 could only be pushed 22". PP > 4.5 tsf TV = 1.0 tsf
TW	98	-	-	-	-	1.9								239		-175			
														240				239.8	

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BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	99	-	-	-	-	1.9								240		-176		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; hard; grayish-brown (2.5Y 5/2)	TW-99 could only be pushed 22". PP > 4.5 tsf TV = 8.8 tsf Note: Tube touching wall while lowered (sand in slough).
														241		-177			
														242		-178		grading greenish-gray (GLEY1 3/1 5GY)	TW-100 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.4 tsf
TW	100	-	-	-	-	1.5								243		-179			
														244		-180			
														245		-181		grading w/high toughness; light greenish-gray (GLEY1 8/1 10Y); w/frequent black and brown stains	Stopped overnight after TW-100. Fluid level recorded @ 1.8' on 02/28/07. TW-101 could only be pushed 1'.
TW	101	-	-	-	-	1.3								246		-182			
														247		-183			
														248		-184		grading light greenish-gray (GLEY1 7/1 10Y); w/ frequent pale brown stains; black and brown stains grade out	TW-102 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.4 tsf
TW	102	-	-	-	-	1.6								249		-185			
														250		-186		grading w/medium toughness; w/frequent gravel size calcareous nodules (strong reaction w/HCl)	TW-103 could only be pushed 1.4'. PP > 4.5 tsf TV = 0.3 tsf
TW	103	-	-	-	-	1.5								251		-187			
														252		-188			
														253		-189		calcareous nodules grade to coarse sand size; w/ occasional calcareous material partings	TW-104 could only be pushed 14". PP > 4.5 tsf TV = 0.5 tsf
TW	104	-	-	-	-	1.3								254		-190			
														255					

BLACK & VEATCH

BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	105	-	-	-	-	1.6								255		-191		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy, medium dry strength; moist; hard; greenish-gray (GLEY1 5/1 5G); w/ occasional pockets of light brown clay	TW-105 could only be pushed 1.6'. PP > 4.5 tsf TV = 1.1 tsf
														256		-192			
														257		-193		—257.2—	
TW	106	-	-	-	-	1.5								258		-194		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; light brownish-gray (2.5Y 6/2); w/occasional calcareous nodules	TW-106 could only be pushed 1.4'. PP > 4.5 tsf TV = 0.4 tsf
														259		-195			
														260		-196		grading grayish-brown (2.5Y 5/2); w/frequent greenish-gray stains and occasional calcareous nodules	TW-107 could only be pushed 1.5'. PP = 3.5 tsf TV = 0.8 tsf
TW	107	-	-	-	-	1.7								261		-197			
														262		-198		—262.0—	
TW	108	-	-	-	-	0.7								263		-199		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; greenish-gray (GLEY1 5/1 10GY); w/frequent calcareous nodules	TW-108 could only be pushed 1.6'. Tube bent @ bottom. Soil described based on soil @ side of tip of tube. No PP or TV tests could be performed.
														264		-200		—264.5—	
TW	109	-	-	-	-	1.7								265		-201		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY1 6/1 10GY); w/occasional calcareous nodules	TW-109 could only be pushed 1.8'. Tube tip bent. PP > 4.5 tsf TV = 1.3 tsf
														266		-202			
														267		-203			@ 267.5' PP > 4.5 tsf TV = 0.4 tsf
TW	110	-	-	-	-	2.0								268		-204			
														269		-205			
														270					

BLACK & VEATCH

BORING LOG

BORING NO. RB-27

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17154.5' E 16931.7'	64.5 ft (MSL)	271.4 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/23/07	03/01/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	111	-	-	-	-	1.7								270		-206			TW-111 could only be pushed 17". PP > 4.5 tsf TV = 0.5 tsf
														271		-207			Bottom of boring @ 271.4'. Fluid level @ 1.8' @ completion of drilling. Deviation survey performed on 02/28/07. Fluid level @ 6.3' on 03/01/07. Boring backfilled w/ cement bentonite grout by tremie method on 03/01/07.
														272		-208			
														273		-209			
														274		-210			
														275		-211			
														276		-212			
														277		-213			
														278		-214			
														279		-215			
														280		-216			
														281		-217			
														282		-218			
														283		-219			
														284		-220			
														285					

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BORING LOG

BORING NO. RB-28
SHEET 1 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	9	16	18	34	1.5									0		68		[Fill] Clayey SAND (SC) - ~85% medium, subrounded to rounded sand; ~15% fines; moist; dense; poorly graded; yellowish-brown (10YR 5/6); w/some organic matter	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	13	18	20	38	1.3									2		66		@ 1.0' grading brownish-yellow (10YR 6/8); organic matter grades out	
SPT	03	13	18	18	36	1.3									4		64		@ 2.5' grading w/~70% medium, subrounded to rounded sand; ~30% fines; brownish-yellow (10YR 6/8)	
SPT	04	12	18	21	39	1.1									6		62		@5' grading to ~65% fine to coarse sand; ~30% fines; ~5% fine, subrounded gravel; wet	
SPT	05	15	23	31	54	1.1									8		60		@ 7.5' gravel grades fine to coarse grained	
SPT	06	13	19	16	35	1.2									10		58		grading to 60% fine to medium sand; ~30% fines; ~10% fine to coarse, subangular to rounded gravel; very dense	
SPT	07	15	25	30	55	0.8									12		56			
SPT	08	16	32	44	76	1.1									14		54		grading to ~65% sand; ~30% fines; ~5% fine to coarse gravel; w/dark brown clay inclusions	
															16		52			
															17.5				[Engineered Fill]	
															18		50			
															20		48		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; very dense; light gray (10YR 7/2)	
															22		46			
															24		44			SPT-08 gravel @ top of sampler (slough).
															26		42			
															28		40			
															30					

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BORING LOG

BORING NO. RB-28
SHEET 2 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	13	31	50	81	1.0								30	38			
														32	36			
														34	34			
SPT	10	23	42	45	87	1.2								36	32			
														38	30			
SPT	11	14	26	40	66	1.4								40	28		@ 40.5' w/fine gravel seam @ 40.8' grading yellow (10YR 7/6)	
														42	26		42.5	
														44	24		Poorly graded SAND (SP) - grading fine to medium sand; dense; very pale brown (10YR 7/4) w/fine to coarse, subrounded to rounded gravel and sand seam @ 45.3'	
SPT	12	12	16	18	34	1.4								46	22			
														48	20		48.3 [Citronelle (lower)]	
														50	18		Well graded SAND w/gravel (SW) - ~80% fine to coarse, subrounded to rounded sand; ~15% fine to coarse, subrounded to rounded, elongate gravel; ~5% fines; wet; very dense; pale yellow (2.5Y 1/4); w/gravel located mostly in thin seams	
SPT	13	15	26	39	65	1.4								52	16		52.5	
														54	14		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; dense; very pale brown (10YR 8/4)	
SPT	14	10	18	25	43	1.0								56	12			
														58	10			
														60				

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BORING LOG

BORING NO. RB-28

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	19	18	24	42	0.9								60		8		60.0 Well graded GRAVEL (GW) - ~85% fine to coarse, subangular to rounded gravel; ~10% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; strong brown (10YR 7/6); (few particles broke w/three hammer strikes)	Field sample smaller than recommended.
														62		6		61.2 Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 7/4)	
SPT	16	15	20	25	45	0.6								64		4		62.5 Well graded SAND (SW) - 92% fine to coarse, subrounded to rounded sand; 5% fine gravel; 3% fines; wet; dense; pale yellow (2.5Y 5/4)	SPT-16 gravel on top of sample (slough).
														66		2			
														68		0			
SPT	17	20	28	33	61	1.0								70		-2		70.5 Well graded GRAVEL w/sand (GW) - ~70% fine to coarse, subangular to rounded, elongate and flat gravel; ~25% fine to coarse, subangular to rounded sand; ~5% fines; wet; very dense; yellowish-brown (10YR 5/8)	
														72		-4		71.0 Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 5/4)	
SPT	18	14	19	26	45	1.1								74		-6		73.0 Poorly graded SAND (SP); dense	
														76		-8			
														78		-10		77.5	
SPT	19	12	14	24	38	0.9								80		-12		Clayey GRAVEL w/sand (GC) - ~50% fine to coarse, angular to rounded gravel; ~20% fine to coarse, subangular to rounded sand; ~30% fines w/medium plasticity, medium toughness; wet; dense; brownish-yellow (10YR 6/8) w/black matrix @ 81' and light gray clayey seam @ 81.3'	Drilling stopped overnight after SPT-19. Groundwater level recorded @ 2.5'.
														82		-14	C		
														84		-16			
SPT	20	12	7	10	17	1.5								86		-18		85.2 Lean CLAY (CH) - 85% fines w/LL=49, PI=29, medium toughness, no dilatancy; ~15% sand; moist, w/natural moisture content = 29%; firm; light greenish-gray (GLEY1 7/1) and yellowish-red (5YR 4/6)	Hole caved in 6' before SPT-20 cave-in drilled.
														88		-20			
														90					

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BORING LOG

BORING NO. RB-28
SHEET 4 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	21	-	-	-	-	2.2								90		-22		yellowish-red grades out; grading w/LL=40, PI=20; natural moisture content = 25%, insitu dry density = 97 pcf; w/ferrous spots	PP = 3.5 tsf TV = 6 tsf
														92		-24			
																		92.5	
														94		-26			
SPT	22	4	3	8	11	1.1								96		-28		Poorly graded SAND w/silt (SP-SM) - 90% fine to medium, subrounded to rounded sand; 10% non-plastic fines; wet, w/ natural moisture content = 24%; medium dense; very pale brown (10YR 8/3); w/fine gravel sized clay balls	
														98		-30			
																		97.5	
														100		-32		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; dense; yellow (10YR 7/6); w/ferrous partings @ 101.0'	SPT-23 gravel @ top of sample (slough).
SPT	23	12	14	24	38	0.7								102		-34			
														104		-36			
SPT	24	11	18	24	42	0.8								106		-38		grading pink	
														108		-40			
														110		-42		grading very dense; yellow (10YR 7/6)	
SPT	25	15	31	37	68	1.0								112		-44			
																		113.0 [Pascagoula]	@ 113.0' clay encountered as per driller's observations.
														114		-46			
SPT	26	4	4	6	10	1.5								116		-48		Lean CLAY (CL) - ~100% fines w/LL=46, PI=22, medium toughness, slow dilatancy; moist, w/natural moisture content = 28%; firm; light greenish-gray (GLEY1 7/1); w/frequent ferrous seams and black spots	
														118		-50			
														120					

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BORING LOG

BORING NO. RB-28

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	ROCK CORING: CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	7	8	15	23	1.5								120		-52		grading hard; black spots grade to ferrous spots	SPT performed as expected disturbance. Sampler sank ~6" before SPT performed. 4' layer of ferrous material at top of sampler.
														122		-54			
														124		-56			
TW	28	-	-	-	-	2.2								126		-58		grading to ~95% fines w/LL=44, PI=22; ~5% fine sand; w/natural moisture content = 26%; insitu dry density = 104 pcf	@ 125' PP > 4.5 tsf TV = 5 tsf
														128		-60			
SPT	29	12	14	17	31	1.5								130		-62		grading very hard; w/ferrous seam @ 130.4'	
														132		-64			
														134		-66			
TW	30	-	-	-	-	2.2								136		-68		grading 100% fines w/LL=47, PI=20; natural moisture content = 24%; greenish-gray (GLEY2 5/1); w/very hard clay granules and occasional calcareous spots	PP > 4.5 tsf TV could not be performed
														138		-70			
SPT	31	11	11	14	25	1.5								140		-72			
														142		-74			
																		142.5	
														144		-76			
TW	32	-	-	-	-	2.3								146		-78		Sandy Lean CLAY (CL) - ~70% fines w/medium plasticity, medium toughness, slow dilatancy; ~30% fine sand; moist; greenish-gray (GLEY2 5/1)	PP = 4 tsf TV could not be performed
																		147.5	
														148		-80			
														150					

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PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0'	E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	5	9	12	21	1.1								150		-82		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, slow dilatancy; low dry strength; moist; hard; greenish-gray (GLEY2 5/1)	
														152		-84			
														154		-86		grading w/low plasticity, low toughness	PP = 1.5 tsf TV = 0.3 tsf
TW	34	-	-	-	-	2.0								156		-88			
														158		-90			
SPT	35	8	11	13	24	1.5								160		-92		grading w/LL=35, PI=16; hard; moist, w/natural moisture content = 24%	Stopped overnight after TW-34. Groundwater level recorded @ 1.1'.
														162		-94			
														164		-96			
TW	36	-	-	-	-	2.1								166		-98			PP = 4.5 tsf TV = 0.3 tsf
														168		-100			
SPT	37	6	10	41	51	1.5								170		-102		grading w/medium plasticity, medium toughness, slow dilatancy; low dry strength	Sample 37A - Lean clay. Sample 37B - Clayey sand.
																		171.0	
														172		-104		Clayey SAND (SC) - ~60% fine sand; ~40% fines w/medium plasticity, medium toughness; wet; very dense; greenish-gray (GLEY2 5/1)	
																		173.0	Clay encountered @ ~173.0' as per driller's observations. PP ≥ 4.5 tsf TV = 0.4 tsf
														174		-106			
TW	38	-	-	-	-	2.2								176		-108		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; greenish-gray (GLEY2 5/1)	
														178		-110			
																		179.0	
														180					

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BORING LOG

BORING NO. RB-28

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0'	E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	39	6	7	12	19	1.8									180		-112	
															182		-114	
															184		-116	
SPT	40	6	7	12	19	1.8									186		-118	
															188		-120	
															190		-122	
TW	41	-	-	-	-	2.1									192		-124	
															194		-126	
SPT	42	10	11	14	25	1.8									196		-128	
															198		-130	
															200		-132	
TW	43	-	-	-	-	2.2									202		-134	
															204		-136	
SPT	44	12	14	19	33	1.2									206		-138	
															208		-140	
															210			

CLASSIFICATION OF MATERIALS	REMARKS
Fat CLAY (CH) - ~100% fines w/LL=87, PI=53, high toughness, no dilatancy; medium dry strength; moist; hard; dark greenish-gray (GLEY2 4/1); gradually grading to greenish-black (GLEY1 2.5/1 5GY)	
182.5	
Lean CLAY (CL) - ~100% fines w/LL=43, PI=17, low toughness, slow dilatancy; moist; hard; greenish-gray (GLEY2 5/1)	
grading w/medium plasticity, medium toughness, no dilatancy; moist; dark greenish-gray (GLEY2 5/1)	PP = 4.5 tsf TV = 0.5 tsf
193.5	
Fat CLAY (CH) - ~100% fines w/LL=64, PI=33; hard; natural moisture content = 40%; black (GLEY1 2.5/N); w/wood seam @ 195.6' and frequent ferrous spots	Sampler sank about 3" after hammer was placed on rod.
grading dark greenish-gray (GLEY2 5/1 5BG); ferrous spots grade out	PP > 4.5 tsf TV = 0.5 tsf
grading very hard; w/occasional calcareous spots	

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BORING LOG

BORING NO. RB-28

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMG	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	45	-	-	-	-	2.0								210		-142		grading w/LL=61, PI=32, natural moisture content = 26%; insitu dry density = 98 pcf	PP > 4.5 tsf TV = 0.5 tsf
														212		-144			
														214		-146			
SPT	46	16	20	28	48	1.7								216		-148		grading very hard; w/seam of hard, white nodules within the clay matrix @ 216.3'	
														218		-150			
TW	47	-	-	-	-	1.7								220		-152		seam of hard, white nodules grades out; grading w/frequent fine gravel sized, hard, white nodules	TW-47 only pushed 1.5'. PP > 4.5 tsf TV = 0.4 tsf Stopped overnight after TW-47. Groundwater level recorded @ 2.1'.
														222		-154			
														224		-156			
SPT	48	17	21	25	46	1.5								226		-158		grading greenish-gray (GLEY1 5/1); hard, white nodules grading to occasional w/yellowish-brown stains	
														228		-160			
TW	49	-	-	-	-	2.3								230		-162		grading w/high toughness, no dilatancy; high dry strength; moist; greenish-gray (GLEY1 6/1 10GY)	TW-49 only pushed ~7". Then the driller hammered it once, but we got complete recovery.
														232		-164			
														234		-166			
SPT	50	10	15	19	34	1.6								236		-168		grading w/LL=59, PI=33; medium toughness; very hard; natural moisture content = 26%; grayish-brown (10YR 5/2); w/occasional ferrous spots	PP > 4.5 tsf TV = 0.5 tsf
														238		-170			
														239.0					
														240					

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BORING LOG

BORING NO. RB-28

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	51	-	-	-	-	2.1								240		-172		Lean CLAY (CL) - ~100% fines w/LL=37, PI=17; natural moisture content = 23%; insitu dry density = 102 pcf; greenish-gray (GLEY1 6/1 10GY)	PP > 4.5 tsf TV = 2.5 tsf TW-51 only pushed 1.7'.
														242		-174			
														244		-176			
SPT	52	12	14	18	32	1.8								246		-178		grading very hard	
														248		-180			
TW	53	-	-	-	-	1.9								250		-182		grading to greenish-gray (GLEY1 6/1 10Y)	PP ≥ 4.5 tsf. TV = 1.2 tsf TW-53 only pushed 1.5'.
														252		-184			
														254		-186			
SPT	54	18	25	28	53	1.8								256		-188		grading greenish-gray (GLEY1 6/1 10Y) and grayish-brown (10YR 5/2); w/seam of white, hard nodules within clay matrix @ 256'	Sample SPT-54 @ clay matrix w/ hard nodules.
														258		-190			
TW	55	-	-	-	-	2.1								260		-192		seam of hard nodules within clay matrix grades out; w/ occasional white, hard nodules	PP > 4.5 tsf TV = 0.3 tsf TW-55 only pushed 1.2'.
														262		-194			
														264		-196			
SPT	56	17	20	23	43	1.6								266		-198		grading grayish-brown (10YR 5/2) @ 265.5' grading grayish-green (GLEY1 4/2)	
														268		-200			
														270					

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BORING LOG

BORING NO. RB-28
SHEET 10 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17158.0' E 16998.8'	68.2 ft (MSL)	271.6 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	57	-	-	-	-	2.1								270		-202		grading w/medium plasticity, medium toughness, no dilatancy; moist; greenish-gray (GLEY1 5/1)	PP > 4.5 tsf TV = 0.6 tsf
														272		-204			Bottom of boring @ 271.6'. Drilling mud level @ ground surface at completion of drilling. Boring caved @ 83.0'; boring cleaned to 270.0'. Deviation survey performed on 02/14/07. Boring backfilled w/cement bentonite grout by tremie method on 02/15/07.
														274		-206			
														276		-208			
														278		-210			
														280		-212			
														282		-214			
														284		-216			
														286		-218			
														288		-220			
														290		-222			
														292		-224			
														294		-226			
														296		-228			
														298		-230			
														300					

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BORING LOG

BORING NO. RB-28A

SHEET 1 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17164.2' E 17001.1'	68.4 ft (MSL)	150.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	03/13/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		68		Undifferentiated Overburden (See Boring Log RB-28)	Boring advanced w/3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud.
														2		66			
														4		64			
														6		62			
														8		60			
														10		58			
														12		56	C		
														14		54			
														16		52			
														18		50			
														20		48			
														22		46			
														24		44			
														26		42			
														28		40			
														30					

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BORING LOG

BORING NO. RB-28A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17164.2'	E 17001.1'	68.4 ft (MSL)	150.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	03/13/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
30		38			Below 30', advanced w/2-3/4" drag bit to 41'. Pressuremeter test No. 1 performed at 37.75'. Stop drilling on 03/13/07.
32		36			
34		34			
36		32			
38		30			
40		28			Continued drilling on 03/14/07. Boring reamed/advanced w/3-7/8" baffle bit w/ NW rods using water and bentonite as drilling mud to 43'.
42		26			
44		24			Below 43', boring advanced w/2-3/4" drag bit to 47'. Pressuremeter test No. 2 performed at 45'.
46		22			
48		20			Boring reamed/advanced w/3-7/8" baffle bit to 50'.
50		18			Below 50', boring advanced w/2-15/16" tricone bit to 53'. Pressuremeter test No. 3 performed at 51'.
52		16			
54		14			Below 53', boring advanced w/2-15/16" tricone bit to 70'.
56		12			
58		10			
60					

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BORING LOG

BORING NO. RB-28A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17164.2' E 17001.1'	68.4 ft (MSL)	150.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	03/13/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JPL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
60		8			
62		6			
64		4			
66		2			Pressuremeter test No. 4 performed at 65'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 74'.
68		0			
70		-2			
72		-4			
74		-6			Below 74', boring advanced w/2-3/ 4" drag bit to 77'. Pressuremeter test No. 5 performed at 75'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 93'. Stop drilling on 03/14/07. Continue drilling on 03/15/07. Boring caved; hole cleaned w/ 3-7/8" baffle bit to 88'. Below 88', boring cleaned w/ 2-3/4" drag bit to 93'. Boring caved to 90'. Added mud and cleaned/ advanced hole w/ 2-3/4" drag bit to 95'. Boring caved to 85'. Boring
76		-8			
78		-10			
80		-12			
82		-14			
84		-16			
86		-18			
88		-20			
90					

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BORING LOG

BORING NO. RB-28A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17164.2' E 17001.1'	68.4 ft (MSL)	150.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	03/13/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
90		-22			cleaned w/3-7/8" baffle bit to 93'.
92		-24			
94		-26			Below 93', boring cleaned/ advanced w/2-3/ 4" drag bit to 97'. Pressuremeter test No. 6 performed at 95'. Placed 4.5" casing to 95'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 103'.
96		-28			
98		-30			
100		-32			
102		-34			
104		-36			Below 103', boring advanced w/2-3/4" drag bit to 110'. Pressuremeter test No. 7 performed at 105'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 113'.
106		-38			
108		-40			
110		-42			
112		-44			
114		-46			Below 113', boring advanced w/2-3/4" drag bit to 117'. Pressuremeter test No. 8 performed @ 115'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 123'.
116		-48			
118		-50			
120					

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BORING LOG

BORING NO. RB-28A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17164.2' E 17001.1'	68.4 ft (MSL)	150.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	03/13/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														120		-52	
														122		-54	
														124		-56	
														126		-58	
														128		-60	
														130		-62	
														132		-64	
														134		-66	
														136		-68	
														138		-70	
														140		-72	
														142		-74	
														144		-76	
														146		-78	
														148		-80	
														150			

CLASSIFICATION OF MATERIALS

REMARKS

Below 123', boring advanced w/2-3/4" drag bit to 127'. Pressuremeter test No. 9 performed at 125'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 133'.

Below 133', boring advanced w/2-3/4" drag bit to 137'. Pressuremeter test No. 10 performed at 135'. Boring reamed/ advanced w/3-7/ 8" baffle bit to 146'.

Below 146', boring advanced w/2-3/4" drag bit to 150'. Pressuremeter test No. 11 performed at

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BORING LOG

BORING NO. RB-28A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17164.2' E 17001.1'	68.4 ft (MSL)	150.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	03/13/07	03/20/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														150		-82			148'. Bottom of boring @ 150'. Water level not recorded. Boring caved to 12.0'. Boring grouted w/ cement bentonite grout on 03/20/07.
														152		-84			
														154		-86			
														156		-88			
														158		-90			
														160		-92			
														162		-94			
														164		-96			
														166		-98			
														168		-100			
														170		-102			
														172		-104			
														174		-106			
														176		-108			
														178		-110			
														180					

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BORING LOG

BORING NO. RB-29

SHEET 1 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	3	6	8	14	1.5								0		68		[Engineered Fill] Poorly graded SAND (SP) - ~90% fine to medium, rounded to subrounded sand; ~5% fine, angular to subangular gravel; ~5% fines; moist; medium dense; yellow (10YR 7/6)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
														2		66			
SPT	02	7	13	17	30	0.9								4		64		grading very pale brown (10YR 7/4)	
SPT	03	7	15	19	34	1.0								6		62		grading dense	
SPT	04	7	16	18	34	1.0								8		60		grading fine to coarse, subrounded to subangular sand	
														10		58			
SPT	05	8	12	17	29	1.0											▼	grading medium dense	
														12		56			
														14		54			
SPT	06	16	20	31	51	1.1								16		52		grading very dense	
														18		50			
SPT	07	12	25	34	59	0.9								20		48			
														22		46			
														24		44			
SPT	08	12	28	44	72	0.9								26		42			
														28		40			
														30					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	10	24	34	58	1.0								30		38			Water level @ 11.5' on 01/28/07.
														32		36			
														34		34			
SPT	10	13	30	39	69	0.9								36		32			
														38		30			
SPT	11	18	32	43	75	1.2								40		28			
														42		26			
														44		24			
SPT	12	25	50	-	+50	1.2								46		22			
														48		20			
SPT	13	30	49	50/5	+50	1.2								50		18		50.9 [Citronelle (lower)] Poorly graded SAND w/silt - ~90% fine to medium, subrounded to rounded sand; ~10% fines; moist; very dense; yellow (10YR 7/8)	
														52		16			
														54		14		grading wet; dense	
SPT	14	9	18	26	44	1.2								56		12			
														58		10		58.0	
														60					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JN	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	11	14	15	29	1.1								60		8		Poorly graded SAND (SP) - 91% fine to medium, subrounded to rounded sand; 6% fine gravel; 3% fines; wet; medium dense; pale yellow (2.5Y 8/4)	
														62		6			
														64		4			
SPT	16	11	22	37	59	1.0								66		2		@ 65.4' grading yellow (2.5Y 8/6); very dense	
														68		0			
SPT	17	16	26	36	62	0.9								70		-2			
														72		-4			
														74		-6			
SPT	18	2	WOR	WOR	NA	0								76		-8			SPT-18 results indicated as not applicable (NA). Unclear if interval was correctly sampled. See Boring RB-29A for additional sampling.
														78		-10		78.0	
SPT	19	21	31	37	68	0.8								80		-12		Well graded SAND w/silt and gravel (SW-SM) - ~75% fine to coarse, angular to subangular sand; ~15% fine to coarse, angular to subangular gravel; ~10% fines; moist; very dense; brownish-yellow (10YR 6/8)	
														82		-14			
														84		-16		83.5	
SPT	20	3	5	12	17	0.5								86		-18		Poorly graded SAND w/gravel (SP) - 52% medium to coarse sand; 45% fine gravel; 3% fines; medium dense; natural moisture content = 9%; brownish-yellow (10YR 6/8)	
														88		-20			
														90					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Well graded GRAVEL (GW) - ~95% fine to coarse, subrounded to angular gravel; ~5% fine to medium sand; wet; medium dense; yellowish-brown (10YR 5/8)	
93.0	
Poorly graded SAND w/gravel (SP) - 69% fine to coarse, subangular to subrounded sand; 29% fine to coarse, subrounded to angular gravel; 2% fines; wet; medium dense; yellowish-brown (10YR 5/8)	
98.0	
Lean CLAY (CL) - ~95% fines w/LL=43, PI-26, medium toughness, no dilatancy; ~5% fine sand; wet, moist, natural moisture content = 18%; firm; pale yellow (2.5Y 8/3)	Water level @ 12.8' on 01/29/07.
101.1	
Silty SAND (SM) - ~70% fine sand; ~30% fines w/low plasticity, low toughness, no dilatancy; medium dense; wet; yellow (10YR 7/8)	
103.2	
Poorly graded SAND w/silt (SP-SM) - 86% fine sand; 12% fines; 2% fine gravel; medium dense; wet; pale yellow (5Y 8/2)	
108.0	
Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; very dense; wet; pale yellow (5Y 8/2) w/fine, subangular to angular gravel seam (0.2')	
113.0 [Pascagoula]	
Lean CLAY (CL) - ~95% fines w/LL=43, PI=26, high toughness, no dilatancy; ~5% fine sand; firm; moist; natural moisture content = 27%; pale yellow (2.5Y 8/2)	PP = 1.5 tsf
118.0	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)
SPT	21	7	7	9	16	1.5								90	-22
														92	-24
														94	-26
SPT	22	6	9	7	16	1.3								96	-28
														98	-30
SPT	23	5	8	9	17	0.6								100	-32
														102	-34
														104	-36
SPT	24	8	12	17	29	0.9								106	-38
														108	-40
SPT	25	21	40	50	90	1.4								110	-42
														112	-44
														114	-46
SPT	26	5	6	7	13	1.5								116	-48
														118	-50
														120	

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	6	10	13	23	1.5								120		-52		Fat CLAY (CH) - ~95% fines w/high plasticity, high toughness, no dilatancy; ~5% fine sand; moist; hard; pale yellow (5Y 8/2); fine sand seam (0.3') in top of sampler	PP = 3.5 tsf
														122		-54			
																		123.0	
														124		-56			
SPT	28	10	13	15	28	1.5								126		-58		Lean CLAY (CL) - 100% fines, w/LL=34, PI=15, low toughness, slow dilatancy; wet, natural moisture content = 27%; pale yellow (5Y 8/2)	
														128		-60			
TW	29	-	-	-	-	1.9								130		-62		grading w/LL=25, PI=7, high toughness, no dilatancy; moist, natural moisture content = 18%; hard; pale yellow (5Y 8/3)	PP > 4.5 tsf
														132		-64			
														134		-66			
SPT	30	9	15	17	32	1.5								136		-68		grading w/medium plasticity, medium toughness, slow dilatancy; natural moisture content = 26%; firm; grayish-green (GLEY1 5/2)	PP = 2.0 tsf
														138		-70			
TW	31	-	-	-	-	1.6								140		-72			PP > 4.5 tsf
														142		-74			
														144		-76			
SPT	32	8	13	18	31	1.3								146		-78		grading w/LL=36, PI=15, very hard; natural moisture content = 27%	
														148		-80			
														150					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	33	-	-	-	-	1.8								150		-82			PP > 4.5 tsf TV = 0.7 tsf
														152		-84			
														154		-86			
SPT	34	8	12	14	26	1.5								156		-88			PP = 3.5 tsf
														158		-90		—158.0—	
TW	35	-	-	-	-	1.2								160		-92		Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; greenish-gray (GLEY1 6/1) and pale yellow (2.5Y 7/4)	
														162		-94			
																		—163.0—	
														164		-96			
SPT	36	18	22	NA	NA	1.5								166		-98		Lean CLAY (CL) - ~95% fines w/LL=31, PI=12, medium toughness, slow dilatancy; moist, natural moisture content = 26%; hard; greenish-gray (GLEY1 5/1)	SPT-36 sampler @ tip 0.5' below clean-out depth. Spoon driven 1.0' and SPT result not applicable (NA). PP = 3.25 tsf TV = 0.4 tsf
														168		-100			
SPT	37	9	9	17	26	1.5								170		-102			PP = 1.75 tsf TV = 0.7 tsf
														172		-104			
														174		-106			
TW	38	-	-	-	-	2.2								176		-108		grading w/LL=32, PI=11, natural moisture content = 24%	Cave in @ 140'. Water level @ 12.5' on 01/30/07. Sampler tip = 175.3'.
														178		-110		—178.0—	
														180					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	39	5	8	12	20	1.5								180		-112		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; dark greenish-gray (GLEY 1 4/1); w/dark brown wood parting (2 mm)	PP = 3.0 tsf TV = 1.4 tsf
														182		-114			
																		183.0	
														184		-116	C		
TW	40	-	-	-	-	1.9								186		-118		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, slow dilatancy; moist; hard; greenish-gray (GLEY1 6/1)	TW-40 sample tip 0.5' below clean-out depth (185.0'). PP > 4.5 tsf TV = 0.5 tsf
														188		-120			
																		188.5	
SPT	41	11	18	25	43	1.4								190		-122		Sandy SILT (ML) - ~70% fines w/low plasticity, low toughness, rapid dilatancy; ~30% fine, rounded sand; wet; dense; pale yellow (5Y 7/4)	
														192		-124			
																		193.0	
														194		-126			
TW	42	-	-	-	-	1.7								196		-128		Silty SAND (SM) - ~70% fine, rounded sand; ~30% fines w/low plasticity, low toughness, rapid dilatancy; wet; light yellowish-brown (2.5Y 6/4)	
														198		-130			
																		198.5	
														200		-132		Sandy SILT (ML) - 65% fines; w/low plasticity, low toughness, rapid dilatancy; 35% fine sand; greenish-gray (GLEY1 5/1); w/clay seam of 0.2'	
SPT	43	6	8	19	27	1.5												201.0	
														202		-134		Poorly graded SAND w/silt (SP-SM) - ~90% fine, rounded sand; ~10% fines; wet; medium dense; greenish-gray (GLEY1 5/1)	
														204		-136			
																		203.0	
TW	44	-	-	-	-	1.6								206		-138		Lean CLAY (CL) - ~95% fines, w/medium plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY1 6/1)	PP = 4.25 tsf TV = 0.6 tsf
														208		-140			
																		208.5	
														210					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	45	10	13	15	28	1.5								210	-142	Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY1 6/1)	PP = 3.5 tsf TV = 1.1 tsf
														212	-144		
																213.0	
														214	-146		
TW	46	-	-	-	-	1.8								216	-148	Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, slow dilatancy; moist; hard; greenish-gray (GLEY1 6/1)	PP > 4.5 tsf TV = 0.6 tsf
														218	-150		
SPT	47	17	20	25	45	1.5								220	-152	grading w/LL=47, PI=22, high toughness, no dilatancy; natural moisture content = 21%; greenish-gray (GLEY1 6/1)	PP > 4.5 tsf TV = 1.4 tsf
														222	-154		
														224	-156		
TW	48	-	-	-	-	1.4								226	-158		PP = 4.5 tsf TV = 0.6 tsf
														228	-160		
SPT	49	18	20	26	46	1.5								230	-162		Cave-in @ 210.0'. Water level @ 12.0'. PP > 4.5 tsf TV = 1.5 tsf
														232	-164		
														234	-166		
TW	50	-	-	-	-	2.0								236	-168	grading light brownish-gray (2.5Y 6/2)	PP > 4.5 tsf TV = 1.8 tsf
														238	-170		
														240			

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	51	12	17	19	36	0.3								240		-172			
														242		-174			
														244		-176			
																		grading light greenish-gray (GLEY1 7/1)	PP > 4.5 tsf
TW	52	-	-	-	-	2.2								246		-178			TV = 1.1 tsf
														248		-180			
														250		-182			PP > 4.5 tsf
SPT	53	13	18	21	39	1.5													TV = 1.6 tsf
														252		-184			
														254		-186			
																		grading greenish-gray (GLEY1 6/1) and pale brown (10YR 6/3); w/calcareous nodules; strong reaction with HCl	PP > 4.5 tsf
TW	54	-	-	-	-	1.2								256		-188			TV = 1.6 tsf
														258		-190			
														260		-192		@ 260.1' grading w/LL=43, PI=21; greenish-gray (GLEY1 6/1); fine sand seam from 260.5' to 260.8'	
SPT	55	16	18	24	42	1.5								262		-194			
														264		-196			
																		grading w/medium plasticity, low toughness, slow dilatancy; yellowish-brown (10YR 5/4)	PP > 4.5 tsf
TW	56	-	-	-	-	2.3								266		-198			TV = 0.6 tsf
														268		-200			
														270					

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BORING LOG

BORING NO. RB-29

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.7' E 17079.7'	68.3 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass	Plant Grid	01/27/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
C. P. Jiang CPJ	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	57	15	20	22	42	1.5								270		-202		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; yellowish-brown (10YR 5/4)	PP > 4.5 tsf TV = 1.3 tsf
														272		-204			Bottom of boring @ 271.5'. Fluid level @ 11.0' @ completion of drilling. Cave-in measured @ 4.0' on 02/22/07. Deviation survey performed on 02/22/07. Cave-in measured @ 185.0' on 02/23/07. Fluid level @ 11.0' on 02/23/07. Boring backfilled w/ cement bentonite grout on 02/23/07.
														274		-206			
														276		-208			
														278		-210			
														280		-212			
														282		-214			
														284		-216			
														286		-218			
														288		-220			
														290		-222			
														292		-224			
														294		-226			
														296		-228			
														298		-230			
														300					

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BORING LOG

BORING NO. RB-29A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.4' E 17074.5'	69.9 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, sand surface	Plant Grid	05/03/07	05/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JDL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
0				Undifferentiated overburden (See Boring RB-29)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
2		68			
4		66			
6		64			
8		62			
10		60			
12		58			
14		56			
16		54			
18		52			
20		50			
22		48			
24		46			
26		44			
28		42			
30		40			

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BORING LOG

BORING NO. RB-29A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.4' E 17074.5'	69.9 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, sand surface	Plant Grid	05/03/07	05/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	01	31	50/5"	-	+50	0.9								45.0		24	
SPT	02	29	41	50/5"	+50	1.1								51.0		18	
SPT	03	10	25	30	55	1.0								52.5		16	
														57.5		12	

CLASSIFICATION OF MATERIALS

45.0 [Citronelle (lower)]

Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fine gravel; ≤ 5% fines; wet; very dense; pale yellow (2.5Y 2/4)

51.0

Well graded GRAVEL w/clay and sand (GW-GC) - ~50% fine to coarse, subangular to rounded gravel, few particles broke w/1 hammer blow, 3/4" maximum size; ~40% fine to medium, subrounded to rounded sand; ~10% fines w/medium plasticity; wet; very dense; yellow (10YR 7/6)

52.5

Well graded SAND w/silt (SW-SM) - ~90% fine to coarse, subrounded to rounded sand; ~10% fines w/no plasticity; very pale brown (10YR 7/4); wet; very dense; w/sand and gravel seam @ 55.7'

57.5

REMARKS

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BORING LOG

BORING NO. RB-29A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.4' E 17074.5'	69.9 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, sand surface	Plant Grid	05/03/07	05/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	04	17	18	18	36	1.0								60				Poorly graded SAND (SP) - 94% fine to coarse, subrounded to rounded sand; 4% fines w/no plasticity; 2% fine gravel; wet, natural moisture content = 14%; dense; very pale brown (10YR 7/4)	Problems w/ hammer chain too loose; chain fixed; continued.
														62		8			
														64		6			
SPT	05	18	47	46	93	1.6								66		4		grading very dense; w/gravel seam @ 65.6' @ 65.7' grading to ~90% sand; ~5% fines; ~5% fine, rounded gravel; very pale brown (10YR 8/4)	
SPT	06	19	43	50	93	1.4								68		2		@ 67.5' grading w/fine gravel seam @ 68.1' grading yellow (2.5Y 7/6)	
																		69.5	
SPT	07	17	27	45	72	1.1								70		0		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; 5% fines; wet; very dense; pale yellow (2.5YR 8/4) to yellow (2.5Y 7/6); w/ fine gravel seam @ 70.7'	
														72		-2		72.0	
SPT	08	15	19	27	46	1.1								74		-4		Poorly graded SAND w/silt (SP-SM) - 93% fine to coarse, subrounded to rounded sand; 5% fines w/medium plasticity; 2% fine gravel; wet; dense; pale yellow (2.5Y 8/7); w/sandy gravel seam	
																		74.5	
SPT	09	18	38	43	81	1.1								76		-6		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 8/3); w/gravelly sand seam @ 75.4'	
																		77.0	
SPT	10	19	23	20	43	1.1								78		-8		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; pale yellow (2.5YR 8/3); w/3 coarse gravel pieces @ 78.2'	Sample 10A - SP Sample 10B - SW Field sample smaller than recommended.
														80		-10		78.7	
SPT	11	25	33	40	73	0.9												Well graded SAND (SW) - ~90% fine to coarse, subangular to subrounded sand; ~5% fine, subrounded gravel; ~5% fines; wet; dense; pale yellow (2.5Y 1/4)	Sample 11A - GW
														82		-12		79.5	
SPT	12	14	17	20	37	0.8								84		-14		Well graded GRAVEL w/sand (GW) - ~50% fine to coarse, subangular to rounded gravel, a few particles fractured w/1 hammer blow, maximum size 1-1/2"; ~45% fine to coarse, angular to rounded sand; ~5% fines; wet; very dense; very pale brown (10YR 7/4)	Sample 11B - SW-SC Field sample smaller than recommended. Problems w/ pump while drilling to 82.5'. Loss of circulation @ 85'.
																		81.0	
SPT	13	10	9	14	23	0.7								86		-16		Well graded SAND w/clay (SW-SC) - ~90% fine to coarse, angular to subrounded sand; ~10% fines w/low plasticity; wet; very dense; brownish-yellow (10YR 6/6)	
														88		-18		82.0	
														90		-20		Well graded SAND w/clay and gravel (SW-SC); ~50% fine to coarse, angular to rounded sand; ~30% fine, subangular to rounded gravel; ~20% fines w/low	

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BORING LOG

BORING NO. RB-29A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.4' E 17074.5'	69.9 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, sand surface	Plant Grid	05/03/07	05/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	14	11	15	20	35	0.7								90				plasticity; wet; dense; yellowish-brown (10YR 6/8)	Hole caved while placing bit to drill to 90'. Problems keeping hole open @ ~85'. Stopped overnight. Fluid level recorded @ 9.8' on 05/04/07. Hole caved in @ 9.9'. Drilling restarted 05/07/07. Loss of circulation @ 90'. Sample @ 90' OK. Drilled to 95' w/thick mud. Hole caved twice to 90' while trying to sample @ 95'. Field sample smaller than recommended.
																		84.5	
														92		-22		Poorly graded SAND w/gravel (SP) - 56% fine to coarse, angular to rounded sand; 40% fine to coarse, subangular to rounded gravel, few particles fractured w/1 hammer blow; maximum size 1"; 4% non-plastic fines; wet; medium dense; very pale brown (10YR 7/4); w/sandy clay ball @ tip of sampler	
														94		-24			
																		90.0	
SPT	15	7	5	5	10	1.3								96		-26		Clayey GRAVEL w/sand (GC) - ~40% coarse to fine, angular to rounded gravel, few particles broke w/1 hammer blow, maximum size 1.25"; ~40% fine to coarse, angular to rounded sand; ~20% fines w/ medium plasticity; wet; dense; very pale brown (10YR 7/4)	
														98		-28			
																		95.0	
														100		-30		Poorly graded SAND (SP) - ~85% medium to coarse, angular to rounded sand; ~10% fine, subangular gravel; ~5% fines; wet; loose; dark reddish-brown (5YR 3/4); w/clayey sand seam @ 95.8'	
SPT	16	8	22	21	43	0.8												96.0	
														102		-32		Sandy SILT (ML) - ~60% fines w/low plasticity, low toughness, rapid dilatancy; ~40% fine sand; wet; firm; light gray (5YR 7/1); w/frequent ferrous granules	
																		100.0	
														104		-34		Poorly graded SAND w/silt (SP-SM) - ~92% fine to medium, subangular to rounded sand; 8% fines w/no plasticity; wet; dense; very pale brown (10YR 8/2); w/frequent ferrous partings	
														106		-36			@ 105' hole caved in ~5' when sampler was placed in hole. Driller noted same materials as 100'. Cuttings corroborate sand; will continue to 110' to try to stabilize hole.
														108		-38			
														110		-40			
SPT	17	24	35	50/5"	+50	0.9												110.0	
														112		-42		Poorly graded SAND (SP) - ~95% fine to medium sand; ~5% fines; wet; very dense; pale yellow (2.5Y 8/2); w/occasional ferrous partings	
														114		-44			Bottom of boring @ 111.5'. Fluid level @ ground surface at completion of drilling. Deviation survey performed on 05/07/07. Fluid level recorded @ 11.0' on 05/07/07. No cave-in. Boring backfilled w/
														116		-46			
														118		-48			
														120		-50			

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BORING LOG

BORING NO. RB-29A

SHEET 5 OF 5

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17128.4' E 17074.5'	69.9 ft (MSL)	111.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Very slight slope, sand surface	Plant Grid	05/03/07	05/08/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														120					cement bentonite grout on 05/08/07.
														122		-52			
														124		-54			
														126		-56			
														128		-58			
														130		-60			
														132		-62			
														134		-64			
														136		-66			
														138		-68			
														140		-70			
														142		-72			
														144		-74			
														146		-76			
														148		-78			
														150		-80			

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7'	E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	7	10	15	25	1.2								0	64	[Engineered Fill] Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subangular to subrounded sand; ~10% fines; yellow (10YR 7/8); medium dense; moist	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	9	16	16	32	1.3								2	62	grading reddish-yellow (7.5YR 6/8); dense; angular, coarse gravel; w/maximum size 1"	
SPT	03	7	11	19	30	1.2								4	60	grading reddish-yellow (7.5YR 7/8); medium dense; frequent subrounded, coarse to fine gravel throughout the sample w/maximum size 3/4"	
SPT	04	11	25	25	50	1.0								6	58	7.0	
SPT	05	16	26	29	54	1.2								8	56	[Citronelle (upper)] Clayey SAND (SC) - ~80% fine to medium, subangular to subrounded sand; about 20% fines w/low plasticity; very dense; moist: reddish-yellow (7.5YR 7/8)	
SPT	06	5	11	14	25	1.0								10	54		
														12	52		
														14	50	grading medium dense	
														16	48		
														18	46	18.3	
SPT	07	9	18	15	33	0.9								20	44	Poorly graded SAND (SP) - ~100% fine to medium, subangular to subrounded sand; pale yellow (5Y 8/3); dense; wet	
														22	42	21.3 Poorly graded SAND w/silt (SP) - light red (2.5YR 7/6); wet	Not enough sample @ 21.3' to determine percentage.
														24	40		
SPT	08	2	5	7	12	1.2								26	38	grading w/89% fine sand; 11% non-plastic fines; light red (2.5YR 7/6); medium dense; wet, natural moisture content = 23%; pieces of subrounded, coarse, hard gravel, maximum size 1-1/4"	
														28	36	28.3	
														30			

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BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	7	14	20	34	0.8								30		34		Poorly graded SAND (SP) - ~95% fine to coarse, subrounded to subangular sand; ~5% fines; very pale yellow (10YR 8/4); dense; wet; w/pieces of subrounded, fine to coarse, hard gravel; maximum size 7/8"	Fluid level at ground surface @ start of drilling on 02/06/07.
														32		32			
														34		30			
SPT	10	5	9	19	28	0.8								36		28		grading fine to medium sand; medium dense; light red (2.5YR 7/6) @ 36.2' grading w/fine to coarse sand; yellow (10YR 7/8)	
														38		26		38.0	
SPT	11	10	13	18	31	1.0								40		24		Well graded SAND w/gravel (SW) - ~65% fine to coarse, subrounded to subangular sand; ~35% fine to coarse, subrounded to subangular, hard gravel; maximum size 1"; pale yellow (2.5Y 8/4); dense; wet	
														42		22		43.0	
SPT	12	9	16	21	37	1.2								44		20		Poorly graded SAND (SP); ~95% fine to medium, subrounded to subangular sand; ~5% fines; brownish-yellow (10YR 6/6); dense; wet; fine to coarse, subrounded, hard gravel; w/maximum size 1" from ~46' to 46.2'; grading pinkish-white (7.5YR 8/2) from ~46.2' to 46.5'	
														46		18			
														48		16			
SPT	13	7	17	23	40	0.9								50		14		grading pale yellow (2.5YR 8/2); gravel found from 50.8' to 50.9'	
														52		12		53.0 [Citronelle (lower)]	
SPT	14	12	20	32	52	0.9								54		10		Well graded SAND (SW) - ~95% fine to coarse, subrounded to subangular sand; ~5% fines; pale yellow (2.5Y 8/4); very dense; wet	
														56		8			
														58		6			
														60					

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	7	14	18	32	0.8								60		4		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to subangular sand; ~5% fines; very pale brown (10YR 8/3); dense; wet	
														62		2			
																		63.0	
														64		0			
SPT	16	10	26	34	60	0.9								66		-2		Well graded SAND (SW) - ~95% fine to coarse, subangular to subrounded sand; ~5% fines; pale yellow (2.5Y 7/3); very dense; wet; gravel w/maximum size 1-1/2" from 65.3' to 65.4' @ 66.3' grading yellow (10YR 7/8)	
														68		-4			
SPT	17	15	26	35	61	1.1								70		-6		grading very pale brown (10YR 8/3) and pale yellow (2.5Y 7/3); gravel found from ~70.5' to 70.6' w/ maximum size 1"	
														72		-8			
														74		-10			
SPT	18	16	33	34	67	1.3								76		-12		grading pale yellow (2.5Y 7/3); gravel found from 75.8' to 76' w/maximum size 1-1/4"; @ 76.2' grading yellow (2.5Y 7/6)	Driller felt gravel @ 76.5'.
														78		-14			
														80		-16		80.1	
SPT	19	9	6	10	16	1.6								82		-18		Fat CLAY (CH) - ~100% fines w/LL=51, PI=25, high toughness, no dilatancy; light greenish-gray (GLEY1 10Y 8/1); w/strong brown (7.5YR 5/8) stains; hard; moist, natural moisture content = 26%	SPT-19 check valve was clogged.
														84		-20		83.5	
TW	20	-	-	-	-	2.2								86		-22		Lean CLAY (CL) - ~100% fines w/LL=32, PI=14; light greenish-gray (GLEY1 10Y 8/1); hard; natural moisture content = 28%	TW-20 PP = 3.3 tsf TV = 0.3 tsf
														88		-24			
														90					

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
91.0	
Silty SAND (SM) - ~85% fine to medium, subrounded to subangular sand; ~15% fines w/no plasticity; pale yellow (5Y 8/2); wet	
93.0	
Poorly graded SAND (SP) - ~95% fine to medium, subrounded to subangular sand; about 5% fines; yellow (10YR 8/8); dense; wet	
grading pink (7.5YR 8/3)	
grading pale yellow (2.5Y 8/3)	
107.0 [Pascagoula]	Driller felt clay @ 107'.
Lean CLAY (CL) - ~100% fines w/LL=38, PI=20, high toughness, no dilatancy; light greenish-gray (GLEY1 10Y 8/1); hard; moist, natural moisture content = 27%	PP = 3.0 tsf TV = 0.3 tsf
113.5	
Silty SAND (SM) - 77% fine sand; 23% fines w/no plasticity; pale yellow (5Y 8/2); loose; wet; gravel sized, laminated clay balls found at few places in the sample	
118.5	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	21	3	10	11	21	1.5							
SPT	22	8	14	20	34	1.0							
SPT	23	6	16	21	37	1.1							
SPT	24	10	13	21	34	1.2							
TW	25	-	-	-	-	2.0							
SPT	26	1	3	6	9	1.4							

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren DJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	8	13	14	27	1.8								120		-56		Lean CLAY (CL) - ~100% fines w/LL=49, PI=26, high toughness, no dilatancy; light greenish-gray (GLEY1 10Y 8/1); hard; moist, natural moisture content = 23%	PP > 4.5 tsf
														122		-58			
														124		-60			
TW	28	-	-	-	-	2.2								126		-62			PP > 4.5 tsf TV = 0.8 tsf
														128		-64			
SPT	29	9	12	14	26	1.8								130		-66		grading w/LL=38, PI=21, medium toughness, pale yellow (5Y 7/3); natural moisture content = 22%	PP > 4.5 tsf
														132		-68			
														134		-70			
TW	30	-	-	-	-	2.1								136		-72		grading greenish-gray (GLEY1 5G 6/1)	PP > 4.5 tsf TV = 0.4 tsf
														138		-74			
SPT	31	9	10	15	25	1.8								140		-76		grading w/ occasional sand and sandy seams; laminated	
														142		-78			
																		143.0	
														144		-80			
TW	32	-	-	-	-	2.1								146		-82		Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness, no dilatancy; about 20% fine sand; greenish-gray (GLEY1 5G 6/1); hard; moist; powdery and blocky clay	PP > 4.5 tsf TV = 0.4 tsf
														148		-84			
																		148.5	
														150					

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7'	E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	8	9	15	24	1.8								150		-86		Lean CLAY (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; about 10% fine sand; greenish-gray (GLEY1 5G 5/1); hard; moist; sand seams; powdery and blocky	
														152		-88			
														153.5					
														154		-90		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; dark greenish-gray (GLEY1 5G 4/1); hard; moist	PP > 4.5 tsf TV = 0.3 tsf
TW	34	-	-	-	-	2.2								156		-92			
														158		-94			
														158.5					
														160		-96			SPT-35 no sample recovered; verified catcher and vent are working correctly. Continued drilling on 02/07/07; fluid level @ ground surface: TW-36 field extended to log the sample. Slough - fine to coarse, subrounded gravel w/ maximum 1-1/2" on top of TW-36. TW-37 PP = 3.5 tsf TV = 0.3 tsf
SPT	35	4	7	11	18	0.0								162		-98			
TW	36	-	-	-	-	2.3								164		-100		Lean CLAY (CL) - ~100% fines w/LL=44, PI=18, medium toughness, no dilatancy; dark greenish-gray (GLEY1 5G 4/1); hard; moist, natural moisture content = 26%; w/inclined and horizontal silt seams < 1/16"; pockets of sandy clay scattered throughout the sample	
														166		-102			
TW	37	-	-	-	-	2.1								168		-104		grading w/LL=40, PI=18; natural moisture content = 28%	
														168.5					
														170		-106		Fat CLAY (CH) - ~100% fines w/LL=73, PI=40, high toughness, no dilatancy; greenish-gray (GLEY2 5BG 5/1); hard; moist, natural moisture content = 37%; homogeneous	
SPT	38	5	9	12	21	1.7								172		-108			
														174		-110			
																		grading greenish-gray (GLEY1 5GY 5/1)	TW-39 PP = 4.0 tsf TV = 0.3 tsf
TW	39	-	-	-	-	2.1								176		-112			
														178		-114			
														180					

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7'	E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	40	5	7	11	18	1.1								180		-116		Lean CLAY (CL) - ~100% fines w/LL=42, PI=17, medium toughness, low to no dilatancy; greenish-gray (GLEY1 5G 5/1); firm; moist, natural moisture content = 35%; powdery and blocky; lenses of silt < 1/16"	
														182		-118			
																		183.0	
														184		-120		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; dark greenish-gray (GLEY1 10GY 4/1); hard; moist; homogeneous	PP > 4.5 tsf TV = 0.3 tsf
TW	41	-	-	-	-	2.1								186		-122			
														188		-124			
														190		-126		grading dark greenish-gray (GLEY2 10BG 4/1); wood fragments found throughout the sample	Driller found wood fragments floating on mud between 190' and 195'
SPT	42	4	7	10	17	1.9								192		-128			
														194		-130		grading greenish-gray (GLEY1 5G 5/1)	PP > 4.5 tsf TV = 0.8 tsf
TW	43	-	-	-	-	2.1								196		-132			
														198		-134			
														200		-136			
SPT	44	11	15	22	37	1.6								202		-138			
														204		-140		grading w/LL=56, PI=31, natural moisture content = 27%	PP > 4.5 tsf TV = 0.4 tsf
TW	45	-	-	-	-	2.0								206		-142			
														208		-144			
														210					

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	46	12	19	22	41	1.7								210		-146		calcareous pocket @ ~210.5' w/strong reaction w/HCl	
														212		-148			
																		—213.0—	
														214		-150			
TW	47	-	-	-	-	1.9								216		-152		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; greenish-gray (GLEY1 5G 5/1); hard; moist	TW-47 pushed 18" prior to lifting drill rig. PP > 4.5 tsf TV = 0.3 tsf
														218		-154			
																		—218.0—	
														220		-156			
SPT	48	16	22	22	44	1.6												Sandy lean CLAY (CL) - 66% fines w/LL=30, PI=10, no to low toughness, slow dilatancy; 44% fine sand; greenish-gray (GLEY1 5G 6/1); dense; moist, natural moisture content = 23%; homogeneous	Continued drilling below 217' on 02/08/07. Fluid level @ 12' below ground surface.
														222		-158			
																		—223.0—	
														224		-160			
TW	49	-	-	-	-	1.4								226		-162		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; greenish-gray (GLEY1 10GY 6/1); hard; moist	TW-49 pushed 1.3' prior to lifting drill rig. PP > 4.5 tsf TV = 0.5 tsf
														228		-164			
																		—228.5—	
														230		-166			
SPT	50	10	14	20	34	1.8												Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; light gray (5Y 7/2); hard; moist	
														232		-168			
																		—233.0—	
														234		-170			
TW	51	-	-	-	-	2.0								236		-172		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; light yellowish-brown (2.5Y 6/3); hard; moist	PP > 4.5 tsf TV = 0.4 tsf
														238		-174			
														240					

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	52	8	13	16	29	0.8								240		-176	
														242		-178	
														244		-180	
TW	53	-	-	-	-	1.9								246		-182	
														248		-184	
SPT	54	12	20	24	44	1.8								250		-186	
														252		-188	
														254		-190	
TW	55	-	-	-	-	1.5								256		-192	
														258		-194	
														260		-196	
SPT	56	17	22	24	46	1.7								262		-198	
														264		-200	
TW	57	-	-	-	-	1.9								266		-202	
														268		-204	
														270			

CLASSIFICATION OF MATERIALS	REMARKS
grading w/LL=45, PI=30, high toughness, light greenish-gray (GLEY1 10GY 7/1); natural moisture content = 18%	
grading mixture of brown (7.5 YR 5/4) w/light greenish-gray (GLEY1 10Y 8/1); pieces of coarse sand sized calcareous grains w/strong reaction w/HCl	PP > 4.5 tsf TV = 0.8 tsf
grading greenish-gray (GLEY1 10GY 6/1); calcareous pockets throughout the sample w/strong reaction w/ HCl	
253.0	
Sandy SILT (ML) - ~55% fines w/no plasticity; ~45% fine sand; greenish-gray (GLEY1 5G 5/1); moist	TW-55 pushed 1.0' prior to lifting drill rig. PP > 4.5 tsf
258.0	
FAT CLAY (CH) - ~100% fines w/LL=54, PI=32, medium toughness, no dilatancy; yellowish-brown (11YR 5/6); mix w/greenish gray (GLEY1 5G 5/1); hard; moist, natural moisture content = 22%	
grading greenish-gray (GLEY1 5GY 5/1)	TW-57 pushed ~1.4' prior to lifting drill rig. PP > 4.5 tsf TV = 0.4 tsf

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BORING LOG

BORING NO. RB-30

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17236.7' E 16920.3'	64.9 ft (MSL)	271.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grass; flat; dry; close to bottom of slope	Plant Grid	02/05/07	02/09/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	58	14	17	18	35	1.7								270		-206		grading greenish-gray (GLEY1 10GY 6/1); partings of silt < 1/16"	
														272		-208			Bottom of boring @ 271.5'. Drilling mud level at 1' @ completion of drilling. Deviation survey performed. Fluid level at 10' on 02/09/07 prior to grouting. Boring caved @ 238.0'. Boring backfilled w/cement bentonite grout using tremie method on 02/09/07.
														274		-210			
														276		-212			
														278		-214			
														280		-216			
														282		-218			
														284		-220			
														286		-222			
														288		-224			
														290		-226			
														292		-228			
														294		-230			
														296		-232			
														298		-234			
														300					

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BORING LOG

BORING NO. RB-31
SHEET 1 OF 13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	5	6	8	14	1.0								0				[Fill] Poorly graded SAND w/silt (SP-SM) - ~90% fine to medium, subangular to rounded sand; ~10% fines w/ no plasticity; moist; medium dense; reddish-yellow (7.5YR 7/8); w/fine to coarse, angular to subrounded gravel seam @ 1.5'	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. SPT-03 gravel on top of sampler (slough). Stopped overnight after SPT 4. Fluid level recorded @ ~1.5' on 03/06/07. Temporary casing installed to 7.5' before resuming drilling.
SPT	02	9	9	13	22	1.1								2		66			
SPT	03	9	16	22	38	0.9								4		64		2.5 [Engineered Fill] Well graded SAND (SW) - ~95% fine to coarse, subangular to rounded sand; ~5% fines; moist; medium dense; very pale brown (10YR 7/3); w/sandy gravel seam @ 3.1'	
SPT	04	9	16	19	35	1.1								6		62		@ 5' grading dense; sandy gravel seam grades out	
SPT	05	9	18	21	39	0.8								8		60		grading w/< 5% fine, rounded gravel	
SPT	06	13	22	29	51	1.3								10		58		grading wet	
SPT	07	9	23	36	59	1.5								12		56			
SPT	08	14	24	31	55	1.1								14		54		grading very dense; w/coarse sand and fine gravel seam @ 15.3'	
														16		52			
														18		50			
														20		48		sand w/dark gray fine gravel seam @ 20.1' coarse sand parting @ 20.8'	
														22		46			
														24		44			
														26		42			
														28		40			
														30		38			

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0' E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JN	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	20	40	50/5"	+50	1.1								30				
														32	36			
														34	34			
SPT	10	20	35	42	77	1.1								36	32		grading light gray (2.5Y 7/2)	
														38	30			
SPT	11	24	49	50/5"	+50	0.9								40	28		grading pale yellow (2.5Y 7/3)	
														42	26			
														44	24			
SPT	12	24	48	50/5"	+50	1.1								46	22			
																	47.5	
														48	20		[Citronelle (lower)]	
														50	18		Poorly graded SAND w/silt (SP-SM) - ~90% fine to medium, subangular to subrounded sand; ~10% fines; wet; very dense; pale yellow (2.5Y 7/3); grading pink (5YR 7/3) @ tip of sampler	
SPT	13	18	26	32	58	0.8												
														52	16		52.5	
														54	14			
SPT	14	14	20	25	45	1.3								56	12		Well graded SAND (SW) - ~95% fine to coarse, subangular to rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 7/3); w/coarse gravel parting @ 55.4'	
														58	10			
														60	8			

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	11	23	30	53	1.5								60				61.0 Poorly graded SAND (SP) - ~95% fine to medium, subangular to subrounded sand; ~5% fines; wet; very dense; very pale brown (10YR 8/3)	
														62		6		62.5	
														64		4			
SPT	16	19	26	27	53	1.1								66		2		Well graded SAND (SW) - ~95% fine to coarse, subangular to rounded sand; ~5% fines; wet; very dense; very pale brown (10YR 8/3); w/coarse gravel parting @ top of sampler	
														68		0		67.5	
SPT	17	14	21	35	56	0.9								70		-2		Poorly graded SAND (SP) - ~95% fine to medium, subangular to subrounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 8/4); w/occasional ferrous stains and coarse gravel parting @ 70.7'	
														72		-4			
														74		-6			
SPT	18	16	23	29	52	1.2								76		-8		grading w/<5% fine, subangular gravel; w/fine gravel parting @ 75.9'; ferrous stains grade out	
														78		-10		77.5	
														80		-12			
SPT	19	29	49	50/5"	+50	2.0												Well graded SAND (SW) - ~95% fine to coarse, subangular to subrounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 7/3); w/fine to coarse sandy gravel seam @ 81.2'	SPT-19 sampler was driven ~0.5' to reach cleanout depth. @ 82' clayey gravel as per driller's observation
														82		-14			
																		83.0	
														84		-16			
SPT	20	7	8	9	17	1.6								86		-18		Lean CLAY (CL) - ~100% fines w/LL=44, PI=22, medium toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y) @ 85.9' grading w/LL=39, PI=18, low toughness	SPT-20 cleanout depth OK; sampler tip depth @ 84'; redrilled. Mud thickened. Sample 20A (85.0-85.9') Sample 20B (85.9-86.5')
														88		-20			
														90		-22			

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
grading w/frequent ferrous spots and stains	PP = 3.0 tsf TV = 0.5 tsf
92.5	
SILT (ML) - ~95% fines w/LL=22, PI=10, low toughness, rapid dilatancy; ~5% sand; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous partings and black spots; w/lean clay seam @ 95.8'	
96.0	
Silty SAND (SM) - ~80% fine, subangular to subrounded sand; ~20% fines w/high plasticity; wet; medium dense; poorly graded; pinkish white (7.5YR 8/2); laminated; w/frequent ferrous, black partings (1/8") @ 100' grading to ~70% sand; ~30% fines; dense; black partings grade out	
grading to ~80% sand; ~20% fines	
grading very dense; pale yellow (2.5Y 8/4); ferrous partings grade to occasional; w/occasional black partings	
112.5 [Pascagoula]	
Lean CLAY (CL) - ~100% fines w/LL=42, PI=20, low toughness, slow dilatancy; moist, natural moisture content = 29%; very hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous spots and partings	SPT-26 sampler tip 0.6' below cleanout depth (115.0'). SPT result considered not applicable (NA).
117.5	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)
TW	21	-	-	-	-	2.1								90	
														92	-24
														94	-26
SPT	22	4	11	14	25	1.2								96	-28
														98	-30
SPT	23	11	19	21	40	1.3								100	-32
														102	-34
														104	-36
SPT	24	14	16	23	39	1.1								106	-38
														108	-40
SPT	25	25	33	32	65	1.1								110	-42
														112	-44
														114	-46
SPT	26	9	9	12	NA	1.8								116	-48
														118	-50
														120	-52

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0' E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
TW	27	-	-	-	-	1.9								120	-54	SILT (ML) - ~100% fines w/low plasticity, low toughness, rapid dilatancy; wet; light greenish-gray (GLEY1 8/1 10Y)	PP = 1.25 tsf TV = 0.2 tsf
														122		122.5	
														124	-56		
SPT	28	10	11	11	22	1.8								126	-58	Silty SAND (SM) - ~80% fine, subangular sand; ~20% fines w/low plasticity; moist; hard; light greenish-gray (GLEY1 8/1 10Y)	Sample 28A - Silty sand. Sample 28B - Silt. Sample 28C - Lean clay.
																125.4	
														128	-60	SILT (ML) - ~100% fines w/low plasticity, low toughness, rapid dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y)	
																126.1	
														130	-62	Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 8/1 10Y)	@ 130' sand expected as per driller's observations.
SPT	29	10	13	13	26	0.8										127.5	
														132	-64	Clayey SAND (SC) - ~80% fine, subangular to subrounded sand; ~20% fines w/low plasticity; wet; medium dense; poorly graded; light greenish-gray (GLEY1 8/1 10Y); w/occasional ferrous partings	Clay encountered @ 132' as per driller's observations.
																132.0	
														134	-66		
TW	30	-	-	-	-	1.9								136	-68	Lean CLAY (CL) - ~100% fines w/low plasticity, medium toughness, no dilatancy; moist; light greenish-gray (GLEY1 8/1 10Y)	@ 135' PP = 4.5 tsf TV = 0.6 tsf
														138	-70	137.5	
														140	-72	Fat CLAY (CH) - ~90% fines w/high plasticity, high toughness, no dilatancy; ~10% fine sand; moist; very hard; light gray (5Y 7/2); w/frequent ferrous spots; w/clayey sand seam @ 140.5' and sandy clay seam @ 140.8'	
SPT	31	10	11	21	32	1.5								142	-74		
														144	-76		
TW	32	-	-	-	-	1.8								146	-78	grading ~100% fines w/LL=57, PI=36, medium toughness, no dilatancy; natural moisture content = 19%; greenish-gray (GLEY2 5/1 10BG)	TW-32 could only be pushed 1.8'. PP ~ 4.5 tsf TV = 0.5 tsf
														148	-80	147.5	
														150	-82		

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	10	20	19	39	1.5								150				Lean CLAY (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; ~10% sand; moist; very hard; dark greenish-gray (GLEY2 4/1 5BG); w/ frequent clayey sand seams and partings	Stopped overnight after TW-32. Fluid level recorded @ 13.0' on 03/07/07.
														152		-84			
																		—152.5—	
														154		-86			
SPT	34	12	15	27	42	1.4								156		-88		Clayey SAND (SC) - ~70% fine, subangular to subrounded sand; ~30% fines w/medium plasticity, medium toughness; wet; dense; poorly graded; greenish-gray (GLEY2 5/1 5BG); w/0.4' lean clay layer @ 155.6'	Due to amount of sand in sample 33, sample 34 will be SPT.
														158		-90			
																		—157.5—	
SPT	35	5	11	20	31	1.6								160		-92		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; very hard; dark greenish-gray (GLEY1 4/1 5GY); w/clayey sand seam @ 161.3'	
														162		-94			
														164		-96			
TW	36	-	-	-	-	1.9								166		-98		grading w/LL=60, PI=34, high toughness; clayey sand seam grades out; natural moisture content = 21%; w/clayey sand @ top of sample	PP = 4.25 tsf TV = 0.3 tsf Sand @ top of tube.
														168		-100			
														170		-102			
SPT	37	4	6	9	15	1.6												grading w/medium toughness; firm; w/frequent clayey sand pockets and partings and clayey sand seam @ 171.2'	
														172		-104			
														174		-106			
																		—175.0—	
TW	38	-	-	-	-	1.7								176		-108		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subangular to rounded sand; ~10% fines w/ medium plasticity; moist; greenish-gray (GLEY1 5/1 5GY)	TW-38 sampler sank 3" under WOR; only pushed 21". PP = 2.0 tsf TV = 0.1 tsf Gravel in clay on slough.
														178		-110			
														180		-112			

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BORING LOG

BORING NO. RB-31
SHEET 7 OF 13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0' E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	39	7	11	12	23	0.8								180				Fat CLAY (CH) - ~90% fines w/high plasticity, medium toughness, no dilatancy; ~10% fine sand; < 5% fine gravel; moist; hard; homogeneous; dark greenish-gray (GLEY1 4/1 5GY)	
														182		-114			
																		182.5	
														184		-116			
TW	40	-	-	-	-	2.0								186		-118		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, slow dilatancy; moist; hard; dark greenish-gray (GLEY1 4/1 5G)	PP > 4.5 tsf TV = 0.6 tsf
														188		-120		187.5	
SPT	41	WOH	5	13	18	1.9								190		-122		Fat CLAY (CH) - ~100% fines w/LL=67, PI=40, high toughness, no dilatancy; high dry strength; moist, natural moisture content = 34%; hard; dark greenish-gray (GLEY1 4/1 5G)	
														192		-124			
														194		-126			
TW	42	-	-	-	-	1.9								196		-128		grading dark gray (10YR 4/1); w/frequent organic matter nodules (wood)	PP = 4.0 tsf TV = 0.5 tsf
														198		-130			
SPT	43	7	14	16	30	2.0								200		-132		grading grayish-green (GLEY1 4/2 5G); w/frequent black spots and partings	
														202		-134			
														204		-136			
TW	44	-	-	-	-	1.8								206		-138		black spots and partings grade out	PP = 4.5 tsf TV = 1.0 tsf
														208		-140			
														210		-142			

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0' E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JWL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	45	12	14	20	34	2.0								210					
														212		-144			
														214		-146			
TW	46	-	-	-	-	1.2								216		-148		grading w/frequent calcareous (strong reaction w/HCl) nodules	TW-46 could only be pushed 13". PP > 4.5 tsf TV = 0.4 tsf Stopped overnight after TW-46. Fluid level recorded @ ~13' on 03/08/07.
														218		-150			
														220		-152			
SPT	47	15	19	24	43	1.8												grading very hard	
														222		-154			
														224		-156			
TW	48	-	-	-	-	1.3								226		-158			TW-48 could only be pushed 1.2'. PP > 4.5 tsf TV = 0.6 tsf
														228		-160			
														230		-162			
SPT	49	17	20	24	44	1.8												grading dark greenish-gray (GLEY1 4/1 5G); w/frequent light brown staining; calcareous nodules grade out	SPT-49 fine gravel and clay @ top of sample (slough).
														232		-164			
														234		-166			
TW	50	-	-	-	-	1.3								236		-168		grading w/medium toughness; w/occasional black spots	TW-50 could only be pushed 1.5'. PP > 4.5 tsf TV = 1.0 tsf
														238		-170			
														240		-172			

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BORING LOG

BORING NO. RB-31
SHEET 9 OF 13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0' E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	51	10	11	15	26	1.8								240				grading w/LL=50, PI=23; natural moisture content = 26%; hard; grayish-brown (10YR 5/2); w/frequent light greenish-gray stains	
														242		-174			
														244		-176			
TW	52	-	-	-	-	1.5								246		-178		grading w/slow dilatancy; light greenish-gray (GLEY1 7/1 10Y)	TW-52 could only be pushed 15". PP > 4.5 tsf TV = 0.6 tsf
														248		-180			
														250		-182			
SPT	53	14	19	25	44	1.9								252		-184		grading w/high toughness; very hard; light greenish-gray (GLEY 1 7/1 5GY); w/frequent brown spots	
																		252.5	
														254		-186			
TW	54	-	-	-	-	1.7								256		-188		Lean CLAY (CL) - ~100% fines w/medium plasticity, high toughness, no dilatancy; moist; very hard; greenish-gray (GLEY1 5/1 5G); w/frequent grayish-brown stains and frequent calcareous (strong reaction w/HCL) nodules	TW-54 could only be pushed 1.5'. PP > 4.5 tsf TV = 1.1 tsf
														258		-190			
																		257.5	
														260		-192			
SPT	55	10	13	18	31	2.0								262		-194		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; very high dry strength; moist; very hard; greenish-gray (GLEY1 5/1 5G); w/frequent grayish-brown stains and frequent calcareous nodules	
																		263.5	
														264		-196		Fat CLAY w/sand (CH) - 77% fines w/LL=50, PI=29; ~23% sand; very hard; greenish-gray (GLEY1 5/1 5G); w/frequent grayish-brown stains and frequent calcareous nodules	
TW	56	-	-	-	-	1.9								266		-198			PP = 4.25 tsf TV = 0.6 tsf
														268		-200			
																		269.0	
														270		-202			

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; very hard; grayish-green (GLEY1 5/2 5G); w/frequent grayish-brown stains	SPT-57 catcher appeared to be placed backwards.
—272.5—	
Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; very hard; greenish-gray (GLEY1 5/1 5G)	PP > 4.5 tsf TV = 0.5 tsf Stopped overnight. Fluid level recorded @ 13.0' on 03/09/07.
grading greenish-gray (GLEY1 5/1 10GY); w/frequent brown (10YR 5/3) stains	
grading w/high toughness; brown (10YR 5/3); w/frequent greenish-gray stains	TW-60 could only be pushed 1.4' PP = 4.5 tsf TV = 0.8 tsf
grading greenish-gray (GLEY1 5/1 10GY)	
grading grayish-green (GLEY1 5/2 5G)	PP > 4.5 tsf TV = 0.9 tsf

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)
SPT	57	13	14	18	32	0.6								270	
														272	-204
														274	-206
TW	58	-	-	-	-	1.9								276	-208
														278	-210
SPT	59	15	19	21	40	1.9								280	-212
														282	-214
														284	-216
TW	60	-	-	-	-	1.7								286	-218
														288	-220
SPT	61	12	16	21	37	1.8								290	-222
														292	-224
														294	-226
TW	62	-	-	-	-	1.9								296	-228
														298	-230
														300	-232

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BORING LOG

BORING NO. RB-31

SHEET 11 OF 13

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	63	12	17	20	37	2.0								300			
														302	-234		
														304	-236		
TW	64	-	-	-	-	1.4								306	-238		TW-64 could only be pushed 1.0'. PP > 4.5 tsf TV = 0.6 tsf
														308	-240		
														310	-242		
SPT	65	13	20	22	42	0.3										grading w/frequent brown stains	Field sample smaller than recommended.
														312	-244		
														314	-246		
TW	66	-	-	-	-	1.6								316	-248	grading w/frequent coarse gravel size calcareous (strong reaction w/HCl) nodules; brown stains grade out	TW-66 could only be pushed 1.7'. PP > 4.5 tsf TV = 0.6 tsf Tube bent.
														318	-250		
														320	-252		
SPT	67	8	12	17	29	1.7								322	-254	grading greenish-gray (GLEY1 5/1 5G); w/occasional silt partings; calcareous nodules grade to occasional, fine gravel size	SPT-67 no catcher used. Lost shoe. Stopped overnight after SPT-67. Fluid level recorded @ 12' on 03/10/07.
																323.0	
														324	-256		
TW	68	-	-	-	-	1.6								326	-258	Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; greenish-gray (GLEY1 5/1 5G); w/frequent calcareous nodules	TW-68 could only be pushed 1.7'. PP > 4.5 tsf TV = 0.9 tsf
														328	-260		
														330	-262		

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0'	E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
grading w/LL=46, PI=21; natural moisture content = 29%; calcareous nodules grade to occasional; w/silt seam @ 331.2'	SPT-69 no catcher used.
332.5	
Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; very high dry strength; moist; hard; greenish-gray (GLEY1 5/1 5G); w/occasional calcareous nodules	TW-70 could only be pushed 1.0'. PP > 4.5 tsf TV = 0.6 tsf
grading very hard; calcareous nodules grade out	SPT-71 no catcher used.
344.5	
Silty SAND (SM) - ~70% fine sand; ~30% fines w/no plasticity; moist; poorly graded; greenish-gray (GLEY1 5/1 5G)	TW-72 could only be pushed 1'. PP = 2.0 tsf TV = 0.1 tsf
grading w/66% fine sand; 34% fines w/LL=23, PI=10; very dense	Catcher used in SPT-73 sampler.
352.5	
Poorly graded SAND (SP) - ~95% fine, subangular sand, ~5% fines; moist; very dense; dark greenish-gray (GLEY1 4/1 10GY); w/lean clay seam @ 355.5'	
	Drill rig refusal @ 355'. See boring RB-31A for additional information. Bottom of boring

SPT	69	9	11	17	28	1.9								330		-264	
														332			
																-266	
														334			
TW	70	-	-	-	-	1.2								336		-268	
																-270	
														338			
														340		-272	
SPT	71	15	20	24	44	1.3											
														342		-274	
														344		-276	
TW	72	-	-	-	-	1.2								346		-278	
																-280	
														348			
														350		-282	
SPT	73	26	44	50/5"	+50	0.9											
														352		-284	
														354		-286	
SPT	74	40	50/4"	-	+50	0.7								356		-288	
														358		-290	
														360		-292	

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BORING LOG

BORING NO. RB-31

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17235.0' E 16988.2'	67.8 ft (MSL)	356.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat, level ground adjacent to existing tank berm	Plant Grid	03/05/07	05/02/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														360					@ 356.5'. Fluid level @ ground surface @ completion of drilling. Temporary casing removed. Cave-in @ 4' to 10'. Deviation survey performed on 05/02/07. Fluid level recorded @ 10' on 05/02/07. Boring backfilled w/cement bentonite grout by tremie method on 05/02/07.
														362		-294			
														364		-296			
														366		-298			
														368		-300			
														370		-302			
														372		-304			
														374		-306			
														376		-308			
														378		-310			
														380		-312			
														382		-314			
														384		-316			
														386		-318			
														388		-320			
														390		-322			

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BORING LOG

BORING NO. RB-31A
SHEET 1 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
0				[Engineered Fill] Well graded SAND (SW) - ~95% coarse to fine, subangular sand; ~5% fine, subangular to subrounded gravel; moist; pale yellow (2.5Y 8/4)	Boring advanced with 6-1/4" baffle bit using air as drilling fluid and 6-7/8" OD temporary steel casing driven from ground surface. Stratigraphic logging from drill cuttings. No preservation of drill cuttings.
2		66			
4		64			
6		62			
8		60			
10		58			
12		56			
14		54			
16		52			
17.0			▽	gravel grading to coarse	Water encountered @ 17.0' during drilling.
18		50			
20		48		20.0 Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; dark gray	
22		46			
24		44			
26		42			
28		40			
30		38			

4/2/2008 2:48 PM River Bend- Geotechnical

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														30			
														32		36	
														34		34	
														36		32	
														38		30	
														40		28	
														42		26	
														44		24	
														46		22	
														48		20	
														50		18	
														52		16	
														54		14	
														56		12	
														58		10	
														60		8	

CLASSIFICATION OF MATERIALS

48.0
[Citronelle (lower)]

Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; pale yellow (2.5YR 7/5)

REMARKS

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
60					
62		6		grading to ~95% fine to medium, subrounded to subangular sand; ~5% fines; pale brown (10YR 5/6)	
64		4			
66		2			
68		0			
70		-2			@ 70.0' Drilling and casing driving very hard; lost circulation; no cuttings returned.
72		-4			
74		-6			
76		-8			
78		-10			
80		-12			@ 80.0' Clay plugging bit; very hard casing driving; ~1.5" per blow w/7500 lb hammer. Casing driven to 85.0'.
				81.0	
82		-14		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy	
84		-16			
86		-18			
88		-20			
90		-22		grading moist light greenish-gray (GLEY1 10Y 8/1)	

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
90				grading light greenish-gray (GLEY1 5GY 8/1)	Boring advanced below 91.0' w/6-5/8" drag bit using bentonite mud as drilling fluid. Stopped drilling for the night at 91.0'. Casing dry (no water) on 05/19/07.
92		-24			
94		-26			
96		-28			
				97.0	
98		-30		Poorly graded SAND - ~95% fines and ~5% fines; wet; pinkish-white (7.5YR 8/1)	
100		-32			
102		-34			
104		-36			
106		-38			
108		-40			
110		-42		110.0	
				Poorly graded SAND w/silt (SP-SM) - ~90% fine sand; ~10% fines; moist; reddish-brown (5YR 5/3)	
112		-44			
114		-46			
116		-48			
118		-50			
120		-52			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
120				[Pascagoula] Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; light greenish-gray (GLEY1 8/1 10Y)	
122		-54			
124		-56			
126		-58			
128		-60			
130		-62		130.0 Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; moist; greenish-gray (GLEY1 10Y 6/1); w/occasional iron stains	Cuttings consist of 1 to 1-1/2" clay pieces
132		-64			
134		-66			
136		-68			
138		-70			
140	C	-72		grading dark greenish-gray (GLEY1 5G 4/1)	
142		-74			
144		-76			
146		-78			
148		-80			
150		-82			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3'	E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WP M	J. Liljegren SPL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)
150	
152	-84
154	-86
	155.0
156	-88
158	-90
160	-92
162	-94
164	-96
166	-98
168	-100
170	-102
172	-104
174	-106
176	-108
178	-110
180	-112

Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; very dark grayish-green (GLEY1 5G 3/2)

grading greenish-black (GLEY1 5GY 2.5/1)

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BORING LOG

BORING NO. RB-31A

SHEET 7 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180					
182		-114			
184		-116			
186		-118		grading greenish-gray (GLEY1 5GY 6/1)	
188		-120			
190		-122			
192		-124			
194		-126			
196		-128			
198		-130			
200		-132		200.0	
202		-134		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; greenish-gray (GLEY1 5GY 6/1)	
204		-136			
206		-138			
208		-140			
210		-142			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														210					
														212		-144			
														214		-146			
														216		-148		grading grayish-green (GLEY1 5G 5/2)	
														218		-150			
														220		-152			
														222		-154			
														224		-156			
														226		-158			
														228		-160			
														230		-162			
														232		-164			
														234		-166			
														236		-168			
														238		-170			
														240		-172			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3'	E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
grading greenish-gray (GLEY1 10Y 6/1)	
grading w/red (10R 5/8) mottling	
grading greenish-gray (GLEY1 5G 5/2)	
grading light greenish-gray (GLEY1 5GY 7/1)	

240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270

-174 -176 -178 -180 -182 -184 -186 -188 -190 -192 -194 -196 -198 -200 -202

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BORING LOG

BORING NO. RB-31A

SHEET 10 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														270			
														272		-204	
														274		-206	
														276		-208	
														278		-210	
														280		-212	
														282		-214	
														284		-216	
														286		-218	
														288		-220	
														290		-222	
														292		-224	
														294		-226	
														296		-228	
														298		-230	
														300		-232	

CLASSIFICATION OF MATERIALS

grading grayish-green (GLEY1 5G 5/2)

REMARKS

Drilling rate @ 40'/25 min (~1.6'/min)

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
300				300.0 Lean CLAY (CL) - ~100% fines w/low plasticity, medium toughness, no dilatancy; moist; greenish-gray (GLEY1 10GY 5/1)	
302		-234			
304		-236			
306		-238			
308		-240			
310		-242			
312		-244			
314		-246			
316		-248			
318		-250			
320		-252			
322		-254			
324		-256			
326		-258			
328		-260			
330		-262			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
330					
332		-264			
334		-266			
336		-268			
338		-270			
338.5				Elastic SILT (MH) - ~100% fines w/medium plasticity, low toughness, no dilatancy; moist; grayish-green (GLEY1 5G 4/2)	
340		-272			
342		-274			
344		-276			
346		-278			
348		-280			
350		-282			
352		-284			
354		-286		grading w/trace sand	
356		-288			
358		-290			
360		-292			

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BORING LOG

BORING NO. RB-31A

SHEET 13 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WP M	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
										360.0				360			
CS	1	5.0	2.7	-	54	-								362		-294	
														364		-296	
										365.0							
CS	2	5.0	0.9	-	18	-								366		-298	
														368		-300	
										370.0				370		-302	
SPT	3	5	61	39/1	+50	1.2								372		-304	
														374		-306	
														376		-308	
														378		-310	
										380.0				380		-312	
CS	4	5.0	3.9	-	78	-								382		-314	
														384		-316	
										385.0				386		-318	
														388		-320	
														390		-322	

CLASSIFICATION OF MATERIALS

Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular sand; ~10% fines; moist; dark greenish-gray (GLEY1 5GY 4/1)

362.2

Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand; moist; firm; dark greenish-gray (GLEY1 5GY 5/1)

365.0

Poorly graded SAND (SP) - ~95% fine, subangular sand; ~≤ 5% fines; moist; very dense; dark greenish-gray (GLEY1 5GY 4/1)

370.3

Poorly graded SAND w/silt (SP-SM) - ~90% fines, subrounded to subangular sand; ~10% fines; moist; very dense; dark greenish-gray (GLEY1 5GY 4/1)

@381.4' 0.1' thick clay seam

grading w/fines w/no plasticity, slow dilatancy, dark greenish-gray (GLEY1 5G 4/1)

REMARKS

Boring advanced below 360.0' w/4" core bit. SPT performed using automatic hammer w/ unlined sampler and no catcher. Water level @ ground surface. @ 365.0' PP = 1.5 tsf Sample from Core Run 2. Stopped drilling for the day @ 371. 5' 05/19/07. Started drilling @ 7:00 a.m. 05/20/07. Fluid level unreadable due to drill steel in boring.

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BORING LOG

BORING NO. RB-31A

SHEET 14 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy LOPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
										390.0				390				
CS	5	5.0	1.5	-	30	-								392	-324			
														394	-326			
										395.0								
														396	-328			
														398	-330			
										400.0				400	-332			Attempted to core soil; no recovery.
CS	6	5.0	0.0	-	0.0	-								402	-334			
														404	-336			
SPT	7	50/5"	405.0	-	+50	0.0								406	-338			SPT-7 fat CLAY (CH) w/sand in tip of sampler. Boring caved @ 405'. Pulled casing to 140.0'; thickened mud; cleaned hole. Stopped drilling for day. 05/21/07 Started drilling and coring @ 405'.
														408	-340			
										410.0				410	-342		410.0	
CS	8	5.0	2.1	-	42	-								412	-344		Clayey SAND (SC) - ~80% fine, subrounded to subangular sand; ~20% fines w/medium plasticity, medium toughness, no dilatancy; wet; very dark grayish-green (GLEY1 5G 3/2) w/seams of fine, subrounded gravel to 410.5'	
														414	-346		410.5 Poorly graded SAND w/silt (SP-SM) - ~90% fine, subrounded to subangular sand; ~10% fines; wet	
										415.0				416	-348		415.0 Poorly graded SAND (SP) - ~95% fine, subangular to subrounded sand; ~5% fines; wet	
														418	-350			
														420	-352			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
										420.0				420			
CS	9								5.0	0.5	-	10	-	422		-354	
														424		-356	
										425.0							
CS	10								5.0	0.5	-	10	-	426		-358	
														428		-360	
										430.0				430		-362	
CS	11								5.0	1.2	-	24	-	432		-364	
														434		-366	
										435.0				436		-368	
														438		-370	
														440		-372	
														442		-374	
														444		-376	
														446		-378	
														448		-380	
														450		-382	

CLASSIFICATION OF MATERIALS

grading to grayish-green (GLEY1 5G 4/2)

430.0

Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular sand; ~10% fines w/no plasticity; wet; dark greenish-gray (GLEY1 10GY 4/1)

grading w/clay

448.0

Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand

REMARKS

@ 423' Drill rig grating on gravel. Driller reports intermittent gravel from 423' to 425'. Sample @ 420' ran out of barrel after ~0.5' of sample.

Extending core barrel lead to 6.0" to see if recovery can be increased. 05/21/07 Core shut down for day. Water level @ ground surface.

05/22/07 Start for day. Water level @ 12.9' below ground surface. Began drilling on 05/30/07. Water level @ 14.3' @ 440' @ 10.55.

@ 448' Driller noted clay based on increased

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
														450			
														452		-384	
														454		-386	
														456		-388	
														458		-390	
										460.0				460		-392	
							CS	12	5.0	2.5	-	50	-	462		-394	
										465.0				464		-396	
														466		-398	
														468		-400	
														470		-402	
														472		-404	
														474		-406	
														476		-408	
														478		-410	
														480		-412	

CLASSIFICATION OF MATERIALS

grading to moist; hard; (easily indented w/thumbnail); greenish black (GLEY1 5G 2.5/1); w/iron stains

grading w/ > 10% sand (interbeds of sandy clay and clayey sand)

460.0

Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; very dense; gray (GLEY1 5)

475.0

REMARKS

downpressure.

Drilled noted alternating sand and clay layers (1-2" thick)

1200 - 1500 psi downpressure.

Driller reports clay @ 475.0'.

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BORING LOG

BORING NO. RB-31A

SHEET 17 OF 19

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														480				Lean CLAY (CL) - ~95% fines w/medium plasticity, low toughness; ~5% fine sand; moist	
														482		-414			
														484		-416			
														486		-418			
														488		-420			
										490.0				490		-422			
CS	13	5.0							5.0	-	100	-		492		-424		grading w/~100% fines w/medium toughness, no dilatancy; moist; very hard; dark greenish-gray (GLEY1 5G 4/1); mottled w/iron stains	PP > 4.5 tsf penetration ~1/8" TV = 2.8 tsf Sample interval from 491.0' - 495.0'.
										495.0				494		-426			
														496		-428			
														498		-430			
														500		-432			
														502		-434			
														504		-436			
														506		-438			
														508		-440			
														510		-442			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy LDP M	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														510					
														512		-444			
														514		-446			
			515.0															515.0	
CS	14	5.0	5.0	-	100	-								516		-448		Fat CLAY (CH) - ~95% fines w/high plasticity, high toughness, no dilatancy; w/nodules of white crystalline substance; moist; very hard; mottled w/yellowish-red (5YR 5/6); mottling occurs every 3 - 4" for length of sample. Mottling appears as iron staining grayish-green (GLEY1 5G 4/2) mottling covers ~90% of surface area	Stopped drilling @ 515'; 05/30/07, No water level reported; drill steel in hole. Drilling started 05/31/07 @ 515'. @ 515' PP = 3.0 tsf TV = 2.3 tsf
														518		-450			
			520.0											520		-452			
														522		-454			
														524		-456			
														526		-458			
														528		-460			
														530		-462			PP > 4.5 tsf TV = 2.3 tsf
														532		-464			
														534		-466			
														536		-468			
														538		-470			
														540		-472			

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BORING LOG

BORING NO. RB-31A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17232.3' E 16978.0'	67.9 ft (MSL)	555.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying; limestone gravel	Plant Grid	05/18/07	6/3/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy wp M	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
										540.0				540					PP > 4.5 tsf TV = 0.5 tsf Stopped drilling 05/31/07. Boring depth 545' 06/01/07. Water level @ 143'. Pulled 94 mm casing to 230'. Boring reamed/ advanced w/6-1/ 2" baffle bit from 330' to 555'.
CS	15	5.0	4.5	-	90	-								542		-474			
														544		-476			
										545.0				546		-478			
														548		-480			
														550		-482			
														552		-484			
														554		-486			
														556		-488			Bottom of boring @ 555.0'. 4" OD schedule 80, threaded PVC casing installed to 550.0'. Boring annulus grouted by tremie method using 1 sack centent : 1 sack bentonite : 75 gallons water mix. 280 gallons of grout used to grout to 90' on 06/02/07. Temporary casing removed; borehole annulus grouted to ground surface on 06/03/07.
														558		-490			
														560		-492			
														562		-494			
														564		-496			
														566		-498			
														568		-500			
														570		-502			

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AWB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

0 / 64

[Fill]
Poorly graded SAND w/silt and gravel (SP-SM) - ~70% fine to medium, subangular to subrounded sand; ~20% fine to coarse, subangular to rounded gravel; ~10% fines w/low plasticity; moist; light yellowish brown (10YR 6/4)

2 / 62

4 / 60

5.0

[Engineered Fill]

6 / 58

8 / 56

10 / 54

Poorly graded SAND (SP) - ~90% fine to coarse, subangular to subrounded sand, ~5% fine, subrounded gravel; ~5% fines; moist; pale yellow (2.5Y 7/4)

12 / 52

14 / 50

16 / 48

18 / 46

grading to ~85% sand; ~10% fine gravel; ~5% fines; wet

20 / 44

22 / 42

24 / 40

26 / 38

28 / 36

30

Boring advanced with 6" tricone bit using air as drilling fluid and 6-7/8" OD (6" ID) steel temporary casing installed. Sampling from drill cuttings. No preservation of drill cuttings.

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AWB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
30		34			
32		32			
34		30			
36		28			
38		26			
40		24			
42		22			
44		20		45.4 [Citronelle (lower)]	Citronelle (lower) based on previous excavation to elevation 20'.
46		18			
48		16			
50		14		Poorly graded SAND (SP) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; pale yellow (2.5Y 7/4)	Sample appears to be very wet.
52		12			
54		10			
56		8			
58		6			
60					

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BORING LOG

BORING NO. RB-31B

SHEET 3 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
60		4		grading to ~95% sand; ~5% fines; ~5% gravel	Sample appears to be very wet.
62		2			
64		0			
65.0					
66		-2			
68		-4			
70		-6		Well graded SAND (SW) - ~90% fine to coarse, angular to rounded sand; ~5% fines; subangular to rounded gravel; ~5% fines; wet; pale yellow (2.5Y 7/4)	
72		-8			
74		-10		grading to ~85% sand; ~10% fine to coarse, angular to subrounded gravel; ~5% fines; yellow (2.5Y 7/6)	
76		-12			
78		-14			
78.0					
80		-16		Well graded GRAVEL (GW) - ~90% fine to coarse, subangular to rounded, mostly elongate gravel; ~5% coarse, rounded sand; ~5% fines; gravel particles fractured w/1 hammer blow, max size 1-1/4"; wet; yellowish brown (10YR 6/8)	Stopped overnight @ 80'. Groundwater level not recorded. Drilling restarted 02/22/08. Water level not recorded.
82		-18			
84		-20			
85.0					
86		-22		Lean CLAY (CL) - ~95% fines w/high plasticity, slow dilatancy, medium toughness; ~5% sand; moist; brownish yellow (10YR 6/6) and light greenish gray (GLEY1 7/1)	Pressure buildup in pipe; will use water as drilling fluid to remove clay cuttings.
88		-24			
90					

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
90		-26		brownish yellow grades out	
92		-28			
94		-30			
				95.0	@95' driller noted change from clay to sand.
96		-32			
98		-34			
100		-36		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; pale yellow (2.5Y 5/4)	@100' driller noted gravel; none in sample.
102		-38			@103' driller noted gravel grades out.
104		-40			
106		-42			
				107.4 [Pascagoula]	Clay encountered @ 107.4' based on downhole geophysical testing.
108		-44			
110		-46			
112		-48			
114		-50			@115' gravel and sand encountered by driller's comments.
116		-52			
118		-54			Drilling continued using air as drilling fluid. @118' clay
120					

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
120				Lean CLAY (CL) - ~90% fines w/medium plasticity, low dilatancy, medium toughness; ~10% fine sand; wet; light greenish gray (GLEY1 8/1)	encountered per driller's observation. @120' water used as drilling fluid.
122		-56			
124		-58			
126		-60			
128		-62			
130		-64			
132		-66			
134		-68			@134' cuttings consist of 1"-2" clay pieces.
136		-70		grading to 100% fines	
138		-72		138.0	
140		-74		Fat CLAY (CH) - ~95% fines w/high plasticity, no dilatancy, high toughness; ~5% fine sand; wet; greenish gray (GLEY1 6/1)	
142		-76			
144		-78			
146		-80			
148		-82			
150		-84			

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
150		-86		150.0	Temporary casing installed to 150.0'. Below 150', boring advanced w/6" tricone bit w/ 4.5" drilling rods using bentonite mud as drilling fluid. Bentonite mud consists of 300 lbs Quik Gel, 11 lbs soda ash, 10 lbs Quick-Trol LV and 10 lbs EZ Mud Gold, for 2200 gal tank. Mud viscosity before adding EZ Mud Gold = 36 sec. Any water in borehole pumped out and drilling mud placed in hole.
152		-88			
154		-90		Elastic SILT (MH) - ~100% fines w/medium plasticity, slow dilatancy, low toughness; wet; greenish gray (GLEY1 6/1)	
156		-92			
158		-94			
160		-96			
162		-98			
164		-100			@ 165', mud viscosity @ 43 sec.
166		-102			
168		-104			
170		-106		170.0	
172		-108			
174		-110		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness; wet; greenish gray (GLEY1 6/1)	
176		-112			
178		-114			
180					

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AWB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180		-116			
182		-118			
184		-120			
186		-122			
188		-124			
190		-126			
192		-128			
194		-130			
196		-132			
198		-134			
200		-136		200.0	@ ~200', harder drilling.
202		-138			
204		-140		Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness; wet; greenish gray (GLEY2 5/1)	
206		-142			
208		-144			
210					

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BORING LOG

BORING NO. RB-31B

SHEET 8 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
210		-146			
212		-148			
214		-150		grading w/high toughness; greenish gray (GLEY2 5/1) and very dark grayish brown (10YR 3/2)	
216		-152			
218		-154			
220		-156		220.0	
222		-158		Elastic SILT (MH) - ~95% fines w/high plasticity, low toughness; ~5% fine sand; moist; light greenish gray (GLEY1 7/1)	At end of drilling, mud viscosity @ 51 sec.
224		-160		225.0	
226		-162		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness; wet; greenish gray (GLEY2 6/1)	Stopped overnight @ 225' on 02/27/08. Groundwater level not recorded. Drilling restarted on 02/28/08. New half tank of drilling mud added. Mud viscosity @ 43 sec. From 225' slow drilling (~7 minutes per foot of drilling).
228		-164			
230		-166			
232		-168			
234		-170			
236		-172			Softer drilling @ 236'.
238		-174			
240					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco CAB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
240					
		-176			
242					
		-178			
244				grading pale brown (10YR 6/3) and greenish gray (GLEY1 6/1)	
		-180			
246					
		-182			Hard drilling @ 247.0'.
248					
		-184			
250					
		-186			
252					
		-188			
254					
		-190		grading w/medium toughness; greenish gray (GLEY1 6/1)	Hard drilling continues.
256					
		-192			
258					
		-194			
260					
		-196			
262					@ 262', pump became sluggish, still hard drilling.
		-198			
264					
		-200		grading w/high toughness; dark greenish gray (GLEY1 4/1)	
266					
		-202			
268					
		-204			
270					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco CWB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
270		-206		grading greenish gray (GLEY1 6/1)	
272		-208			
274		-210			
276		-212			
278		-214			Mud viscosity @ 64 sec. Mud was thinned out by adding Aqua Clear PFD w/ water to tank. Mud viscosity lowered to 52 sec.
280		-216			
282		-218			
284		-220			
286		-222			@ 287', mud viscosity is 47 sec.
288		-224			
290		-226			
292		-228			@ 293', softer drilling.
294		-230			
296		-232			
298		-234			
300					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AWB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
300					
		-236			@ 301', harder drilling.
302					
		-238			
304					
		-240			Drilling stopped overnight @ 305'. Groundwater level was not recorded. Drilling restarted 02/29/08. Water level recorded @ 20.2'. Drilling fluid extracted from hole. Drilling continued w/6" tricone bit w/ longer teeth. New mud placed in hole. No progress on drilling; drilling was stopped due to structural crack on mud system. Elog/ gamma, caliper/ gamma and suspension PS velocity logging were performed between 150' and 305' on 02/29/08. Water level recorded @ 15.2' on 03/10/08. No drilling today due to bad mud system. Drilling restarted on 03/11/08 w/6" tricone bit w/long teeth using bentonite mud as drilling fluid.
306					
		-242			
308					
		-244			
310				310.0	
		-246		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; wet; greenish gray (GLEY1 5GY 6/1)	
312					
		-248			
314					
		-250			
316					
		-252			
318					
		-254			
320				grading ~90% fines; ~10% fine sand; greenish gray (GLEY1 10GY 6/1)	
322		-256			
324		-258			
326		-260			
328		-262			
330		-264			

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

SHEET 12 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
330		-266			Mud test @ 330' Weight: 8.5 lb/ gal Viscosity: 51 sec Filtrate: 9.2 cc Sand: 0% pH: 9.5 Cake: 1/32 in. Add 20 lb Quick-Gel 10 lb Quick-Trol LV 10 lb soda ash 2,000 gal water
332		-268			
334		-270			
336		-272			
338		-274			
340		-276		340.0 Lean CLAY w/sand (CL) - ~ 80% fines w/medium plasticity, medium toughness, no dilatancy; ~ 20% fine sand; wet; greenish gray (GLEY1 10GY 6/1) and yellowish brown (10YR 5/6)	Bentonite mud consists of 350 lb Quick-Gel, 30 lb soda ash, 50 lb EZ Mud Gold, and 26 lb Quick-Trol LV for 3,500 gal tank.
342		-278			
344		-280			
346		-282			
348		-284			
350		-286			
352		-288			
354		-290			
356		-292			
358		-294			
360					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
360		-296			
362		-298			
364		-300			
366		-302			
368		-304			
370		-306			
372		-308			
374		-310			
376		-312			
378		-314			
380		-316			
382		-318			
384		-320			
386		-322			
388		-324			
390					
				365.0 — Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; greenish gray (GLEY1 5GY 5/1)	@ 365' driller felt change from clay to sand.
					Mud Test @ 380'. Weight: 8.6 lb/gal Viscosity: 55 sec Filtrate: 8.8 cc Sand: 0% pH: 9.5 Cake: <1/32"

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BORING LOG

BORING NO. RB-31B

SHEET 14 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
390				390.0 Poorly graded SAND w/silt (SP-SM) - ~90% fine sand; 10% fines; wet; greenish gray (GLEY1 5GY 5/1)	
392		-326			
394		-328			
396		-330			
398		-332			
400		-334		400.0 Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; greenish gray; (GLEY1 5GY 5/1)	
402		-336			
404		-338			
406		-340			
408		-342			
410		-344			
412		-346			
414		-348			
416		-350			
418		-352			
420		-354			

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BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
420					
		-356			
422					
		-358			
424					
		-360			At ~425' driller felt gravel seam.
426					
		-362			
428					
		-364			
430					
		-366			
432					
		-368			
434					
		-370			
436					
		-372			
438					
		-374			
440					
		-376			
442					
		-378			
444					
		-380			@ 445' encountered wood layer ~2' thick.
446					
		-382			
448					
		-384			
450					

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BORING LOG

BORING NO. RB-31B

SHEET 16 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ONB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														450					Add more mud. Mud consists of 200 lb Quick Gel, 10 lb Quick-Trol LV and 10 lb soda ash, 2,000 gal water. Viscosity @ 41 sec.
																-386			
														452					
																-388			
														454					
																-390			
														456					
																-392			
														458					
																-394			
														460					
																-396			
														462					
																-398			
														464					
																-400			
														466					
																-402			
														468					
																-404			
														470				grading w/trace medium sand	
																-406			
														472					
																-408			
														474					
																-410			
														476					
																-412			
														478					
																-414			
														480					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

SHEET 17 OF 20

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
480		-416			Medium, angular sand was found in the cuttings.
482		-418			
484		-420			
486		-422			
488		-424			
				489.0	Clay encountered @ 489.0' based on geophysical testing.
490		-426			
492		-428		Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand; wet; greenish gray (GLEY1 5G 5/1) and dark yellowish brown (10YR 4/1)	@ 493' driller felt change from sand to clay. Add 10 lb EZ Mud Gold and 1 quart Aqua-Clear PFD.
494		-430			
496		-432			
498		-434			
500		-436			
502		-438			
504		-440			
506		-442			
508		-444			
510					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco GMB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
510		-446			Wood was found in the cuttings.
512		-448			
514		-450			Drilling stopped overnight @ 515'. Groundwater level was not recorded.
516		-452			
518		-454			
520		-456		520.0 Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; wet; greenish gray (GLEY1 5G 5/1) and dark yellowish brown (10YR 4/6) to yellowish red (5YR 5/6)	Drilling restarted on 03/12/08. Water level not recorded. Add 150 lb Quick-Gel, 10 lb soda ash, 6 lb Quick-Trol LV and ~1,000 gal water. Mud Test @ 520' Weight: 8.6 lb/gal Viscosity: 45 sec Filtrate: 9 cc Sand: 0.25% pH: 9.5 Cake: <1/32"
522		-458			
524		-460			
526		-462			
528		-464			
530		-466		530.0 Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand; wet; greenish gray (GLEY1 5G 5/1) and dark yellowish brown (10YR 4/6)	
532		-468			
534		-470			
536		-472			
538		-474			
540					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco awb	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
540		-476			Fine sand was found from the de-sander.
542		-478			
544		-480			
546		-482			
548		-484			
550		-486		grading greenish gray (GLEY1 10GY 6/1)	
552		-488			
554		-490			
556		-492			
558		-494			
560		-496			
562		-498			
564		-500			Bottom of boring @ 565.0'. E-log/ gamma, caliper/ gamma, and P-S suspension logging performed between 305 and 473' on 3/13/08.
566		-502			
568		-504			
570					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31B

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17214.4' E 16989.0'	65.4 ft (msl)	565.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level sand surface prepared w/excavator	Plant Grid	2/21/08	3/15/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AWB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
570					Obstruction @ 473' removed on 3/13/08. E-log/ gamma, caliper/ gamma, and P-S suspension logging performed between 473 and 565' on 3/13/08. 3.5" ID Schedule 80 PVC casing installed to 565' on 3/14/08. Boring annulus grouted by tremie method with cement-bentonite grout to ground surface on 03/15/ 08. Temporary casing removed on 03/15/08. Downhole seismic logging performed on 04/ 14/08.
572		-506			
574		-508			
576		-510			
578		-512			
580		-514			
582		-516			
584		-518			
586		-520			
588		-522			
590		-524			
592		-526			
594		-528			
596		-530			
598		-532			
600		-534			

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BORING LOG

BORING NO. RB-31C

SHEET 1 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
0		66		[Fill] Clayey SAND (SC); ~80% fine, subangular to subrounded sand; ~15% fines w/low plasticity; ~5% fine gravel; moist; light brownish gray (10YR 6/2)	Boring advanced w/6" tricone bit using bentonite mud as drilling fluid. 6" ID ($6\frac{7}{8}$" OD) temporary casing installed. Bottom of temporary casing @ 12.5'. SPT not performed. Sampling from drill cuttings. No preservation of drill cuttings. Water level measured @ 11.4' before drilling below 12.5' started.
2		64			
4		62			
6		60			
8		58			
10		56			
12		54		grading to ~70% fine, subangular sand; ~30% fines w/medium plasticity	
14		52		14.0 Well graded SAND w/gravel (SW) - ~60% fine to coarse, angular to rounded sand; ~40% fine, angular to subangular elongate gravel; wet; brownish yellow (10YR 6/8)	Drilling fluid consists of (for a 2,200 gal tank), 11 lbs soda ash, 6 sacks Quick Gel, 5 bags Quick-Trol LV, 1 bucket EZ Mud Gold. Drill mud viscosity @ 41 sec @ the start of drilling.
16		50			
18		48			
20		46			
22		44			
24		42		grading to ~70% medium to coarse sand; ~30% fine gravel	High amount of sand observed from mud system desander.
26		40			
28		38			
30					

BLACK & VEATCH

BORING LOG

BORING NO. RB-31C

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
30	36		
		30.0 [Engineered Fill]	
32	34		
34	32	Well graded SAND (SW) - ~95% fine to coarse, angular to rounded sand; ~5% fine gravel	
36	30		
38	28		
40	26		
42	24		
44	22		
46	20		
		46.7 [Citronelle (lower)]	Citronelle (lower) based on previous excavation to elevation 20'.
48	18		
50	16		
52	14		
54	12		
56	10		More Quick Gel added to drilling mud.
58	8		
60			

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BORING LOG

BORING NO. RB-31C

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)
60	6
62	4
64	2
66	0
68	-2
70	-4
72	-6
74	-8
76	-10
78	-12
79.0	
80	-14
82	-16
84	-18
86	-20
88	-22
90	

Very few cuttings observed between 75.0' and 79.0'. Possible clay layer.

Poorly graded SAND (SP) - ~100% fine, subangular to rounded sand; wet; pale yellow (2.5Y 7/4)

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BORING LOG

BORING NO. RB-31C

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
90		-24		90.0	
92		-26			
94		-28		Clayey SAND (SC) - ~80% fine to coarse, angular to subrounded sand; ~20% fines; wet; pale yellow (2.5Y 7/3)	@94' more mud mixed. N-Seal added to protect sands already drilled.
96		-30			
98		-32			
100		-34			Some clay coating in gravel particles in cuttings.
102		-36			
104		-38			
106		-40			
108		-42			
110		-44		109.2 [Pascagoula]	Clay encountered @ 109.2 based on geophysical testing
112		-46		Lean CLAY w/sand (CL) - ~80% fines w/low plasticity; ~20% fine to coarse sand; wet; pale yellow (2.5Y 7/3)	Driller noted clay @ 112'.
114		-48			
116		-50		grading to ~90% fines; ~10% fine sand	
118		-52			
120					

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BORING LOG

BORING NO. RB-31C

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco CWS	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
120		-54		grading light gray (2.5Y 7/2)	
122		-56			
124		-58			
126		-60			
128		-62			
130		-64		—130.0—	
132		-66		Clayey GRAVEL w/sand (GC) - ~60% fine, angular to rounded, elongate gravel; ~20% fine to coarse, subangular to rounded sand; ~20% fines w/low plasticity; wet; light gray (2.5Y 7/2)	
134		-68			
136		-70			
138		-72			
140		-74		—140.0—	
142		-76		Lean CLAY (CL) - ~100% fines w/low plasticity; wet; light gray (2.5Y 7/2)	
144		-78			
146		-80			
148		-82			
150					

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BORING LOG

BORING NO. RB-31C

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren JHL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
150		-84			
152		-86			
154		-88			
156		-90			
158		-92			
160		-94		160.0	
162		-96		Fat CLAY (CL) - ~100% fines w/high plasticity; wet; greenish gray (GLEY1 5/1)	
164		-98			
166		-100			
168		-102			
170		-104			
172		-106			
174		-108			
176		-110			Bottom of boring @ 176.2'. Water level recorded @ 6.8' @ end of drilling. E log/ gamma, caliper/ gamma, and P-S
178		-112			
180					

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BORING LOG

BORING NO. RB-31C

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17254.2' E 16984.7'	66.7 ft (msl)	176.2 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface, base of tank berm crane pad	Plant Grid	03/16/08	03/17/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180		-114			suspension logging performed on 03/16/08. 3.5" OD (3" ID) PVC Schedule 80 casing was installed to bottom of hole on 03/17/08. Boring annulus grouted by tremie method with cement bentonite grout to ground surface on 03/17/08. Temporary casing removed on 03/17/08. Downhole seismic testing performed on 4/13/08.
182		-116			
184		-118			
186		-120			
188		-122			
190		-124			
192		-126			
194		-128			
196		-130			
198		-132			
200		-134			
202		-136			
204		-138			
206		-140			
208		-142			
210					

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BORING LOG

BORING NO. RW-33

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16945.5' E 17205.4'	64.6 ft (MSL)	71.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	01/25/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
BAG	01	-	-	-	-	-								0		64		[Engineered Fill]	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. Bag Sample RW-33 - Bag 01 was collected @ 1.5'.
SPT	02	2	5	8	13	1.1								2		62		Poorly graded SAND (SP) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; moist; medium dense; yellow (10YR 7/6)	
SPT	03	9	13	17	30	0.7								4		60		grading medium dense	
SPT	04	10	18	19	37	1.0								6		58		grading dense	
SPT	05	11	16	19	35	1.2								8		56		grading wet; pale yellow (2.5Y 7/4)	
SPT	06	10	14	16	30	1.2								10		54		grading medium dense	
SPT	07	13	18	23	41	1.4								12		52			
SPT	08	17	25	31	56	1.4								14		50		grading dense	
SPT	09	20	32	40	72	1.5								16		48			
														18		46			
														20		44		grading to ~90% sand; ~5% fines; ~5% fine, subrounded, elongate gravel; very dense	Stopped overnight. Water level recorded @ 6.8' on 01/26/07.
														22		42			
														24		40			
														26		38		grading to 93% coarse to medium sand; 4% fines; 3% fine gravel	
														28		36			
														30					

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BORING LOG

BORING NO. RW-33

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16945.5'	E 17205.4'	64.6 ft (MSL)	71.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	01/25/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	10	16	22	24	46	1.3								30		34		grading dense	
														32		32			
														34		30			
SPT	11	19	27	37	64	1.4								36		28		grading very dense	
														38		26			
SPT	12	25	50	-	+50	0.8								40		24			
														42		22			Thin gravel layer @ 42' as per driller's observations.
														44		20			
SPT	13	15	36	50	+50	1.3								46		18		45.7 [Citronelle (lower)] Clayey SAND (SC) - ~80% fine to coarse, subrounded to rounded sand; ~20% fines; wet; very dense; well graded; yellow (10YR 7/8)	
														48		16			
SPT	14	28	35	37	72	0.0								50		14			SPT-14 tip of sampler lost in hole. No recovery.
														52		12			
														54		10			
SPT	15	13	26	28	54	1.2								56		8		grading to ~75% sand; ~20% fines; ~5% fine gravel; very pale brown (10YR 7/4)	
														58		6			
														60					

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BORING LOG

BORING NO. RW-33

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16945.5' E 17205.4'	64.6 ft (MSL)	71.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	01/25/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	16	19	31	48	79	1.3								60		4		61.0	Field sample smaller than recommended.
																		Well graded SAND (SW) - ~90% fine to coarse, subrounded to rounded sand; ~5% fine, subangular, elongated gravel; ~5% fines; wet; very dense; yellow (10YR 7/6)	
														62		2			
														64		0			
																		grading to ~5% fine to coarse, subangular to subrounded gravel	
SPT	17	19	26	35	61	1.5								66		-2			
														68		-4			
																		grading to 94% fine to medium sand; 3% fine gravel; 3% fines	
SPT	18	20	27	32	59	0.7								70		-6			
														72		-8			Bottom of boring @ 71.5'. Hole caved in @ 7.0' right after completion of drilling. No fluid level recorded upon completion. Fluid level @ 7.3' on 01/31/07. Boring backfilled w/cement bentonite grout on 01/31/07.
														74		-10			
														76		-12			
														78		-14			
														80		-16			
														82		-18			
														84		-20			
														86		-22			
														88		-24			
														90					

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BORING LOG

BORING NO. RW-33A

SHEET 1 OF 3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16931.4' E 17191.3'	65 ft (estimated)	55.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	03/19/08	03/25/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
0		64		[Engineered Fill] Poorly graded SAND (SP); ~90% fine to coarse, subangular to rounded sand; ~5% fine, rounded gravel; ~5% fines; moist; very pale brown (10YR 7/3)	Boring advanced w/6" tricone bit using air as drilling fluid to install 6" ID (6-7/8" OD) steel temporary casing to 15.8'. Below bottom of temporary casing, boring advanced w/6" tricone bit using bentonite mud as drilling fluid. Boring logged by cuttings, no sample preservation. Drilling mud consists of (for a 2,200 gallon tank) 11 lbs soda ash, 300 lbs Quick Gel, 10 lbs QTLV, 1 bucket EZ Mud Gold (½ tank from previous location was also used). Mud viscosity (Marshall flume) @ start of drilling was 43 seconds. Two bags of N-Seal were added to help avoid washouts. @ 10' Slight change in color. @15.8' Mud was observed coming out of the ground surface. 20.0' more temporary casing were installed. Very hard drilling while placing the casing @ 21.0'.
2		62			
4		60			
6		58			
8		56			
10		54		grading wet	
12		52			
12.5					
14		50		Clayey SAND (SC); ~70% fine, subrounded sand; ~30% fine w/low plasticity; wet; light gray (2.5Y 7/2)	
16		48			
18		46			
20		44			
22		42			
24		40			
26		38			
28		36			
30					

BLACK & VEATCH

BORING LOG

BORING NO. RW-33A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16931.4' E 17191.3'	65 ft (estimated)	55.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	03/19/08	03/25/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JML	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

DEPTH (FEET)	ELEVATION (FEET)
30	34
32	32
34	30
36	28
38	26
40	24
42	22
44	20
46	18
48	16
50	14
52	12
54	10
56	8
58	6
60	

REMARKS:

No sampling below 15.0' and 35.0' due to placement of casing. Casing installed using air as drilling fluid. Mud observed coming out of the ground by the casing when the drill bit was 6.0' ahead of bottom of casing.

During installation of additional casing, the casing was falling under its own weight at a depth of ~45.0'.

Casing installed to 55.0'. Mud observed @ surface around the casing; stopped drilling.

Boring abandoned @ 55.0'. Temporary casing removed on 03/25/08. Boring was backfilled

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BORING LOG

BORING NO. RW-33A

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16931.4' E 17191.3'	65 ft (estimated)	55.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	03/19/08	03/25/08

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco CWB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
60		4			w/cement bentonite grout by tremie method on 03/25/08.
62		2			
64		0			
66		-2			
68		-4			
70		-6			
72		-8			
74		-10			
76		-12			
78		-14			
80		-16			
82		-18			
84		-20			
86		-22			
88		-24			
90					

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BORING LOG

BORING NO. RW-34

SHEET 1 OF 3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16955.8' E 17324.8'	64.4 ft (MSL)	71.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	01/26/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco MMP	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		64		[Engineered Fill]	Boring advanced w/3-7/8" baffle bit w/NW rods using water as drilling fluid. No sampling 0 to 5' due to utility concerns. SPT performed below 5.0' using automatic hammer w/ unlined split spoon sampler and plastic catcher. SPT-2 piece of gravel @ top of sampler (slough).
														2		62			
														4		60			
SPT	01	7	12	15	27	1.4								6		58		Poorly graded SAND (SP) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; medium dense; pale yellow (2.5Y 7/4); w/0.2' coarse sand seam @ 5.2'	
SPT	02	11	18	25	43	0.9								8		56		grading dense; coarse sand seam grades out	
														10		54			
SPT	03	11	17	22	39	1.2								12		52		grading to pale yellow (2.5Y 7/3)	
														14		50			
SPT	04	11	15	20	35	1.2								16		48		grading to ~90% sand; ~5% fines; ~5% fine, subrounded to rounded gravel	SPT-4 coarse gravel @ top of sampler (slough).
														18		46			
SPT	05	16	26	33	59	1.1								20		44		grading to ~95% sand; ~5 % fines; very dense	
														22		42			
														24		40			
SPT	06	16	29	42	71	1.1								26		38		grading to ~90% sand; ~5% fines; ~5% fine, angular to rounded gravel	
														28		36			
														30					

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BORING LOG

BORING NO. RW-34

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16955.8' E 17324.8'	64.4 ft (MSL)	71.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	01/26/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco MMB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	07	18	32	41	73	1.1								30	34	grading to ~90% sand; ~5% fines; ~5% fine, rounded gravel	Water level measured @ 4.8' after 1.5 hours.
														32	32		
														34	30		
SPT	08	19	43	50/5"	+50	1.1								36	28	grading to 90% coarse to fine sand; 6% fine gravel; 4% fines	
														38	26		
SPT	09	17	36	46	82	1.2								40	24	grading to ~90% sand; ~5% fines; ~5% fine, angular to rounded gravel	
														42	22		
														44	20	44.6 [Citronelle (lower)]	
SPT	10	41	50/5"	-	+50	0.9								46	18	Well graded SAND (SW) - ~95% sand; ~5% fines; wet; very dense; pale yellow (2.5YR 7/4) w/0.2' seam of fine, subrounded to rounded gravel @ 45.6'	
														48	16		
SPT	11	15	23	24	47	1.5								50	14	50.8	Field sample smaller than recommended.
														52	12	Poorly graded GRAVEL (GP) - ~100% fine, subrounded to rounded, elongate gravel; wet; dense; poorly graded; yellowish-brown (10YR 5/6)	
														54	10	51.0 Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; yellow (10YR 7/6)	
SPT	12	12	19	27	46	1.0								56	8	@ 55.0' grading w/~97% sand; 3% fines; dense; brownish-yellow (10YR 6/8)	
														58	6		
														60			

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BORING LOG

BORING NO. RW-34

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16955.8' E 17324.8'	64.4 ft (MSL)	71.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sand surface	Plant Grid	01/26/07	01/31/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	13	17	33	50	83	1.5								60		4		grading very dense; pale yellow (2.5Y 7/4)	@ 60.0' cleanout depth measured @ 61.0'. Hole was washed for too long; cleaned hole to 61.0' and performed sampling.
														62		2			
														64		0			
SPT	14	10	15	20	35	1.0								66		-2		grading dense; yellow (2.5Y 7/6)	
														68		-4		68.0	
SPT	15	14	15	18	33	1.0								70		-6		Well graded SAND w/clay (SW-SC) - ~90% fine to coarse, subrounded to rounded sand; ~10% fines; wet; dense; brownish-yellow (10YR 6/8); w/black (organic) matrix @ top 0.2'	Bottom of boring @ 71.5'. Fluid level recorded @ 6.8' @ completion of drilling. Boring caved @ 6.2'. Boring backfilled w/cement bentonite grout on 01/31/07.
														72		-8			
														74		-10			
														76		-12			
														78		-14			
														80		-16			
														82		-18			
														84		-20			
														86		-22			
														88		-24			
														90					

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BORING LOG

BORING NO. RW-35

SHEET 1 OF 3

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17054.9' E 17205.3'	67.1 ft (MSL)	76.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, few grass	Plant Grid	01/31/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	5	6	9	15	1.1								0		66		[Engineered Fill] Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; moist; medium dense; yellow (10YR 7/6)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
														2				2.3	
SPT	02	7	13	18	31	1.1								4		64		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; moist; dense; very pale brown (10YR 7/4); w/gravelly sand seam @ 3.2'	
SPT	03	6	10	13	23	1.1								6		62		grading w/fine gravel sand seam @ 5.7'	
SPT	04	10	21	28	49	0.9								8		60		grading to ~90% sand; ~5% fines; ~5% fine, subrounded gravel; very pale brown (10YR 7/4)	SPT-04 gravel on top of sampler (slough).
SPT	05	9	20	29	49	0.9								10		58	C	grading to 95% sand; 5% fines; wet	SPT-05 gravel on top of sampler (slough).
SPT	06	9	26	41	67	0.8								12		56			
														14		54		grading very dense	SPT-06 gravel on top of sampler (slough).
														16		52			
SPT	07	15	40	50	90	1.5								18		50	▽		
														20		48		grading w/fine, subrounded gravel seam @ 20.6'	
														22		46			
														24		44			
SPT	08	13	32	50	82	1.2								26		42		grading pale yellow (2.5Y 7/3) w/medium subrounded to rounded sand seam @ 25.8' and fine subrounded to rounded gravel seam @ 25.8'	Mud was thickened.
														28		40			
														30		38			

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CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17054.9'	E 17205.3'	67.1 ft (MSL)	76.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, few grass	Plant Grid	01/31/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	13	29	43	72	1.2								30		36		grading to ~90% sand; ~5% fines; ~5% fine, subrounded to rounded gravel; homogeneous	
														32		34			
														34		32			
SPT	10	20	40	50	90	0.9								36		30			
														38		28			
SPT	11	20	46	50/5"	+50	1.0								40		26		grading to 93% medium to fine sand; 4% fine gravel; 3% fines	
														42		24			
														44		22			
SPT	12	21	43	50/5"	+50	0.9								46		20			
														48		18			
														50		16		51.2 [Citronelle (lower)]	
SPT	13	15	25	35	60	0.9								52		14		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; very dense; brownish-yellow (10YR 6/8)	Coarse gravel piece found between Fill and Citronelle sand. Field sample smaller than recommended.
														54		12		53.5	
SPT	14	12	26	28	54	0.7								56		10		Poorly graded SAND (SP) - ~95% medium sand; ~5% fines; very dense; wet; brownish-yellow (10YR 6/8)	
														58		8		58.5	
														60					

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BORING LOG

BORING NO. RW-35

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17054.9' E 17205.3'	67.1 ft (MSL)	76.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, few grass	Plant Grid	01/31/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	17	39	45	84	0.7								60		6		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; very dense; brownish-yellow (10YR 6/8)	
														62		4			
																		63.5	
														64		2		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; very dense; light gray (2.5Y 7/2)	
SPT	16	14	27	41	68	1.5								66		0		@ 65.8' coarse, subangular to subrounded, elongate gravel seam	
														68		-2		@ 66.2' grading pale yellow (2.5Y 7/3)	
														70		-4		grading to ~85% sand; ~10% fine to coarse, subangular to subrounded, elongate to flat gravel; ~5% fines	@ 70' mud was thickened.
SPT	17	16	33	41	74	1.5								72		-6		@ 71' grading to pale yellow (2.5Y 7/3)	
														74					
																-8		@ 75' grading to 90% sand; ~5% fine, subrounded to rounded gravel; ~5% fines	Sample 18A - SP.
SPT	18	21	37	50	87	1.4								76				76.1	Sample 18B - SW.
																-10		Well graded SAND (SW) - ~85% fine to coarse, angular to rounded sand; ~5% fine to coarse, subangular to subrounded gravel; ~10% fines; wet; very dense; yellowish-brown (10YR 5/8)	Bottom of boring @ 76.5'. Fluid level @ 18.0' at completion of drilling. Boring caved @ 10.0'. No fluid level encountered on 02/14/07. Boring backfilled w/ cement bentonite grout on 02/14/07.
														78		-12			
														80		-14			
														82		-16			
														84		-18			
														86		-20			
														88		-22			
														90					

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BORING LOG

BORING NO. RW-36

SHEET 1 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Engineered Fill] Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fine, subangular to subrounded gravel; moist; pale brown (5YR 5/2)	Boring advanced w/6" tricone bit. Bentonite mud used as drilling fluid. 10" ID temporary casing installed 2.5' below ground surface. Sampling from drill cuttings. No drill cuttings preserved. Drilling fluid consists of 100 gal water, 50 lbs bentonite, ~8 lbs soda ash, 1 lb Quik-Trol additive. Mixed 400 gals before drilling.
5.0	
Well graded SAND w/gravel (SW) - ~80% fine to medium, subangular sand; ~20% fine, subangular to subrounded gravel; light brown (5YR 6/4)	
15.0	
Poorly graded SAND (SP) - ~90% fine, subangular sand; ~5% fines; ~5% fine, subangular gravel; light gray (5Y 7/2)	

DEPTH (FEET)	ELEVATION (FEET)
0	64
2	62
4	60
6	58
8	56
10	54
12	52
14	50
16	48
18	46
20	44
22	42
24	40
26	38
28	36
30	

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
grading pale olive (5Y 6/4)	@ 30.0' mixed 100 gal drilling fluid, desanded using cyclone desander.
35.0	
Well graded SAND (SW) - ~90% fine to coarse, subangular sand; ~10% fine to coarse, subrounded to subangular gravel; pale olive (5Y 6/4)	
44.8 [Citronelle (lower)]	
Poorly graded SAND (SP) - ~95% fine to coarse, subangular sand; ~5% fine, subangular gravel; pale olive (5Y 6/4)	@ 50.0' mixed 100 gal drilling fluid, desanded using cyclone desander.

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG | CLASSIFICATION OF MATERIALS | REMARKS

60 / 4
62 / 2
64 / 0
65.0
66 / -2
68 / -4
70 / -6
72 / -8
74 / -10
76 / -12
78 / -14
80 / -16
82 / -18
84 / -20
86 / -22
88 / -24
90

Well graded SAND (SW) - ~95% fine to coarse, subangular sand; ~5% fine, subangular to subrounded gravel; dusky yellow (5Y 6/4)

grading to ~90% medium to coarse, subangular sand; ~10% fine to coarse, subrounded gravel; light brown (5YR 6/4)

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
90		-26		grading to 95% medium to coarse, subangular sand; ~5% fine, subangular gravel	@ 90.0' mixed 100 gal drilling fluid, desanded using cyclone desander.
92		-28			
94		-30			
96		-32			
98		-34			
100		-36			@ 100.0' desanded using cyclone desander.
102		-38			
104		-40			
106		-42		106.0 [Pascagoula] Lean CLAY w/sand (CL) - ~80% fines w/low plasticity; ~20% fine to medium sand; moderate yellowish brown (10YR 5/4)	Downhole logs suggest clay encountered @ 106.0'.
108		-44			
110		-46			@ 110.0' mixed 100 gal drilling fluid.
112		-48			@ 112.0' driller reports change in drill speed.
114		-50			@ 113.0' some brown clay particles in wash cuttings.
116		-52			
118		-54			
120					

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
120		-56		grading to ~90% fines; ~10% fine sand; pale yellowish brown (10YR 6/2)	@ 120.0' mixed 100 gal drilling fluid, desanded using cyclone desander.
122		-58			
124		-60			
				125.0	
126		-62			
128		-64			
130		-66		Fat CLAY (CH) - 100% fines w/high plasticity; greenish gray (5G 6/1)	
132		-68			
134		-70			
136		-72			@ 135.0' mixed 100 gal drilling fluid, desanded using cyclone desander.
138		-74			
140		-76			
142		-78			
144		-80			
146		-82			
148		-84			
150					

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BORING LOG

BORING NO. RW-36

SHEET 6 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
150		-86			@ 150.0' mixed 100 gal drilling fluid, added 1 lb E-Z Mud Gold, desanded using cyclone desander.
152		-88			
154		-90			
				155.0	
156		-92			
158		-94			
160		-96		Lean CLAY (CL) - ~100% fines w/low plasticity; soft; greenish gray (5G 6/1)	Stopped overnight @ 160.0', fluid level @ ground surface 04/08/08. @ 160.0' changed drilling fluid, mixed 300 gal drilling fluid, added 1 lb E-Z Mud Gold to each 100 gal. Pumped off old drilling fluid.
162		-98			
164		-100			
166		-102			
168		-104			
170		-106		grading to pale olive (5GY 5/2)	
172		-108			
174		-110			
176		-112			@ 175.0' mixed 100 gal drilling fluid, added 1 lb E-Z Mud Gold, desanded using cyclone desander.
178		-114			
180					

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180		-116			
182		-118			
184		-120			
186		-122			@ 185.0' mixed 100 gal drilling fluid, added 1 lb E-Z Mud Gold, desanded using cyclone desander.
188		-124			
190		-126		grading to greenish gray (5GY 6/1)	
192		-128			
194		-130			
195.0					@195.0' mixed 100 gal drilling fluid consisting of 30 lbs bentonite, 3 lb soda ash, 1 lb Quik-Trol additive. Desanded using cyclone desander.
196		-132			
198		-134			
200		-136		Fat CLAY (CH) - 100% fines w/high plasticity; greenish gray (5GY 6/1)	
202		-138			
204		-140			
206		-142			@ 205.0' added 50 gal water to drilling fluid.
208		-144			
210					

6/26/2008 10:22 AM River Bend- Geotechnical

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														210		-146			@ 210.0' desanded using cyclone desander, added 25 gal water to drilling fluid.
														212		-148			
														214		-150			@ 215.0' mixed 300 gal drilling fluid consisting of 100 gal mixes. Each 100 gal mix consists of 30 lbs bentonite, 5 lbs soda ash, 1 lb Quik-Trol additive, 1 lb E-Z Mud Gold. Pumped off old drilling fluid.
														216		-152			
														218		-154			
														220		-156			@ 220.0' hole squeezing. Pulled 60' drill rods, reamed hole to 220.0'. Drilled to 226.0' - no bit advance, pulled rods, pressure-washed bit. Stopped overnight @ 226.0'.
														222		-158			
														224		-160			
														226		-162			
														228		-164			
														230		-166		grading to yellowish gray (5Y 7/2)	Fluid level 7.5' below ground surface 0740 04/09/08.
														232		-168			@ 230.0' desanded using cyclone desander, mixed 100 gal drilling fluid.
														234		-170			
														236		-172			
														238		-174			
														240					

BLACK & VEATCH

BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
240		-176		grading to pale olive (10Y 6/2)	@ 240.0' desanded using cyclone desander, added 30 gal water to drilling fluid.
242		-178			
244		-180			
246		-182			
248		-184			
250		-186			@ 250.0' added 30 gal water to drilling fluid, mixed and added 100 gal drilling fluid.
252		-188			Bottom of boring @ 252.3'. Mud level @ 8.2' below ground surface @ completion. Fluid level 7.8' below ground surface on 4/10/08. Deviation, E-log/ gamma, caliper/ gamma, P-S suspension logging performed on 4/9 08. 3-½" OD schedule 80 PVC casing installed to bottom of borehole on 4/ 10/08. Boring annulus grouted by tremie method w/ 250 gallons of cement-bentonite grout (2-½ bags
254		-190			
256		-192			
258		-194			
260		-196			
262		-198			
264		-200			
266		-202			
268		-204			
270					

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BORING LOG

BORING NO. RW-36

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17007.2' E 17269.7'	64.8 ft (MSL)	252.3 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Grassy; sandy; gravelly	Plant Grid	04/07/08	4/10/08

LOGGED BY	CHECKED BY	APPROVED BY
R. Conolly MMP for	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
270		-206			bentonite, 1-1/4 bags cement per 100 gallons water). Downhole seismic testing performed on 4/ 13/08.
272		-208			
274		-210			
276		-212			
278		-214			
280		-216			
282		-218			
284		-220			
286		-222			
288		-224			
290		-226			
292		-228			
294		-230			
296		-232			
298		-234			
300					

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BORING LOG

BORING NO. FB-38

SHEET 1 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														0		68		[Engineered Fill]	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. SPT-02 field sample smaller than recommended. SPT-04 one piece of gravel @ top of sampler (slough).
SPT	01	6	8	9	17	1.2								2		66		Poorly graded SAND (SP) - ~95% fine to coarse, subangular to rounded sand; ~5% fines; dry; medium dense; pale yellow (2.5Y 7/4); w/clayey sand seam and clay partings w/no clayey sand	
SPT	02	1	9	10	19	0.7								4		64		@ 2.5' grading to ~90% sand; ~5% fines; ~5% fine, rounded gravel; clayey sand seam grades out	
SPT	03	7	16	20	36	1.0								6		62		grading to dense; pale yellow (2.5Y 7/3)	
SPT	04	5	17	24	41	1.1								8		60		grading to ~95% sand; ~5% fines	
SPT	05	13	25	31	56	1.1								10		58		grading wet; very dense	
														12		56			
														14		54			
SPT	06	15	27	37	64	1.0								16		52			
														18		50			
SPT	07	11	22	31	53	1.1								20		48		sandy gravel seam @ top of sample	
														22		46			
														24		44			
SPT	08	13	23	27	50	1.0								26		42			
														28		40			
														30					

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BORING LOG

BORING NO. FB-38

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	24	50/5"	-	+50	1.3								30		38		fine, subrounded to rounded gravel and coarse sand seam @ 31'	
														32		36			
														34		34			
SPT	10	16	35	45	80	1.1								36		32		grading to pale yellow (2.5Y 7/3)	Stopped overnight after SPT-10 fluid level measured @ 12' on 02/12/07. Cave-in depth @ 13'.
														38		30			
SPT	11	23	44	50/5"	+50	1.1								40		28			
														42		26			
														44		24			
SPT	12	23	42	50/5"	+50	1.0								46		22		grading to 93% fine to coarse sand; 4% fine gravel; 3% fines; natural moisture content = 13%	
														48		20		48.6 [Citronelle (lower)]	
SPT	13	WOR	WOR	WOR	NA	0.6								50		18		Poorly graded SAND (SP) - 92% fine to medium sand; 6% fine, subangular gravel; 2% fines; moist, natural moisture content = 18%; pale yellow (2.5YR 7/3)	SPT-13 sampler penetrated under weight of rod (WOR). Per ASTM D6066, excessive disturbance noted; blowcount not applicable (NA). Proceeded to clean hole, drilled 1 ft, resampled. SPT-13 -Field sample smaller than recommended.
														52		16			
SPT	14	1	7	18	25	0.9								54		14		grading w/92% fine to medium, subrounded to rounded sand; 4% fines; 4% fine to coarse, subrounded, elongate gravel; wet, natural moisture content = 16%; medium dense; pale yellow (2.5Y 7/4)	
SPT	15	12	19	26	45	1.0								56		12		@ 55' grading to dense; gravel portion grades to fine; pale yellow (2.5Y 8/3)	
														58		10			
														60					

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BORING LOG

BORING NO. FB-38

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang ECA	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	16	7	12	17	29	1.0								60		8		grading to 92% sand; 7% fines; 1% fine gravel; medium dense; natural moisture content = 5%; very pale brown (10YR 8/3)	
														62		6			
														64		4			
SPT	17	13	26	32	58	1.3								66		2		grading to ~90% sand; ~5% fines; ~5% fine, subangular to subrounded gravel; very dense; grading yellow (2.5Y 8/6) w/sandy gravel seam @ 65.5'	ECA logged FB-38 below 65.5'.
														68		0			
SPT	18	17	25	32	57	1.2								70		-2		grading to 95% sand; 5% fines; w/a piece of coarse, subangular, elongated gravel; w/maximum size ~1"; homogeneous	
														72		-4			
														74		-6			
SPT	19	11	25	32	57	0.8								76		-8		grading to pale yellow (2.5Y 7/4) w/yellow (10 YR 8/8) stains; homogeneous	
																		77.5	
														78		-10			
SPT	20	12	15	15	30	0.9								80		-12		Well graded SAND (SW) - ~90% fine to coarse, subrounded to subangular sand; ~10% fine, subrounded to subangular, flat and elongate gravel; w/ maximum size 3/4"; medium dense; wet; brownish-yellow (10YR 6/8)	Driller felt clay seams between 80' and 85'.
														82		-14			
																		82.5	
														84		-16			
SPT	21	4	4	6	10	1.8								86		-18		Sandy Lean CLAY (CL) - ~70% fines w/medium plasticity, medium toughness, no dilatancy; ~30% fine sand; firm; moist; light greenish-gray (GLEY1 10Y 8/1); w/ferrous staining; clay seams	
														88		-20			
														90					

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BORING LOG

BORING NO. FB-38

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang EUA	J. Liljegren SMZ	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	22	-	-	-	-	2.0								90		-22		grading w/LL=45, PI=24; natural moisture content = 11%; brownish-yellow (10YR 6/8)	PP = 1.25 tsf TV = 0.75 tsf
														92		-24			
														94		-26			
																		95.2	
SPT	23	5	5	14	19	1.7								96		-28		Lean CLAY (CL) - ~90% fines w/medium plasticity, medium toughness, no dilatancy; ~10% fine sand; firm; moist; light greenish-gray (GLEY1 10Y 8/1)	
																		96.3	
														98		-30		Clayey SAND (SC) - ~75% fine to medium, subrounded to subangular sand; ~25% fines; wet; reddish-yellow (7.5YR 6/8)	
														100		-32		100.0	
SPT	24	8	16	15	31	1.1												Poorly graded SAND w/silt (SP-SM); ~90% fine sand; ~10% fines; dense; wet; light gray (2.5Y 7/2) and pink (7.5YR 7/4); homogeneous	
														102		-34			
														104	C	-36			
SPT	25	6	13	21	34	1.2								106		-38		grading light gray (2.5Y 7/2) w/yellow (2.5Y 7/8) stains; clayey seam w/ferrous material	Driller felt interlayered clay and sand between 105' and 110'.
														108		-40		107.5 [Pascagoula]	
														110		-42		Lean CLAY (CL) - ~100% fines w/LL=42, PI=21, medium toughness, no dilatancy; firm; moist, natural moisture content = 29%; light greenish-gray (GLEY 10Y 8/1) w/ferrous staining; silt seams	
SPT	26	5	6	7	13	2.0								112		-44			
														114		-46			
TW	27	-	-	-	-	2.1								116		-48		grading w/LL=32, PI=16; natural moisture content = 27%	TW-27 PP = 2.8 tsf
														118		-50		118.5	
														120					

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BORING LOG

BORING NO. FB-38

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	28	4	6	11	17	1.8								120		-52		Elastic SILT (MH) - ~100% fines w/low plasticity, low toughness, slow dilatancy; moist; hard; light greenish-gray (GLEY1 10Y 8/1); w/clayey sand @ bottom of sampler and ferrous partings and pockets	AMB logged borehole below 120.0'.
														122		-54		—122.5—	
														124		-56			
TW	29	-	-	-	-	1.5								126		-58		Clayey SAND (SC) - ~70% fine to medium, subrounded to rounded sand; ~30% fines w/medium plasticity, medium toughness, moist; poorly graded; light greenish-gray (GLEY1 10Y 8/1); w/few gravel size clay balls and numerous ferrous pockets	PP = 3.5 tsf
														128		-60		—128.5—	
SPT	30	18	30	26	56	1.1								130		-62		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; very dense; pale yellow (2.5Y 8/2) w/ferrous parting @ 131'	Field sample smaller than recommended. Sample 30A - Sand Sample 30B - Clay
														132		-64		—131.2— Lean CLAY (CL) - ~100% fines w/LL=32, PI=13, high toughness, no dilatancy; moist, natural moisture content = 25%; very hard; light greenish-gray (GLEY1 10Y 8/1)	
														134		-66			
TW	31	-	-	-	-	2.0								136		-68			Field sample smaller than recommended. @ 135' PP = 4 tsf TV = 0.4 tsf
														138		-70			
SPT	32	11	16	21	37	1.7								140		-72		grading w/LL=31, PI=15, medium toughness; natural moisture content = 37%; w/occasional ferrous spots; one piece of hard clay and fine to medium sand seam @ tip of sampler	
														142		-74			
														144		-76			
SPT	33	12	18	25	43	1.4								146		-78		grading w/LL=41, PI=20, low toughness, slow dilatancy; natural moisture content = 26%; very hard; w/frequent fine silty sand seams	Sand @ 145' as per driller's observations. Stopped overnight after SPT-33.
														148		-80			
														150					

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BORING LOG

BORING NO. FB-38

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang EA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	34	28	26	34	60	1.5								150		-82		150.3 Silty SAND (SM) - ~85% fine, subrounded to rounded sand; ~15% fines w/low plasticity, low toughness; wet; very dense; poorly graded; light greenish-gray (GLEY1 10Y 8/1); w/frequent ferrous partings and pockets; occasional gravel size clay balls	Fluid level measured @ 12' on 02/13/07. Sand encountered @ 148' as per driller's observations.
														152		-84			
														154		-86			
SPT	35	17	28	34	62	1.1								156		-88		ferrous partings and pockets grade to occasional; gravel size clay balls grade to frequent on top 0.3' of sample and surrounded w/ferrous material	@ 150' Fine gravel @ top of sampler (slough). @ 155' Fine gravel @ top of sampler (slough).
														158		-90		158.0	
SPT	36	11	13	15	28	1.5								160		-92		Fat CLAY (CH) - ~100% fines w/LL=52, PI=29, medium toughness; moist, natural moisture content = 45%; hard; light greenish-gray (GLEY1 10Y 8/1); w/frequent fine sand seams and partings; frequent ferrous partings and pockets	
														162		-94			
														164		-96			
TW	37	-	-	-	-	1.8								166		-98			Field sample smaller than recommended. @ 165' PP ~ 2 tsf TV = 0.35 tsf (Clay expected @ top of tube.)
																		167.0 Sandy fat CLAY (CH) - 68% fines w/LL=60, PI=33, medium toughness; 32% fine sand; wet, natural moisture content = 30%; poorly graded; light greenish-gray (GLEY1 10Y 8/1); w/frequent ferrous pockets and clay balls	
														168		-100			
														170		-102		170.0 Silty SAND (SM) - ~60% fine, subrounded to rounded sand; ~40% fines w/low plasticity, low toughness; wet; dense; poorly graded; light gray (5Y 7/2); w/occasional ferrous seams	
SPT	38	14	20	28	48	1.1													
														172		-104			Bottom of boring @ 171.5'. Fluid level at ground surface @ completion of drilling. Boring caved @ 103.7'. Water level @ 12.0' on 02/14/07. Deviation survey performed on 02/15/07. Boring backfilled w/ cement bentonite
														174		-106			
														176		-108			
														178		-110			
														180					

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BORING LOG

BORING NO. FB-38

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17308.1' E 16990.3'	68.4 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grassy surface	Plant Grid	02/11/07	02/15/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco/E. Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														180		-112			grout using tremie method on 02/15/07.
														182		-114			
														184		-116			
														186		-118			
														188		-120			
														190		-122			
														192		-124			
														194		-126			
														196		-128			
														198		-130			
														200		-132			
														202		-134			
														204		-136			
														206		-138			
														208		-140			
														210					

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BORING LOG

BORING NO. FB-39

SHEET 1 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6' E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	ROCK CORING: CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	9	12	15	27	1.2								0		64		[Fill] Clayey SAND (SC) - ~70% fine to medium, subrounded to rounded sand; ~20% fines; ~10% fine to coarse, subangular to subrounded gravel; moist; medium dense; poorly graded; brownish-yellow (10YR 6/8); w/black parting @ 1.4' @ 2.5' grading w/frequent pockets of sandy clay	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. @ 5', mud has thinned since started drilling.
SPT	02	2	14	16	30	0.9								2		62			
														4		60		4.5	
SPT	03	10	20	28	48	1.2								6		58		Clayey SAND w/gravel (SC) - ~65% fine to medium, subrounded to rounded sand; ~20% fine to coarse, subangular to subrounded gravel; ~15% fines; moist; dense; brownish-yellow (10YR 6/8)	
																		7.0	
SPT	04	14	23	29	52	1.2								8		56		Clayey SAND (SC) - ~65% fine to medium, subrounded to rounded sand; ~25% fines; ~10% fine to coarse, subangular to subrounded gravel; moist; very dense; brownish-yellow (10YR 6/8)	
SPT	05	16	27	31	58	1.0								10		54		grading to ~70% sand; ~25% fines; ~5% gravel	Camera stopped working @ SPT-5. No photo taken.
														12		52		13.0 [Citronelle (upper)]	
SPT	06	15	10	14	24	1.0								14		50		Clayey SAND (SC) - ~80% fine to medium, subrounded to rounded sand; ~20% fines; wet; medium dense; yellow (10YR 7/8); w/frequent sandy clay pockets	Field sample smaller than recommended.
RNG	07	-	16	16	32	0.9								16		48		grading to ~70% sand; ~30% fines	Camera is working; photo taken of RNG-7.
														18		46		19.5	
SPT	08	2	9	14	23	0.9								20		44		Poorly graded SAND w/clay (SP-SC) - 87% fine to coarse, subrounded to rounded sand; 7% fines; 6% fine gravel; wet, natural moisture content = 12%; medium dense; pale yellow (2.5Y 7/4)	Field sample smaller than recommended.
														22		42			
														24		40			
SPT	09	12	15	15	30	1.2								26		38		25.8 Sandy Lean CLAY (CL) - ~80% fines w/medium plasticity, medium toughness; ~20% fine to medium, subrounded to rounded sand; moist; hard; weak red (10R 5/4) and yellow (2.5Y 8/6)	
														28		36		26.1 Clayey SAND (SC) - ~70% fine to medium, subrounded to rounded sand; ~30% fines; wet;	Field sample smaller than recommended.
														30					

BLACK & VEATCH

BORING LOG

BORING NO. FB-39

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6' E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	10	3	4	7	11	1.2
SPT	11	6	9	11	20	1.1
SPT	12	8	11	13	24	1.0
SPT	13	7	8	8	16	1.5
SPT	14	WOR	WOR	WOR	NA	1.2
SPT	15	7	17	21	38	1.0
SPT	16	8	19	24	43	1.3

DEPTH (FEET) | SAMPLE TYPE | ELEVATION (FEET) | GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
medium dense; grading from yellow (2.5Y 8/6) to weak red (10R 5/4) @ 26.2'	
27.5	
Silty SAND (SM) - 88% fine, subrounded to rounded sand; 12% fines; wet, natural moisture content = 22%; medium dense; poorly graded; light red (10R 6/6)	
32.5	
Poorly graded SAND (SP) - ~90% fine to coarse, subrounded to rounded sand; ~5% fines; ~5% fine to coarse, rounded gravel; wet; medium dense; yellow (10YR 7/6); w/silty sand seam @ 35.8'	
grading w/94% fine to medium sand; 4% fines; 2% fine gravel; natural moisture content = 15%; brownish-yellow (10YR 6/8) w/weak red silty sand seam @ 41.2'	SPT-12 gravel on top of sampler (slough).
42.5	
Poorly graded SAND w/clay & gravel (SP-SC) - 48% fine to coarse, subrounded to rounded sand; 43% fine to coarse, angular to rounded gravel (few particles broke w/2 hammer blows); 9% fines w/LL=22, PI=12; wet; medium dense; pink (7.5YR 7/4); homogeneous; w/frequent sandy clay balls	
47.5	
Poorly graded SAND (SP) - 99% fine to medium, subrounded to rounded sand; 1% fines; wet, natural moisture content = 21%; very loose; very pale brown (10YR 7/4)	Drilled down to 50' after having problems w/ pump cleanout. Depth was measured @ 50.2'. Sampler tip depth measured @ 50.9'. The coupler to the hammer was placed; the rods sunk 0.4' more under their own weight (WOR). Per ASTM D-6066, excessive
51.0	
Clayey SAND (SC) - ~70% fine sand; ~30% fines w/ medium plasticity, medium toughness; wet; very loose; poorly graded; light red (2.5YR 6/6)	
52.5	
[Citronelle (lower)] Poorly graded SAND (SP) - 95% fine to coarse, subrounded to rounded sand; 3% fines; 2% fine gravel; wet; dense; very pale brown (10YR 7/4)	
54.5	
Poorly graded SAND w/clay (SP-SC); ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; dense; very pale brown (10YR 7/4); w/seam of sandy gravel @ 55.6'	

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BORING LOG

BORING NO. FB-39

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6'	E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	17	8	14	16	30	1.1								60		4		grading w/94% fine sand; 6% fines; natural moisture content = 20%; medium dense	disturbance (>0.4') noted, blow count not applicable (NA); proceeded to next sample interval. SPT-17 gravel on top of sampler (slough).
														62		2		62.5	
SPT	18	13	28	36	64	1.5								64		0		Poorly graded SAND w/gravel (SP) - 83% fine to coarse; subrounded to rounded sand; 14% fine to coarse, subrounded to rounded gravel; 3% fines; wet, natural moisture content = 12%; very dense; very pale brown (10YR 7/4); w/coarse gravel seam @ 65.3'	
														66		-2			
														68		-4			
														70		-6		70.5	SPT-19 - SP.
SPT	19	13	21	28	49	1.4								72		-8		Well graded GRAVEL (GW) - ~95% fine to coarse, subrounded to rounded gravel; ~5% fine to coarse, subrounded to rounded sand; wet; dense; strong brown (7.5YR 4/6)	
																		70.8	
														74		-10		Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; dense; very pale brown (10YR 7/4)	Field sample smaller than recommended.
																		72.5	
SPT	20	14	16	15	31	0.8								76		-12		Well graded SAND w/clay (SW-SC) - ~85% fine to coarse, subrounded to rounded sand; ~10% fines; ~5% fine to coarse, subrounded to rounded gravel; wet; dense; pale yellow (2.5Y 7/4)	
														78		-14		77.5	
														80		-16		Lean CLAY (CL) - ~100% fines w/LL=40, PI=22, medium toughness, no dilatancy; moist, natural moisture content = 25%; firm; light greenish-gray (GLEY1 8/1); w/frequent ferrous seams between 80.1' and 80.7'	Stopped overnight after SPT-21. Water level measured @ 12.0' on 02/10/07.
SPT	21	2	6	6	12	1.5								82		-18		82.5	
														84		-20		Clayey SAND (SC) - ~60% fine sand; ~40% fines w/ medium plasticity, medium toughness; wet; poorly graded; light greenish-gray (GLEY1 8/1)	PP = 2 tsf TV = 0.2 tsf
TW	22	-	-	-	-	2.1								86		-22			
														88		-24			
														90					

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BORING LOG

BORING NO. FB-39

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6'	E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ARB	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	23	8	11	10	21	1.3								90		-26		grading to 88% subrounded to rounded sand; 12% fines w/LL=21, PI=8; medium dense; very pale brown (10YR 8/4); w/lean clay layer @ 91' - 91.4'	
														92		-28			
														94		-30			
SPT	24	7	13	18	31	1.0								96		-32		grading dense w/frequent ferrous partings	SPT-24 clay and gravel on top of sample (slough).
														98		-34		—97.5—	
														100		-36			
SPT	25	9	13	13	26	0.9								102		-38		Poorly graded SAND w/clay (SP-SC) - 89% fine to medium, subrounded to rounded sand; 11% fines; wet, natural moisture content = 21%; medium dense; very pale brown (10YR 7/4)	SPT-25 clay and gravel on top of sample (slough).
														104		-40		—102.5—	
														106		-42			
SPT	26	9	11	18	29	1.0								108		-44		Clayey SAND (SC) - ~80% fine to medium, subrounded to rounded sand; ~20% fines; wet; medium dense; pale yellow (2.5Y 8/3); w/frequent ferrous pockets	SPT-26 clay and gravel on top of sample (slough).
														110		-46			
														112		-48		grading pale yellow (2.5Y 7/4)	
SPT	27	19	25	33	58	0.9								114		-50			
TW	28	-	-	-	-	0.0								116		-52			TW-28 pushed (apparent soft material); no recovery. Will drill to 118' and push TW.
														118		-54		—117.5— [Pascagoula]	
TW	29	-	-	-	-	1.8								120				Silty SAND (SM) - ~80% fine, subrounded to rounded sand; ~20% fines w/no plasticity; wet; light greenish-gray (GLEY1 10Y 8/1)	

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BORING NO. FB-39
SHEET 5 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6' E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														120					
																-56		121.0	
														122				Fat CLAY (CH) - ~100% fines w/LL=60, PI=35, medium toughness, slow dilatancy; moist, natural moisture content = 32%; firm; light greenish-gray (GLEY1 10Y 7/1); w/clayey sand w/gravel seam @ 122.4' and occasional fine clayey sand partings	
SPT	30	5	6	6	12	1.5										-58			
														124				124.0	@ 124' Driller noted sand. SPT-31A - CL. SPT-31B - SP-SM. Field sample smaller than recommended (SPT-31).
																-60		Lean CLAY (CL) - ~90% fines w/LL=33, PI=16, low toughness, rapid dilatancy; ~10% fine sand; wet, natural moisture content = 29%; hard; light greenish-gray (GLEY1 10Y 7/1)	
SPT	31	5	10	18	28	1.4								126				126.0	
																-62		Poorly graded SAND w/silt (SP-SM) - ~90% fine, subrounded to rounded sand; ~10% fines; wet; medium dense; light greenish-gray (GLEY1 10Y 7/1)	
														128				128.0	
																-64		Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness; no dilatancy; moist; hard; light greenish-gray (GLEY1 10Y 7/1); w/frequent ferrous spots	
														130					
SPT	32	7	9	11	20	1.4										-66			
														132					
																-68			
														134					
																-70		grading ~95% fines w/LL=32, PI=14, low toughness, slow dilatancy; ~5% fine sand; wet; light greenish-gray (GLEY1 10Y 7/1)	PP ≈ 4.5 tsf TV = 0.3 tsf
TW	33	-	-	-	-	2.1								136					
																-72		137.5	
														138					
																-74			
														140				Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; dense; pale yellow (5Y 8/2)	SPT-34 fine gravel @ top of sample (slough).
SPT	34	17	23	26	49	1.2										-76			
														142					
																-78			
														144					
																-80		grading to subrounded to rounded sand; light gray (5Y 7/2); w/frequent ferrous spots	
TW	35	-	-	-	-	1.7								146					
																-82			
														148					
																-84			
														150					

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BORING LOG

BORING NO. FB-39
SHEET 6 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6' E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	36	11	17	23	40	1.1								150		-86		grading w/occasional gravel size clay balls surrounded w/ferrous material	SPT-36 fine to coarse gravel and coarse sand on top of sample (slough).
														152		-88			
														154		-90			
SPT	37	23	28	30	58	1.1								156		-92		grading to ~95% fine sand; ~5% fines; very dense; w/ frequent ferrous seams; clay balls grade out	SPT-37 coarse sand on top of sampler (slough).
														158		-94			
														160		-96	C		
SPT	38	16	24	14	38	1.5								162		-98		grading dense; interlayered w/fat clay; w/frequent sand seams (ferrous) within clay layers	Sample 38A - Sand. Sample 38B - Clay.
																		162.5	Stopped overnight after SPT-38. Water level recorded @ 12' on 02/11/07.
														164		-100		Fat CLAY (CH) - ~100% fines w/LL=52, PI=26, medium toughness, no dilatancy; moist, natural moisture content = 37%; greenish-gray (GLEY2 10BG 5/1); w/ frequent fine clayey sand and silt partings	
SPT	39	13	16	19	35	1.1								166		-102			SPT-39 fine to coarse sand and fine gravel on top of sample (slough).
														168		-104			
																		167.5	
														170		-106		Poorly graded SAND (SP) - ~95% fine, subrounded to rounded sand; ~5% fines; wet; very dense; greenish-gray (GLEY2 10BG 5/1)	@ 170' TW attempted recovery was all slough (cleanout depth not reached). SPT w/COD check performed @ 170'.
SPT	40	14	22	29	51	0.9								172		-108			SPT-40 fine gravel and clay on top of sample (slough).
														174		-110			
														176		-112			
														178		-114			Bottom of boring @ 171.5'. Deviation survey performed on 02/11/07. Water
														180					

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BORING LOG

BORING NO. FB-39

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17311.6' E 16924.7'	65.2 ft (MSL)	171.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass surface	Plant Grid	02/09/07	02/11/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180		-116			level recorded @ 12.0' 1.5 hrs after deviation survey completed. Boring caved @ 161.2'. Boring backfilled w/ cement bentonite grout by tremie method on 02/11/07.
182		-118			
184		-120			
186		-122			
188		-124			
190		-126			
192		-128			
194		-130			
196		-132			
198		-134			
200		-136			
202		-138			
204		-140			
206		-142			
208		-144			
210					

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BORING LOG

BORING NO. SF-40

SHEET 1 OF 2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16417.9'	E 16528.6'	92.7 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Crushed rock surfacing	Plant Grid	02/26/07	02/26/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
TW	01	-	-	-	-	1.2									0		92	
TW	02	-	-	-	-	0.8									2		90	
TW	03	-	-	-	-	1.2									4		88	
TW	04	-	-	-	-	1.3									6		86	
SPT	05	3	3	5	8	1.2									8		84	
SPT	06	6	7	8	15	0.9									10		82	
SPT	07	4	5	9	14	1.0									12		80	
SPT	08	6	6	11	17	0.9									14		78	
															16		76	
															18		74	
															20		72	
															22		70	
															24		68	
															26		66	
															28		64	
															30			

CLASSIFICATION OF MATERIALS

[Fill]
Poorly graded SAND w/clay and gravel (SP-SC) - ~90% fine, subangular sand; ~5% fine, subangular to subrounded gravel; ~5% fines; moist; yellowish-red (5YR 5/6)

2.0

[Port Hickey]
Fat CLAY (CH) - ~95% fines w/LL=54, PI=25, high toughness, no dilatancy; ~5% fine sand; moist, natural moisture content = 26%; soft; reddish-yellow (5YR 7/6)

4.5

Lean CLAY (CL) - ~100% fines w/medium plasticity, low toughness, no dilatancy; moist; firm; dark brown (7.5YR 3/4)

7.2

SILT (ML) - ~100% fines w/no plasticity, low toughness, slow dilatancy; moist; firm; yellowish-red (5YR 5/8)

9.7

Lean CLAY (CL) - ~90% fines w/LL=36, PI=18, low toughness, no dilatancy; ~10% fine sand; moist, natural moisture content = 24%; yellowish-red (5YR 4/6)

13.0

[Citronelle (upper)]

Clayey SAND (SC) - 80% fine, subangular sand; 20% fines; moist, natural moisture content = 15%; medium dense; pale yellow (2.5Y 8/2)

18.5

Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; pale yellow (2.5Y 8/3)

21.1

Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; medium dense; pale yellow (2.5YR 8/2)

23.5

Clayey SAND (SC) - 82% fine, subangular sand; 18% fines; moist, natural moisture content = 26%; medium dense; very pale brown (10YR 8/2)

REMARKS

Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
@ 2' PP = 2.5 tsf
TV = 1.4 tsf
@ 5'
PP > 4.5 tsf
TV = 2.5 tsf
@ 7.5'
PP > 4.5 tsf
TV = 3.0 tsf

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BORING LOG

BORING NO. SF-40

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16417.9'	E 16528.6'	92.7 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Crushed rock surfacing	Plant Grid	02/26/07	02/26/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	6	6	8	14	0.9								30		62		Well graded SAND w/gravel (SW) - ~85% fine to coarse, subangular to subrounded sand; ~10% fine gravel; ~5% fines; moist; medium dense; strong brown (7.5YR 7/8)	
														32		60			
																		33.5	
														34		58			
SPT	10	8	9	10	19	0.6								36		56		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; medium dense; strong brown (7.5YR 5/6)	
														38		54			
																		38.5	
SPT	11	6	6	8	14	0.9								40		52		Silty SAND (SM) - 86% fine, subangular sand; 14% fines; wet, natural moisture content = 17%; medium dense; brownish-yellow (10YR 6/6)	
														42		50			
																		43.5	
														44		48			
SPT	12	9	25	50/5	+50	0.9								46		46		Poorly graded SAND w/silt (SP) - 90% fine, subangular to subrounded sand; 10% non-plastic fines; wet; very dense; strong brown (7.5YR 6/6)	
														48		44			
														50		42		grading w/86% fine to medium sand; 10% non-plastic fines; 4% fine gravel; natural moisture content = 14%; dark brown (7.5YR 2.5/3)	
SPT	13	24	10	9	19	0.6								52		40			Bottom of boring @ 51.5'. Fluid level measured at the ground surface at completion of drilling. Water level @ 22.8' on 2/27/07. Boring caved to 41.0'. Boring backfilled w/cement-bentonite grout by tremie method on 2/27/07.
														54		38			
														56		36			
														58		34			
														60					

BLACK & VEATCH

BORING LOG

BORING NO. WT-41

SHEET 1 OF 2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16531.1' E 16525.9'	93.4 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level gravel surface	Plant Grid	02/26/07	02/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WP MJ	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	01	-	-	-	-	1.4								0		92		[Fill] Clayey SAND (SC) - ~85% fine, subangular sand; ~15% fines; moist; strong brown (7.5YR 5/6)	Boring advanced w/3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
														2					
																		2.5	
TW	02	-	-	-	-	0.5								4		90		GRAVEL - fine to coarse	
																		4.0	
TW	03	-	-	-	-	0.7								6		88		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; strong brown (7.5YR 5/6)	
SPT	04	5	8	8	16	0.9								8		86		grading medium dense; brownish-yellow (10YR 6/6)	
SPT	05	4	4	7	11	0.8								10		84			
																82		10.7	
														12				[Port Hickey] Clayey SAND (SC) - 80% fine, subangular sand; 20% fines; moist; medium dense; pale yellow (2.5YR 8/3) @ 11.1' grading ~85% fine, subangular sand; ~15% fines; reddish-yellow (7.5YR 7/8)	
														14		80		13.0	
TW	06	-	-	-	-	1.5								16		78		[Citronelle (upper)] Clayey SAND (SC) - ~85% fine, subangular sand; ~15% fines; moist; yellowish-brown (10YR 5/6); intermixed w/Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; pale yellow (2.5Y 8/3)	
														18		76			
SPT	07	4	5	9	14	1.3								20		74		grading w/51% fine to medium sand; 49% fines w/LL=53, PI=34; natural moisture content = 38%	
														22		72			
																70		23.2	
														24					
SPT	08	7	9	15	24	0.9								26		68		Poorly graded SAND w/silt (SP-SM) - ~90% fine, subangular sand; ~10% fines; moist; medium dense; strong brown (7.5YR 5/6)	
														28		66			
														30		64			

BLACK & VEATCH

BORING LOG

BORING NO. WT-41

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16531.1' E 16525.9'	93.4 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level gravel surface	Plant Grid	02/26/07	02/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	15	14	12	26	0.7								30		62		grading wet	
														32		60			
														34		58			
SPT	10	6	8	10	18	0.7								36		56		grading w/~80% sand; ~20% fines; moist; yellow (10YR 7/6)	
														38		54			
SPT	11	4	7	9	16	0.9								40		52	C	grading w/91% fine sand; 9% fines; natural moisture content = 19%	
														42		50			
																		43.0	
														44		48		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; dense; strong brown (7.5YR 5/6)	
SPT	12	11	17	26	43	0.9								46		46			
														48		44		48.5	
														50		42		Poorly graded SAND w/silt (SP-SM) - 91% fine, subangular sand; 9% fines; wet, natural moisture content = 16%; very dense; strong brown (7.5YR 5/8)	
SPT	13	25	50/5"	-	50+	0.7								52		40			Bottom of boring @ 51.5'. Fluid level measured at the ground surface at completion of drilling. Water level @ 23.8' on 02/27/07. Boring caved @ 41.0'. Boring backfilled w/cement-bentonite grout by tremie method on 02/27/07.
														54		38			
														56		36			
														58		34			
														60					

BLACK & VEATCH

BORING LOG

BORING NO. FO-42
SHEET 1 OF 2

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16783.2'	E 16528.6'	95.6 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Native vegetation, sloping NE to drainage	Plant Grid	02/25/07	02/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	01	-	-	-	-	0.9								0		94		[Fill] Lean CLAY (CL) w/sand - ~70% fines w/medium plasticity, medium toughness, no dilatancy ~20% fine, subangular sand; ~10% coarse gravel; moist; very soft; mottled w/yellow (10YR 8/8) and dark red (10R 3/6)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. @ 0'-2' PP = 1.75 tsf TV = 0.3 tsf Skipped sample from 2.5' to 4.5'.
														2					
																92		3.5 [Port Hickey]	
														4				Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; white (7.5YR 8/11)	
TW	02	-	-	-	-	1.5								6		90			
																88		grading to reddish-yellow (7.5YR 7/8)	
TW	03	-	-	-	-	0.8								8					
																86			
SPT	04	3	6	6	12	1.4								10		84		grading wet; medium dense; light greenish-gray (GLEY1 8/1); w/frequent seams of Fat CLAY (CH) - ~95% fines w/high plasticity, high toughness, no dilatancy; ~5% fine sand; firm; wet; brownish-yellow (10YR 6/6)	
														12					
																82			
														14					
																80		15.0	
TW	05	-	-	-	-	1.3								16				Poorly graded SAND w/clay (SP-SC) - ~53% fine, subangular sand; 47% fines w/LL=48, PI-32, high toughness, no dilatancy; moist, natural moisture content = 30%; firm; dark yellowish-brown (10YR 3/6)	
														18		78		18.5	
																76			
SPT	06	2	4	6	10	1.3								20				Fat CLAY (CH) - ~100% fines w/LL=67, PI=44, high toughness, no dilatancy; w/frequent partings of fine sand; moist; firm; mottled w/red (10R 5/8) and brownish-yellow (10YR 6/6)	
														22		74			
																72		23.5 [Citronelle (upper)]	
														24					
SPT	07	4	7	7	14	1.0								26		70		Clayey SAND (SC) - 68% fine, subrounded to subangular sand; 32% fines; wet, natural moisture content = 44%; medium dense; strong brown (7.5YR 5/6)	Gravel @ 27' according to driller.
														28		68			
														30		66			

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BORING LOG

BORING NO. FO-42

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16783.2' E 16528.6'	95.6 ft (MSL)	51.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Native vegetation, sloping NE to drainage	Plant Grid	02/25/07	02/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WDM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	08	9	11	13	24	0.9								30					
																64			
														32					
																62			
														34					
SPT	09	5	6	8	14	0.9										60		grading w/82% fine sand; 18% fines; natural moisture content = 21%	
														36					
																58			
														38					
																56			
														40					
SPT	10	6	8	11	19	0.7										54		grading w/81% fine sand; 15% fines; 4% coarse gravel	
														42					
																52		43.0	
														44					
																	C		
SPT	11	4	6	8	14	1.0								46		50		Poorly graded SAND (SP) - ~95% fine, subrounded to subangular sand; wet; medium dense; yellowish-brown (10YR 6/8) w/frequent partings of Lean CLAY (CL) - ~100% fines w/medium plasticity, high toughness, no dilatancy; wet; firm; brownish-yellow (10YR 6/8)	
														48					
																48			
														50					
																46			
SPT	12	7	10	10	20	1.0										44			
														52					Bottom of boring @ 51.5'. Fluid level measured at the ground surface at completion of drilling. Boring caved to 45.0'. Boring backfilled w/cement bentonite grout by tremie method on 02/25/07.
																42			
														54					
																40			
														56					
																38			
														58					
																36			
														60					

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BORING LOG

BORING NO. CT-43

SHEET 1 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2'	E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~20% fine sand; moist; strong brown (7.5YR 5/6); firm	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
@2.5' grading w/LL=28, PI=12; natural moisture content = 13%; w/seams of light greenish-gray clay & black spots	
@5.0' grading w/laminations of fine sand and lean clays; natural moisture content = 14%	
7.0 [Port Hickey] Sandy Lean CLAY (CL) - ~70% fines w/medium plasticity, medium toughness, slow dilatancy; ~10% fine sand; moist; firm; yellowish-brown (10YR 5/8) and light greenish-gray (GLEY1 8/1)	
@10.0' LL=28, PI=12; natural moisture content = 12%	
12.5 Silty SAND (SM) - ~60% fine, subrounded sand; ~40% fines; low plasticity, low toughness; moist; medium dense; white (GLEY1 8/1)	
grading w/71% sand; 29% fines	
17.5 [Citronelle (upper)] Clayey SAND (SC) - ~80% fine, subrounded sand; ~20% fines; moist; loose; poorly graded; brownish-yellow (10YR 6/8)	
grading to ~80% sand; 20% fines w/medium plasticity, low toughness; moist; medium dense; well graded	

SPT	01	3	4	6	10	0.9								0		94	
														2			
SPT	02	6	11	12	23	0.9								4		92	
SPT	03	4	5	5	10	1.1								6		90	
														8		88	
SPT	04	3	7	8	15	1.1								10		86	
SPT	05	6	9	10	19	1.2								12		84	
														14		82	
SPT	06	5	7	6	13	0.9								16		80	
														18		78	
SPT	07	3	4	5	9	1.1								20		76	
														22		74	
														24		72	
SPT	08	3	6	7	13	0.9								26		70	
														28		68	
														30		66	

3/25/2008 5:48 PM River Bend- Geotechnical

BORING LOG

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2' E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	3	5	16	21	0.8								30		64		grading w/fine to medium grained sand	
														32		62			
														34		60			
SPT	10	7	8	9	17	1.1								36		58		35.4 Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~20% fine, subrounded sand; wet; hard; yellowish-red (5YR 5/6) and yellow (10YR 7/6)	
														38		56		35.8 Clayey SAND (SC) - ~70% fine to medium, subrounded to rounded sand; ~30% fines; wet; medium dense; well graded; brownish-yellow (10YR 6/8) w/occasional gravel size balls of clay	
SPT	11	4	8	13	21	1.0								40		54	C	37.5 Poorly graded SAND w/clay (SP-SC); ~90% fine, subrounded to rounded sand; ~10% fines; wet; medium dense; brownish-yellow (10YR 6/6)	
														42		52		42.5	
														44		50			
SPT	12	9	5	5	10	0.9								46		48		Clayey SAND w/gravel (SC) - 62% fine to coarse, subrounded to rounded sand; 17% fine to coarse, angular to rounded elongate gravel; 21% fines; wet; loose; brownish-yellow (10YR 6/8); homogeneous; w/frequent gravel size balls of greenish-gray clay	
														48		46		47.5	
														50		44		Clayey SAND (SC) - ~80% fine, subrounded sand; ~20% fines; wet; loose; poorly graded; pale yellow (2.5Y 9/4)	SPT-13 - Gravel on top of sample (slough). Field sample smaller than recommended.
SPT	13	7	4	2	6	1.5								52		42		@50.5' grading ~60% fine sand; ~40% fines w/medium plasticity, medium toughness; reddish-yellow (7.5YR 6/6) w/red (10R 5/6) pockets	
														54		40		51.0 Lean CLAY w/sand (CL) - ~80% fines w/medium plasticity, medium toughness; ~20% fine, subrounded to rounded sand; wet; firm; reddish-yellow (7.5YR 6/6) w/red (10R 5/6) pockets	SPT-13A - Clayey sand @ 50'.
SPT	14	7	8	7	15	1.5								56		38		52.5 Fat CLAY (CH) - ~100% fines w/LL=71, PI=44, medium toughness, no dilatancy; wet, natural moisture content = 45%; firm; light red (10R 6/6) w/layers of light greenish-gray and light brown material	SPT-13B - Clayey sand @ 50.5'. SPT-13C - Lean clay @ 51'.
														58		36		56.0 Sandy lean CLAY (CL) - ~70% fines w/medium plasticity; medium toughness; ~30% fine, subrounded	Sample 14A - Fat clay. Sample 14B - Lean clay.
														60					

BLACK & VEATCH

BORING LOG

BORING NO. CT-43

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2' E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
														60		34		to rounded sand; wet; firm; strong brown (7.5YR 5/8)	@60' - Added biodegradable drilling fluid.
																		57.5 [Citronelle (lower)]	
SPT	15	24	33	29	62	1.0								62		32		Well graded SAND w/clay (SW-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; very dense; yellowish-brown (10YR 5/8)	
														64		30			
SPT	16	13	23	32	55	1.1								66		28			
														68		26			
SPT	17	26	33	29	62	1.0								70		24		@70' grading to ~85% sand; ~10% fines; ~5% fine, subrounded gravel	SPT-17 - Gravel on top of sampler (slough).
														72		22			
														74		20			
SPT	18	14	14	13	27	0.8								76		18		@75' grading to ~80% fine to coarse sand; ~10% fines; ~10% fine to coarse, subrounded to rounded, hard gravel; medium dense; strong brown (7.5YR 5/8)	Stopped overnight after SPT-18. Water level recorded @ 3.0' w/rods in hole (to avoid cave-in) @ 7:30 a.m. 01/25/07.
																		77.5	
														78		16			
SPT	19	11	11	15	26	0.6								80		14		Well graded SAND (SW) - ~91% fine to coarse, subrounded to rounded sand; ~5% fine gravel; 4% fines; wet; medium dense; pale yellow (2.5Y 7/4); homogeneous	SPT-19 - Gravel on top of sampler (slough).
														82		12			
														84		10		grading very dense	
SPT	20	25	31	39	70	1.0								86		8			
																		87.5	
														88		6			
														90					

BLACK & VEATCH

BORING LOG

BORING NO. CT-43

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2' E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	10	19	30	49	0.6								90		4		Poorly graded SAND (SP) - ~95% medium, rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 8/4)	SPT-21 - Top of sampler 0.4' above cleanout depth.
														92		2			@ 90' more fluid was added and made thicker to stabilize hole. Hole was also cleaned.
																		92.5	
														94		0			
SPT	22	17	22	28	50	0.9								96		-2		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 7/4); w/pockets of sand w/clay	
														98		-4		98.0	
														100		-6			
SPT	23	23	30	43	73	1.3								102		-8		Poorly graded SAND (SP); ~100% medium, subrounded sand; wet; very dense; pale yellow (2.5Y 7/4)	@ 100' - Changed sampling interval to 10'.
														104		-10			
														106		-12			
														108		-14			
														110		-16		grading to ~95% sand; ~5% fines; w/coarse gravel size balls of sand within a clay matrix	
SPT	24	24	32	33	65	0.8								112		-18			
														114		-20			
														116		-22			
																		117.0 [Pascagoula]	Clay encountered @ 117' based on driller's observations.
														118		-24			
														120					

BLACK & VEATCH

BORING LOG

BORING NO. CT-43

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2' E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JPL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	25	-	-	-	-	2.2								120		-26		Lean CLAY (CL) - ~100% fines w/LL=42, PI=21, medium toughness, no dilatancy; moist, natural moisture content = 32%; in situ dry density = 92 pcf; light gray (2.5Y 7/2); w/ferrous seams and spots	PP = 3.0 tsf TV = 3.5 tsf
														122		-28			
														124		-30			
														126		-32		126.0	@ 126' - Sand encountered as per driller's observations.
														128		-34			
SPT	26	10	11	10	21	1.2								130		-36		Clayey SAND (SC) - ~80% fine, subrounded to rounded sand; ~20% fines; wet; medium dense; poorly graded; yellow (2.5Y 7/6)	
														132		-38			
														134		-40			
														136		-42		135.0	@ 135' - Clay encountered as per driller's observations.
														138		-44			
														140		-46		Lean CLAY (CL) - ~100 fines w/medium plasticity, medium toughness, no dilatancy; moist; light gray (2.5Y 7/2) w/ferrous seams and spots and black spots	PP > 4.5 tsf TV = 5 tsf
TW	27	-	-	-	-	2.2								142		-48			
														144		-50			
														146		-52			
														148		-54			
														150					

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BORING LOG

BORING NO. CT-43

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2' E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	28	13	17	21	38	1.7								150		-56		grading w/high toughness; very hard; dark bluish-gray (GLEY2 7/1)	
														152		-58			
														154		-60			
														156		-62			
														158		-64			
TW	29	-	-	-	-	2.3								160		-66		grading pale yellow (5Y 7/4)	PP > 4.5 tsf TV > 9 tsf
														162		-68			
														164		-70			
																		165.0	
														166		-72			
														168		-74			
SPT	30	18	19	20	39	1.4								170		-76		Poorly graded SAND (SP) - ~89% fine, subrounded to rounded sand; 11% fines; wet; dense; light gray (10YR 7/1) w/brownish-yellow (10YR 6/8) seams and layers	
																		171.1	
														172		-78		Poorly graded SAND w/clay (SP-SC) - ~90% sand; ~10% fines; light gray (2.5Y 6/1); w/sandy clay layer @ tip of sampler	
														174		-80			
SPT	31	19	18	18	36	1.3								176		-82			
														178		-84			Bottom of boring @ 176.5'. Drilling mud level @ 3.0' at completion of drilling. Cave-in measured @
														180					

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BORING LOG

BORING NO. CT-43

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17420.2' E 16561.9'	95.1 ft (MSL)	176.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass surface, at bottom of slight slope	Plant Grid	01/24/07	02/20/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco ATB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180		-86			40.0' on 02/20/07. Water level recorded @ 35.0'. Boring backfilled w/ cement bentonite grout on 02/20/07.
182		-88			
184		-90			
186		-92			
188		-94			
190		-96			
192		-98			
194		-100			
196		-102			
198		-104			
200		-106			
202		-108			
204		-110			
206		-112			
208		-114			
210					

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BORING LOG

BORING NO. CT-47

SHEET 1 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6' E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	3	3	2	5	0.9								0		104		[Loess] Fat CLAY (CH) - ~100% fines w/medium plasticity, medium toughness, slow dilatancy; medium dry strength; moist, natural moisture content = 22%; yellowish-brown (10YR 5/4) w/some organic material @ 2.5' organic material grades out; grades w/black spots	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. @ 0.5' to 1.5' bag sample (CT47-Bag 39) collected near borehole. Sample TW-03 could only be pushed 1.5'. @ 6.5' PP ≥ 4.5 tsf TV ≥ 9 tsf @ 10' PP ≥ 4.5 tsf
SPT	02	5	13	13	26	0.7								2		102			
TW	03	-	-	-	-	1.2								4		100			
SPT	04	8	9	10	19	1.2								6		98		@ 6.5' grading to ~95% fines w/LL=52, PI=31; ~5% fine sand; natural moisture content = 23%; yellowish-brown (10YR 5/4) and light greenish-gray @ 7.5' grading light yellowish-brown (10YR 6/4)	
TW	05	-	-	-	-	0.9								8		96			
														10		94			
														12		92		12.5 [Port Hickey (top stratum)] Sandy lean CLAY (CL) - ~70% fines w/medium plasticity, medium toughness; ~30% fine sand; moist; dense; red (2.5YR 4/8) w/light gray (10YR 7/1) layers	
SPT	06	12	22	26	48	1.1								14		90			
														16		88			
														18		86		17.5 [Port Hickey] Poorly graded SAND w/clay - ~90% fine to medium, subrounded to rounded sand; ~10% fines; moist; medium dense; strong brown (7.5YR 5/8) and light yellowish-brown (10YR 6/4)	
SPT	07	8	13	17	30	0.6								20		84			Sample 7A - fine to medium sand. Sample 7B - fine sand.
														22		82			
SPT	08	5	7	13	20	0.6								24		80		22.5 [Citronelle (upper)] Clayey SAND (SC) - 78% fine to coarse, subangular to rounded sand; 18% fines; 4% fine gravel; moist; medium dense; poorly graded; yellowish-brown (10YR 5/8) w/occasional gravel size fat clay particles	
														26		78			
														28		76			
														30					

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BORING LOG

BORING NO. CT-47

SHEET 2 OF 7

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6' E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KWB	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	6	9	15	24	0.7								30		74		grading fine to medium grained; pale yellow (2.5Y 7/3)	
														32		72			
														34		70			
SPT	10	8	14	15	29	0.6								36		68		grading to ~85% sand; ~15% fines; wet; light gray (2.5Y 7/4)	
																		37.5	
														38		66			
SPT	11	12	24	28	52	1.1								40		64		Well graded SAND (SW) - ~100% fine to coarse, subrounded to rounded sand; wet; very dense; pale yellow (2.5Y 7/4) @ 41' grading to ~95% sand; ~5% fines; brownish-yellow (10YR 6/8)	Sample 11A - pale yellow. Sample 11B - brownish-yellow.
														42		62			
														44		60			
SPT	12	14	24	30	54	0.6								46		58		grading to ~100% sand	
														48		56			
														50		54		grading dense	
SPT	13	13	19	17	36	0.7								52		52			
														54		50	C		
																		55.2	
SPT	14	18	26	33	59	1.1								56		48		Poorly graded SAND (SP) - ~93% fine to coarse, subrounded to rounded sand; 7% fines; wet; very dense; strong brown (7.5YR 5/8)	
														58		46	▽		
														60					

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BORING LOG

BORING NO. CT-47

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6'	E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	30	45	37	82	1.1								60		44		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fine, subrounded gravel; wet; very dense; very pale brown (10YR 7/6)	
																		60.0	
														62		42			
																		62.5	
														64		40			
SPT	16	13	18	19	37	1.0								66		38		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; dense; very pale brown (10YR 7/6)	@ 65' - More bentonite added to drilling fluid.
																		67.5	
														68		36			
SPT	17	41	25	16	41	1.1								70		34		Well graded SAND (SW) - ~100% fine to coarse, subrounded to rounded sand; wet; dense; yellow (2.5Y 7.6)	Sample 17A - 100% sand. Sample 17B - 80% sand. Field sample smaller than recommended.
																		71.0	
														72		32		Clayey SAND; ~80% medium, subrounded to rounded sand; ~20% fines; wet; dense; poorly graded; strong brown (7.5YR 5/8)	
														74		30		73.0 [Citronelle (lower)]	
SPT	18	21	29	36	65	1.3								76		28		Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; very dense; very pale brown (10YR 7/4) w/0.3' layer of gravelly sand @ 76.2' grading pale yellow (2.5Y 7/4) w/frequent black spots	No photo - camera ran out of memory.
														78		26		77.5	
SPT	19	10	13	14	27	0.6								80		24		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; medium dense; yellow (2.5Y 7/6)	
														82		22			
																		83.5	
														84		20			
SPT	20	12	17	19	36	1.2								86		18		Well graded SAND (SW) - ~100% medium to coarse, subrounded to rounded sand; wet; dense; yellow (2.5Y 7/6) w/thin sandy gravel seam @ 85.8'	Sample 20A - 100% sand. Sample 20B - 90% sand. More bentonite added to drilling fluid.
																		86.0	
														88		16		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded to rounded sand; ~10% fines; wet; dense; yellow (2.5Y 7/6)	
														90					

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BORING LOG

BORING NO. CT-47

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6' E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)

CLASSIFICATION OF MATERIALS	REMARKS
90.0 Well graded SAND (SW) - ~100% fine to coarse, subrounded to rounded sand; wet; dense; yellow (2.5Y 7/6)	
92.5 Poorly graded SAND (SP) - ~95% fine to medium sand; ~5% fines; dense	
	Photos re-started w/SPT-23.
102.5 Well graded SAND (SW) - ~100% fine to coarse sand; wet; very dense; pale yellow (2.5Y 7/4)	
111.0 Poorly graded GRAVEL w/clay and sand (GP-GC) - ~60% fine to coarse, angular to subrounded, elongate gravel (few particles broke w/1 hammer blow); ~30% medium to coarse, subrounded to rounded sand; ~10% fines; wet; very dense; yellowish-brown (10YR 5/8); homogeneous	
113.5 Clayey GRAVEL w/sand (GC) - ~60% fine to coarse, angular to subrounded, elongate gravel (few particles broke w/1 hammer blow); ~20% medium to coarse, subrounded to rounded sand; ~20% fines; wet; very dense; poorly graded; yellowish-brown (10YR 5/8); homogeneous	Stopped overnight; Drilling fluid level recorded @ 38.0'.

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	21	13	17	20	37	1.1							
SPT	22	15	19	24	43	1.1							
SPT	23	14	18	25	43	0.8							
SPT	24	37	50/5"	-	+50	0.6							
SPT	25	27	42	50/5"	+50	1.5							
SPT	26	23	28	28	56	0.8							

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BORING LOG

BORING NO. CT-47

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6' E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	4	8	9	17	1.5								120		-16		120.0 Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; wet; light greenish-gray (GLEY1 7/1); w/occasional thin seams and pockets of silt (ferrous)	Sample 27A - clay. Sample 27B - clayey sand.
														122		-18		120.6 Clayey SAND (SC) - ~60% fine, subangular to rounded sand; ~40% fines w/medium plasticity, medium toughness; wet; medium dense; poorly graded; very pale brown (10YR 8/2); w/few laminations of fine sand and clay	
SPT	28	6	9	9	18	1.4								124		-20			Sample 28 - sand @ 126'. Field sample smaller than recommended.
														126		-22		125.5 Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; wet; light greenish-gray (GLEY1 7/1)	
														128		-24		126.0 Clayey SAND (SC) - ~70% fine to medium, subrounded to rounded sand; ~30% fines; wet; medium dense; poorly graded; light greenish-gray (GLEY1 7/1) and brownish-yellow (10YR 6/6)	
SPT	29	9	9	9	18	0.5								130		-26		127.5 Sandy lean CLAY; (CL) - ~70% fines w/medium plasticity, medium toughness; ~30% fines, subrounded to rounded sand; wet; yellow (10YR 7/6)	Field sample smaller than recommended.
														132		-28		132.5	
														134		-30			
SPT	30	8	9	10	19	1.5								136		-32		Clayey SAND (SC) - ~84% fine to medium, subangular to subrounded sand; 16% fines; wet; medium dense; poorly graded; very pale brown (10YR 7/4)	
														138		-34			
SPT	31	13	13	11	24	1.4								140		-36		grading to ~80% sand; ~20 fines	
														142		-38			
														144		-40			
SPT	32	9	8	8	16	1.3								146		-42			
														148		-44			
														150					

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BORING LOG

BORING NO. CT-47

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6' E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KMB	J. Liljegren JN	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	33	13	18	14	32	1.1								150		-46		150.5 [Pascagoula] Fat CLAY (CH) - ~95% fines w/high plasticity, high toughness, slow dilatancy; ~5% fine sand; wet; light greenish-gray (GLEY1 7/1) w/frequent black and light brown spots	
														152		-48			
														154		-50			
TW	34	-	-	-	-	2.2								156		-52			PP ≥ 4.5 tsf TV = 2.5 tsf
																		157.0 Elastic SILT (MH) - ~95% fines w/medium plasticity, medium toughness, slow dilatancy; ~5% fine sand; wet; light greenish-gray (GLEY1 7/1) w/frequent black spots	
														158		-54			
																		158.5 Fat CLAY (CH); 100% fines w/high plasticity, high toughness, no dilatancy; moist; light greenish-gray (GLEY1 7/1); w/occasional ferrous spots	
SPT	35	11	15	17	32	1.5								160		-56			
														162		-58			
														164		-60			
TW	36	-	-	-	-	1.9								166		-62			PP ≥ 4.5 tsf TV = 2.5 tsf
														168		-64		grading greenish-gray (GLEY1 6/1); blocky; w/very hard conglomerations of clay material	
														170		-66		pockets of hard material grade out	
SPT	37	13	16	21	37	1.5								172		-68			
														174		-70			
TW	38	-	-	-	-	2.2								176		-72			PP ≥ 4.5 tsf
														178		-74			Bottom of boring @ 177'. Drilling mud level @ 58' 8 hours after completion of
														180					

BLACK & VEATCH

BORING LOG

BORING NO. CT-47

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 15575.6' E 15700.5'	104.3 ft (MSL)	177.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, grass and shrubs (wooded area)	Plant Grid	01/16/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JWL	M. Petersen MMP

SOIL SAMPLING: SAMPLE TYPE | SAMPLE NUMBER | SET 6 INCHES | 2ND 6 INCHES | 3RD 6 INCHES | N VALUE | SAMPLE RECOVERY

ROCK CORING: CORE SIZE | RUN NUMBER | RUN LENGTH | RUN RECOVERY | RQD RECOVERY | PERCENT RECOVERY | RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
180		-76			drilling. Cave-in depth @ 54.0'. Water not encountered on 02/14/07. Boring backfilled w/ cement bentonite grout on 02/14/07.
182		-78			
184		-80			
186		-82			
188		-84			
190		-86			
192		-88			
194		-90			
196		-92			
198		-94			
200		-96			
202		-98			
204		-100			
206		-102			
208		-104			
210					

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BORING LOG

BORING NO. CS-51

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16741.8' E 17118.9'	63.3 ft (MSL)	31.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass, dry	Plant Grid	02/13/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
[Fill] Poorly graded GRAVEL (GP) - ~90% fine to coarse, subangular to subrounded gravel; hard; w/maximum size 1-1/4"; ~5% sand; ~5% fines; moist; gray (GLEY N 5)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
1.5 [Citronelle (upper)] Clayey SAND (SC) - ~75% fine to medium, subangular to subrounded sand; ~25% fines; medium dense; moist; yellowish-red (5YR 5/8) grading dense	
grading medium dense	
10.5 Clayey SAND w/gravel (SC) - 69% fine to medium, subangular to subrounded sand; 16% fines w/LL=22, PI=12; 15% fine, subangular to subrounded gravel; medium dense; natural moisture content = 12%; yellowish-red (5YR 5/8)	
13.0 Fat CLAY (CH) - ~100% fines w/LL=53, PI=29, high toughness, no dilatancy; very soft; moist, w/natural moisture content = 40%; light greenish-gray (GLEY1 10Y 8/1)	
grading w/LL=60, PI=41, firm; natural moisture content = 35%; light greenish-gray (GLEY1 10Y 8/1) and reddish-yellow (7.5YR 6/8); w/laminated silt partings (varves) & wet sand seams	
21.3 Silty SAND (SM) - ~85% fine to medium, subangular to subrounded sand; ~15% fines; wet; reddish-yellow (7.5YR 6/8)	
23.5 Poorly graded SAND w/silt (SP-SM); - 84% fine to coarse, subrounded to subangular sand; 8% fines w/no plasticity; 8% fine gravel; medium dense; natural moisture content = 17%; brownish-yellow (10YR 6/8); sandy gravel layer from 25.5' to 25.9'; w/maximum size 1-1/2"; a pocket of clay @ ~25.5'	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	01	16	11	11	22	1.0							
SPT	02	10	14	15	29	1.1							
SPT	03	10	14	22	36	1.2							
SPT	04	5	12	13	25	1.1							
SPT	05	5	8	13	21	0.7							
SPT	06	3	1	1	2	1.1							
SPT	07	WOR	2	3	5	2.0							
SPT	08	4	10	14	24	0.7							

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BORING LOG

BORING NO. CS-51

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16741.8' E 17118.9'	63.3 ft (MSL)	31.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Slight slope, grass, dry	Plant Grid	02/13/07	02/14/07

LOGGED BY	CHECKED BY	APPROVED BY
Eng-Chew Ang ECA	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	8	15	19	34	1.1								30				grading w/frequent fine, subrounded gravel; w/ maximum size 3/4"; dense; moist; olive-yellow (2.5Y 6/ 8)	
														32		32			Bottom of boring @ 31.5'. Drilling mud level at 1.0' at completion of drilling. Boring caved @ 24.0'. Water level @ 4.0' on 02/14/07. Boring backfilled w/cement bentonite grout by tremie method on 02/14/07.
														34		30			
														36		28			
														38		26			
														40		24			
														42		22			
														44		20			
														46		18			
														48		16			
														50		14			
														52		12			
														54		10			
														56		8			
														58		6			
														60		4			

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING								ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY		CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	10	20	25	45	1.1									0		66		[Fill] Clayey SAND w/gravel (SC) - ~50% fine to medium, subrounded to rounded sand; ~35% fines w/low plasticity; ~15% fine to coarse, angular to rounded gravel; moist; dense; brownish-yellow (10YR 6/8); homogeneous	Boring advanced with 3-7/8" baffle bit w/NW rods using water and bentonite as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
															1		65			
															2		64			
																			2.5	
SPT	02	13	19	21	40	1.0									3		63		[Citronelle (upper)] Clayey SAND (SC) - ~55% fine to medium, subrounded to rounded sand; ~35% fines w/low plasticity; ~10% fine to coarse, angular to rounded gravel; moist; dense; brownish-yellow (10YR 6/8)	
															4		62			
															5		61			SPT-03 coarse gravel @ top of sampler (slough).
SPT	03	8	25	24	49	1.0									6		60			
															7		59			
																			grading very dense; w/sandy clay parting @ 8.0'	
SPT	04	12	27	26	53	1.0									8		58			
															9		57			
															10		56	▽	grading light yellowish-brown (2.5Y 6/3); sandy clay parting grades out	
SPT	05	12	25	27	52	1.1									11		55		@ 11.3' - grading to ~60% sand; ~35% fines; ~5% gravel; w/occasional clay partings	
															12		54			
															13		53			
															14		52			
															15					

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco MWB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	06	11	17	15	32	1.1								15		51		grading wet; dense	SPT-06 coarse gravel @ top of sampler (slough).
														16		50			
														17		49			
														18		48			
														19		47			
														20		46		grading to ~70% sand; ~30% fines w/no plasticity; medium dense; yellow (2.5Y 7/6); w/frequent partings of light yellow to light gray sand	
SPT	07	8	11	11	22	1.2								21		45			
														22		44			
														23		43			
														24		42			
														25		41		grading w/82% medium to fine sand; 16% fines w/LL=18, PI=7; 2% fine gravel; natural moisture content = 19%; loose; w/0.3' fat clay seam @ 25.5'	
SPT	08	2	3	6	9	1.2								26		40			
														27		39			
														28		38			
														29		37			
														30					

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco	J. Liljegren	M. Petersen

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	6	9	13	22	0.8								30		36		grading to ~80% fine to coarse sand; ~20% fines w/no plasticity; ≤5% gravel; medium dense; pale yellow (2.5Y 8/3)	
														31		35			
														32		34			
																		32.5 [Citronelle (lower)]	
														33		33			
														34		32			
														35		31		Well graded SAND w/silt (SW-SM) - ~90% fine to coarse, subrounded to rounded sand; ~10% fines w/no plasticity; ≤5% gravel; wet; medium dense; brownish-yellow (10YR 6/8)	
SPT	10	10	12	13	25	0.9								36		30			
														37		29		37.5	
														38		28			
														39		27			
														40		26		Well graded SAND (SW); ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; dense; pale yellow (2.5Y 7/6) ; w/sandy gravel parting @ 40.9' grading yellow @ 41.1' to yellowish-brown @ 41.3'	
SPT	11	10	20	23	43	1.2								41		25			
														42		24		42.5	
														43		23			
														44		22			
														45					

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco BMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

SAMPLE TYPE	SAMPLE NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	CLASSIFICATION OF MATERIALS	REMARKS
SPT	12	8	14	23	37	0.9	Poorly graded SAND w/silt (SP-SM); ~90% fine to medium, subrounded to rounded sand; ~10% fines w/ no plasticity; wet; dense; pale yellow (2.5Y 7/4); w/well graded sand seam @ 46.3'	
							47.5	
SPT	13	13	21	41	62	1.5	Well graded SAND (SW) - ~90% fine to coarse, subangular to rounded sand; ~5% fines; ~5% fine gravel; wet; very dense; pale yellow (2.5Y 8/6); homogeneous; w/sandy gravel seam @ 50.8'	
							52.5	
SPT	14	6	13	16	29	0.9	Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines; wet; medium dense; pale yellow (2.5Y 7/4); w/fine gravel parting @ 56.1'	Sample 14A - SP Sample 14B - SW
							56.2 Well graded SAND (SW) - ~95% fine to coarse, subrounded to rounded sand; ~5% fines; wet; medium dense; pale yellow (2. 5Y 7/4)	Field sample smaller than recommended.

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco KWB	J. Liljegren SJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	12	22	27	49	1.3								60		6		grading ~95% sand; ~5% fines; ≤5% fine gravel; dense; w/coarse gravel partings @ 60.8' and 61.1'	
														61		5			
														62		4			
														63		3			
														64		2			
														65		1		grading very dense; w/sandy gravel seam @ 65.5'	
SPT	16	21	38	50/5"	+50	1.7								66		0			
														67		-1			
														68		-2			
														69		-3			
														70		-4		grading to ~90% sand; ~10% fine to coarse, subangular to subrounded gravel; ≤5% fines; homogeneous	
SPT	17	20	32	30	62	1.1								71		-5			
														72		-6			
														73		-7		grading to ~95% sand; ~5% fine gravel; ≤5% fines; w/coarse gravel parting @ 73.2'	
SPT	18	17	32	50	82	1.2								74		-8			
														75					

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BORING LOG

BORING NO. CB-52
SHEET 6 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RWB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	19	19	33	35	68	1.5								75		-9	
														76		-10	
														77		-11	
SPT	20	20	44	50/5"	+50	1.2								78		-12	
														79		-13	
														80		-14	
SPT	21	25	44	50	94	1.4								81		-15	
														82		-16	
SPT	22	11	12	15	27	0.6								83		-17	
														84		-18	
														85		-19	
SPT	23	14	22	23	45	1.5								86		-20	
														87		-21	
														88		-22	
SPT	24	15	14	17	31	0.7								89		-23	
														90			

CLASSIFICATION OF MATERIALS

gravel grades to coarse grained, subrounded

77.0

Poorly graded SAND (SP) - ~95% fine to medium, subangular to rounded sand; ≤5% fines; ~5% fine to coarse, subangular to subrounded gravel; wet; very dense; pale yellow (2.5Y 8/4); homogeneous

82.0

Well graded GRAVEL w/clay and sand (GW-GC) - ~60% fine to coarse, angular to rounded gravel; ~30% fine to coarse, subrounded to rounded sand; ~10% fines; wet, natural moisture content = 11%; medium dense; yellow (2.5Y 7/6); few particles fractured w/1 hammer blow; w/frequent clayey sand w/gravel pockets

84.5

Poorly graded SAND (SP) - ~85% fine to medium, subrounded to rounded sand; ~10% fine to coarse, subrounded to rounded gravel; ~5% fines; wet; dense; pale yellow (2.5Y 7/6)

85.9

Well graded GRAVEL w/clay and sand (GW-GC) - ~60% fine to coarse, angular to rounded gravel; ~30% fine to coarse, subrounded to rounded sand); ~10% fines; wet; dense; yellow (10YR 7/6)

87.0

Clayey GRAVEL w/sand (GC) - ~60% fine, angular to subrounded gravel; ~20% fine to coarse, subangular to rounded sand; ~20% fines w/medium plasticity; wet; dense; very pale brown (10YR 7/3); w/frequent clayey sand pockets

89.5

REMARKS

Sample 23A - SP
Sample 23B - GW-GC
Field sample smaller than recommended.

Hole caved in while drilling to 87.5'.

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Gravelly Lean CLAY (CL) - ~60% fines w/medium plasticity, medium toughness; ~30% fine to coarse, subangular to rounded gravel; ~10% fine to coarse sand; wet; hard; pale yellow (2.5Y 8/2)	SPT-25 sand and coarse gravel @ top of sampler (slough).
92.0	
Poorly graded GRAVEL w/clay and sand (GP-GC) - ~60% fine, angular to rounded gravel; ~30% fine to coarse, subrounded to rounded sand; ~10% fines w/ medium plasticity; wet; dense; pale yellow (2.5Y 7/4); w/frequent sandy clay pockets	SPT-26 sampler was pushed to reach tip depth of 92.1'. Field sample smaller than recommended.
94.5	
Clayey GRAVEL w/sand (GC) - ~60% fine to coarse, angular to rounded, elongate gravel; ~30% fines w/high plasticity; ~10% fine to coarse, subangular to rounded sand; wet; dense; very pale brown (10YR 8/2); homogeneous	@ 95' - Hole caved in. Stopped overnight. Fluid level recorded @ 10.0' on 03/25/07.
97.0	
Gravelly Fat CLAY (CH) - ~70% fines w/high plasticity, medium toughness, slow dilatancy; ~20% fine to coarse, subrounded, flat to elongate gravel; ~10% fine to medium sand; wet; very hard; pale yellow (2.5Y 8/3); homogeneous	SPT-28 sampler was pushed through slough.
99.5	
Clayey GRAVEL w/sand (GC) - ~40% fine to coarse, angular to subrounded gravel; ~30% fine to coarse, subangular to subrounded sand; ~30% fines w/high plasticity; wet; dense; pale yellow (2.5Y 7/4)	
@102.5' - grading medium dense	
@103.1' - sandy clay seam	
103.4	
Silty SAND - ~60% fine, subangular to subrounded sand; ~40% fines w/no plasticity; wet; medium dense; pink (7.5YR 8/3); w/occasional light gray clay balls	
104.5	

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD
SPT	25	8	13	16	29	0.5							
SPT	26	7	17	22	39	0.5							
SPT	27	14	17	21	38	0.8							
SPT	28	12	15	18	33	1.0							
SPT	29	11	18	21	39	0.7							
SPT	30	10	11	11	22	1.1							

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BORING LOG

BORING NO. CB-52

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG

CLASSIFICATION OF MATERIALS	REMARKS
Poorly graded SAND w/silt (SP-SM) - ~90% fine; subangular to subrounded sand; ~10% fines w/no plasticity; wet, natural moisture content = 28%; medium dense; very pale brown (10YR 8/3); w/frequent ferrous partings	
grading dense; w/occasional fine gravel particles	After SPT-32, new batch of mud mixed.
—109.5—	
Poorly graded SAND (SP) - ~95% fine to medium, subrounded to rounded sand; ~5% fines w/no plasticity; wet; dense; very pale brown (10YR 8/3); w/ frequent ferrous partings	
—112.0—	
Clayey SAND w/gravel (SC) - ~50% fine to coarse, subrounded to rounded sand; ~30% fines w/medium plasticity; ~20% fine, subrounded to rounded gravel; wet; medium dense; yellowish brown (10YR 5/8); w/dark yellowish-brown sand seam @ 112.8'	Field sample smaller than recommended. Sample 34A - SC Sample 34B - CH
—112.9— [Pascagoula]	
Fat CLAY (CH) - ~100% fines w/high plasticity, medium toughness, no dilatancy; high dry strength; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous spots and partings	@ 115' Clean out dpeth check OK; sample tip depth OK; lifted tube to wash; pushed 2'; only clayey gravel slough recovered.
—117.5—	
Lean CLAY (CL) - ~95% fines w/medium plasticity, low toughness, no dilatancy; ~5% fine sand; moist; hard; light greenish-gray (GLEY1 8/1 10Y); w/frequent ferrous spots	TW-36 could only be pushed 20". PP = 4.0 tsf TV = 0.8 tsf

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)
SPT	31	10	4	9	13	1.5								105	-39
														106	-40
														107	-41
SPT	32	7	15	22	37	0.9								108	-42
														109	-43
SPT	33	6	11	22	33	0.7								110	-44
														111	-45
														112	-46
SPT	34	13	10	14	24	1.5								113	-47
														114	-48
														115	-49
TW	35	-	-	-	-	0								116	-50
														117	-51
TW	36	-	-	-	-	1.4								118	-52
														119	-53
														120	

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BORING LOG

BORING NO. CB-52
SHEET 9 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco RMB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
TW	37	-	-	-	-	1.8								120		-54	
														121		-55	
														122		-56	
														123		-57	
TW	38	-	-	-	-	2.0								124		-58	
														125		-59	
TW	39	-	-	-	-	2.1								126		-60	
														127		-61	
														128		-62	
TW	40	-	-	-	-	2.0								129		-63	
														130		-64	
TW	41	-	-	-	-	2.1								131		-65	
														132		-66	
														133		-67	
														134		-68	
														135			

CLASSIFICATION OF MATERIALS	REMARKS
@ 120' - ferrous spots grade out	@ 120' PP > 4.5 tsf TV = 0.9 tsf
	@ 122.5' PP = 4.0 tsf TV = 0.8 tsf
125.0 Elastic SILT (MH) - ~100% fines w/medium plasticity, low toughness, slow dilatancy; moist; hard; light gray (2.5Y 7/2); w/occasional ferrous spots	@ 125' PP = 4.5 tsf TV = 0.8 tsf
	@ 127.5' PP > 4.5 tsf TV = 1.1 tsf
	@ 130' PP > 4.5 tsf TV = 0.5 tsf
131.0 Lean CLAY (CL) - ~100% fines w/medium plasticity, medium toughness, no dilatancy; moist; hard; light gray (GLEY1 7/N) to greenish-gray (GLEY1 5/1 5G)	
	Bottom of boring @ 132.0'. Fluid level @ ground surface @ completion of drilling. Deviation survey performed on 03/25/07. Water level @ 10.0' on

5/6/2008 5:42 PM River Bend- Geotechnical

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BORING LOG

BORING NO. CB-52
SHEET 10 OF 10

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17026.8' E 17060.1'	66.3 ft (MSL)	132.0 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level, sandy surface	Plant Grid	03/24/07	03/26/07

LOGGED BY	CHECKED BY	APPROVED BY
A. Blanco AB	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY

ROCK CORING

CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD

DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
135		-69			03/26/07. Boring was backfilled w/ cement bentonite grout by tremie method on 03/26/07.
136		-70			
137		-71			
138		-72			
139		-73			
140		-74			
141		-75			
142		-76			
143		-77			
144		-78			
145		-79			
146		-80			
147		-81			
148		-82			
149		-83			
150					

BLACK & VEATCH

BORING LOG

BORING NO. TB-53

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16913.5' E 16921.8'	94.3 ft (MSL)	171.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel, parking lot, beside slope	Plant Grid	03/25/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
TW	01	-	-	-	-	1.3								0		94		[Fill] Lean CLAY (CL) - ~95% fines w/medium plasticity, medium toughness, no dilatancy; ~5% fine sand; reddish-yellow (5YR 6/6)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. @ 0.5' PP = 2.1 tsf TV = 0.9 tsf Pushed 1.5' @ 5' PP = 1 tsf TV = 1.3 tsf
SPT	02	2	5	6	11	1.3								2		92			
														2.3				Elastic SILT (MH) - ~90% fines w/medium plasticity, low toughness, slow dilatancy; ~10% fine sand; moist; firm; reddish-yellow (5YR 6/6)	
														4		90			
														4.5				Sandy fat CLAY (CH) - ~70% fines w/high plasticity, medium toughness, no dilatancy; ~30% fine sand; moist; stiff; reddish-yellow (7.5YR 6/8)	
TW	03	-	-	-	-	1.3								6		88			
SPT	04	2	4	8	12	1.0								8		86			
														8.5				[Port Hickey] Poorly graded SAND (SP) - ~90% fine, subangular sand; ~10% fines; moist; medium dense; strong brown (7.5YR 4/6)	
SPT	05	7	8	7	15	0.7								10		84			
														12		82			
														13.0					
														14		80			
SPT	06	4	6	7	13	1.2								16		78		Clayey SAND (SC) - 48% fine sand; 48% fines w/high plasticity; 4% gravel; medium dense; moist, natural moisture content = 34%; yellowish-red (7.5YR 4/6); w/occasional thin (0.12") clay partings	
														18		76			
														18.0					
														20		74		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; yellowish-red (5YR 6/8)	PP > 4.5 tsf
TW	07	-	-	-	-	1.2								22		72			
														24		70			
SPT	08	6	7	7	14	0.7								26		68		grading medium dense	
														28		66			
														30					

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BORING LOG

BORING NO. TB-53

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16913.5' E 16921.8'	94.3 ft (MSL)	171.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel, parking lot, beside slope	Plant Grid	03/25/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	8	10	12	22	0.8								30		64			
														32		62		32.5 [Citronelle (upper)]	
SPT	10	3	2	3	5	1.5								34		60		Silty SAND (SM) - ~70% fine, subangular sand; ~30% fines w/medium plasticity, low toughness, slow dilatancy; wet; loose; reddish-yellow (5YR 6/6)	
														36		58			
														38		56			
RNG	11	11	12	14	26	1.0								40		54			Ring sampling performed w/3" OD split sampler and 2.5" ID rings.
														42		52		42.5	
														44		50		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; medium dense; reddish-yellow (5YR 6/8)	
SPT	12	10	10	20	30	0.9								46		48			
														48		46			
														50		44		50.2	
SPT	13	3	3	6	9	1.1								52		42		Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; wet; firm; very pale brown (10YR 7/4)	
														54		40		50.6 Clayey SAND (SC) - ~70% fine, subangular sand; ~30% fines w/high plasticity, no dilatancy; wet; loose; strong brown (7.5YR 5/8)	
SPT	14	9	14	20	34	0.9								56		38		55.0 Well graded SAND (SW) - ~95% fine to coarse, subangular sand; ~5% fine gravel; wet; dense; very pale brown (10YR 8/3)	
														58		36			
														60					

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BORING LOG

BORING NO. TB-53

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16913.5' E 16921.8'	94.3 ft (MSL)	171.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel, parking lot, beside slope	Plant Grid	03/25/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	12	23	26	49	1.2								60		34		[Citronelle (lower)] Well graded SAND w/gravel (SW) - ~80% fine to coarse, subangular sand; ~15% fine, subrounded gravel; ~5% fines; wet; dense; very pale brown (10YR 8/3)	
														62		32			
														64		30			
SPT	16	18	22	27	49	1.3								66		28			
														68		26		67.5	
SPT	17	19	26	27	53	0.9								70		24		Well graded SAND (SW) - ~95% fine to coarse, subangular sand; ~5% fines; wet; very dense; yellowish-red (5YR 5/6)	
														72		22		72.5	
														74		20			
SPT	18	15	36	34	70	1.1								76		18		Poorly graded SAND w/gravel (SP) - 72% fine to coarse, subangular sand; 22% fine to coarse, elongate gravel; 6% fines; wet; very dense; yellowish-red (5YR 5/6)	
														78		16			
SPT	19	30	32	42	74	1.4								80		14			
														82		12			
														84		10	C		
SPT	20	32	50/3	-	50+	0.0								86		8			Rock in sampling shoe; recovery was broken rock w/some sand.
														88		6			
														90					

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BORING LOG

BORING NO. TB-53

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16913.5' E 16921.8'	94.3 ft (MSL)	171.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel, parking lot, beside slope	Plant Grid	03/25/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	21	50/4"	-	-	+50	0.1								90		4		Poorly graded GRAVEL w/sand (GP) - ~55% fine to coarse, subrounded, elongated, gravel, maximum size 1-1/2"; ~45% fine to coarse, subangular sand; <5% fines; wet; very dense; dark reddish-gray (5YR 4/2)	
														92		2			
														94		0		grading reddish-yellow (7.5YR 7/6)	
SPT	22	25	44	50	94	1.2								96		-2			
																		97.5	
														98		-4			
														100		-6		Poorly graded SAND (SP) - ~90% fine to coarse, subangular sand; ~10% medium to coarse, subrounded gravel; wet; very dense; reddish-yellow (7.5YR)	Stopped overnight @ 5:30 p.m. on 03/25/07. Fluid level @ 4.9' on 03/26/07. Boring caved in @ 84'.
SPT	23	25	45	48	93	1.2								102		-8			
														104		-10			
SPT	24	50	-	-	50+	0.7								106		-12			
														108		-14			
														110		-16			
SPT	25	41	45	50/5"	50+	1.5												110.8	
														112		-18		Poorly graded GRAVEL (GP) - ~90% fine, subangular, elongated gravel; ~5% coarse, subangular sand; ~5% fines; wet; very dense; reddish-yellow (7.5YR 6/8)	
																		112.5	
														114		-20			
SPT	26	41	42	47	89	1.1								116		-22		Poorly graded SAND (SP) - ~95% medium to coarse, subangular sand; ~5% fines; wet; very dense; reddish-yellow (7.5YR 7/8)	
																		115.8	
														118		-24		Poorly graded GRAVEL (GP) - ~95% fine, subangular, elongated gravel; ~5% fine, subangular sand; wet; very dense; strong brown (7.5YR 5/6)	
														120					

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BORING LOG

BORING NO. TB-53

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16913.5' E 16921.8'	94.3 ft (MSL)	171.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel, parking lot, beside slope	Plant Grid	03/25/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	27	16	40	45	85	0.6								120		-26		120.1 Poorly graded SAND (SP) - ~95% fine to medium, subangular sand; ~5% fines; wet; very dense; pinkish-white (5YR 8/2)	
														122		-28			
														124		-30			
SPT	28	12	12	29	41	1.5								126		-32		125.3 Poorly graded GRAVEL (GP) 125.9 Clayey GRAVEL (GC) - ~85% medium to coarse, subangular, flat and elongated gravel; ~15% fines w/ high plasticity, high toughness, no dilatancy; wet; very dense; light greenish-gray (GLEY1 7/1); w/occasional iron stains	
														128		-34			
SPT	29	16	32	40	72	0.8								130		-36		130.3 Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; very dense; pink (7.5YR 8/4)	
														132		-38			
														134		-40		134.0 [Pascagoula] Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; hard; light greenish-gray (GLEY1 5GY 8/1)	Clay encountered @ 134.0' as per driller's observations.
SPT	30	7	11	16	27	1.5								136		-42			
														138		-44			
														140		-46			
TW	31	-	-	-	-	1.3								142		-48			TW-31 pushed 18" to refusal. No photo of TW-31. PP ≥ 4.5 tsf TV = 3.2 tsf
														144		-50			
SPT	32	11	18	20	38	2.0								146		-52		grading to ~95% fines; ~5% fine sand; very hard; w/occasional partings of sand w/blocky structure on fresh breaks	
														148		-54			
														150					

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BORING LOG

BORING NO. TB-53
SHEET 6 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16913.5' E 16921.8'	94.3 ft (MSL)	171.8 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel, parking lot, beside slope	Plant Grid	03/25/07	03/27/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JNL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
TW	33	-	-	-	-	0.9								150	-56	grading very dark greenish-gray (GLEY1 10GY 3/1); partings grade out	TW-33 pushed 0.5' to refusal; drove 0.4'; tube bent on bottom.
														152	-58		
																152.5	PP > 4.5 tsf TV = 4.4 tsf
														154	-60		
SPT	34	27	50	-	50+	1.0								156	-62	Poorly graded SAND (SP) - ~95% fine, angular sand; ~5% fines; moist; very dense; light greenish-gray (GLEY1 5GY 7/1)	Driller noted sand and clay layers 1.5-2' thick.
																157.5	Driller noted clay @ 160'.
														158	-64		
TW	35	-	-	-	-	1.5								160	-66	Lean CLAY (CL) - ~90% fines w/LL=43, PI=19, low toughness, no dilatancy; ~10% fine, angular sand; moist, natural moisture content = 25%; firm; greenish-gray (GLEY1 10GY 5/1)	@ 160' PP > 4.5 tsf TV = 7.3 tsf
														162	-68		
														164	-70		
SPT	36	7	10	16	26	1.5								166	-72		
														168	-74		
																168.5	
TW	37	-	-	-	-	1.9								170	-76	Fat CLAY (CH) - ~95% fines w/high plasticity, medium toughness, no dilatancy; ~5% fine, angular sand; moist; firm; dark greenish-gray (GLEY1 5G 4/1)	PP > 4.5 tsf TV = 1.8 tsf
														172	-78		Bottom of boring @ 171.8'. Fluid level @ ground surface @ completion of drilling. Boring backfilled w/ cement/bentonite grout by tremie method on 03/27/07.
														174	-80		
														176	-82		
														178	-84		
														180			

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BORING LOG

BORING NO. SB-54

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17024.3' E 16809.5'	93.8 ft (MSL)	151.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel parking lot	Plant Grid	03/23/07	03/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)

GRAPHIC LOG

SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
														0		[Fill]	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. @ 0.5' PP > 4.5 tsf TV = 3.5 tsf @ 3.0' to 4.8' PP = 4.5 tsf TV = 1.1 tsf
TW	01	-	-	-	-	0.6								2	92	Elastic SILT w/sand (MH) - ~70% fines w/medium plasticity, medium toughness, slow dilatancy; ~30% fine sand; moist; very hard; dark greenish-gray (GLEY1 3/1)	
																2.7	
TW	02	-	-	-	-	1.2								4	90	Fat CLAY w/sand (CH) - ~70% fines w/high plasticity, medium toughness, slow dilatancy; ~30% fine sand; moist; soft; brown (7.5YR 4/3) @ 5.0' - grading hard; pink	
SPT	03	4	8	11	19	1.5								6	88		
																5.8 [Port Hickey]	
SPT	04	6	7	9	16	1.0								8	86	Poorly graded SAND (SP) - ~90% fine, subangular sand; ~10% fines w/medium plasticity, medium toughness, no dilatancy; moist; medium dense; reddish-yellow (7.5YR 6/6)	
																7.0	
SPT	05	4	6	7	13	1.0								10	84	Clayey SAND (SC) - ~85% fine, subangular sand; ~15% fines w/high plasticity, medium toughness, no dilatancy; moist; medium dense; reddish-yellow (7.5YR 7/8)	
																10.0	
														12	82	Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; medium dense; reddish-yellow (7.5YR 6/6); mottled w/light gray (GLEY1 7/0)	
														14	80		
SPT	06	5	6	9	15	0.9								16	78		
														18	76		
														20	74		
SPT	07	5	8	11	19	1.3										grading w/fines w/ medium plasticity, medium toughness, no dilatancy; strong brown (7.5YR 5/8) w/ occasional partings of red (10R 5/6) clay <1/8" thick	
														22	72	21.1	
																Fat CLAY (CH) - ~100% fines w/high plasticity, high toughness, no dilatancy; moist; soft; yellow (10YR 7/6)	
														24	70		
TW	08	-	-	-	-	0.0								26	68		
SPT	09	9	12	14	26	1.2										27.0 [Citronelle (upper)]	
														28	66	Poorly graded SAND (SP) - ~90% fine sand; ~10% fine gravel; moist; medium dense; reddish-yellow (7.5YR 7/8)	
														30	64		

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BORING LOG

BORING NO. SB-54

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17024.3' E 16809.5'	93.8 ft (MSL)	151.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel parking lot	Plant Grid	03/23/07	03/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	10	38	47	24	71	1.1								30				grading to ~95% fine, subangular sand; ~5% fines; very dense; dark reddish-brown	
														32		62			
														34		60			
SPT	11	5	5	6	11	1.2								36		58		grading w/85% fine to medium sand; 15% fines; medium dense; natural moisture content = 20%; reddish-yellow (7.5YR 6/8)	
														38		56			
SPT	12	4	4	4	8	1.4								40		54		grading loose	
														42		52			
														44		50		44.0	
SPT	13	22	25	15	40	1.4								46		48		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; moist; very dense; red (2.5YR 4/6)	
														48		46		47.5	
														50		44		Poorly graded SAND w/gravel (SP) - 64% coarse to fine sand 30% fine gravel; 6% fines, w/medium plasticity; wet, w/natural moisture content=20%; medium dense; red (2.5YR 4/8)	
SPT	14	7	6	5	11	1.3								52		42		52.5 [Citronelle (lower)]	
														54		40			
SPT	15	9	23	42	65	1.0								56		38		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; very dense; reddish-yellow (7.5YR 5/8)	
														58		36			
														60		34			

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BORING LOG

BORING NO. SB-54

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17024.3' E 16809.5'	93.8 ft (MSL)	151.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel parking lot	Plant Grid	03/23/07	03/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JJL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	16	14	19	15	34	0.8								60				grading w/trace of fine gravel	
														62		32			
														64		30			
SPT	17	16	15	14	29	0.9								66		28		grading to ~85% sand; ~10% gravel; ~5% fines w/low plasticity; medium dense; light greenish-gray (GLEY1 8/1)	
														68		26			
																		67.5	
														70		24		Poorly graded GRAVEL (GP) - ~90% fine, subrounded, elongated gravel; ~10% fine sand; wet; dense; reddish-yellow (5YR 6/8)	
SPT	18	18	23	25	48	0.8								72		22			
																		72.5	
														74		20			
																		Poorly graded SAND (SP) - ~90% fine to medium sand; ~10% fine gravel; wet; dense; yellow (2.5Y 7/3)	Stopped overnight @ 75'. Water level @ 34.5' on 03/24/07.
SPT	19	14	21	21	42	1.0								76		18			
														78		16			
																		78.0	
														80		14		Poorly graded SAND w/gravel (SP) - medium dense	
SPT	20	9	12	18	30	1.1								82		12			
														84		10			
																		85.0	
SPT	21	23	41	44	85	1.1								86		8		Well graded SAND (SW) - ~90% coarse to fine, subangular sand; ~10% fine, elongated gravel; wet; very dense; reddish-yellow (5YR 6/8)	
														88		6			
														90		4			

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BORING LOG

BORING NO. SB-54
SHEET 4 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17024.3' E 16809.5'	93.8 ft (MSL)	151.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel parking lot	Plant Grid	03/23/07	03/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	22	23	33	27	60	1.3								90					
														92		2			
														94		0			
SPT	23	28	31	30	61	0.9								96		-2		grading to coarse sand; fine to coarse, subrounded gravel; maximum size 1-1/2"	
														98		-4			
SPT	24	16	21	25	46	1.2								100		-6		grading to ~95% coarse to fine, subangular to subrounded sand; ~5% fine to coarse, elongated, maximum size 1-1/2" gravel; wet; dense; strong brown (7.5YR 5/6)	
														102		-8			
														104		-10			
SPT	25	21	25	24	49	0.7								106		-12			
														108		-14			
														110		-16		110.0	
SPT	26	10	11	24	35	0.9								112		-18		Clayey SAND (SC) - ~80% coarse to fine, subrounded to subangular sand; ~20% fines w/high plasticity, medium toughness, wet; dense; light greenish-gray (GLEY1 8/1)	
														114		-20			
SPT	27	13	15	18	33	1.1								116		-22			
														118		-24			
														120		-26			

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BORING LOG

BORING NO. SB-54
SHEET 5 OF 6

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17024.3' E 16809.5'	93.8 ft (MSL)	151.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel parking lot	Plant Grid	03/23/07	03/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	28	9	17	50/5"	NA	0.9								120				grading to ~85% subangular sand; ~15% fines w/ medium plasticity; w/0.2' seam of well graded SAND; (~95% coarse to fine sand; ~5% fines; reddish-yellow [7.5YR 7/6]) @ 120.3' and grading to red (10R 4/8) @ 120.5'	SPT-28 blow counts appear to be high, caused by pushing through slough. N-value considered not applicable (NA).
														122		-28			
														122.5					
														124		-30			
SPT	29	5	7	11	18	1.5								126		-32		Poorly graded SAND w/clay (SP-SC) - 79% fine sand; 21% fines; wet, w/natural moisture content = 23%; medium dense; very pale brown (10YR 7/3)	
														128		-34			
														130		-36			
SPT	30	5	6	12	18	1.5								132		-38			
														133.0				[Pascagoula]	
														134		-40			
TW	31	-	-	-	-	1.5								136		-42		Fat CLAY (CH) - ~100% fines w/medium plasticity, high toughness, no dilatancy; moist; firm; light greenish-gray (GLEY1 7/1)	TW-31 could only be pushed 18", tube bent. PP = 4.3 tsf TV = 0.6 tsf
														138		-44			
														140		-46			
SPT	32	10	16	20	36	1.5								142		-48		grading w/LL=49, PI=27; natural moisture content= 21%; very hard	
														144		-50			
TW	33	-	-	-	-	1.5								146		-52		grading greenish-gray (GLEY1 5/1)	TW-33 could only be pushed 1.5'. PP > 4.5 tsf TV = 0.6 tsf
														148		-54			
														150		-56			

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BORING LOG

BORING NO. SB-54

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17024.3' E 16809.5'	93.8 ft (MSL)	151.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Limestone gravel parking lot	Plant Grid	03/23/07	03/25/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	34	12	16	20	36	0.3								150				grading w/occasional iron stains	
														152		-58			Bottom of boring @ 151.5'. Fluid level @ 15.1' @ completion of drilling. Deviation survey performed on 03/24/07. Water level @ 35.0' on 03/25/07. Boring backfilled w/ cement bentonite grout by tremie method on 03/25/07.
														154		-60			
														156		-62			
														158		-64			
														160		-66			
														162		-68			
														164		-70			
														166		-72			
														168		-74			
														170		-76			
														172		-78			
														174		-80			
														176		-82			
														178		-84			
														180		-86			

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BORING LOG

BORING NO. FPWST-56

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17117.6' E 17194.7'	68.7 ft (MSL)	76.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying, grasses	Plant Grid	03/21/07	03/21/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	6	7	12	19	1.2								0		68		[Engineered Fill] Well graded SAND (SP) - ~95% coarse to fine, subangular to subrounded sand; ~5% fines; moist; medium dense; very pale brown (10YR 7/3)	Boring advanced with 3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher.
SPT	02	12	18	21	39	1.1								2		66		grading dense	
SPT	03	10	15	18	33	1.0								4		64			
SPT	04	12	21	20	41	1.0								6		62			
SPT	05	10	16	16	32	1.0								8		60			
SPT	06	13	21	28	49	1.1								10		58		grading wet	
SPT	07	15	25	33	58	1.1								12		56			
SPT	08	17	26	31	57	1.1								14		54			
														16		52		grading pale yellow (2.5Y 7/6)	
														18		50			
														20		48		grading very dense	
														22		46			
														24		44			
														26		42			
														28		40			
														30					

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BORING LOG

BORING NO. FPWST-56

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17117.6'	E 17194.7'	68.7 ft (MSL)	76.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying, grasses	Plant Grid	03/21/07	03/21/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG
SPT	09	24	41	47	88	1.2								30		38	
														32		36	
														34		34	
SPT	10	30	47	50/5"	50+	1.3								36		32	
														38		30	
														40		28	
SPT	11	35	50/4"	-	50+	0.8								42		26	
														44		24	
SPT	12	25	44	50	94	0.9								46		22	
														48		20	
SPT	13	15	28	36	64	0.9								50		18	
														52		16	
														54		14	
SPT	14	18	28	32	60	1.0								56		12	
														58		10	
														60			

35.0

Poorly graded SAND (SP) - 86% fine to coarse, subrounded sand; 9% fines; 5% fine, subangular gravel; wet; very dense; pale yellow (2.5Y 8/3)

48.7

[Citronelle (lower)]

Poorly graded SAND (SP) - ~90% fine to medium, subrounded sand; ~5% fine, subangular gravel; ~5% fines; wet; very dense; brownish-yellow (10YR 6/6)

grading to fine, subrounded sand; yellowish-brown (10YR 7/8)

REMARKS

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BORING LOG

BORING NO. FPWST-56

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES		GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 17117.6'	E 17194.7'	68.7 ft (MSL)	76.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Flat lying, grasses	Plant Grid	03/21/07	03/21/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	15	18	29	25	54	1.2								60		8		@ 60.4' fine gravel seam (0.2' thick) @ 60.6' grading pink (7.5YR 7/3)	
														62		6			
														64		4			
SPT	16	20	28	37	65	1.4								66		2		@ 65.6' grading to pinkish-white (7.5YR 8/2)	
														68		0			
SPT	17	17	26	43	69	1.1								70		-2		@ ~70.7' to 71.0' grading weak red (2.5YR 5/2) @ 71.3' grading w/trace of subangular, elongate gravel	Boring caved ~70.0' while changing from bit to SPT sampler. Driller redrilled interval.
														72		-4			
														74		-6			
SPT	18	19	29	34	63	1.2								76		-8		@ 75.2' medium to fine, subrounded gravel seam (0.2' thick); pinkish-gray (7.5YR 6/2) @ 75.4' grading strong brown (7.5YR 4/6)	
														78		-10			Bottom of boring @ 76.5'. Fluid level 30 minutes after completion @ 9.9'. Boring caved to 12'. Water level @ 12' on 03/21/07. Boring backfilled w/cement bentonite grout on 03/21/07.
														80		-12			
														82		-14			
														84		-16			
														86		-18			
														88		-20			
														90					

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BORING LOG

BORING NO. BFT-57
SHEET 1 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16818.0' E 16769.2'	93.9 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level asphalt and pavement	Plant Grid	03/22/07	03/23/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	01	6	7	5	12	0.7								0				[Fill] Poorly graded SAND	Boring advanced w/3-7/8" baffle bit w/NW rods using water as drilling mud. SPT performed using automatic hammer w/ unlined split spoon sampler and plastic catcher. SPT-3A - 5.0' to 5.4' SPT-3B - 5.4' to 6.5'
																		1.2	
SPT	02	2	2	3	5	1.5								2		92		Poorly graded SAND w/clay (SP-SC) - ~90% fine to medium, subrounded sand; ~10% fines; moist; medium dense; strong brown (7.5YR 5/6)	
																		2.5	
														4		90		Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; very loose	
																		5.0	
SPT	03	0	0	2	2	1.0								6		88		[Port Hickey] Poorly graded SAND w/clay (SP-SC) - ~90% fine, subrounded sand; ~10% fines; wet; very loose; yellowish-red (5YR 5/6); mottled w/strong brown	
																		5.4	
SPT	04	3	4	4	8	1.3								8		86		SILT w/sand (ML) - ~85% fines; w/low plasticity, medium toughness, slow dilatancy; ~15% fine sand; moist; soft; yellowish-red (5YR 5/6)	
																		7.5	
														10		84		Fat CLAY (CH) - ~90% fines w/high plasticity, high toughness, no dilatancy; ~10% fine gravel; wet; firm; strong brown (7.5YR 5/6)	
TW	05	-	-	-	-	1.5													TW-05, PP = 1.75 tsf
																		7.7	
														12		82		Silty SAND (SM) - ~85% fine sand; ~15% fines; moist; loose; reddish-yellow (7.5YR 6/6) w/partings ~0.1' of clay and sand	
																		10.0	
														14		80		Poorly graded SAND (SP) - ~95% fine sand; ~5% fines; wet; strong brown (7.5YR 5/6)	
																		15.0	
SPT	06	4	6	5	11	1.3								16		78		[Citronelle (upper)] Silty SAND (SM) - ~85% fine, subrounded sand; ~15% fines; wet; medium dense; reddish-yellow (7.5YR 7/8)	
														18		76			
														20		74		grading reddish-yellow (7.5YR 6/6)	
SPT	07	4	6	7	13	1.1													
														22		72			
														24		70			
SPT	08	5	5	6	11	1.3								26		68		grading w/fines w/slow dilatancy; reddish-yellow (7.5YR 7/8)	
																		27.5	
														28		66			
														30		64			

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BORING LOG

BORING NO. BFT-57
SHEET 2 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16818.0' E 16769.2'	93.9 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level asphalt and pavement	Plant Grid	03/22/07	03/23/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	ELEVATION (FEET)	CLASSIFICATION OF MATERIALS	REMARKS
SPT	09	9	9	8	17	1.0								30		Poorly graded SAND w/clay (SP-SC) - ~90% coarse to medium, subangular sand; ~10% fines; wet; medium dense; reddish-brown (5YR 4/4)	
														32	62		
														34	60		
SPT	10	5	4	5	9	1.4								36	58	grading w/85% medium to fine sand; 15% fines; loose; natural moisture content = 22%	
RNG	11	6	7	8	15	1.5								38	56		Hammer is operating erratically; drillers repaired hammer. RNG-11 37.0 - 37.5' RNG-11B 37.5 - 38.0' RNG-11C 38.0 - 38.5' Ring sampling performed w/3" OD, split sampler and 2.5" ID rings.
														40	54		
SPT	12	5	6	7	13	0.9								42	52	grading medium dense; natural moisture content = 12%	
																42.5	
														44	50		
SPT	13	11	16	18	34	1.0								46	48	Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; dense; reddish-yellow (5YR 6/8)	
														48	46		
														50	44		
SPT	14	13	23	50/5"	50+	1.0								52	42	grading very dense; strong brown (7.5YR 5/6); w/fine gravel parting @ 50.5' to 50.7'	Appears to be driving gravel. SPT-14A 50.5' - 50.7' SPT-14B 50.7' - 51.5'
														54	40		
SPT	15	4	5	9	14	1.5								56	38	grading medium dense w/partings of Elastic SILT (MH) - ~95% fines w/medium plasticity, medium toughness, slow dilatancy; ~5% fine to coarse sand	
														58	36		
														60	34		

BLACK & VEATCH

BORING LOG

BORING NO. BFT-57

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16818.0' E 16769.2'	93.9 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level asphalt and pavement	Plant Grid	03/22/07	03/23/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JRL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	16	7	8	11	19	1.0								60				grading reddish-yellow (7.5YR 7/8); silt partings grade out	
														62		32			
														64		30			
SPT	17	9	12	15	27	1.2								66		28			Camera stopped working; no sample photos for remainder of boring.
														68		26			
														70		24		70.0	
SPT	18	12	18	23	41	0.9								72		22		[Citronelle (lower)] Well graded SAND (SW) - ~90% coarse to fine, subangular sand; ~5% fines; ~5% fine gravel; wet; dense; reddish-yellow (7.5YR 6/8)	
																		73.0	
														74		20		Poorly graded GRAVEL (GP) - ~95% fine, elongate gravel; ~5% coarse sand; wet; dense; brown (7.5YR 4/3)	
SPT	19	10	14	17	31	0.9								76		18			
														78		16			
														80		14			SPT-20A 80.0' - 80.6' SPT-20B 80.6' - 80.9'
SPT	20	15	21	18	39	0.9												80.6	
														82		12		Poorly graded SAND (SP) - ~95% fine, subangular sand; ~5% fines; wet; dense; pink (5YR 8/4)	
														84		10			
SPT	21	15	15	12	27	1.0								86		8		grading fine to medium sand; medium dense; yellowish-red (5YR 5/6)	
																		87.5	
														88		6		Well graded SAND (SW) - ~95% fine to coarse, subangular sand; ~5% fine gravel; wet; dense; reddish-yellow (7.5YR 6/8)	
														90		4			

BLACK & VEATCH

BORING LOG

BORING NO. BFT-57
SHEET 4 OF 4

CLIENT	PROJECT	PROJECT NO.
Entergy Nuclear, Inc.	River Bend COLA Preparation	145885

PROJECT LOCATION	COORDINATES	GROUND ELEVATION (DATUM)	TOTAL DEPTH
St. Francisville, Louisiana	N 16818.0' E 16769.2'	93.9 ft (MSL)	101.5 (feet)

SURFACE CONDITIONS	COORDINATE SYSTEM	DATE START	DATE FINISHED
Level asphalt and pavement	Plant Grid	03/22/07	03/23/07

LOGGED BY	CHECKED BY	APPROVED BY
P. Murphy WPM	J. Liljegren JAL	M. Petersen MMP

SOIL SAMPLING							ROCK CORING										
SAMPLE TYPE	SAMPLE NUMBER	SET 6 INCHES	2ND 6 INCHES	3RD 6 INCHES	N VALUE	SAMPLE RECOVERY	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOVERY	RQD RECOVERY	PERCENT RECOVERY	RQD	DEPTH (FEET)	SAMPLE TYPE	ELEVATION (FEET)	GRAPHIC LOG	CLASSIFICATION OF MATERIALS	REMARKS
SPT	22	16	17	27	44	0.9								90					Losing circulation.
														92		2			
																		92.5	
														94		0			
SPT	23	50/5"	-	-	+50	0.5												Poorly graded GRAVEL (GP) - ~95% fine, subangular elongate gravel; ~5% fines; wet; very dense; reddish-yellow	Field sample smaller than recommended.
														96		-2			
														98		-4			
																		98.0	
														100		-6			
SPT	24	19	23	20	43	0.8												Poorly graded SAND (SP) - ~90% medium to coarse, subangular sand; ~5% fines; ~5% fine gravel; wet; very dense; strong brown	
														102		-8			Bottom of boring @ 101.5'. Water level measured @ 10.8' @ completion of drilling. Boring caved @ 45'. Water level @ 21' on 03/23/07. Boring redrilled to 100' for deviation survey. Boring caved to 15'. Deviation survey completed on 03/23/07. Boring backfilled w/ cement bentonite grout from 15' to ground surface on 03/23/07.
														104		-10			
														106		-12			
														108		-14			
														110		-16			
														112		-18			
														114		-20			
														116		-22			
														118		-24			
														120		-26			