L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-001

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/21/09 **COMPLETED** 4/21/09
GROUND ELEVATION 75.29 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 21.00 ft / Elev 54.29 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 35' / Mud Rotary to 120'
AFTER DRILLING 81.00 ft / Elev -5.71 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Dark Brown, Moist, Soft to Hard										
			SPT 1	100 (100)	4-4-4 (8)			15	79	18	61	93
			SPT 2	100 (100)	4-3-2 (5)			13				61
			SPT 3	100 (100)	3-4-4 (8)			13	72	21	51	99
10			SH 4	100 (100)		4.5+		13				99
			SH 5	100 (100)		4.5+		15	68	22	46	86
20			SH 6	100 (100)		4.0		14	71	22	49	77
			SH 7	100 (100)		3.0		17	70	26	44	97
30		(SC) Clayey Sand, Brown, Wet, Medium Dense	SPT 8	100 (100)	9-11-13 (24)			20				44
			SPT 9	100 (100)	11-13-17 (30)			24				22
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Dense to Very Dense										
40			SPT 10	100 (100)	12-17-19 (36)			19				7
			SPT 11	100 (100)	14-18-21 (39)			17				12
50			SPT 12	100 (100)	19-24-29 (53)			21				10
			SPT 13	100 (100)	21-27-31 (58)			18				7
60			SPT 14	100 (100)	21-26-32 (58)			22				12
		(SC) Clayey Sand, Brown, Very Moist, Very Dense										

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BORING NUMBER BH-001

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Very Moist, Very Dense *(continued)*										
			SPT 15	100 (100)	24-29-36 (65)			22				25
		(CH) Fat Clay, Brown, Moist, Hard										
70			SPT 16	100 (100)	11-17-20 (37)			26	64	24	40	96
		(CL) Lean Clay, Brown, Moist, Stiff to Hard										
			SPT 17	100 (100)	5-7-10 (17)			16	34	14	20	68
80			SPT 18	100 (100)	11-10-14 (24)			15				71
			SPT 19	100 (100)	9-12-14 (26)			19	43	15	28	69
		(SC) Clayey Sand, Brown, Very Moist, Very Dense										
90			SPT 20	100 (100)	19-25-29 (54)			24				34
			SPT 21	100 (100)	17-20-23 (43)			23				44
100			SPT 22	100 (100)	26-38-42 (80)			21				21
			SPT 23	100 (100)	31-36-46 (82)			16				19
110			SPT 24	100 (100)	46-50-50 (100)			18				21
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Very Dense										
			SPT 25	100 (100)	42-49-50 (99)			17				9
120		(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 26	100 (100)	19-29-39 (68)			19				36

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-002

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/18/09 **COMPLETED** 4/18/09
GROUND ELEVATION 74.77 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 54.77 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 26' / Mud Rotary to 60'
AFTER DRILLING 20.00 ft / Elev 54.77 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Dark Brown, Moist, Soft to hard	SPT 1	100 (100)	3-3-5 (8)			12				90
			SPT 2	100 (100)	3-4-8 (12)			16	80	23	57	
			SH 3	100 (100)		4.5		14				69
10			SH 4	100 (100)		3.25		16	86	26	60	
			SH 5	100 (100)		2.75		26				75
20			SH 6	100 (100)		3.25		25	72	23	49	
		(CL) Lean Clay, Tan, Very Moist, Firm	SH 7	133 (133)		2.5		24				95
30			SPT 8	100 (100)	5-6-9 (15)			17	25	15	10	
		(SC) Clayey Sand, Tan, Very Moist, Medium Dense	SPT 9	100 (100)	6-7-13 (20)			18				31
40		(SP-SM) Poorly Graded Sand w/ Silt, Brown, Very Wet, Medium Dense to Dense	SPT 10	100 (100)	11-14-14 (28)			20				7
			SPT 11	100 (100)	13-16-19 (35)			22				7
50		(SM) Silty Sand w/ Gravel, Brown, Moist, Dense to Medium Dense	SPT 12	100 (100)	21-25-23 (48)			18				22
			SPT 13	100 (100)	4-6-10 (16)			17				17
60		(SP-SM) Poorly Graded Sand w/ Silt & Gravel, Brown, Moist, Medium Dense	SPT 14	100 (100)	12-11-13 (24)			40				10

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-005

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/21/09 **COMPLETED** 4/21/09
GROUND ELEVATION 75.05 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger/ Mud Rotary
AT TIME OF DRILLING 23.00 ft / Elev 52.05 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 32' / Mud Rotary to 120'
AFTER DRILLING 32.00 ft / Elev 43.05 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Brown, Moist, Soft to Firm										
		SPT 1	100 (100)	3-4-4 (8)			21	83	30	53	97
		SPT 2	100 (100)	2-2-4 (6)			21	85	25	60	99
		SH 3	100 (100)		2.5		23	71	33	38	100
10		SH 4	100 (100)		2.5		19				98
		SH 5	100 (100)		2.0		23	85	26	59	91
	(CH) Fat Clay, Brown, Moist, Soft										
20		SH 6	100 (100)		1.5		23				98
	(SC) Clayey Sand, Brown, Wet, Loose to Medium Dense	SPT 7	100 (100)	3-4-4 (8)			17				22
30		SPT 8	100 (100)	6-5-6 (11)			20				33
		SPT 9	100 (100)	5-6-7 (13)			23				21
	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Wet, Medium Dense to Dense										
40		SPT 10	100 (100)	5-8-6 (14)			26				0
		SPT 11	100 (100)	13-19-20 (39)			22				10
50		SPT 12	100 (100)	14-21-23 (44)			24				7
	(CL) Lean Clay, Brown, Moist to Wet, Hard	SPT 13	100 (100)	8-13-22 (35)			21				52
60		SPT 14	100 (100)	10-16-20 (36)			18	25	13	12	56

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BORING NUMBER BH-005

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Very Dense										
			SPT 15	100 (100)	19-28-23 (51)			22				10
		(CL) Lean Clay, Brown, Moist to Wet, Hard										
70			SPT 16	100 (100)	21-26-29 (55)			18	41	15	26	63
		(SC) Clayey Sand, Brown, Wet, Dense										
			SPT 17	100 (100)	30-19-19 (38)			20	23	11	12	30
		(CL) Lean Clay, Brown, Wet, Hard										
80			SPT 18	100 (100)	21-24-18 (42)			19	37	17	20	58
			SPT 19	100 (100)	12-15-17 (32)			21				54
90			SPT 20	100 (100)	14-18-21 (39)			20	42	18	24	57
		(CH) Fat Clay, Brown, Moist, Hard										
			SPT 21	100 (100)	19-26-31 (57)			13	50	19	31	73
100			SPT 22	100 (100)	19-28-35 (63)			19				79
			SPT 23	100 (100)	16-23-31 (54)			33				76
110			SPT 24	100 (100)	18-25-19 (44)			21				94
			SPT 25	100 (100)	15-19-17 (36)			21				97
120			SPT 26	100 (100)	21-22-19 (41)			17				99

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
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L&G Engineering Laboratory LLC
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BORING NUMBER BH-007

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/21/09 **COMPLETED** 4/21/09
GROUND ELEVATION 75.2 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 23.00 ft / Elev 52.20 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 25.00 ft / Elev 50.20 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Dark Brown, Moist, Soft to Hard										
		SPT 1	100 (100)	3-3-4 (7)			21				86
		SPT 2	100 (100)	2-4-4 (8)			23	80	28	52	
		SPT 3	100 (100)	4-4-6 (10)			23				90
10		SPT 4	100 (100)	3-5-7 (12)			15	76	28	48	
		SH 5	100 (100)		2.5		26				79
20		SH 6	100 (100)		2.5		26	78	27	51	
	(CH) Fat Clay, Dark Brown, Moist, Stiff										
		SPT 7	100 (100)	3-4-5 (9)			24				90
30		SPT 8	100 (100)	3-5-6 (11)			23	69	25	44	
	(SC) Clayey Sand, Brown, Moist, Loose to Medium Dense										
		SPT 9	100 (100)	3-4-4 (8)			23				17
40		SPT 10	100 (100)	5-6-9 (15)			19				20
		SPT 11	100 (100)	7-9-17 (26)			22				17
	(SC) Clayey Sand, Brown, Moist, Dense										
50		SPT 12	100 (100)	13-18-13 (31)			19				36
	(SP-SM) Poorly Graded Sand w/ Silt, Brown, Moist, Very Dense to Dense										
		SPT 13	100 (100)	26-29-30 (59)			20	NP	NP	NP	10
60		SPT 14	100 (100)	23-22-26 (48)			19				9

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
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BORING NUMBER BH-008

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/19/09 **COMPLETED** 4/19/09
GROUND ELEVATION 75.15 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 23.00 ft / Elev 52.15 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 28.00 ft / Elev 47.15 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Moist, Firm to Soft	SPT 1	100 (100)	7-7-8 (15)			20				88
			SPT 2	100 (100)	2-3-4 (7)			23	93	13	80	
		(CH) Fat Clay, Brown, Moist, Firm to Hard	SPT 3	100 (100)	2-5-5 (10)			24				95
10			SH 4	100 (100)		2.5		22	78	26	52	
			SH 5	100 (100)		3.5		21				96
20			SH 6	100 (100)		2.5		26	76	28	48	
			SH 7	100 (100)		2.5		25				99
30			SH 8	100 (100)		3.5		25	70	28	42	
		(SC) Clayey Sand, Brown, Wet, Dense	SH 9	100 (100)		3.5		23				25
40		(CL) Lean Clay, Brown, Moist, Hard	SPT 10	100 (100)	12-18-23 (41)			19				98
		(CL) Lean Clay w/ Cal. Nodules, Greyish Tan, Moist, Dense	SPT 11	100 (100)	11-19-27 (46)			18	38	15	23	
50		(SC) Clayey Sand w/ Gravel, Brown, Moist to Very Moist	SPT 12	100 (100)	17-23-31 (54)			21				17
			SPT 13	100 (100)	18-23-27 (50)			19				20
60			SPT 14	100 (100)	23-25-29 (54)			21				14

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-009

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/22/09 **COMPLETED** 4/22/09
GROUND ELEVATION 75.36 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 24.00 ft / Elev 51.36 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 78.00 ft / Elev -2.64 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Dark Brown, Dry to Moist, Firm to Soft	SPT 1	100 (100)	3-5-6 (11)			19	79	27	52	77
		SPT 2	100 (100)	2-3-4 (7)			20				90
	(CH) Fat Clay, Dark Brown, Moist, Hard to Soft	SH 3	100 (100)		2.5		24	74	27	47	99
10		SH 4	100 (100)		1.5		22				93
	(CH) Fat Clay, Dark Brown, Moist, Hard to Firm	SH 5	100 (100)		3.0		21	83	21	62	93
20		SH 6	100 (100)		.75		29				100
	(CH) Fat Clay, Dark Brown, Moist, Stiff to Firm	SH 7	100 (100)		1.75		25	76	26	50	100
30		SPT 8	100 (100)	4-5-6 (11)			23	69	22	47	100
		SPT 9	100 (100)	4-5-6 (11)			25	73	30	43	99
40	(SC) Clayey Sand, Dark Brown, Wet, Loose	SPT 10	100 (100)	3-4-3 (7)			21				21
	(SP-SM) Poorly Graded Sand w/ Silt, Dark Brown, Wet, Medium Dense to Dense	SPT 11	100 (100)	7-9-13 (22)			22				7
50		SPT 12	100 (100)	12-18-13 (31)			20				6
		SPT 13	100 (100)	12-19-16 (35)			21				6
60		SPT 14	100 (100)	19-14-16 (30)			21				7

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BORING NUMBER BH-009

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Sandy Lean Clay, Dark Brown, Very Moist, Hard to Stiff										
			SPT 15	100 (100)	17-29-32 (61)			21				71
70			SPT 16	100 (100)	7-9-18 (27)			25				57
		(CL) Lean Clay, Brown, Moist, Hard										
			SPT 17	100 (100)	12-16-21 (37)			16	37	14	23	55
		(CH) Fat Clay w/ Calc. Nodules, Brown, Moist, Hard										
80			SPT 18	100 (100)	13-19-20 (39)			16	59	18	41	72
			SPT 19	100 (100)	16-20-20 (40)			16	64	17	47	71
90			SPT 20	100 (100)	12-16-21 (37)			14	72	20	52	69
			SPT 21	100 (100)	12-16-21 (37)			25	64	18	46	70
100			SPT 22	100 (100)	12-16-21 (37)			21				79
		(SM) Silty Sand, Brown, Moist, Very Dense										
			SPT 23	100 (100)	31-46-50 (96)			16				29
110			SPT 24	100 (100)	27-39-90 (129)			16				25
		(CH) Fat Clay, Brown, Moist, Hard										
			SPT 25	100 (100)	16-17-19 (36)			15				93
120			SPT 26	100 (100)	14-18-21 (39)			25				98

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-011

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/21/09 **COMPLETED** 4/21/09
GROUND ELEVATION 75.09 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 34.00 ft / Elev 41.09 ft
LOGGED BY Chris Trevino **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 35' / Mud Rotary to 60'
AFTER DRILLING 16.00 ft / Elev 59.09 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Moist, Stiff to Firm	SPT 1	100 (100)	8-8-8 (16)			13	66	20	46	
			SPT 2	100 (100)	3-4-6 (10)			11				69
			SPT 3	100 (100)	3-6-7 (13)			25	80	27	53	
10		(CH) Fat Clay, Brown, Moist, Firm to Stiff	SH 4	100 (100)		2.5		27				98
			SH 5	100 (100)		2.5		26	76	22	54	
20			SH 6	100 (100)		2.0		26				85
			SH 7	100 (100)		1.5		24	72	23	49	
		(CH) Fat Clay, Brown, Moist, Firm to Stiff										
30			SH 8	100 (100)		2.5		27	67	26	41	
			SPT 9	100 (100)	4-5-6 (11)			25				95
		(SC) Clayey Sand, Dark Brown, Wet, Loose to Dense										
40			SPT 10	100 (100)	2-2-2 (4)			17				29
			SPT 11	100 (100)	5-6-7 (13)			16				43
		(CL) Lean Clay, Reddish Brown, Very Moist, Hard										
50			SPT 12	100 (100)	13-18-24 (42)			20	38	18	20	
			SPT 13	100 (100)		3.0		22				85
60			SPT 14	100 (100)	13-15-20 (35)			22				79

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-012

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/19/09 **COMPLETED** 4/19/09
GROUND ELEVATION 74.72 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 16.00 ft / Elev 58.72 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 15' / Mud Rotary to 60'
AFTER DRILLING 21.00 ft / Elev 53.72 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Dry to Moist, Firm to Soft	SPT 1	100 (100)	7-5-7 (12)			11				89
			SPT 2	100 (100)	3-3-4 (7)			20	83	25	58	
			SH 3	100 (100)		2.5		26				97
10			SH 4	100 (100)		1.5		25	83	24	59	
		(CH) Fat Clay, Brown, Moist, Firm to Hard	SH 5	100 (100)		3.5		24				97
20			SH 6	100 (100)		2.5		26	67	28	39	
			SH 7	100 (100)		2.5		26				98
30			SH 8	100 (100)		2.5		25	75	32	43	
			SH 9	100 (100)		3.5		22				94
40		(SC) Clayey Sand, Brown, Wet, Medium Dense to Dense	SPT 10	100 (100)	4-5-6 (11)			19				24
			SPT 11	100 (100)	22-22-24 (46)			22				25
50		(CL) Lean Clay, Reddish Brown, Moist, Hard	SPT 12	100 (100)	23-29-41 (70)			20				60
			SH 13	100 (100)		4.5		17				58
60		(SC) Clayey Sand, Reddish Brown, Wet, Dense	SPT 14	100 (100)	16-20-29 (49)			21				36

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-013

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/22/09 **COMPLETED** 4/22/09
GROUND ELEVATION 75.02 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 26.00 ft / Elev 49.02 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 31.00 ft / Elev 44.02 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Dark Brown, Moist, Firm	SPT 1	100 (100)	2-4-7 (11)			23	81	25	56	98
		SPT 2	100 (100)	3-3-5 (8)			25				90
		SH 3	100 (100)		2.0		26	77	25	52	90
10		SH 4	100 (100)		2.5		22				86
		SH 5	100 (100)		2.0		26	74	22	52	100
	(CH) Fat Clay, Dark Brown, Moist, Very Soft to Soft										
20		SH 6	100 (100)		1.5		20				98
		SH 7	100 (100)		2.0		25	62	20	42	100
	(SC) Clayey Sand, Brown, Moist, Very Loose										
30		SPT 8	100 (100)	1-2-1 (3)			20				40
	(CL) Lean Clay, Brown, Soft to Firm										
		SPT 9	100 (100)	4-5-6 (11)			20	28	11	17	98
	(SC) Clayey Sand, Brown, Medium Dense										
40		SPT 10	100 (100)	8-11-13 (24)			17				23
		SPT 11	100 (100)	7-13-14 (27)			21				30
	(CH) Fat Clay, Brown, Moist, Hard										
50		SPT 12	100 (100)	10-16-18 (34)			21	51	15	36	87
		SPT 13	100 (100)	13-16-22 (38)			20	53	15	38	90
	(SC) Clayey Sand, Brown, Moist, Dense to Very Dense										
60		SPT 14	100 (100)	29-22-26 (48)			23				31

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Telephone: 956-565-0760

BORING NUMBER BH-013

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Moist, Dense to Very Dense *(continued)*										
			SPT 15	100 (100)	23-27-30 (57)			23				22
		(CH) Fat Clay, Brown, Moist, Hard										
70			SPT 16	100 (100)	21-24-29 (53)			24	65	29	36	96
			SPT 17	100 (100)	18-12-22 (34)			24				98
		(CL) Lean Clay, Brown, Moist, Hard										
80			SPT 18	100 (100)	21-27-24 (51)			17	43	14	29	60
			SPT 19	100 (100)	28-30-31 (61)			19				57
90			SPT 20	100 (100)	19-26-30 (56)			20	30	11	19	79
			SPT 21	100 (100)	24-31-33 (64)			15	39	10	29	83
100		(CH) Fat Clay, Brown, Moist, Hard	SPT 22	100 (100)	24-28-35 (63)			20				95
			SPT 23	100 (100)	17-33-39 (72)			20				93
110			SPT 24	100 (100)	32-47-50 (97)			18	54	21	33	98
			SPT 25	100 (100)	34-48-50 (98)			18				94
120		(CL) Lean Clay, Brown, Moist, Hard (SC) Clayey Sand, Brown, Moist, Very Loose	SPT 26	100 (100)	34-26-30 (56)			19	38	16	22	96

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-015

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/18/09 **COMPLETED** 4/18/09
GROUND ELEVATION 75.15 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 56.15 ft
LOGGED BY Chris Trevino **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 60'
AFTER DRILLING 26.00 ft / Elev 49.15 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Dark Brown, Moist, Soft to Firm	SPT 1	100 (100)	2-2-2 (4)			18	74	23	51	
		SPT 2	100 (100)	4-4-7 (11)			19				87
		SPT 3	100 (100)	3-4-5 (9)			23	76	22	54	
10		SPT 4	100 (100)	3-4-5 (9)			17				91
		SH 5	100 (100)		2.5		18	83	24	59	
20		SH 6	100 (100)		1.5		23				76
	(SC) Clayey Sand, Brown, Wet, Loose to Medium Dense	SPT 7	100 (100)	3-3-3 (6)			15	24	13	11	
30		SPT 8	100 (100)	3-4-8 (12)			14				37
	(SP-SM) Poorly Graded Sand w/ Silt, Brown, Very Wet, Medium Dense to Dense	SPT 9	100 (100)	7-7-11 (18)			21				11
40		SPT 10	100 (100)	10-16-20 (36)			4				10
	(SC) Clayey Sand, Brown, Wet, Very Dense	SPT 11	100 (100)	20-27-30 (57)			19				14
	(CH) Fat Clay, Brown, Moist, Stiff										
50		SPT 12	100 (100)	8-12-18 (30)			11	51	15	36	
		SPT 13	100 (100)	6-8-10 (18)			20				87
	(CL) Lean Clay, Brown, Wet, Firm										
60		SPT 14	100 (100)	7-7-8 (15)			23	24	17	7	

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-016

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/18/09 **COMPLETED** 4/18/09
GROUND ELEVATION 74.96 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 17.00 ft / Elev 57.96 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 22.00 ft / Elev 52.96 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Brown, Moist, Firm to Hard	SPT 1	100 (100)	6-9-12 (21)			4	70	25	45	
		SPT 2	100 (100)	9-14-15 (29)			20				72
		SPT 3	100 (100)	12-14-20 (34)			14	62	19	43	
10	(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 4	100 (100)	4-6-9 (15)			11				56
		SPT 5	100 (100)	6-6-8 (14)			14	56	16	40	
20		SH 6	100 (100)		3.0		21				84
		SH 7	100 (100)		4.5		18	72	25	47	
30	(CL) Clayey Sand, Brown, Very Moist, Loose to Medium Dense	SPT 8	100 (100)	4-4-6 (10)			18	26	14	12	38
		SPT 9	100 (100)	5-7-11 (18)			17				26
40	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Very Dense	SPT 10	100 (100)	17-23-29 (52)			18				12
	(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 11	100 (100)	21-28-31 (59)			19				13
50		SPT 12	100 (100)	18-25-26 (51)			19				17
	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Very Dense	SPT 13	100 (100)	22-25-26 (51)			19				8
60		SPT 14	100 (100)	24-27-30 (57)			16				8

Bottom of borehole at 60.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-018

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/18/09 **COMPLETED** 4/18/09
GROUND ELEVATION 74.46 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 54.46 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 22.00 ft / Elev 52.46 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Tan, Dry, Firm	SPT 1	100 (100)	11-7-8 (15)			4	77	48	29	
			SPT 2	100 (100)	5-5-9 (14)			14				88
		(CL) Lean Clay w/ Sand, Dark Brown, Moist, Stiff	SPT 3	100 (100)	5-6-16 (22)			20	59	18	41	
10			SPT 4	100 (100)	6-8-13 (21)			10				52
		(SC) Clayey Sand, Tan, Moist, Very Dense to medium Dense	SH 5	100 (100)		4.0		16	32	18	14	
20			SPT 6	100 (100)	8-9-10 (19)			21	25	12	13	45
		(SC-SM) Silty Clayey Sand, Brown, Very Moist, Medium Dense	SPT 7	100 (100)	5-6-7 (13)			26				24
30			SPT 8	100 (100)	7-10-12 (22)			21				12
			SPT 9	100 (100)	9-10-12 (22)			23				13
40		(SP-SM) Poorly Graded Sand w/ Silt, Brown, Very Moist, Dense	SPT 10	100 (100)	15-20-23 (43)			20				9
			SPT 11	100 (100)	17-20-21 (41)			21				7
50			SPT 12	100 (100)	21-23-25 (48)			20				8
			SPT 13	100 (100)	26-24-25 (49)			23				7
60		(MH) Elastic Silt, Reddish Brown, Moist, Hard	SH 14	100 (100)		4.0		22	71	46	25	97

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
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Geotechnical Engineering

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BORING NUMBER BH-021

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/22/09 **COMPLETED** 4/22/09
GROUND ELEVATION 74.28 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 55.28 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 35' / Mud Rotary to 120'
AFTER DRILLING 52.00 ft / Elev 22.28 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Dark Brown, Dry to Moist, Firm	SPT 1	100 (100)	5-6-6 (12)			11	45	14	31	54
	(SC) Clayey Sand, Dark Brown, Moist, Medium Dense	SPT 2	100 (100)	4-7-8 (15)			15				42
		SPT 3	100 (100)	4-6-7 (13)			12	71	16	55	49
10	(CH) Fat Clay, Dark Brown, Moist, Firm to Soft	SPT 4	100 (100)	3-4-5 (9)			21	60	16	44	70
		SPT 5	100 (100)	2-3-4 (7)			25	58	21	37	64
20	(CH) Fat Clay, Dark Brown, Moist, Firm to Stiff	SPT 6	100 (100)	5-6-9 (15)			22				68
		SPT 7	100 (100)	4-7-11 (18)			21	52	19	33	71
30	(ML) Silt w/ Sand, Brown, Wet, Firm	SPT 8	100 (100)	5-5-6 (11)			20				97
	(SM) Silty Sand, Brown, Very Moist, Medium Dense to Dense	SPT 9	100 (100)	7-11-14 (25)			21				27
40		SPT 10	100 (100)	14-17-20 (37)			26				16
		SPT 11	100 (100)	19-18-26 (44)			28				17
50	(CH) Fat Clay, Dark Brown, Moist, Stiff	SPT 12	100 (100)	9-11-12 (23)			18	54	18	36	55
	(SC) Clayey Sand, Brown, Moist, Medium Dense	SPT 13	100 (100)	4-7-10 (17)			20				42
60	(CH) Fat Clay, Brown, Moist, Hard	SPT 14	100 (100)	5-6-13 (19)			23				37

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BORING NUMBER BH-021

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CH) Fat Clay, Brown, Moist, Hard *(continued)*										
			SPT 15	100 (100)	15-17-20 (37)			18	71	19	52	94
70			SPT 16	100 (100)	13-15-17 (32)			17				76
		(CL) Lean Clay, Brown, Very Moist, Stiff										
			SPT 17	100 (100)	11-12-13 (25)			17	35	14	21	97
		(CH) Fat Clay, Brown, Moist, Hard										
80			SPT 18	100 (100)	9-14-22 (36)			21	72	16	56	85
			SPT 19	100 (100)	12-16-21 (37)			21	80	17	63	96
90			SPT 20	100 (100)	16-19-24 (43)			16				98
			SPT 21	100 (100)	13-17-23 (40)			14	73	20	53	76
100		(CL-ML) Sand Silty Clay, Brown, Wet, Hard	SPT 22	100 (100)	20-27-31 (58)			25				57
		(CL) Lean Clay, Brown, Moist, Hard										
			SPT 23	100 (100)	14-18-23 (41)			15	34	15	19	85
		(SC) Clayey Sand, Brown, Very Moist, Very Dense										
110			SPT 24	100 (100)	16-29-36 (65)			21				19
			SPT 25	100 (100)	18-27-39 (66)			20				27
120			SPT 26	100 (100)	21-30-41 (71)			19				21

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-023

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/21/09 **COMPLETED** 4/21/09
GROUND ELEVATION 74.17 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 12.00 ft / Elev 62.17 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 16.00 ft / Elev 58.17 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand, Brown, Dry, Loose to Medium Dense										
			SPT 1	100 (100)	9-10-13 (23)			9	39	13	26	
			SPT 2	100 (100)	3-5-5 (10)			10				43
			SPT 3	100 (100)	6-5-7 (12)			12	27	13	14	
10			SPT 4	100 (100)	8-5-10 (15)			11				49
		(CH) Fat Clay, Dark Brown, Moist, Firm	SH 5	100 (100)		2.5		18	54	17	37	
		(CL) Lean Clay, Brown, Wet, Very Soft to Soft										
20			SH 6	100 (100)		.25		21	28	12	16	
			SPT 7	100 (100)	3-3-3 (6)			34				50
		(SC) Clayey Sand, Brown, Wet, Loose to Dense										
30			SPT 8	100 (100)	3-4-4 (8)			28				49
			SPT 9	100 (100)	11-11-15 (26)			26				20
40			SPT 10	100 (100)	11-21-25 (46)			23				36
		(SC) Clayey Sand, Brown, Wet, Medium Dense to Dense										
			SPT 11	100 (100)	12-12-16 (28)			27				14
50			SPT 12	100 (100)	21-22-26 (48)			24				26
		(CL) Lean Clay, Brown, Moist, Hard to Stiff										
			SPT 13	100 (100)	13-16-17 (33)			31	31	20	11	
60			SPT 14	100 (100)	11-13-14 (27)			21				74

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-025

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/23/09 **COMPLETED** 4/23/09
GROUND ELEVATION 74.06 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 22.00 ft / Elev 52.06 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 22.00 ft / Elev 52.06 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay w/ Calc. Nodules, Dark Brown, Moist, Firm to Soft	SPT 1	100 (100)	5-5-8 (13)			6	44	13	31	58
			SPT 2	100 (100)	2-3-5 (8)			13				62
			SH 3	100 (100)		3.5		9	49	13	36	53
10		(CL) Lean Clay w/ Calc. Nodules, Dark Brown, Moist, Hard	SH 4	100 (100)		3.5		14				56
		(CH) Fat Clay w/ Calc. Nodules, Moist, Firm to Stiff	SH 5	100 (100)		2.5		14	61	22	39	58
20			SH 6	100 (100)		2.5		23				91
			SH 7	100 (100)		3.0		21	68	26	42	89
30		(SC-SM) Silty Sand w/ Clay, Gravelly, Moist, Dense	SPT 8	100 (100)	14-16-21 (37)			19				21
			SPT 9	100 (100)	17-20-25 (45)			18				29
40		(SP-SM) Poorly Graded Sand w/ Silt, Dense to Very Dense	SPT 10	100 (100)	16-23-23 (46)			18				7
		(CH) Fat Clay, Brown, Moist, Hard	SPT 11	100 (100)	25-28-33 (61)			20				7
50			SPT 12	100 (100)	13-13-19 (32)			16	61	26	35	87
			SPT 13	100 (100)	26-30-35 (65)			17				90
60		(CL) Lean Clay, Brown, Moist, Stiff to Hard	SH 14	100 (100)		1.0		20	38	9	29	87

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Geotechnical Engineering

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Telephone: 956-565-0760

BORING NUMBER BH-025

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Brown, Moist, Stiff to Hard *(continued)*	SH 15	100 (100)		2.5		18				88
70		(CH) Fat Clay, Brown, Moist, Hard	SPT 16	100 (100)	10-12-14 (26)			24	65	25	40	95
		(SC) Clayey Sand, Brown, Moist, Dense	SPT 17	100 (100)	13-17-22 (39)			17				47
80		(CL) Lean Clay, Brown, Moist, Hard	SPT 18	100 (100)	15-20-23 (43)			19	44	15	29	71
			SH 19	100 (100)		4.5		17				60
90		(CH) Fat Clay, Brown, Moist, Hard	SPT 20	100 (100)	20-25-29 (54)			23	85	30	55	91
			SPT 21	100 (100)	23-30-32 (62)			23				94
100		(CL) Lean Clay, Brown, Moist, Hard	SPT 22	100 (100)	23-28-31 (59)			27	30	20	10	89
			SPT 23	100 (100)	26-30-33 (63)			21				86
110		(ML) Sandy Silt, Brown, Moist, Hard	SPT 24	100 (100)	29-25-31 (56)			24	32	26	6	79
		(CL) Lean Clay, Brown, Moist, Hard	SPT 25	100 (100)	32-29-31 (60)			18				82
120			SPT 26	100 (100)	35-31-36 (67)			21	34	21	13	97

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-028

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 74.23 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 54.23 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 40' / Mud Rotary to 60'
AFTER DRILLING 29.00 ft / Elev 45.23 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Brown, Moist, Soft to Very Stiff	SPT 1	100 (100)	3-4-4 (8)			19	79	27	52	
		SPT 2	100 (100)	3-5-6 (11)			17				77
		SPT 3	100 (100)	4-6-6 (12)			15	70	25	45	77
10		SH 4	100 (100)		2.0		16	67	21	46	
		SH 5	100 (100)		2.5		19				81
20		SH 6	100 (100)		2.0		15	74	24	50	
		SH 7	100 (100)		3.0		13				86
30		SH 8	100 (100)		4.0		15	63	23	40	
	(CL) Lean Clay. Tan, Very Moist to Moist, Soft	SPT 9	100 (100)	3-3-4 (7)			16	26	17	9	51
	(SC) Clayey Sand, Light Brown, Moist, Loose										
40		SPT 10	100 (100)	4-5-4 (9)			14				44
	(SP-SC) Poorly Graded Sand with Clay, Tan, Moist, Loose to Dense	SPT 11	100 (100)	16-19-24 (43)			17				8
50		SPT 12	100 (100)	18-22-28 (50)			20				10
		SPT 13	100 (100)	19-25-29 (54)			18				10
60		SPT 14	100 (100)	21-26-31 (57)			19				10

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-029

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/23/09 **COMPLETED** 4/23/09
GROUND ELEVATION 74.14 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 14.00 ft / Elev 60.14 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 37' / Mud Rotary to 120'
AFTER DRILLING 29.00 ft / Elev 45.14 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(SC) Clayey Sand w/ Calc. Nodules, Moist, Medium Dense	SPT 1	100 (100)	4-5-6 (11)			7	58	11	47	36
	(CH) Fat Clay, Dark Brown, Moist, Stiff to Firm	SPT 2	100 (100)	4-5-8 (13)			10				73
		SH 3	100 (100)		3.25		19	69	17	52	75
10		SH 4	100 (100)		3.5		16				83
		SH 5	100 (100)		4.25		14	62	23	39	80
20		SH 6	100 (100)		1.5		19	78	26	52	79
	(SC) Clayey Sand w/ Calc. Nodules, Light Brown, Moist, Medium Dense	SH 7	100 (100)		1.75		14				46
30		SH 8	100 (100)		1.25		14	33	15	18	48
	(SC) Clayey Sand, Brown, Very Moist, Loose to Medium Dense	SPT 9	100 (100)	3-5-5 (10)			17				15
40		SPT 10	100 (100)	6-7-9 (16)			20				34
	(SP-SM) Poorly Graded Sand w/ Silt, Brown, Medium Dense to Dense	SPT 11	100 (100)	12-18-9 (27)			20				7
50		SPT 12	100 (100)	17-18-18 (36)			22				9
	(SC) Clayey Sand, Brown, Very Moist, Dense	SPT 13	100 (100)	13-18-19 (37)			17				26
	(CL) Lean Clay, Brown, Moist, Stiff										
60		SPT 14	100 (100)	7-8-10 (18)			17	44	20	24	76

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BORING NUMBER BH-029

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Brown, Moist, Stiff *(continued)*										
			SPT 15	100 (100)	11-13-13 (26)			18				71
		(CL-ML) Sandy Silty Clay, Brown, Very Moist, Dense										
70			SPT 16	100 (100)	12-16-16 (32)			19	25	20	5	90
		(SC) Clayey Sand, Brown, Very Moist, Dense										
			SPT 17	100 (100)	18-21-22 (43)			20				20
80			SPT 18	100 (100)	16-18-18 (36)			21				33
			SPT 19	100 (100)	15-20-26 (46)			22				41
		(CL) Lean Clay w/alc. Nodules, Brown, Moist, Firm										
90			SPT 20	100 (100)	8-11-13 (24)			13	34	12	22	52
			SPT 21	100 (100)	11-12-15 (27)			15	33	11	22	65
		(SC) Clayey Sand, Brown, Very Moist, Dense to Very Dense										
100			SPT 22	100 (100)	9-13-19 (32)			19				26
			SPT 22	100 (100)	16-46-41 (87)			21				23
110			SPT 23	100 (100)	18-31-37 (68)			19				24
		(CH) Fat Clay, Brown, Moist, Hard										
			SPT 24	100 (100)	18-21-28 (49)			15	62	20	42	98
120			SPT 25	100 (100)	21-22-27 (49)			15	64	19	45	95

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-031

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/18/09 **COMPLETED** 4/18/09
GROUND ELEVATION 72.87 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 52.87 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 21.00 ft / Elev 51.87 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 5"										
		No Sampling Performed 0-10' Below Top Elevation of Levee										
10		(CL) Lean Clay, Silty, Dark Brown, Moist, Soft										
			SH 1	100 (100)		1.0		14	30	15	15	
		(CL) Lean Clay, Silty, Brown, Moist, Very Soft										
20			SH 2	100 (100)		0.0		24	26	13	13	57
		(SC) Clayey Sand, Brown, Very Moist, Medium Dense										
			SPT 3	100 (100)	4-5-6 (11)			23				19
30			SPT 4	100 (100)	9-10-11 (21)			22				16
			SPT 5	100 (100)	8-11-14 (25)			19				13
40		(SP-SC) Poorly Graded Sand w/ Clay, brown, Wet, Very Dense	SPT 6	100 (100)	19-29-33 (62)			19				10
		(SC) Clayey Sand, Brown, Moist, Medium Dense	SPT 7	100 (100)	9-10-1 (11)			20				21
50			SPT 8	100 (100)	14-10-10 (20)			23				
		(CL) Lean Clay, Greyish Brown, Moist, Stiff to Firm										
			SPT 9	100 (100)	7-7-11 (18)			40				74
60			SPT 10	100 (100)	8-10-1 (11)			13				76

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
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BORING NUMBER BH-033

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/23/09 **COMPLETED** 4/23/09
GROUND ELEVATION 70.96 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 51.96 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 40' / Mud Rotary to 120'
AFTER DRILLING 22.00 ft / Elev 48.96 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Reddish Brown, Dry to Moist, Firm to Soft	SPT 1	100 (100)	3-4-6 (10)			19	60	18	42	81
		SPT 2	100 (100)	4-6-7 (13)			12				72
		SPT 3	100 (100)	3-3-4 (7)			9	70	22	48	54
10	(CH) Fat Clay, Reddish Brown, Dry to Moist, Firm to Stiff	SPT 4	100 (100)	4-5-5 (10)			14				69
		SPT 5	100 (100)	4-5-6 (11)			18	75	20	55	65
20		SH 6	100 (100)		1.0		22				73
		SH 7	100 (100)		2.5		21	72	19	53	69
30		SH 8	100 (100)		2.5		20				76
	(SC) Clayey Sand, Reddish Brown, Moist, Medium Dense	SPT 9	100 (100)	9-11-15 (26)			22				39
40	(SP-SC) Poorly Graded Sand w/ Clay, Reddish Brown, Very Moist, Medium Dense	SPT 10	100 (100)	12-14-17 (31)			19				12
	(CH) Fat Clay, Reddish Brown, Moist, Hard to Stiff	SPT 11	100 (100)	14-16-18 (34)			22	63	22	41	90
50		SPT 12	100 (100)	12-18-20 (38)			22				88
		SPT 13	100 (100)	8-13-16 (29)			35	60	20	40	74
60	(CL) Lean Clay, Reddish Brown, Moist, Stiff	SPT 14	100 (100)	7-9-11 (20)			19	35	17	18	71

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BORING NUMBER BH-033

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Reddish Brown, Moist, Stiff *(continued)*										
			SPT 15	100 (100)	8-9-12 (21)			20	30	16	14	68
		(SC) Clayey Sand, Brown, Wet, Dense to Very Dense										
70			SPT 16	100 (100)	14-19-20 (39)			20				20
			SPT 17	100 (100)	18-19-21 (40)			19				25
80			SPT 18	100 (100)	20-28-32 (60)			25				19
			SPT 19	100 (100)	21-27-32 (59)			22				29
90			SPT 20	100 (100)	23-21-31 (52)			23				24
			SPT 21	100 (100)	21-31-34 (65)			22				15
100			SPT 22	100 (100)	22-24-28 (52)			23				25
		(CH) Fat Clay, Brown, Moist, Hard										
			SPT 23	100 (100)	13-18-21 (39)			19	73	23	50	71
110			SPT 24	100 (100)	24-31-36 (67)			17	56	21	35	76
			SPT 25	100 (100)	26-33-35 (68)			16				68
120		(CL) Lean Clay, Brown, Moist, Hard	SPT 26	100 (100)	29-36-44 (80)			15	46	17	29	97

Bottom of borehole at 120.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-035

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/24/09 **COMPLETED** 4/24/09
GROUND ELEVATION 70.49 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 17.00 ft / Elev 53.49 ft
LOGGED BY Chris Trevino **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 26' / Mud Rotary to 60'
AFTER DRILLING 17.00 ft / Elev 53.49 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 6"										
		No Sampling Performed 0-10' Below Top Elevation of Levee										
10												
		(CL) Lean Clay w/ Calc. Nodules, Reddish Brown, Moist, Stiff to Firm	SH 1	100 (100)		2.5		20				44
20			SH 2	100 (100)		3.0		19	41	15	26	
			SPT 3	100 (100)	4-4-11 (15)			21				42
		(SC) Clayey Sand, Reddish Brown, Wey, Medium Dense										
30			SPT 4	100 (100)	5-10-11 (21)			25				22
			SPT 5	100 (100)	5-7-4 (11)			25				16
		(SP-SC) Poorly Graded Sand w/ Clay, Reddish Brown, Wet, Dense										
40			SPT 6	100 (100)	9-19-23 (42)			22				8
			SPT 7	100 (100)	9-15-20 (35)			24				
		(CL) Lean Clay, Reddish Brown, Wet, Stiff										
50			SPT 8	100 (100)	8-10-14 (24)			21				72
			SPT 9	100 (100)	10-14-14 (28)			19				68
		(CL) Gravelly Lean Clay w/ Sand, Reddish Brown, Wet, Stiff										
60			SPT 10	100 (100)	7-9-15 (24)			25				65

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-037

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/23/09 **COMPLETED** 4/23/09
GROUND ELEVATION 70.15 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger/ Mud Rotary
AT TIME OF DRILLING 28.00 ft / Elev 42.15 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 35' / Mud Rotary to 120'
AFTER DRILLING 19.00 ft / Elev 51.15 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay w/ Calc. Nodules, Brown, Dry, Soft to Firm	SPT 1	100 (100)	4-4-3 (7)			12	41	15	26	66
		SPT 2	100 (100)	4-4-5 (9)			13				51
	(CH) Fat Clay, Reddish Brown, Moist, Hard to Firm	SH 3	100 (100)		4.5		15	53	17	36	61
10		SH 4	100 (100)		4.5		10				58
		SPT 5	100 (100)	4-5-7 (12)			23	60	24	36	70
	(CL) Lean Clay, Reddish Brown, Moist, Hard										
20		SH 6	100 (100)		2.5		17				78
		SH 7	100 (100)		2.0		18	40	16	24	76
	(SC) Clayey Sand, Dark Brown, Very Moist, Medium Dense										
30		SPT 8	100 (100)	4-9-8 (17)			21				15
	(SP-SC) Poorly Graded Sand w/ Clay, Very Moist, Medium Dense	SPT 9	100 (100)	9-10-13 (23)			21				9
	(SC) Clayey Sand, Dark Brown, Very Moist, Dense										
40		SPT 10	100 (100)	10-20-26 (46)			17				17
	(SP-SC) Poorly Graded Sand w/ Clay, Very Moist, Dense	SPT 11	100 (100)	15-29-21 (50)			19				11
	(CH) Fat Clay, Brown, Moist, Firm to Hard										
50		SPT 12	100 (100)	3-10-13 (23)			35	68	18	50	
		SPT 13	100 (100)	12-15-21 (36)			27				82
	(ML) Sandy Silt, Brown, Moist, Hard										
60		SPT 14	100 (100)	11-14-21 (35)			20	21	19	2	87

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L&G Engineering Laboratory
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BORING NUMBER BH-037

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Moist, Dense										
			SPT 15	100 (100)	7-13-18 (31)			23				49
		(CL) Lean Clay, Brown, Moist, Hard										
70			SPT 16	100 (100)	23-24-29 (53)			25	26	17	9	63
		(SC) Clayey Sand, Brown, Moist, Dense	SPT 17	100 (100)	16-19-26 (45)			23				35
		(CH) Fat Clay, Brown, Moist, Hard to Stiff										
80			SPT 18	100 (100)	12-21-17 (38)			18	54	19	35	81
			SPT 19	100 (100)	13-18-25 (43)			25				83
90			SPT 20	100 (100)	12-18-28 (46)			22	63	24	39	75
			SPT 21	100 (100)	9-10-13 (23)			17				64
		(CH) Fat Clay, Brown, Moist, Hard										
100			SPT 22	100 (100)	10-12-18 (30)			19				63
			SPT 23	100 (100)	15-17-19 (36)			20				83
110			SPT 24	100 (100)	20-21-31 (52)			19				95
			SPT 25	100 (100)	18-23-27 (50)			23				98
120			SPT 26	100 (100)	16-21-24 (45)			21				86

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-038

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 70.41 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 51.41 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 45' / Mud Rotary to 60'
AFTER DRILLING 20.00 ft / Elev 50.41 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche Base, 3"										
		No Sampling Performed 0-13' Below Top of Levee Elevation										
10												
		(CH) Fat Clay, Brown, Moist, Hard to Stiff	SH 1	100 (100)		3.5		12	59	23	36	
20			SH 2	100 (100)		3.0		15	63	28	35	76
			SH 3	100 (100)		2.0		12	60	39	21	
30			SH 4	100 (100)		1.5		13				62
		(CL) Lean Clay, Reddish Brown, Moist, Stiff	SH 5	100 (100)		1.5		17	37	17	20	
40		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Dense to Very Dense	SPT 6	100 (100)	10-13-18 (31)			19				10
		(SC) Clayey Sand, Brown, Very Moist, Dense	SPT 7	100 (100)	13-17-21 (38)			21				13
50		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Very Dense to Dense	SPT 8	100 (100)	14-21-27 (48)			20				8
		(SC) Clayey Sand, Brown, Very Moist, Very Dense	SPT 9	100 (100)	17-24-30 (54)			16				19
60		(SP) Poorly Graded Sand, Brown, Moist, Very Dense	SPT 10	100 (100)	15-22-28 (50)			20				5

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-041

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/24/09 **COMPLETED** 4/24/09
GROUND ELEVATION 69.81 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 50.81 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 102.00 ft / Elev -32.19 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay w/ Caliche, Reddish Brown, Dry, Firm to Soft	SPT 1	100 (100)	5-7-9 (16)			12				58
		SPT 2	100 (100)	2-3-4 (7)			11	69	23	46	52
		SPT 3	100 (100)	2-3-4 (7)			13				93
10		SPT 4	100 (100)	5-3-3 (6)			14	54	20	34	77
	(SC) Clayey Sand, Reddish Brown, Dry, Dense	SH 5	100 (100)		2.5		24				45
20	(CL) Lean Clay, Reddish Brown, Dry, Soft	SH 6	100 (100)		0.5		19	31	15	16	50
	(SC) Clayey Sand, Brown, Wet, Medium Dense	SPT 7	100 (100)	2-13-2 (15)			20				41
30	(SP-SC) Poorly Graded Sand w/ Clay, Dark Brown, Very Moist, Medium Dense to Very Dense	SPT 8	100 (100)	9-9-12 (21)			22				7
		SPT 9	100 (100)	11-18-17 (35)			21				6
40		SPT 10	100 (100)	20-24-28 (52)			21				11
		SPT 11	100 (100)	24-26-29 (55)			23				5
50	(CH) Fat Clay, Brown, Moist, Hard	SH 12	100 (100)		3.5		20	54	17	37	84
	(CL) Lean Clay, Reddish Brown, Moist, Hard	SH 13	100 (100)		3.0		19	46	21	25	84
60		SPT 14	100 (100)	14-12-21 (33)			24				88

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BORING NUMBER BH-041

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Reddish Brown, Moist, Hard *(continued)*	SPT 15	100 (100)	17-25-26 (51)			22	28	19	9	52
70		(SC) Clayey Sand, Reddish Brown, Wet, Very Dense	SPT 16	100 (100)	36-38-31 (69)			25				45
		(CH) Fat Clay, Reddish Brown, Wet, Hard	SPT 17	100 (100)	37-37-40 (77)			26	75	17	58	98
80		(CL) Lean Clay, Light Brown, Moist, Hard	SPT 18	100 (100)	13-15-17 (32)			15	32	12	20	63
			SPT 19	100 (100)	21-24-29 (53)			16	44	14	30	61
90		(SC) Clayey Sand, Light Brown, Wet, Very Dense	SPT 20	100 (100)	30-30-42 (72)			22				15
			SPT 21	100 (100)	33-35-41 (76)			21				13
100			SPT 22	100 (100)	49-50-50 (100)			23				27
		(SC) Clayey Sand w/ Gravel, Light Brown, Very Moist, Very Dense	SPT 23	100 (100)	50-50-50 (100)			9				46
110		(CH) Fat Clay w/ Sand, Light Brown, Hard	SPT 24	100 (100)	50-45-48 (93)			17				55
		(CH) Fat Clay, Brown, Moist, Hard	SPT 25	100 (100)	50-50-49 (99)			21	59	21	38	93
120		(CL) Lean Clay, Brown, Moist, Hard	SPT 26	100 (100)	24-31-36 (67)			19	42	18	24	96

Bottom of borehole at 120.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-043

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/24/09 **COMPLETED** 4/24/09
GROUND ELEVATION 70.48 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 51.48 ft
LOGGED BY Chris Trevino **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 26' / Mud Rotary to 60'
AFTER DRILLING 19.00 ft / Elev 51.48 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 5"										
		No Sampling Performed 0-10' Below Top Elevation of Levee										
10		(CL) Lean Clay, Sandy w/ Calc. Nodules, Brown, Moist,Stiff to Firm										
			SH 1	100 (100)		2.0		18	41	19	22	
20			SH 2	100 (100)		1.5		22				60
			SPT 3	100 (100)	3-4-6 (10)			19	28	14	14	
		(SC) Clayey Sand, Brown, Wet, Medium Dense to Dense										
30			SPT 4	100 (100)	6-9-12 (21)			24				30
			SPT 5	100 (100)	10-12-11 (23)			23				14
40			SPT 6	100 (100)	11-22-27 (49)			22				23
		(CH) Fat Clay, Sandy, Reddish Brown, Moist ,Stiff										
			SPT 7	100 (100)	8-9-11 (20)			30	74	31	43	
50			SPT 8	100 (100)	8-9-12 (21)			23				78
			SPT 9	100 (100)	8-12-14 (26)			21	63	17	46	
60			SPT 10	100 (100)	10-10-12 (22)			24				82

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
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2100 W. Expressway 83
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BORING NUMBER BH-045

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/24/09 **COMPLETED** 4/24/09
GROUND ELEVATION 69.78 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 50.78 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 120'
AFTER DRILLING 73.00 ft / Elev -3.22 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Brown, Moist, Soft	SPT 1	100 (100)	3-2-2 (4)			10	32	14	18	59
		SPT 2	100 (100)	2-2-3 (5)			12				67
	(SC) Clayey Sand, Brown, Moist, Very Loose	SPT 3	100 (100)	1-2-2 (4)			13	34	16	18	48
10	(CL) Lean Clay, Brown, Moist, Soft	SPT 4	100 (100)	2-2-3 (5)			17				68
		SPT 5	100 (100)	3-3-5 (8)			16	31	14	17	56
	(CL) Lean Clay w/ Sand, Brown, Very Moist, Firm										
20		SPT 6	100 (100)	3-4-5 (9)			21				54
	(SC) Clayey Sand, Dark Brown, Wet, Medium Dense to Dense	SPT 7	100 (100)	5-6-7 (13)			25				38
30		SPT 8	100 (100)	6-7-9 (16)			26				28
		SPT 9	100 (100)	7-9-11 (20)			27				18
40		SPT 10	100 (100)	12-18-20 (38)			23				13
	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Wet, Dense	SPT 11	100 (100)	14-16-23 (39)			25				10
	(CH) Fat Clay, Brown, Moist, Stiff										
50		SPT 12	100 (100)	9-9-12 (21)			21	52	19	33	84
		SPT 13	100 (100)	10-12-15 (27)			22				86
	(CL) Lean Clay, Brown, Moist, Firm										
60		SPT 14	100 (100)	5-6-6 (12)			23	42	19	23	96

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BORING NUMBER BH-045

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Brown, Moist, Firm *(continued)*										
			SPT 15	100 (100)	6-8-9 (17)			22				83
		(CH) Fat Clay, Brown, Moist, Hard										
70			SPT 16	100 (100)	10-13-19 (32)			27	86	35	51	96
			SPT 17	100 (100)	12-16-21 (37)			27				96
		(CL) Lean Clay, Brown, Moist, Stiff										
80			SPT 18	100 (100)	4-5-7 (12)			18	32	13	19	53
		(SC) Clayey Sand, Brown, Moist, Medium Dense	SPT 19	100 (100)	6-6-9 (15)			18				49
		(CL) Lean Clay, Brown, Moist, Stiff										
90			SPT 20	100 (100)	6-11-12 (23)			32	41	18	23	68
		(SC) Clayey Sand, Brown, Moist, Very Dense										
			SPT 21	100 (100)	5-8-10 (18)			15	25	12	13	47
100			SPT 22	100 (100)	31-37-40 (77)			22				14
			SPT 23	100 (100)	34-41-50 (91)			21				27
110			SPT 24	100 (100)	38-47-50 (97)			21				25
			SPT 25	100 (100)	40-45-50 (95)			22				12
120			SPT 26	100 (100)	45-50-50 (100)			19				16

Bottom of borehole at 120.0 feet.

L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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BORING NUMBER BH-048

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 69.81 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 21.00 ft / Elev 48.81 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 60'
AFTER DRILLING 28.00 ft / Elev 41.81 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 5"										
		No Sampling Performed 0-13' below top of Levee Elevation										
10												
		(CH) Fat Clay, Brown, Moist, Soft to Firm	SPT 1	100 (100)	4-3-2 (5)			9	56	22	34	
20			SPT 2	100 (100)	6-6-5 (11)			10				65
		(CL) Lean Clay, Reddish Brown, Wet, Stiff	SH 3	100 (100)		1.0		15	27	19	8	
30		(SC) Clayey Sand, Reddish Brown, Wet, Medium Dense	SPT 4	100 (100)	8-8-9 (17)			21				29
		(SM) Silty Sand, Brown, Very Moist, Dense	SPT 5	100 (100)	15-19-17 (36)			19				14
40			SPT 6	100 (100)	15-21-28 (49)			18				25
		(CH) Fat Clay, Reddish Brown, Moist, Hard	SH 7	100 (100)		4.0		14				97
50			SH 8	100 (100)		4.5		14	50	20	30	
			SH 9	100 (100)		4.5		16				91
60		(CL-ML) Silty Sandy Clay, Tan, Very Moist, Hard	SPT 10	100 (100)	15-31-33 (64)			20	24	20	4	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-049

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/25/09 **COMPLETED** 4/25/09
GROUND ELEVATION 69.46 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 18.00 ft / Elev 51.46 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING --- 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 5"										
		No Sampling Performed 0-10' Below Top Elevation of Levee										
10												
		(CH) Fat Clay, Dark Brown, Moist, Hard	SH 1	100 (100)		2.5		18	59	20	39	64
		(CL) Lean Clay, Light Brown, Moist, Stiff										
20			SH 2	100 (100)		1.0		19	43	15	28	69
			SH 3	100 (100)		2.0		20	31	14	17	66
30			SPT 4	100 (100)	5-10-13 (23)			20	26	16	10	56
		(SC) Clayey Sand, Brown, Moist, Medium Dense	SPT 5	100 (100)	7-9-13 (22)			15				31
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Very Dense										
40			SPT 6	100 (100)	18-26-33 (59)			21				9
			SPT 7	100 (100)	31-35-39 (74)			24				9
		(CL) Lean Clay w/ Silt, Brown, Moist to Wet, Hard										
50			SH 8	100 (100)		4.5+		18				85
			SH 9	100 (100)		4.5		30				86
60			SPT 10	100 (100)	17-21-33 (54)			23				78
		(SC) Clayey Sand, Brown, Wet, Very Dense										

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BORING NUMBER BH-049

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Wet, Very Dense *(continued)*	SPT 11	100 (100)	21-24-29 (53)			22				32
		(CH) Fat Clay, Brown, Moist, Hard										
70			SH 12	100 (100)		4.5+		22				75
			SH 13	100 (100)		4.5+		18				74
		(SC) Clayey Sand, Light Brown, Very Moist, Very Dense										
80			SPT 14	100 (100)	35-41-42 (83)			15				46
			SPT 15	100 (100)	30-36-44 (80)			14				42
		(SC) Clayey Sand, Brown, Wet, Very Dense										
90			SPT 16	100 (100)	34-36-39 (75)			21				29
			SPT 17	100 (100)	41-40-45 (85)			22				21
100			SPT 18	100 (100)	38-33-48 (81)			23				15
			SPT 19	100 (100)	41-48-50 (98)			19				32
110			SPT 20	100 (100)	50-50-50 (100)			21				16
			SPT 21	100 (100)	48-50-51 (101)			31				18
		(CL-ML) Lean Clay w/ Silt, Light Brown, Very Moist, Hard										
120			SPT 22	100 (100)	28-44-41 (85)			22				81

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-052

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 69.18 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 17.00 ft / Elev 52.18 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 36' / Mud Rotary to 60'
AFTER DRILLING 28.00 ft / Elev 41.18 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 6"										
		No Sampling Performed 0-13' Below Top Elevation of Levee										
10												
		(CH) Fat Clay, Brown, Moist, Hard	SH 1	100 (100)		2.5		13	57	18	39	
20			SH 2	100 (100)		2.5		12				90
		(CL) Lean Clay, Slightly Sandy, Brown, Very Moist	SH 3	100 (100)		2.25		13				73
30			SH 4	100 (100)		2.5		10	35	15	20	
		(SP-SM) Poorly Graded Sand w/ Silt, Brown, Moist Medium Dense to Very Dense	SPT 5	100 (100)	6-8-7 (15)			17				9
40			SPT 6	100 (100)	5-7-10 (17)			19				7
			SPT 7	100 (100)	12-22-28 (50)			17				5
50			SPT 8	100 (100)	13-23-26 (49)			17				10
		(CL) Lean Clay, Slightly Sandy, Brown, Moist, Stiff	SPT 9	100 (100)	12-9-13 (22)			8	43	18	25	
60			SPT 10	100 (100)	15-10-11 (21)			9				73

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-053

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/28/09 **COMPLETED** 4/28/09
GROUND ELEVATION 68.94 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 48.94 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 20.00 ft / Elev 48.94 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		No Sampling Performed 0-10' Below Top Elevation of Levee										
10		(CH) Fat Clay, Brown, Moist, Soft	SPT 1	100 (100)	3-4-4 (8)			16	53	16	37	84
		(CL) Lean Clay, Brown, Very Moist, Soft										
20			SPT 2	100 (100)	2-2-2 (4)			19	46	15	31	80
			SPT 3	100 (100)	2-2-4 (6)			20	25	15	10	76
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Medium Dense										
30			SPT 4	100 (100)	5-13-14 (27)			23				12
			SPT 5	100 (100)	6-9-9 (18)			22				11
		(SC) Clayey Sand, Brown, Very Moist, Medium Dense										
40			SPT 6	100 (100)	14-14-14 (28)			22				18
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Dense										
			SPT 7	100 (100)	23-21-26 (47)			23				8
		(CH) Fat Clay, Brown, Moist, Stiff										
50			SPT 8	100 (100)	8-10-15 (25)			17	51	16	35	88
		(CL) Lean Clay, Brown, Moist to Wet, Stiff										
			SPT 9	100 (100)	8-12-14 (26)			18	48	16	32	91
60			SPT 10	100 (100)	6-7-14 (21)			27				52

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BORING NUMBER BH-053

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Very Moist, Dense to Very Dense										
			SPT 11	100 (100)	7-13-27 (40)			20				45
70												
			SPT 12	100 (100)	19-27-29 (56)			23				22
		(CL) Lean Clay, Brown, Very Moist, Hard										
80			SPT 13	100 (100)	21-26-31 (57)			22				51
			SPT 14	100 (100)	14-16-20 (36)			17	36	15	21	59
		(SC) Clayey Sand, Brown, Very Moist, Dense										
90			SPT 15	100 (100)	17-18-21 (39)			23				38
		(SP-SC) Poorly Graded Sand w/ Clay, Very Moist, Dense										
			SPT 16	100 (100)	19-22-24 (46)			19				11
		(SC) Clayey Sand, Brown, Moist, Very Dense										
100			SPT 17	100 (100)	23-27-30 (57)			20				16
			SPT 18	100 (100)	18-23-25 (48)			20	41	15	26	42
110		(CL) Lean Clay, Brown, Very Moist, Hard	SPT 19	100 (100)	20-26-28 (54)			22	25	16	9	72
		(SC) Clayey Sand, Brown, Very Moist, Very Dense										
			SPT 20	100 (100)	24-29-32 (61)			25				15
120		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Very Dense	SPT 21	100 (100)	27-33-36 (69)			21				11

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-055

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/2/09 **COMPLETED** 5/2/09
GROUND ELEVATION 69.66 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jordan Drilling, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 30.00 ft / Elev 39.66 ft
LOGGED BY J. Holmes **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 60'
AFTER DRILLING 7.00 ft / Elev 62.66 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay w/ Calc. Nodules, Brown, Moist, Soft	SPT 1	100 (100)	4-2-1 (3)			8	35	13	22	
			SPT 2	100 (100)	2-2-3 (5)			12	31	13	18	50
			SPT 3	100 (100)	2-2-2 (4)			8	35	15	20	
10			SPT 4	100 (100)	2-2-2 (4)			11				50
			SH 5	100 (100)		1.0		9	45	16	29	
		(SC) Clayey Sand, Brown, Moist to Wet, Loose to Medium Dense										
20			SPT 6	100 (100)	3-2-4 (6)			21	21	8	13	45
			SPT 7	100 (100)	2-4-7 (11)			19				33
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Very Dense										
30			SPT 8	100 (100)	20-23-32 (55)			21				9
		(SC) Clayey Sand, Brown, Moist, Very Dense										
			SPT 9	100 (100)	29-39-44 (83)			14				17
40			SPT 10	100 (100)	19-32-45 (77)			21				24
			SPT 11	100 (100)	4-45-50 (95)			18				19
		(CH) Fat Clay, Brown, Moist, Hard										
50			SPT 12	100 (100)	30-30-42 (72)			15	61	26	35	88
			SPT 13	100 (100)	17-21-24 (45)			14	50	16	34	
60			SPT 14	100 (100)	26-29-33 (62)			16				85

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-057

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/29/09 **COMPLETED** 4/29/09
GROUND ELEVATION 69.59 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 15.00 ft / Elev 54.59 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 120'
AFTER DRILLING 26.00 ft / Elev 43.59 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay w/ Calc. Nodules, Dry, Firm	SPT 1	100 (100)	5-5-4 (9)			8	26	11	15	66
		(CL) Lean Clay, Brown, Moist, Soft to Stiff	SPT 2	100 (100)	2-2-3 (5)			11				66
			SPT 3	100 (100)	1-3-3 (6)			13	21	10	11	66
10			SPT 4	100 (100)	2-3-4 (7)			13				71
			SH 5	100 (100)		2.0		16	33	10	23	69
20			SH 6	100 (100)		1.0		18	33	16	17	69
		(SC-SM) Silty Calyey Sand, Brown, Wet, Medium Dense	SPT 7	100 (100)	5-7-9 (16)			24				48
		(CL) Lean Clay w/ Calc. Nodules, Light Brown, Moist, Stiff										
30			SPT 8	100 (100)	9-9-11 (20)			19	22	13	9	60
		(SC-SM) Silty Clayey Sand, Brown, Moist, Medium Dense	SPT 9	100 (100)	10-12-13 (25)			17	20	10	10	42
		(SM) Silty Sand, Brown, Wet, Dense										
40			SPT 10	100 (100)	14-16-17 (33)			24				17
		(CL) Lean Clay, Brown, Moist, Stiff to Hard	SPT 11	100 (100)	12-17-19 (36)			17	40	10	30	69
50			SPT 12	100 (100)	7-11-13 (24)			19				86
		(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 13	100 (100)	9-9-12 (21)			22	52	20	32	84
60			SPT 14	100 (100)	18-24-27 (51)			23				77

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BORING NUMBER BH-057

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SM) Silty Sand, Brown, Moist, Very Dense										
			SPT 15	100 (100)	21-26-30 (56)			22				19
		(CL) Sandy Lean Clay, Brown, Moist, Hard										
70			SPT 16	100 (100)	10-14-17 (31)			13	47	19	28	60
		(CH) Fat Clay, Greyish Brown, Moist, Stiff										
			SPT 17	100 (100)	9-9-13 (22)			15	71	18	53	86
80			SPT 18	100 (100)	6-6-10 (16)			17				66
		(CL) Lean Clay, Brown, Moist, Stiff										
			SPT 19	100 (100)	8-9-12 (21)			16	38	14	24	67
		(SC) Clayey Sand Light Brown, Wet, Hard										
90			SPT 20	100 (100)	15-20-26 (46)			19				34
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Dense										
			SPT 21	100 (100)	16-22-30 (52)			23				9
		(SC) Clayey Sand, Brown, Very Moist, Very Dense										
100			SPT 22	100 (100)	26-28-29 (57)			20				40
			SPT 23	100 (100)	22-30-33 (63)			20				21
110			SPT 24	100 (100)	24-33-41 (74)			20				39
			SPT 25	100 (100)	35-41-43 (84)			18				32
120		(CL) Sandy Lean Clay, Brown, Moist, Hard	SPT 26	100 (100)	41-38-44 (82)			24				60

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-058

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 69.57 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 16.00 ft / Elev 53.57 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 60'
AFTER DRILLING 20.00 ft / Elev 49.57 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Slightly Silty, Brown, Dry to Moist, Soft to Hard	SPT 1	100 (100)	4-4-4 (8)			7	37	16	21	
			SPT 2	100 (100)	1-1-2 (3)			6				57
			SPT 3	100 (100)	1-1-2 (3)			8	35	14	21	
10			SPT 4	100 (100)	2-2-1 (3)			11				76
			SPT 5	100 (100)	16-20-19 (39)			18	32	20	12	
20		(CL) Lean Clay, Light Brown, Moist, Stiff	SPT 6	100 (100)	5-7-9 (16)			13				80
			SH 7	100 (100)		2.0		11	47	17	30	
30		(CL) Lean Clay, Light Brown, Moist, Hard	SH 8	100 (100)		3.0		13				51
		(SC) Clayey Sand w/ Cal. Nodules, Tan, Moist to Wet, Dense	SPT 9	100 (100)	12-17-18 (35)			16				39
40		(SC) Clayey Sand w/ Cal. Nodules, Tan, Moist, Very Dense	SPT 10	100 (100)	21-23-26 (49)			21				17
			SPT 11	100 (100)	24-24-27 (51)			19				19
50		(CH) Fat Clay, Tan, Moist, Hard	SH 12	100 (100)		4.5		16	54	22	32	
			SH 13	100 (100)		4.5		10				79
60		(CL) Lean Clay, Tan, Moist, Hard	SH 14	100 (100)		4.0		12	33	21	12	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-061

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/29/09 **COMPLETED** 4/29/09
GROUND ELEVATION 70.24 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 18.00 ft / Elev 52.24 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 18' / Mud Rotary to 120'
AFTER DRILLING 19.00 ft / Elev 51.24 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Brown, Moist, Firm to Stiff	SPT 1	100 (100)	5-7-8 (15)			6	25	10	15	83
		SPT 2	100 (100)	5-4-6 (10)			6				66
		SPT 3	100 (100)	3-5-5 (10)			7	33	10	23	64
10		SPT 4	100 (100)	3-4-5 (9)			14				72
		SPT 5	100 (100)	3-11-13 (24)			18	32	10	22	70
20	(CL) Lean Clay, Brown, Moist, Firm	SPT 6	100 (100)	4-6-7 (13)			16				70
	(CH) Fat Clay, Brown, Moist, Stiff to Hard	SH 7	100 (100)		1.0		13	52	14	38	73
30		SPT 8	100 (100)	11-19-16 (35)			15				61
	(CL-ML) Silty Clay , Brown, Very Moist, Stiff	SPT 9	100 (100)	10-8-9 (17)			12				82
	(SP-SM) Poorly Graded Sand w/ Silt, Brown, Very Moist, Dense										
40		SPT 10	100 (100)	18-18-20 (38)			21				12
	(SC) Clayey Sand, Very Moist, Medium Dense to Very Dense	SPT 11	100 (100)	7-8-10 (18)			16				39
50	(CL) Lean Clay, Brown, Moist, Hard	SPT 12	100 (100)	19-25-29 (54)			20				53
	(SP-SM) Poorly Graded Sand w/ Silt, Brown, Very Moist, Dense	SPT 13	100 (100)	17-17-17 (34)			20				13
60		SPT 14	100 (100)	13-15-19 (34)			21				13
	(SC) Clayey Sand, Brown, Very Moist,Very Dense to Medium Dense										

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L&G Engineering Laboratory
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Geotechnical Engineering

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BORING NUMBER BH-061

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Very Moist,Very Dense to Medium Dense *(continued)*	SPT 15	100 (100)	20-23-27 (50)			19				17
70			SPT 16	100 (100)	6-11-10 (21)			18				49
			SPT 17	100 (100)	12-15-21 (36)			19	26	13	13	49
		(CL) Lean Clay w/ Calc. Nodules, Moist, Stiff to Hard										
80			SPT 18	100 (100)	8-8-10 (18)			16	32	15	17	52
			SPT 19	100 (100)	12-14-19 (33)			16				68
		(CH) Fat Clay, Brown, Moist, Stiff										
90			SPT 20	100 (100)	11-11-18 (29)			17	84	22	62	97
		(SC) Clayey Sand, Brown, Moist, Dense										
			SPT 21	100 (100)	19-18-21 (39)			19				28
		(CH) Fat Clay, Brown, Moist, Hard										
100			SPT 22	100 (100)	14-18-21 (39)			18	62	21	41	
		(SC) Clayey Sand, Brown, Moist, Dense to Medium Dense										
			SPT 23	100 (100)	16-22-25 (47)			16				31
110			SPT 24	100 (100)	6-8-11 (19)			17	36	18	18	31
			SPT 25	100 (100)	11-13-15 (28)			16				30
120			SPT 26	100 (100)	10-12-15 (27)			18	25	10	15	36

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-063

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/3/09 **COMPLETED** 5/3/09
GROUND ELEVATION 70.09 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jordan Drilling, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 50.09 ft
LOGGED BY J. Holmes **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 60'
AFTER DRILLING 39.00 ft / Elev 31.09 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Light Brown, Moist, Hard to Firm										
			SPT 1	100 (100)	15-19-17 (36)			12	48	31	17	
			SPT 2	100 (100)	12-13-20 (33)			11				71
			SH 3	100 (100)		4.5		11	41	15	26	
10			SH 4	100 (100)		4.5		11				
			SH 5	100 (100)		2.5		14	34	16	18	74
20			SPT 6	100 (100)	4-6-8 (14)			17	44	13	31	
			SPT 7	100 (100)	8-9-11 (20)			23				91
		(CH) Fat Clay, Light Brown, Moist, Hard										
30			SPT 8	100 (100)	25-35-49 (84)			22	61	19	42	
			SPT 9	100 (100)	34-33-35 (68)			23				54
		(SC) Clayey Sand, Light Brown, Moist, Medium Dense										
40			SPT 10	100 (100)	28-34-50 (84)			23				35
		(CL) Lean Clay, Light Brown, Moist, Hard										
			SPT 11	100 (100)	37-33-45 (78)			11				56
50			SPT 12	100 (100)	22-27-32 (59)			10	41	30	11	
			SPT 13	100 (100)	46-50-50 (100)			12				76
60			SPT 14	100 (100)	13-18-28 (46)			17	32	12	20	

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-065

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/29/09 **COMPLETED** 4/29/09
GROUND ELEVATION 70.2 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 32.00 ft / Elev 38.20 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 40' / Mud Rotary to 120'
AFTER DRILLING --- 24 hours after drilling

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Brown, Moist, Firm to Hard										
		SPT 1	100 (100)	3-4-5 (9)			9	34	13	21	73
		SPT 2	100 (100)	5-5-4 (9)			12				75
		SPT 3	100 (100)	3-5-5 (10)			8	42	17	25	72
10		SPT 4	100 (100)	3-4-5 (9)			13				75
		SH 5	100 (100)		3.0		13	26	12	14	77
20		SH 6	100 (100)		3.5		14				79
		SH 7	100 (100)		2.5		11	36	15	21	76
	(CL) Lean Clay, Brown, Moist, Firm										
30		SPT 8	100 (100)	4-4-6 (10)			15	34	10	24	79
	(SC) Clayey Sand, Brown, Moist, Medium Dense										
		SPT 9	100 (100)	5-5-7 (12)			17				45
40		SPT 10	100 (100)	7-9-11 (20)			16				42
		SPT 11	100 (100)	10-10-9 (19)			18				14
	(CL) Sandy Lean Clay, Brown, Moist, Firm										
50		SPT 12	100 (100)	7-6-8 (14)			15	22	14	8	53
	(CL) Lean Clay, Brown, Moist, Stiff										
		SPT 13	100 (100)	5-9-8 (17)			18	29	19	10	85
	(CL) Lean Clay, Brown, Moist, Firm										
60		SPT 14	100 (100)	6-6-7 (13)			21				94

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BORING NUMBER BH-065

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand Brown, Moist, Loose to Medium Dense	SPT 15	100 (100)	4-5-5 (10)			15	24	13	11	43
70			SPT 16	100 (100)	6-5-7 (12)			16				47
		(CL) Sandy Lean Clay, Brown, Moist, Firm to Stiff	SPT 17	100 (100)	10-13-12 (25)			12	27	13	14	63
80			SPT 18	100 (100)	12-11-15 (26)			11				51
		(CL) Lean Clay, Brown, Moist, Hard	SPT 19	100 (100)	12-16-20 (36)			21	48	24	24	90
90			SPT 20	100 (100)	14-17-19 (36)			16				98
			SPT 21	100 (100)	13-15-19 (34)			12	29	23	6	95
		(CH) Fat Clay, Brown, Moist, Hard										
100			SPT 22	100 (100)	15-17-22 (39)			10	57	19	38	95
		(CL) Lean Clay ,Brown, Moist, Hard	SPT 23	100 (100)	17-19-23 (42)			12				95
110			SPT 24	100 (100)	19-22-24 (46)			11	38	13	25	88
			SPT 25	100 (100)	21-25-27 (52)			10				99
120			SPT 26	100 (100)	23-23-30 (53)			10	34	14	20	96

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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BORING NUMBER BH-066

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 69.4 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 12.00 ft / Elev 57.40 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 36' / Mud Rotary to 60'
AFTER DRILLING 12.00 ft / Elev 57.40 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Dry, Moist, Firm	SPT 1	100 (100)	6-7-8 (15)			6	62	18	44	
			SPT 2	100 (100)	4-5-7 (12)			6				66
		(CL) Lean Clay, Silty, Brown, Moist, Firm	SPT 3	100 (100)	4-6-7 (13)			10	47	15	32	
10			SPT 4	100 (100)	5-6-7 (13)			12				80
		(CH) Fat Clay, Dark Brown, Moist, Hard	SH 5	100 (100)		2.5		20	54	23	31	
20			SH 6	100 (100)		3.0		14				82
		(CL) Lean Clay, Silty, Brown, Moist, Hard	SH 7	100 (100)		1.75		13	48	17	31	
30			SH 8	100 (100)		4.25		11				75
		(SC) Clayey Sand, Brown, Wet, Medium Dense	SPT 9	100 (100)	3-4-9 (13)			24				23
40		(CL) Lean Clay, Sandy, Brown, Wet, Stiff	SPT 10	100 (100)	10-10-18 (28)			33				62
		(SC) Clayey Sand, Brown, Moist, Medium Dense	SPT 11	100 (100)	9-12-15 (27)			24				48
50		(CH) Fat Clay, Brown, Moist, Stiff	SPT 12	100 (100)	8-10-11 (21)			8	55	24	31	93
			SPT 13	100 (100)	13-8-14 (22)			9				88
60			SPT 14	100 (100)	6-9-14 (23)			11	68	18	50	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
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BORING NUMBER BH-067

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 69.22 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 15.00 ft / Elev 54.22 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 36' / Mud Rotary to 60'
AFTER DRILLING 15.00 ft / Elev 54.22 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Dark Brown, Dry, Firm to Hard	SPT 1	100 (100)	6-6-7 (13)			8	55	18	37	
			SPT 2	100 (100)	3-5-5 (10)			7				59
			SH 3	100 (100)		4.5		12	53	24	29	
10			SH 4	100 (100)		4.5		13	54	19	35	71
			SH 5	100 (100)		4.0		14				
20		(CL) Lean Clay, Light Brown, Moist, Hard to Firm	SH 6	100 (100)		3.5		16	34	20	14	89
			SPT 7	100 (100)	4-4-5 (9)			18				80
30		(CH) Fat Clay Reddish Brown, Moist to Wet, Firm to Soft	SH 8	100 (100)		2.0		19	63	22	41	
			SH 9	100 (100)		1.0		20				52
40		(CH) Fat Clay, Brown, Moist, Firm	SPT 10	100 (100)	12-20-21 (41)			21	71	27	44	
			SH 11	100 (100)		4.5		15				66
50		(CL) Lean Clay, Light Brown, Moist, Firm	SPT 12	100 (100)	3-4-6 (10)			17	24	13	11	
			SH 13	100 (100)		4.0		18				88
60		(CH) Fat Clay, Reddish Brown, Moist, Hard	SH 14	100 (100)		4.5		18	64	21	43	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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BORING NUMBER BH-069

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/30/09 **COMPLETED** 4/30/09
GROUND ELEVATION 69.28 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 50.28 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 27.00 ft / Elev 42.28 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Brown, Dry, Firm	SPT 1	100 (100)	6-6-7 (13)			7	48	22	26	68
	(CH) Fat Clay, Brown, Moist, Firm	SPT 2	100 (100)	6-4-5 (9)			12				82
		SPT 3	100 (100)	4-4-5 (9)			12	56	11	45	79
10	(CH) Fat Clay, Brown, Moist, Soft	SPT 4	100 (100)	3-3-5 (8)			13				78
	(CL) Lean Clay, Reddish Dark Brown, Moist, Firm	SPT 5	100 (100)	2-4-5 (9)			20	44	22	22	80
	(CL) Lean Clay, Light Brown, Moist, Firm										
20		SPT 6	100 (100)	5-7-8 (15)			16				76
		SH 7	100 (100)		2.0		14	46	18	28	68
	(CH) Fat Clay, Light Brown, Moist, Hard to Stiff										
30		SH 8	100 (100)		4.0		20				88
		SH 9	100 (100)		2.5		18	62	21	41	99
	(CL) Lean Clay, Reddish Brown, Very Moist, Stiff										
40		SH 10	100 (100)		3.0		17				98
	(SC) Clayey Sand, Brown, Moist, Loose	SH 11	100 (100)		0.5		16	21	14	7	32
	(CL) Lean Clay, Brown, Moist, Stiff										
50		SPT 12	100 (100)	6-10-11 (21)			18	34	14	20	76
		SPT 13	100 (100)	10-12-16 (28)			17	48	17	31	85
	(SC) Clayey Sand, Brown, Very Moist, Very Dense										
60		SPT 14	100 (100)	23-23-30 (53)			22				35

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L&G Engineering Laboratory
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BORING NUMBER BH-069

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Very Moist, Very Dense *(continued)*	SPT 15	100 (100)	23-30-32 (62)			22				20
		(CH) Fat Clay, Brown, Very Moist, Stiff to Firm										
70			SPT 16	100 (100)	8-10-11 (21)			20	56	24	32	73
			SPT 17	100 (100)	6-6-7 (13)			15				67
		(CL) Lean Clay, Brown, Moist, Hard										
80			SPT 18	100 (100)	10-20-22 (42)			16	43	21	22	86
		(CH) Fat Clay, Brown, Dry to Moist, Hard										
			SPT 19	100 (100)	11-19-25 (44)			17				90
90			SPT 20	100 (100)	19-27-32 (59)			15	50	26	24	96
		(CL) Lean Clay, Light Brown, Moist, Hard										
			SPT 21	100 (100)	13-20-21 (41)			15	49	20	29	92
100			SPT 22	100 (100)	20-23-25 (48)			18	45	24	21	87
			SPT 23	100 (100)	16-21-23 (44)			15				98
110			SPT 24	100 (100)	12-14-17 (31)			18	32	19	13	83
			SPT 25	100 (100)	14-19-21 (40)			23				94
120			SPT 26	100 (100)	16-21-23 (44)			19	32	21	11	97

Bottom of borehole at 120.0 feet.

L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-071

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/5/09 **COMPLETED** 5/5/09
GROUND ELEVATION 68.8 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING --- No Water Encountered
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 17' / Mud Rotary to 60'
AFTER DRILLING 7.00 ft / Elev 61.80 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay w/ Caliche, Brown, Dry, Soft to Firm	SPT 1	100 (100)	2-2-4 (6)			15				81
			SPT 2	100 (100)	4-4-6 (10)			15	54	15	39	
		(SC) Clayey Sand, Dark Brown, Moist, Medium Dense	SPT 3	100 (100)	4-7-10 (17)			13				28
10		(CH) Fat Clay, Dark Brown, Dry to Moist, Firm	SPT 4	100 (100)	5-6-8 (14)			16	51	17	34	
			SPT 5	100 (100)	3-5-7 (12)			22				51
		(CL) Lean Clay, Brown, Dry, Hard										
20			SH 6	100 (100)		3.5		14	35	15	20	
			SH 7	100 (100)		4.5+		14				67
		(CH) Fat Clay, Light Brown, Very Moist, Stiff to Hard										
30			SPT 8	100 (100)	10-10-16 (26)			18				91
			SPT 9	100 (100)	12-15-18 (33)			17	58	18	40	93
		(CL) Lean Clay, Light Brown, Very Moist, Stiff to Hard										
40			SPT 10	100 (100)	9-12-14 (26)			23	23	19	4	
			SPT 11	100 (100)	13-17-21 (38)			21				95
		(CL) Lean Clay, Light Brown, Very Moist, Stiff to Hard										
50			SPT 12	100 (100)	6-8-11 (19)			21	29	13	16	
			SPT 13	100 (100)	9-13-17 (30)			19				86
60			SPT 14	100 (100)	14-19-20 (39)			21	41	14	27	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-073

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/30/09 **COMPLETED** 4/30/09
GROUND ELEVATION 69.4 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering Laboratory
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 49.40 ft
LOGGED BY Ram C. **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 40' / Mud Rotary to 120'
AFTER DRILLING 29.00 ft / Elev 40.40 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand w/ Calc. Nodules, Brown, Moist, Loose	SPT 1	100 (100)	5-5-4 (9)			7	34	15	19	43
			SPT 2	100 (100)	3-3-4 (7)			15				48
			SPT 3	100 (100)	4-2-4 (6)			8	27	15	12	47
10		(CL) Lean Clay, Brown, Moist, Soft to Stiff	SPT 4	100 (100)	2-2-3 (5)			13				53
			SPT 5	100 (100)	8-11-12 (23)			15	33	14	19	55
20			SPT 6	100 (100)	10-13-15 (28)			17				74
			SPT 7	100 (100)	5-6-8 (14)			16	44	14	30	68
30			SPT 8	100 (100)	4-5-7 (12)			17	44	15	29	68
			SPT 9	100 (100)	7-8-9 (17)			20				71
40		(SC) Clayey Sand, Brown, Moist, Medium Dense	SPT 10	100 (100)	9-11-13 (24)			19				48
			SPT 11	100 (100)	11-12-14 (26)			18	49	16	33	43
50		(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 12	100 (100)	10-13-12 (25)			18				87
			SPT 13	100 (100)	13-11-14 (25)			18	57	16	41	91
60			SPT 14	100 (100)	8-11-13 (24)			20				73

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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Telephone: 956-565-0760

BORING NUMBER BH-073

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CH) Fat Clay, Brown, Moist, Stiff to Hard *(continued)*										
			SPT 15	100 (100)	12-14-16 (30)			21	57	22	35	99
70			SPT 16	100 (100)	10-18-17 (35)			24				98
		(CL) Lean Clay, Brown, Moist, Stiff										
			SPT 17	100 (100)	7-12-10 (22)			28	32	14	18	98
80			SPT 18	100 (100)	9-9-13 (22)			18				99
		(CL) Lean Clay w/ Calc. Nodules, Brown, Moist, Stiff										
			SPT 19	100 (100)	9-13-16 (29)			21	64	30	34	50
		(CH) Fat Clay w/ Calc. Nodules, Moist, Hard										
90			SPT 20	100 (100)	11-15-18 (33)			20				99
			SPT 21	100 (100)	12-20-23 (43)			16	57	19	38	99
		(CL) Lean Clay w/ Calc. Nodules, Brown, Moist, Hard										
100			SPT 22	100 (100)	19-24-27 (51)			20	47	17	30	97
			SPT 23	100 (100)	16-14-16 (30)			20				96
110			SPT 24	100 (100)	21-27-22 (49)			20	48	19	29	98
		(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 25	100 (100)	16-22-29 (51)			32				24
120			SPT 26	100 (100)	23-33-37 (70)			27	32	20	12	33

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-076

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 68.29 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 18.00 ft / Elev 50.29 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 33.00 ft / Elev 35.29 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay w/ Cal. Nodules, Tan, Moist to Very Moist, Firm to Hard	SPT 1	100 (100)	6-6-8 (14)			6	52	18	34	
			SPT 2	100 (100)	5-5-7 (12)			9				67
		(CL) Lean Clay, Light Brown, Moist, Firm	SPT 3	100 (100)	3-6-7 (13)			6	47	19	28	
10		(CH) Fat Clay w/ Cal. Nodules, Tan, Very Moist, Firm to Stiff	SPT 4	100 (100)	4-7-8 (15)			11				74
			SH 5	100 (100)		1.5		20	50	17	33	
20			SH 6	100 (100)		3.0		13				80
		(CL) Lean Clay w/ Cal. Nodules, Greyish Tan, Moist, Stiff to Soft	SH 7	100 (100)		1.5		19	41	20	21	
30			SPT 8	100 (100)	4-7-9 (16)			17				73
			SPT 9	100 (100)	4-1-6 (7)			16	28	13	15	
40		(SC) Clayey Sand w/ Cal. Nodules, Reddish Brown, Moist, Firm to Stiff	SPT 10	100 (100)	4-6-8 (14)			14				44
			SPT 11	100 (100)	10-8-8 (16)			13	32	14	18	16
50		(CH) Fat Clay, Slightly Silty, Reddish Brown, Stiff, Moist	SPT 12	100 (100)	3-13-13 (26)			11				87
			SPT 13	100 (100)	9-10-12 (22)			10	68	23	45	
60			SPT 14	100 (100)	8-12-13 (25)			12				

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
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BORING NUMBER BH-077

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/1/09 **COMPLETED** 5/1/09
GROUND ELEVATION 68.45 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 30.00 ft / Elev 38.45 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 120'
AFTER DRILLING 20.00 ft / Elev 48.45 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(ML) Sandy Silt, Brown, Dry, Firm	SPT 1	100 (100)	5-6-8 (14)			8				50
		SPT 2	100 (100)	3-5-5 (10)			13	49	16	33	51
	(CL-ML) Sandy Silty Clay, Brown, Moist, Firm	SPT 3	100 (100)	4-5-5 (10)			11	19	13	6	57
10	(CL) Lean Clay, Light Brown, Moist, Firm to Soft	SPT 4	100 (100)	3-4-5 (9)			14	39	12	27	67
		SPT 5	100 (100)	2-2-3 (5)			16	47	14	33	67
	(CL) Lean Clay, Light Brown, Moist, Firm to Soft										
20		SPT 6	100 (100)	3-4-6 (10)			16				67
		SPT 7	100 (100)	2-2-3 (5)			18	41	17	24	69
	(CL) Lean Clay, Light Brown, Moist, Firm to Stiff										
30		SPT 8	100 (100)	4-6-6 (12)			18				74
		SPT 9	100 (100)	7-8-10 (18)			16	45	16	29	79
40	(SP-SC) Poorly Graded Sand w/ Clay, Light Brown, Very Moist, Medium Dense	SPT 10	100 (100)	11-10-10 (20)			22				11
	(SC) Clayey Sand, Light Brown, Very Moist, Dense	SPT 11	100 (100)	14-16-18 (34)			19				46
50	(CL) Lean Clay, Light Brown, Very Moist, Stiff	SPT 12	100 (100)	7-8-10 (18)			17	41	15	26	87
	(CH) Fat Clay, Light Brown, Very Moist to Moist, Stiff to Hard	SPT 13	100 (100)	11-13-15 (28)			32				85
60		SPT 14	100 (100)	10-12-19 (31)			2	55	19	36	76

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-077

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Light Brown, Moist, Hard to Soft	SPT 15	100 (100)	15-23-28 (51)			26				90
70			SPT 16	100 (100)	2-2-3 (5)			17	27	14	13	97
		(SC) Clayey Sand Light Brown, Moist, Medium Dense	SPT 17	100 (100)	4-8-11 (19)			60				44
80			SPT 18	100 (100)	10-12-18 (30)			18	42	18	24	47
		(CH) Fat Clay, Light Brown, Moist to Very Moist, Hard	SPT 19	100 (100)	12-14-18 (32)			24				98
90			SPT 20	100 (100)	13-16-20 (36)			17	61	19	42	96
			SPT 21	100 (100)	14-16-20 (36)			21				89
100			SPT 22	100 (100)	22-26-29 (55)			19	60	20	40	83
			SPT 23	100 (100)	12-16-18 (34)			23				88
110			SPT 24	100 (100)	10-17-22 (39)			23	50	17	33	89
			SPT 25	100 (100)	13-19-24 (43)			20				98
		(CL-ML) Silty Clay, Light Brown, Very Moist, Hard										
120			SPT 26	100 (100)	18-24-28 (52)			26	25	20	5	92

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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BORING NUMBER BH-079

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/22/09 **COMPLETED** 4/22/09
GROUND ELEVATION 68.24 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 48.24 ft
LOGGED BY E.Leal **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 35' / Mud Rotary to 60'
AFTER DRILLING 40.00 ft / Elev 28.24 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Caliche, 4"										
		No Sampling Performed 0-12' Below Top Elevation of Existing Levee										
10												
		(CH) Fat Clay, Dark Brown, Moist, Firm to Stiff	SPT 1	100 (100)	4-5-7 (12)			16				52
20			SPT 2	100 (100)	4-5-9 (14)			14	56	13	43	
			SPT 3	100 (100)	7-9-11 (20)			11				84
30			SPT 4	100 (100)	9-12-14 (26)			14	55	19	36	
		(CL) Lean Clay, Silty, Reddish Brown, Moist, Stiff to Hard	SPT 5	100 (100)	14-13-16 (29)			15				80
40			SPT 6	100 (100)	12-15-19 (34)			16	32	13	19	
			SPT 7	100 (100)	10-15-19 (34)			15				73
50			SPT 8	100 (100)	14-17-21 (38)			15	41	14	27	
			SPT 9	100 (100)	19-23-25 (48)			14				90
60			SPT 10	100 (100)	21-25-27 (52)			17	43	15	28	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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BORING NUMBER BH-081

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/2/09 **COMPLETED** 5/2/09
GROUND ELEVATION 68.21 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 48.21 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 40' / Mud Rotary to 120'
AFTER DRILLING 70.00 ft / Elev -1.79 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Moist, Firm to Soft	SPT 1	100 (100)	5-5-5 (10)			9				67
			SPT 2	100 (100)	3-3-4 (7)			5	31	13	18	62
			SPT 3	100 (100)	3-4-4 (8)			8				73
10		(CL) Lean Clay, Light Brown, Moist, Firm	SPT 4	100 (100)	4-4-6 (10)			8	24	14	10	74
			SPT 5	100 (100)	2-3-5 (8)			10				66
20		▽	SPT 6	100 (100)	4-3-6 (9)			15	43	12	31	69
			SPT 7	100 (100)	3-3-5 (8)			17				73
30			SPT 8	100 (100)	4-5-7 (12)			17	20	9	11	68
		(SC) Clayey Sand, Light Brown, Moist, Medium Dense	SPT 9	100 (100)	7-8-10 (18)			17				35
40			SPT 10	100 (100)	9-12-14 (26)			18				12
		(CL) Lean Clay, Light Brown, Moist, Stiff	SPT 11	100 (100)	9-12-13 (25)			16	40	14	26	97
50			SPT 12	100 (100)	12-11-14 (25)			123				96
		(CH) Fat Clay, Light Brown, Moist, Stiff	SPT 13	100 (100)	11-13-15 (28)			10	65	20	45	98
60			SPT 14	100 (100)	9-10-11 (21)			15				98

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L&G Engineering Laboratory
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Geotechnical Engineering

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BORING NUMBER BH-081

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Light Brown, Stiff										
			SPT 15	100 (100)	8-12-14 (26)			21	29	16	13	88
		(SC) Clayey Sand, Light Brown, Moist, Medium Dense to Dense										
70			SPT 16	100 (100)	13-15-18 (33)			20				23
			SPT 17	100 (100)	12-12-15 (27)			16	45	11	34	40
		(CL) Lean Clay, Light Brown, Moist, Stiff to Hard										
80			SPT 18	100 (100)	8-10-13 (23)			17				76
			SPT 19	100 (100)	14-15-17 (32)			15	43	16	27	87
		(CH) Fat Clay, Light brown, Moist, Hard										
90			SPT 20	100 (100)	14-19-21 (40)			20				99
			SPT 21	100 (100)	13-18-22 (40)			20	65	22	43	99
100			SPT 22	100 (100)	18-21-23 (44)			18	62	24	38	99
			SPT 23	100 (100)	15-17-20 (37)			14				97
110			SPT 24	100 (100)	17-19-21 (40)			11	55	25	30	81
			SPT 25	100 (100)	16-22-24 (46)			17				96
120			SPT 26	100 (100)	19-20-23 (43)			14	60	24	36	95

Bottom of borehole at 120.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 5/20/09 10:03 - \\S300\LABORATORY\GINT\PROJECTS\NFE2.GPJ

L & G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-083

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/1/09 **COMPLETED** 5/1/09
GROUND ELEVATION 67.58 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jordan Drilling, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 21.00 ft / Elev 46.58 ft
LOGGED BY J. Holmes **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 33' / Mud Rotary to 60'
AFTER DRILLING 24.00 ft / Elev 43.58 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 1	100 (100)	11-11-15 (26)			14				64
			SH 2	100 (100)		4.5		13	52	17	35	
			SH 3	100 (100)		4.5		14				65
10			SH 4	100 (100)		4.5		14	53	16	37	
		(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 5	100 (100)	4-5-12 (17)			15				69
20			SPT 6	100 (100)	9-12-16 (28)			17	51	17	34	
			SH 7	100 (100)		4.5		18				69
30			SH 8	100 (100)		4.0		15	51	15	36	
		(CH) Fat Clay, Brown, Moist, Stiff	SPT 9	100 (100)	4-7-9 (16)			25				50
		(SC) Clayey Sand, Light Brown, Very Moist, Very Dense	SPT 10	100 (100)	30-31-32 (63)			18				15
		(CL) Lean Clay, Light Brown, Moist, Hard	SPT 11	100 (100)	23-23-28 (51)			17	38	14	24	
50		(CH) Fat Clay, Light Brown, Moist to Wet, Hard	SH 12	100 (100)		4.5		19				94
			SH 13	100 (100)		4.5		19	50	19	31	
60			SPT 14	100 (100)	50-50-50 (100)			24				98

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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BORING NUMBER BH-085

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 5/3/09 **COMPLETED** 5/3/09
GROUND ELEVATION 66.99 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 21.00 ft / Elev 45.99 ft
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 120'
AFTER DRILLING 27.00 ft / Elev 39.99 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand, Brown, Dry, Medium Dense	SPT 1	100 (100)	3-5-6 (11)			12	46	15	31	30
		(CH) Fat Clay, Brown, Moist, Firm to Stiff	SPT 2	100 (100)	10-8-12 (20)			12	50	16	34	62
			SPT 3	100 (100)	4-4-5 (9)			5	50	18	32	68
10			SPT 4	100 (100)	6-9-13 (22)			5	54	15	39	68
		(CL) Lean Clay,, Brown, Moist, Stiff	SPT 5	100 (100)	4-7-12 (19)			6	46	17	29	71
20			SPT 6	100 (100)	6-9-11 (20)			8	39	13	26	68
			SH 7	100 (100)		3.5		10				70
		(CH) Fat Clay, Light Brown, Moist, Stiff to Hard										
30			SH 8	100 (100)		3.0		14	50	15	35	73
			SH 9	100 (100)		4.25		17				74
		(SC) Clayey Sand, Light Brown, Medium Dense										
40			SPT 10	100 (100)	9-16-12 (28)			20				33
			SPT 11	100 (100)	6-10-16 (26)			14	36	13	23	44
		(CH) Fat Clay, Reddish Brown, Moist, Hard										
50			SPT 12	100 (100)	17-32-37 (69)			25	61	20	41	98
			SPT 13	100 (100)	14-23-31 (54)			16	64	20	44	98
60			SPT 14	100 (100)	9-16-23 (39)			23				86

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-085

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CH) Fat Clay, Reddish Brown, Moist, Hard *(continued)*										
		(CL) Sandy Clay, Light Brown, Moist, Dense	SPT 15	100 (100)	7-14-21 (35)			16	30	19	11	76
		(SC) Clayey Sand, Reddish Brown, Very Moist, Very Dense										
70			SPT 16	100 (100)	29-33-38 (71)			21				15
			SPT 17	100 (100)	19-31-41 (72)			19				13
		(CL) Lean Clay, Light Brown, Moist, Hard										
80			SPT 18	100 (100)	10-14-21 (35)			18				60
			SPT 19	100 (100)	10-12-19 (31)			18	35	31	4	85
		(CH) Fat Clay, Light Brown, Very Moist, Hard										
90			SPT 20	100 (100)	27-33-41 (74)			25				93
			SPT 21	100 (100)	30-50-50 (100)			19	59	21	38	97
100			SPT 22	100 (100)	8-11-14 (25)			20	52	23	29	94
			SPT 23	100 (100)	12-12-22 (34)			23				95
110			SPT 24	100 (100)	11-17-24 (41)			22	72	19	53	93
			SPT 25	100 (100)	13-21-34 (55)			29				94
120			SPT 26	100 (100)	18-50-50 (100)			22	57	19	38	94

Bottom of borehole at 120.0 feet.

L&G Engineering Laboratory
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BORING NUMBER BH-086

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 66.76 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 46.76 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 27.00 ft / Elev 39.76 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Moist, Firm to Soft	SPT 1	100 (100)	4-5-6 (11)			14	58	19	39	
			SPT 2	100 (100)	3-4-4 (8)			16				68
			SPT 3	100 (100)	3-3-5 (8)			16	57	21	36	
10		(CH) Fat Clay, Brown, Moist, Firm to Stiff	SPT 4	100 (100)	3-5-6 (11)			15				75
		(CL) Lean Clay, Brown, Moist, Stiff	SH 5	100 (100)		1.75		16	44	17	27	
20		(CH) Fat Clay, Reddish, Brown, Moist to Wet, Hard to Stiff	SH 6	100 (100)		3.75		15	50	19	31	
			SH 7	100 (100)		1.75		22				81
30			SPT 8	100 (100)	7-9-11 (20)			17	53	26	27	
		(SC) Clayey Sand, Reddish, Brown, Wet, Stiff	SPT 9	100 (100)	8-10-11 (21)			19				33
40		(CL) Lean Clay, Reddish Brown, Moist, Firm	SPT 10	100 (100)	4-5-6 (11)			18	32	16	16	
			SPT 11	100 (100)	5-5-8 (13)			18				87
50		(CH) Fat Clay, Reddish Brown, Moist, Stiff to Hard	SPT 12	100 (100)	7-10-15 (25)			17	51	22	29	96
			SPT 13	100 (100)	9-11-15 (26)			18	80	27	53	
60			SPT 14	100 (100)	12-19-21 (40)			26				52

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
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Telephone: 956-565-0760

BORING NUMBER BH-087

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/19
GROUND ELEVATION 66.75 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 14.00 ft / Elev 52.75 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 32' / Mud Rotary to 60'
AFTER DRILLING 21.00 ft / Elev 45.75 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Dark Brown, Sandy, Firm to Hard, Moist	SPT 1	100 (100)	4-4-5 (9)			7				55
			SH 2	100 (100)		3.5		7	46	18	28	
			SH 3	100 (100)		4.0		13				68
10			SH 4	100 (100)		4.5+		12	41	18	23	63
		(CH) Fat Clay, LightBrown, Hard, Moist										
			SH 5	100 (100)		2.0		13	56	14	42	
20			SH 6	100 (100)		2.5		17				
			SH 7	100 (100)		3.0		11	70	21	49	
30			SH 8	100 (100)		2.5		13				
		(CL) Lean Clay, Brown, Hard, Moist										
			SH 9	100 (100)		4.5+		13	48	18	30	
		(SC) Clayey Sand, Brown, Medium Dense, Moist										
40			SPT 10	100 (100)	8-9-12 (21)			15				43
			SPT 11	100 (100)	10-14-16 (30)			15				30
		(CH) Fat Clay, reddish Brown, Hard, Moist										
50			SPT 12	100 (100)	10-13-16 (29)			17	65	25	40	97
			SPT 13	100 (100)	17-17-15 (32)			20				98
60			SPT 14	100 (100)	7-14-18 (32)			28	58	18	40	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-089

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/30/09 **COMPLETED** 4/30/09
GROUND ELEVATION 66.2 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING ---
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 120'
AFTER DRILLING 22.00 ft / Elev 44.20 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand w/ Caliche, Dark Brown, Moist, Very Loose	SPT 1	100 (100)	1-2-3 (5)			3	41	14	27	40
		(CL) Lean Clay w/ Caliche, Dark Brown, Moist, Firm	SPT 2	100 (100)	4-7-7 (14)			13				63
		(CH) Fat Clay, Brown, Moist to Very Moist, Stiff to Hard	SPT 3	100 (100)	5-8-14 (22)			10	55	16	39	67
10			SPT 4	100 (100)	6-8-11 (19)			7				66
			SPT 5	100 (100)	5-8-13 (21)			13	51	16	35	71
20		(SC) Clayey Sand, Brown, Very Moist, Medium Dense	SPT 6	100 (100)	6-10-15 (25)			12				48
		(CH) Fat Clay, Brown, Very Moist, Stiff to Hard	SH 7	100 (100)		2.5		15	61	20	41	79
30			SH 8	100 (100)		4.5		16				85
			SPT 9	100 (100)	13-15-14 (29)			19				54
		(SC) Clayey Sand, Reddish Brown, Very Moist, Dense										
40			SPT 10	100 (100)	16-21-23 (44)			15				15
		(CL-ML) Sandy Silty Clay, Reddish Brown, Very Moist, Hard	SPT 11	100 (100)	11-19-27 (46)			13	24	17	7	51
50			SH 12	100 (100)		4.5+		17				80
		(CH) Fat Clay, Brown, Dry, Hard	SH 13	100 (100)		4.0		17	50	20	30	99
		(CL) Lean Clay, Brown, Wet, Hard										
60			SPT 14	100 (100)	50-50-50 (100)			22				77

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-089

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Wet, Very Dense	SPT 15	100 (100)	15-29-39 (68)			22				30
70		(CL) Lean Clay, Brown, Moist, Hard	SPT 16	100 (100)	32-26-34 (60)			18	33	18	15	64
		(CH) Fat Clay, Brown, Moist, Hard	SPT 17	100 (100)	24-35-33 (68)			12	66	27	39	78
80		(CL) Lean Clay, Brown, Moist to Very Moist	SPT 18	100 (100)	9-18-16 (34)			15	32	15	17	51
			SPT 19	100 (100)	8-16-19 (35)			14				52
90			SPT 20	100 (100)	14-31-46 (77)			25				96
			SPT 21	100 (100)	13-29-43 (72)			16	28	19	9	82
100			SPT 22	100 (100)	24-50-50 (100)			24				84
			SPT 23	100 (100)	28-30-40 (70)			20	40	20	20	80
110			SPT 24	100 (100)	21-32-38 (70)			17	47	24	23	98
			SPT 25	100 (100)	27-50-50 (100)			22				98
120			SPT 26	100 (100)	33-50-50 (100)			19	40	20	20	79

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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Telephone: 956-565-0760

BORING NUMBER BH-090

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 65.65 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 16.00 ft / Elev 49.65 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 45' / Mud Rotary to 60'
AFTER DRILLING 22.00 ft / Elev 43.65 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(SC) Clayey Sand, Dark Brown, Moist, Loose	SPT 1	100 (100)	2-3-4 (7)			9				42
			SPT 2	100 (100)	3-4-4 (8)			9	34	12	22	
			SPT 3	100 (100)	3-3-3 (6)			10				47
10			SPT 4	100 (100)	3-4-4 (8)			11	36	12	24	
		(SC) Clayey Sand, Reddish Brown, Moist, Dense	SH 5	100 (100)		3.5		10				48
		(CL) Lean Clay, Reddish Brown, Sandy, Moist, Very Soft to Soft										
20			SH 6	100 (100)		0.5		14				
			SH 7	100 (100)		1.5		17	28	12	16	74
		(CH) Fat Clay, Reddish Brown w/ Sand & Calc. Nods., Stiff, Moist										
30			SPT 8	100 (100)	8-10-3 (13)			12				81
			SPT 9	100 (100)	7-9-10 (19)			17	68	20	48	
40			SPT 10	100 (100)	7-9-13 (22)			13				81
		(CL) Lean Clay w/ Calc. Nods., Reddish Brown, Stiff, Moist										
			SPT 11	100 (100)	10-12-15 (27)			10	39	12	27	
50			SPT 12	100 (100)	9-10-12 (22)			17				99
			SPT 13	100 (100)	8-10-14 (24)			15	45	19	26	
60			SPT 14	100 (100)	9-12-15 (27)			18				96

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-093

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/29/09 **COMPLETED** 4/29/09
GROUND ELEVATION 64.71 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING ---
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 120'
AFTER DRILLING 5.00 ft / Elev 59.71 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Dark Brown, Dry ,Stiff	SPT 1	100 (100)	6-8-12 (20)			6	32	13	19	54
			SPT 2	100 (100)	6-8-9 (17)			7				51
			SPT 3	100 (100)	7-9-9 (18)			7	30	6	24	61
10			SPT 4	100 (100)	7-8-9 (17)			10				58
		(SC) Clayey Sand, Dark Brown, Moist, Medium Dense	SPT 5	100 (100)	6-7-9 (16)			13	28	13	15	49
		(CL) Lean Clay, Dark Brown, Moist, Stiff										
20			SH 6	100 (100)		2.5		14				58
		(CH) Fat Clay, Brown, Moist, Hard										
			SH 7	100 (100)		4.5+		13	52	15	37	76
30			SH 8	100 (100)		4.5+		13				76
		(SC) Clayey Sand, Reddish Brown, Moist, medium Dense										
			SPT 9	100 (100)	5-9-10 (19)			25				34
		(CL) Lean Clay, Light Brown, Moist, Hard to Stiff										
40			SPT 10	100 (100)	7-20-26 (46)			21	31	12	19	73
			SPT 11	100 (100)	5-17-28 (45)			13	43	14	29	88
50			SH 12	100 (100)		3.0		18				85
			SPT 13	100 (100)	14-18-24 (42)			19	27	12	15	83
		(CL) Sandy Lean Clay, Light Brown, Moist, Hard										
60			SPT 14	100 (100)	14-41-50 (91)			21				57

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-093

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Sandy Lean Clay, Light Brown, Moist, Hard *(continued)*										
			SPT 15	100 (100)	21-32-43 (75)			20				57
		(SC) Clayey Sand, Light Brown, Moist, Very Dense										
70			SPT 16	100 (100)	36-25-28 (53)			29				43
		(ML) Silty Clay, Brown, Moist, Hard										
			SPT 17	100 (100)	35-27-26 (53)			25	41	26	15	85
		(CL) Lean Clay, Light Brown, Moist, Hard										
80			SPT 18	100 (100)	19-25-24 (49)			19				90
			SPT 19	100 (100)	17-23-25 (48)			22	31	18	13	92
90			SPT 20	100 (100)	16-38-42 (80)			22				98
			SPT 21	100 (100)	18-35-43 (78)			16	30	15	15	88
100			SPT 22	100 (100)	26-37-41 (78)			18	28	15	13	73
			SPT 23	100 (100)	19-29-44 (73)			20				95
110			SPT 24	100 (100)	50-50-50 (100)			30	26	19	7	87
		(SC) Clayey Sand, Light Brown, Very Moist, Very Dense										
			SPT 25	100 (100)	40-50-50 (100)			22				39
		(CL) Sandy Lean Clay, Light Brown, Very Moist, Hard										
120			SPT 26	100 (100)	50-50-50 (100)			16	30	14	16	62

Bottom of borehole at 120.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-094

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 64.26 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 31.00 ft / Elev 33.26 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 40' / Mud Rotary to 60'
AFTER DRILLING 13.00 ft / Elev 51.26 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Brown to Dark Brown, Dry, Soft to Hard	SPT 1	100 (100)	3-4-3 (7)			4				64
		SPT 2	100 (100)	3-4-6 (10)			8	60	16	44	
		SH 3	100 (100)		4.5		10				65
10	(CL) Lean Clay w/ Calc. Nodules, Brown, Dry, Stiff	SH 4	100 (100)		1		13	27	13	14	74
	(CL-ML) Silty Clay w/ Calc. Nodules, Red, Moist, Hard	SH 5	100 (100)		3.0		15				
	(CH) Fat Clay, Brown, Moist, Stiff to Firm										
20		SPT 6	100 (100)	5-9-12 (21)			14	55	19	36	
	(SC) Clayey Sand. Brown, Very Moist, Medium Dense	SPT 7	100 (100)	7-8-7 (15)			14				47
30		SPT 8	100 (100)	4-4-6 (10)			15	49	16	33	
		SPT 9	100 (100)	6-7-9 (16)			17				47
	(CL) Lean Clay, Brown, Moist, Stiff to Hard										
40		SPT 10	100 (100)	7-9-8 (17)			16	26	16	10	
		SPT 11	100 (100)	10-15-16 (31)			15				86
	(CL) Lean Clay, Reddish Brown, Moist, Stiff										
50		SPT 12	100 (100)	11-10-13 (23)			17	46	18	28	
	(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 13	100 (100)	31-40-50 (90)			22				31
60		SPT 14	100 (100)	0-50-0 (50)			22				31

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-096

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 63.97 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 17.00 ft / Elev 46.97 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 37' / Mud Rotary to 60'
AFTER DRILLING 19.00 ft / Elev 44.97 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Dark Brown, Dry to Moist, Firm to Hard	SPT 1	100 (100)	5-3-6 (9)			9				
			SPT 2	100 (100)	5-5-12 (17)			13	50	17	33	
			SH 3	100 (100)		4.0		14				70
10			SH 4	100 (100)		2.75		14	55	14	41	70
			SH 5	100 (100)		2.25		17				68
20		(CL) Lean Clay, Dark Brown, Moist, Hard	SH 6	100 (100)		2.25		17	38	17	21	
		(CH) Fat Clay, Tan, Moist, Firm	SPT 7	100 (100)	5-5-9 (14)			25				70
30			SPT 8	100 (100)	6-5-8 (13)			23	71	15	56	
		(SC) Sandy Clay, Tan, Moist, Stiff	SPT 9	100 (100)	4-6-10 (16)			16				48
40		(CL) Lean Clay, Silty, Tan, Moist, Stiff to Hard	SPT 10	100 (100)	7-9-14 (23)			16	44	15	29	
			SPT 11	100 (100)	8-18-17 (35)			18				93
50		(CL) Lean Clay, Silty, Tan, Moist, Stiff	SPT 12	100 (100)	10-16-19 (35)			18	49	15	34	
			SPT 13	100 (100)	12-13-15 (28)			24				60
60		(SC) Clayey Sand, Tan, Very Moist, Medium Dense	SPT 14	100 (100)	16-12-18 (30)			27				18

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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Telephone: 956-565-0760

BORING NUMBER BH-097

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/27/09 **COMPLETED** 4/27/09
GROUND ELEVATION 64.07 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 25.00 ft / Elev 39.07 ft
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 120'
AFTER DRILLING 19.00 ft / Elev 45.07 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Brown, Dry to Moist, Firm to Soft	SPT 1	100 (100)	7-11-4 (15)			12	52	17	35	
		SPT 2	100 (100)	5-7-3 (10)			14				52
		SPT 3	100 (100)	6-6-9 (15)			15	59	13	46	66
10		SPT 4	100 (100)	7-9-9 (18)			17				59
		SPT 5	100 (100)	5-7-12 (19)			17	55	15	40	51
20		SH 6	100 (100)		3.5		20				83
	(CL) Lean Clay, Greyish Light Brown, Moist, Hard	SH 7	100 (100)		2.25		21	47	15	32	70
30		SPT 8	100 (100)	6-10-16 (26)			22				83
	(CH) Fat Clay, Light Brown, Very Moist, Stiff to Hard	SPT 9	100 (100)	4-7-17 (24)			23	70	21	49	92
40		SH 10	100 (100)		4.5+		22				93
		SH 11	100 (100)		4.5+		22	67	20	47	98
50	(SC-SM) Poorly Graded Sand w/ Silt, Light Brown, Very Moist to Wet, Medium Dense to Dense	SPT 12	100 (100)	7-13-16 (29)			27				90
		SPT 13	100 (100)	5-19-26 (45)			21	32	19	13	95
60	(SC) Clayey Sand, Light Brown, Moist, Very Dense	SH 14	100 (100)		45.5		24				15

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L&G Engineering Laboratory
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Geotechnical Engineering

L&G Engineering Laboratory LLC
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BORING NUMBER BH-097

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Light Brown, Moist, Very Dense *(continued)*	SH 15	100 (100)		50		24				16
		(SP-SC) Poorly Graded Sand w/ Clay, Light Brown, Moist, Very Dense										
70			SH 16	100 (100)		50		26				11
			SH 17	100 (100)		50		23				10
		(CL) Lean Clay w/ Calc. Nodules, Light Brown, Moist, Hard										
80			SPT 18	100 (100)	12-11-32 (43)			16	29	11	18	59
			SPT 19	100 (100)	9-15-37 (52)			16				60
90			SPT 20	100 (100)	36-37-47 (84)			19	24	18	6	63
		(SC) Clayey Sand, Light Brown, Very Moist, Very Dense	SPT 21	100 (100)	18-30-44 (74)			19	25	15	10	42
100			SH 22	100 (100)		50		26				24
			SH 23	100 (100)		50		22				15
110			SH 24	100 (100)		50		21				21
			SH 25	100 (100)		50		27				23
		(CL) Lean Clay, Light Brown, Wet, Very Dense										
120			SPT 26	100 (100)	39-42-49 (91)			21				58

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
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Geotechnical Engineering

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2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-099

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 63.73 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger/ Mud Rotary
AT TIME OF DRILLING 12.00 ft / Elev 51.73 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 36' / Mud Rotary to 60'
AFTER DRILLING 12.00 ft / Elev 51.73 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay with Sand & Gravel, Dark Brown, Firm to Stiff, Moist	SPT 1	100 (100)	3-3-5 (8)			5	58	18	40	
			SPT 2	100 (100)	3-4-8 (12)			13				63
			SPT 3	100 (100)		4.5		14	56	19	37	
10			SPT 4	100 (100)		3.25		15				68
		(CH) Fat Clay, Reddish Brown, Sandy, Stiff, Moist										
			SPT 5	100 (100)		2.75		16	53	19	34	68
20			SPT 6	100 (100)		3.25		14				
			SPT 7	100 (100)		2.50		18	70	21	49	62
		(CL) Lean Clay, Reddish Brown, Sandy, Stiff										
30			SPT 8	100 (100)	5-6-9 (15)			15	28	13	15	
			SPT 9	100 (100)	6-7-13 (20)			16				78
40			SPT 10	100 (100)	11-14-14 (28)			13	33	14	19	
		(SC) Clayey Sand, Reddish Brown, Moist, Dense										
			SPT 11	100 (100)	13-16-19 (35)			16				46
		(CL) Lean Clay, Reddish Brown, Sandy, Stiff										
50			SPT 12	100 (100)	21-25-23 (48)			21	30	17	13	
			SPT 13	100 (100)	4-6-10 (16)			16				79
60			SPT 14	100 (100)	12-11-13 (24)			15	26	13	13	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-101

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/24/09 **COMPLETED** 4/24/09
GROUND ELEVATION 63.16 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 24.50 ft / Elev 38.66 ft
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 24.5' / Mud Rotary to 120'
AFTER DRILLING 19.00 ft / Elev 44.16 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Dark Brown, Dry to Moist, Stiff to Firm	SPT 1	100 (100)	9-11-15 (26)			10	60	15	45	77
		SPT 2	100 (100)	5-6-7 (13)			11				71
		SPT 3	100 (100)	3-4-9 (13)			18	52	13	39	77
	(CH) Fat Clay, Dark Brown, Dry to Moist, Stiff to Firm										
10		SPT 4	100 (100)	5-6-11 (17)			16				75
		SPT 5	100 (100)	6-5-10 (15)			19	54	15	39	79
	(CH) Fat Clay, Dark Brown, Dry to Moist, Stiff										
20		SPT 6	100 (100)	4-7-13 (20)			19				82
		SH 7	100 (100)		2.5		19				76
30		SH 8	100 (100)		4.0		17				76
	(SC) Clayey Sand, Dark Brown, Moist, Medium Dense										
		SH 9	100 (100)		2.0		15	26	12	14	28
	(CL) Lean Clay, Dark Brown, Dry to Moist, Firm to Hard										
40		SH 10	100 (100)		2.0		16	37	13	24	70
		SPT 11	100 (100)	18-29-32 (61)			18	49	16	33	79
	(SC) Clayey Sand, Brown, Moist, Very Dense to Dense										
50		SPT 12	100 (100)	9-23-32 (55)			23				47
		SPT 13	100 (100)	7-19-24 (43)			22				46
60		SPT 14	100 (100)	4-16-26 (42)			19				50
	(SC) Clayey Sand, Brown, Very Moist, Very Dense										

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L&G Engineering Laboratory
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Geotechnical Engineering

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Telephone: 956-565-0760

BORING NUMBER BH-101

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Very Moist, Very Dense *(continued)*										
			SPT 15	100 (100)	27-34-46 (80)			24				45
70			SPT 16	100 (100)	0-50-0 (50)			20				18
		(CL) Lean Clay, Light Brown, Moist, Hard to Stiff										
			SPT 17	100 (100)	19-36-32 (68)			16	46	17	29	56
80			SPT 18	100 (100)	22-30-30 (60)			18				80
			SPT 19	100 (100)	6-11-13 (24)			18	31	11	20	59
90			SPT 20	100 (100)	9-7-12 (19)			15	27	11	16	62
		(SC-SM) Clayey Silty Sand, Light Brown, Very Moist, Very Dense										
			SPT 21	100 (100)	19-43-50 (93)			22				26
100			SPT 22	100 (100)	27-0-50 (50)			21				21
			SPT 23	100 (100)	17-31-41 (72)			20				31
110			SPT 24	100 (100)	38-0-50 (50)			21				28
			SPT 25	100 (100)	38-0-50 (50)			21				20
120			SPT 26	100 (100)	0-50-0 (50)			21				30

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-102

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 62.95 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 38.00 ft / Elev 24.95 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 38' / Mud Rotary to 60'
AFTER DRILLING 17.00 ft / Elev 45.95 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CH) Fat Clay, Sandy, Dark Brown, Moist, Firm	SPT 1	100 (100)	3-4-5 (9)			11	54	22	32	
		SH 2	100 (100)		4.5		13	51	15	36	79
	(CL) Lean Clay w/ Sand, Reddish Brown, Moist, Hard	SH 3	100 (100)		4.25		13				
10		SH 4	100 (100)		3		16	49	19	30	
	(CH) Fat Clay, Brown, Sandy, Firm to Stiff, Moist	SPT 5	100 (100)	4-4-6 (10)			13	53	20	33	
20		SPT 6	100 (100)	5-9-5 (14)			15				87
		SPT 7	100 (100)	4-5-6 (11)			14	55	16	39	
30		SPT 8	100 (100)	6-9-12 (21)			15				76
	(CL) Lean Clay, Silty & Sandy, Brown, Stiff, Moist	SPT 9	100 (100)	6-9-12 (21)			15	21	10	11	
40		SPT 10	100 (100)	9-8-9 (17)			20				62
		SPT 11	100 (100)	10-9-9 (18)			16				63
	(SC-SM) Silty Clayey Sand, Brown, Medium Dense										
50		SPT 12	100 (100)	7-6-12 (18)			22				37
		SPT 13	100 (100)	8-11-9 (20)			23				26
60		SPT 14	100 (100)	13-8-10 (18)			23				30

Bottom of borehole at 60.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 5/20/09 10:04 - \\S300\LABORATORY\GINT\PROJECTS\NFE2.GPJ

L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-105

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/22/09 **COMPLETED** 4/22/09
GROUND ELEVATION 63.29 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING ---
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 23' / Mud Rotary to 120'
AFTER DRILLING 16.00 ft / Elev 47.29 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CH) Fat Clay, Brown, Moist, Stiff to Firm	SPT 1	100 (100)	7-13-14 (27)			14	55	16	39	56
			SPT 2	100 (100)	4-6-8 (14)			16				68
			SPT 3	100 (100)	5-7-8 (15)			15	58	18	40	75
10		(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 4	100 (100)	7-8-9 (17)			20				74
			SPT 5	100 (100)	5-8-12 (20)			17	51	16	35	78
20			SPT 6	100 (100)	3-10-14 (24)			17				78
			SPT 7	100 (100)	5-8-17 (25)			14	53	26	27	71
30			SPT 8	100 (100)	10-14-26 (40)			21				78
		(CH) Fat Clay, Brown, Moist, Stiff to Firm	SPT 9	100 (100)	9-9-17 (26)			17	65	15	50	71
40			SH 10	100 (100)		2.0		13				50
		(CL) Lean Clay, Brown, Very Moist, Stiff to Hard	SH 11	100 (100)		4.5+		16	42	17	25	77
50			SH 12	100 (100)		2.5		21				71
		(CH) Fat Clay, Reddish Brown, Moist, Hard	SH 13	100 (100)		4.5+		21	70	26	44	97
60		(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 14	100 (100)	28-36-50 (86)			23				30

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L&G Engineering Laboratory
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Telephone: 956-565-0760

BORING NUMBER BH-105

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(SC) Clayey Sand, Brown, Moist, Very Dense *(continued)*										
			SPT 15	100 (100)	27-50-0 (50)			24				25
		(CH) Fat Clay, Brown, Moist, Hard										
70			SPT 16	100 (100)	6-15-25 (40)			20	56	23	33	98
			SPT 17	100 (100)	9-17-26 (43)			24				98
80			SPT 18	100 (100)	21-23-29 (52)			21				76
			SPT 19	100 (100)	16-24-29 (53)			20				77
		(CL) Lean Clay, Brown, Moist, Hard										
90			SPT 20	100 (100)	24-29-46 (75)			23	33	16	17	71
			SPT 21	100 (100)	20-31-41 (72)			21				65
100			SPT 22	100 (100)	29-37-48 (85)			17				61
								68				53
			SPT 23	100 (100)	0-50-0 (50)			27	39	18	21	93
			SPT 24	100 (100)	25-31-48 (79)							
110												
			SPT 25	100 (100)	21-33-46 (79)			23				87
120			SPT 26	100 (100)	44-0-50 (50)			21				69

Bottom of borehole at 120.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-106

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 62.78 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 15.00 ft / Elev 47.78 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 18' / Mud Rotary to 60'
AFTER DRILLING 15.00 ft / Elev 47.78 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Moist, Firm	SPT 1	100 (100)	4-4-6 (10)			14				80
			SPT 2	100 (100)	4-5-6 (11)			11	43	14	29	
			SPT 3	100 (100)	3-4-6 (10)			15				85
10		(CH) Fat Clay, Brown, Moist, Soft to Firm	SPT 4	100 (100)	4-5-8 (13)			17	55	18	37	
			SH 5	100 (100)		2.75		15				73
20			SH 6	100 (100)		2.5		19	52	16	36	
			SH 7	100 (100)		1.5		11	59	15	44	
30		(CH) Fat Clay, Brown, Moist, Firm	SH 8	100 (100)	5-5-8 (13)			17				72
		(CL) Lean Clay, Greyish Brown w/ Cal. Nodules, Moist, Firm to Stiff	SPT 9	100 (100)	5-6-9 (15)			28	40	12	28	
40			SPT 10	100 (100)	4-6-8 (14)			15				69
			SPT 11	100 (100)	9-11-14 (25)			15	41	14	27	
50		(CL) Lean Clay, Greyish Brown w/ Cal. Nodules, Moist, Firm	SPT 12	100 (100)	5-6-8 (14)			18				62
		(SP-SC) Poorly Graded Sand w/ Clay, Moist, Dense	SPT 13	100 (100)	22-20-19 (39)			22	19	14	5	11
60		(CL) Lean Clay, Brown, Moist, Hard	SPT 14	100 (100)	20-23-18 (41)			24				60

Bottom of borehole at 60.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-107

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 62.62 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 43.62 ft 24 hours after completion
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 15.00 ft / Elev 47.62 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Moist, Firm to Stiff	SPT 1	100 (100)	6-6-6 (12)			11	44	18	26	
			SPT 2	100 (100)	4-5-6 (11)			11				61
			SPT 3	100 (100)	5-5-4 (9)			13	46	28	18	
10			SPT 4	100 (100)	3-5-7 (12)			12				71
			SH 5	100 (100)		3.0		16	48	17	31	
20		(CL) Lean Clay, Brown, Moist, Firm	SH 6	100 (100)		1.75		16				76
		(CH) Fat Clay, Brown, Moist, Firm to Hard	SH 7	100 (100)		1.5		18	54	15	39	
30			SH 8	100 (100)		5+		28				75
		(CL) Lean Clay, Brown, Moist, Firm to Stiff	SPT 9	100 (100)	5-6-8 (14)			15	24	14	10	
40			SPT 10	100 (100)	5-6-8 (14)			16				50
			SPT 11	100 (100)	9-13-15 (28)			17	46	14	32	
50		(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 12	100 (100)	8-9-10 (19)			21				88
			SPT 13	100 (100)	8-10-13 (23)			20	53	20	33	
60			SPT 14	100 (100)	9-10-22 (32)			20				97

Bottom of borehole at 60.0 feet.

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BORING NUMBER BH-108

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 62.59 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 16.00 ft / Elev 46.59 ft 24 hours after completion
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 18' / Mud Rotary to 60'
AFTER DRILLING 13.00 ft / Elev 49.59 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Sandy, Dark Brown, Medium Dense, Dry	SPT 1	100 (100)	5-5-6 (11)			9				75
			SPT 2	100 (100)	3-3-3 (6)			10	42	12	30	
		(CH) Fat Clay, Sandy w/ Gravel, Dark Brown, Soft, Moist	SPT 3	100 (100)	2-2-3 (5)			11				66
10			SPT 4	100 (100)	1-2-2 (4)			14	52	19	33	
		(CH) Fat Clay, Brown, Firm to Hard, Moist										
			SH 5	100 (100)		4.0		14				
20			SH 6	100 (100)		2.0		22				91
		(CH) Fat Clay w/ Calc. Nods., Greyish Brown, Hard, Moist										
			SH 7	100 (100)		4.0		16	50	14	36	
30			SPT 8	100 (100)	6-6-8 (14)			18	53	15	38	73
		(CL) Lean Clay, Sandy, Reddish Brown, Stiff to Hard, Moist										
			SH 9	100 (100)		1.5		14	23	14	9	50
40			SPT 10	100 (100)	10-16-21 (37)			15				
			SH 11	100 (100)		4.5		13				
		(ML) Silt w/ Sand, Brown, Hard, Very Moist										
50			SPT 12	100 (100)	16-19-23 (42)			22				83
			SPT 13	100 (100)	12-14-21 (35)			22				72
		(SC) Clayey Sand, Brown, Hard, Wet										
60			SPT 14	100 (100)	16-23-28 (51)			21				23

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
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BORING NUMBER BH-110

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 62.56 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 18.00 ft / Elev 44.56 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 18' / Mud Rotary to 60'
AFTER DRILLING ---

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Brown, Moist, Firm	SPT 1	100 (100)	4-6-8 (14)			11	48	17	31	
	(CH) Fat Clay, Brown, Moist, Firm to Very Soft	SPT 2	100 (100)	4-5-7 (12)			12	50	17	33	62
		SPT 3	100 (100)	2-1-1 (2)			11				
10	(CL) Lean Clay, Brown, Moist, Hard	SH 4	100 (100)		4.0		13	39	16	23	75
		SH 5	100 (100)		4.0		24				
20	(CH) Fat Clay, Brown, Moist, Soft to Stiff	SH 6	100 (100)		1.5		22	67	16	51	
		SH 7	100 (100)		2.5		22				
30	(SP-SM) Poorly Graded Sand w/ Silt & Gravel, Very Moist, Dense	SPT 8	100 (100)	19-25-20 (45)			16				9
		SPT 9	100 (100)	16-20-21 (41)			18				9
40	(CH) Fat Clay, Brown, Moist, Stiff to Hard	SPT 10	100 (100)	10-11-13 (24)			22	50	16	34	
		SH 11	100 (100)		4.5		22	64	21	43	98
50	(CL) Lean Clay, Silty, Moist, Hard	SH 12	100 (100)		4.5		20	31	19	12	
		SPT 13	100 (100)	26-21-20 (41)			19				25
	(SM) Silty Sand, Brown, Very moist, Dense to Very Dense										
60		SPT 14	100 (100)	29-26-25 (51)			15	NP	NP	NP	43

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
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BORING NUMBER BH-113

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/21/09 **COMPLETED** 4/21/09
GROUND ELEVATION 62.22 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 23.00 ft / Elev 39.22 ft
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 120'
AFTER DRILLING 19.00 ft / Elev 43.22 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Brown, Dry to Moist, Hard to Stiff	SPT 1	100 (100)	16-12-19 (31)			8	35	12	23	67
		SPT 2	100 (100)	4-7-8 (15)			10				77
		SPT 3	100 (100)	5-4-4 (8)			12				52
10	(CL) Lean Clay, Brown, Moist, Hard	SPT 4	100 (100)	4-3-7 (10)			14				76
		SH 5	100 (100)		3.5		16	43	17	26	66
20		SH 6	100 (100)		4.5+		16				79
		SH 7	100 (100)		3.5		14	46	15	31	83
30	(CH) Fat Clay. Brown, Moist, Hard	SH 8	100 (100)		4.5+		20	63	23	40	96
		SPT 9	100 (100)	12-18-24 (42)			30	62	21	41	75
40	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Very Dense to Dense	SPT 10	100 (100)	13-20-18 (38)			23				6
	(SC) Clayey Sand, Brown, Very Moist, Very Dense to Dense	SPT 11	100 (100)	11-16-16 (32)			19				24
50	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Very Dense to Dense	SPT 12	100 (100)	11-13-17 (30)			20				7
		SPT 13	100 (100)	9-9-14 (23)			20				8
60	(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 14	100 (100)	0-50-50 (100)			25				25
	(CL-ML) Sandy Silty Clay, Brown, Very Moist, Hard										

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L&G Engineering Laboratory
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Telephone: 956-565-0760

BORING NUMBER BH-113

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL-ML) Sandy Silty Clay, Brown, Very Moist, Hard *(continued)*										
			SPT 15	100 (100)	27-28-44 (72)			18				51
		(CH) Fat Clay Brown, Moist, Hard										
70			SPT 16	100 (100)	21-28-22 (50)			20	70	24	46	98
			SPT 17	100 (100)		4.5		17				96
80			SPT 18	100 (100)	12-18-26 (44)			22	58	19	39	
		(CH) Fat Clay w/ Calc. Nodules, Greyish Brown, Moist, Hard										
			SPT 19	100 (100)	15-18-29 (47)			30	57	26	31	79
90			SPT 20	100 (100)				19	58	13	45	72
		(CH) Fat Clay, Reddish Brown, Moist to Very Moist, Hard to Soft										
			SH 21	100 (100)		4.0		18				73
100			SH 22	100 (100)		4.5		20	55	20	35	50
110			SH 23	100 (100)	50-50-50 (100)			22	67	16	51	80
			SH 24	100 (100)		.5		26	61	21	40	68
		(SC) Clayey San, Reddish Brown, Wet, Hard										
120			SH 25	100 (100)	12-18-19 (37)			23				25

Bottom of borehole at 120.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

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2100 W. Expressway 83
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BORING NUMBER BH-115

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 61.95 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 28.00 ft / Elev 33.95 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 45' / Mud Rotary to 60'
AFTER DRILLING 17.00 ft / Elev 44.95 ft 24 hrs. after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Dry to Moist, Hard to Firm	SPT 1	100 (100)	6-7-12 (19)			8				50
			SHELBY 2	100 (100)		4.5		4	28	13	15	
			SHELBY 3	100 (100)		4.0		49				51
10			SPT 4	100 (100)	2-2-5 (7)			9	30	13	17	
			SHELBY 5	100 (100)		2.5		13				
20			SHELBY 6	100 (100)		2.0		12	32	16	16	
		(SC) Clayey Sand, Brown, Very Moist to Moist, Medium Dense to Dense	SPT 7	100 (100)	3-5-9 (14)			18				30
30			SPT 8	100 (100)	3-4-7 (11)			15				13
			SPT 9	100 (100)	20-23-27 (50)			18				15
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Dense										
40			SPT 10	100 (100)	22-20-25 (45)			15				9
		(CL) Lean Clay, Light Brown, Moist, Hard to Stiff	SPT 11	100 (100)	9-11-21 (32)			18	46	21	25	83
50			SPT 12	100 (100)	12-12-15 (27)			21				88
		(CH) Fat Clay, Brown, Wet to Very Moist, Stiff	SPT 13	100 (100)	6-12-17 (29)			28	60	14	46	
60			SPT 14	100 (100)	10-11-15 (26)			32				81

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-116

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/15/09 **COMPLETED** 4/15/09
GROUND ELEVATION 61.78 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 16.00 ft / Elev 45.78 ft
LOGGED BY C. CAVAZOS **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 37' / Mud Rotary to 60'
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Moist, Firm to Hard	SPT 1	100 (100)	4-6-8 (14)			10	29	16	13	
			SPT 2	100 (100)	6-6-6 (12)			19				64
			SH 3	100 (100)		4.5		13	36	12	24	
10			SH 4	100 (100)		3.0		13				69
		(CL) Lean Clay, Dark Brown to Tan, Moist, Soft to Stiff	SPT 5	100 (100)	4-7-10 (17)			13	41	17	24	
20			SH 6	100 (100)		1.5		16				78
			SH 7	100 (100)		1.0		20	35	13	22	
30		(SC) Clayey Sand, Tan, Moist, Medium Dense	SPT 8	100 (100)	6-7-6 (13)			16				20
		(SP) Poorly Graded Sand, Brown, Moist, Medium Dense	SPT 9	100 (100)	8-11-13 (24)			16				2
40		(SC) Clayey Sand, Brown, Moist, Dense	SPT 10	100 (100)	15-19-22 (41)			17				13
			SPT 11	100 (100)	17-16-20 (36)			25				20
50		(SP-SC) Poorly Graded Sand W/ Clay, Brown, Moist, Dense	SPT 12	100 (100)	15-19-16 (35)			20				11
		(CL) Lean Clay, Reddish Brown, Moist, Stiff	SPT 13	100 (100)	6-9-11 (20)			21	45	19	26	
60			SPT 14	100 (100)	8-10-15 (25)			18	42	18	24	97

Bottom of borehole at 60.0 feet.

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Geotechnical Engineering

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BORING NUMBER BH-117

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/20/09 **COMPLETED** 4/20/09
GROUND ELEVATION 61.64 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 28.00 ft / Elev 33.64 ft
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 28' / Mud Rotary to 120'
AFTER DRILLING --- 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Dark Brown, Dry to Moist, Stiff										
		SPT 1	100 (100)	4-9-11 (20)			7				71
	(SC) Clayey Sand, Dark Brown, Moist, Medium Dense										
		SPT 2	100 (100)	7-7-5 (12)			6	34	13	21	26
	(CL) Lean Clay, Dark Brown, Moist, Stiff to Firm	SPT 3	100 (100)	3-5-6 (11)			11				56
10		SPT 4	100 (100)	4-7-9 (16)			10	32	13	19	60
		SPT 5	100 (100)	7-5-6 (11)			14	32	16	16	51
	(CL) Lean Clay, Dark Brown, Moist, Soft										
20		SH 6	100 (100)		1.5		21	28	14	14	76
		SH 7	100 (100)		1.0		25				67
30		SPT 8	100 (100)	3-3-2 (5)			19				70
	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Dense										
		SPT 9	100 (100)	17-22-27 (49)			17				8
40		SPT 10	100 (100)	11-21-25 (46)			22				9
	(SC) Clayey Sand, Brown, Moist, Very Dense										
		SPT 11	100 (100)	18-31-50 (81)			20				34
	(CH) Fat Clay, Reddish Brown, Moist, Hard										
50		SH 12	100 (100)		26-50/2		17				73
		SPT 13	100 (100)	3-23-37 (60)			21	55	15	40	92
60		SH 14	100 (100)		4.5		17				98
	(CL) Lean Clay, Brown, Moist, Hard										

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L&G Engineering Laboratory
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Geotechnical Engineering

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2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-117

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CL) Lean Clay, Brown, Moist, Hard *(continued)*										
			SH 15	100 (100)		4.0		19	36	17	19	97
70			SH 16	100 (100)		4.5		19				99
		(CH) Fat Clay, Brown, Moist, Hard										
			SH 17	100 (100)		2.5		21	52	22	30	95
80			SH 18	100 (100)		2.5		14	68	25	43	85
		(CL) Lean Clay, Brown, Moist, Hard										
			SH 19	100 (100)		4.5		46	37	21	16	98
90			SPT 20	100 (100)	6-14-33 (47)			23				78
			SPT 21	100 (100)	9-12-18 (30)			20	28	14	14	63
100			SH 22	100 (100)		3.5		26	23	11	12	58
			SPT 23	100 (100)	22-43-50 (93)			16	21	21	NP	60
		(SC) Clayey Sand, Brown, Moist, Very Dense										
110			SH 24	100 (100)	50-50 (100)			32				31
		(CH) Fat Clay, Brown, Moist, Hard										
			SPT 25	100 (100)	37-41-50 (91)			20				96
120			SPT 26	100 (100)	27-29-44 (73)			21	63	17	46	95

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-118

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 61.46 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 19.00 ft / Elev 42.46 ft
LOGGED BY A. Gomez **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 37' / Mud Rotary to 60'
AFTER DRILLING 41.00 ft / Elev 20.46 ft 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay, Sandy, Dark Brown, Firm to Hard, Moist										
		SH 1	100 (100)		4.5		11	38	12	26	
		SH 2	100 (100)		4.5		12	43	14	29	60
		SPT 3	100 (100)	3-3-9 (12)			13				56
10		SPT 4	100 (100)	6-5-10 (15)			15	36	17	19	
		SPT 5	100 (100)	4-5-8 (13)			17				56
20		SPT 6	100 (100)	6-9-7 (16)			18	46	22	24	
	(SM) Silty Sand, Brown, Medium Dense to Dense, Very moist										
		SPT 7	100 (100)	5-5-9 (14)			23				33
30		SPT 8	100 (100)	6-8-11 (19)			23				28
		SPT 9	100 (100)	8-15-25 (40)			19				16
	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Dense, Moist										
40		SPT 10	100 (100)	21-19-18 (37)			23				6
	(CH) Fat Clay, Reddish Brown, Stiff, Moist	SPT 11	100 (100)	15-16-17 (33)			22				9
50		SPT 12	100 (100)	9-11-15 (26)			26	53	18	35	
	(CL) Lean Clay, Silty, Reddish Brown, Stiff, Moist	SPT 13	100 (100)	9-11-11 (22)			20				91
60		SPT 14	100 (100)	8-9-11 (20)			23	31	20	11	

Bottom of borehole at 60.0 feet.

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Telephone: 956-565-0760

BORING NUMBER BH-119

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/16/09 **COMPLETED** 4/16/09
GROUND ELEVATION 61.18 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 41.18 ft
LOGGED BY E. Castillo **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 20' / Mud Rotary to 60'
AFTER DRILLING 34.00 ft / Elev 27.18 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Moist, Firm to Hard	SPT 1	100 (100)	5-6-6 (12)			10				50
			SPT 2	100 (100)	4-4-5 (9)			13	37	16	21	
			SPT 3	100 (100)	5-6-6 (12)			12				51
10			SH 4	100 (100)		4.0		14	34	16	18	
		(CL) Lean Clay, Brown, Moist, Stiff	SH 5	100 (100)		1.5		16				57
20		(CH) Fat Clay, Reddish Brown, Wet, Hard	SH 6	100 (100)		2.0		18	70	18	52	
		(SC) Clayey Sand, Reddish Brown, Wet, Loose	SPT 7	100 (100)	2-2-3 (5)			22				39
30		(SP-SM) Poorly Graded Sand w/ Silt, Brown, Moist, Dense to Very Dense	SPT 8	100 (100)	8-8-10 (18)			22				8
			SPT 9	100 (100)	11-13-15 (28)			24				7
40			SPT 10	100 (100)	13-24-27 (51)			24				7
			SPT 11	100 (100)	27-23-25 (48)			22				12
50		(CH) Fat Clay, Reddish Brown, Moist, Hard	SH 12	100 (100)		4.5		19	51	13	38	69
			SH 13	100 (100)		4.5		19				99
60			SH 14	100 (100)		4.5		19	53	23	30	

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
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BORING NUMBER BH-120

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/15/09 **COMPLETED** 4/15/09
GROUND ELEVATION 61.08 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 20.00 ft / Elev 41.08 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 60'
AFTER DRILLING 21.00 ft / Elev 40.08 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Moist, Firm to Soft										
			SPT 1	100 (100)	3-3-6 (9)			14				98
			SPT 2	100 (100)	2-3-4 (7)			11	33	14	19	
			SPT 3	100 (100)	1-1-2 (3)			11	31	15	16	
10			SPT 4	100 (100)	1-2-3 (5)			14				62
			SPT 5	100 (100)	2-2-4 (6)			15	29	16	13	
20			SPT 6	100 (100)	2-3-4 (7)			18				61
			SPT 7	100 (100)	3-4-4 (8)			21	24	13	11	
		(SC) Clayey Sand, Brown, Wet, Medium Dense										
30			SPT 8	100 (100)	7-8-11 (19)			24				14
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Wet to Moist, Dense to Very Dense	SPT 9	100 (100)	9-11-14 (25)			24				11
40			SPT 10	100 (100)	12-21-28 (49)			20				8
			SPT 11	100 (100)	18-23-29 (52)			19				7
50		(CL) Lean Clay, Brown, Moist, Hard to Stiff	SPT 12	100 (100)	13-16-17 (33)			23	37	21	16	
			SPT 13	100 (100)	10-12-15 (27)			20	44	21	23	77
60		(SC) Clayey Sand, Brown, Very Moist, Dense	SPT 14	100 (100)	5-18-14 (32)			20				17

Bottom of borehole at 60.0 feet.

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L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
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Telephone: 956-565-0760

BORING NUMBER BH-121

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/17/09 **COMPLETED** 4/17/09
GROUND ELEVATION 61.33 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR Jedi Drilling
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 25.00 ft / Elev 36.33 ft
LOGGED BY Roland **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 25' / Mud Rotary to 120'
AFTER DRILLING 20.00 ft / Elev 41.33 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Brown, Very Moist, Firm to Stiff										
			SPT 1	100 (100)	8-11-14 (25)			11	44	14	30	70
			SPT 2	100 (100)	6-6-6 (12)			10				67
			SPT 3	100 (100)	3-3-2 (5)			9	46	16	30	72
10			SPT 4	100 (100)	6-6-7 (13)			13				63
			SPT 5	100 (100)	4-6-8 (14)			15	47	18	29	57
20			SPT 6	100 (100)	3-7-9 (16)			16	39	15	24	61
			SPT 7	100 (100)	2-5-9 (14)			21	26	16	10	51
30			SPT 8	100 (100)	4-10-16 (26)			32				84
		(SC) Clayey Sand, Brown, Moist, Dense to Very Dense										
			SPT 9	100 (100)	7-14-17 (31)			23				16
40			SPT 10	100 (100)	9-15-21 (36)			23				15
			SPT 11	100 (100)	29-33-21 (54)			28				41
		(CL) Lean Clay, Brown, Very Moist, Hard										
50			SPT 12	100 (100)	11-21-19 (40)			18	38	16	22	63
		(CH) Fat Clay, Reddish Brown, Moist, Stiff to Hard										
			SPT 13	100 (100)	13-10-27 (37)			25				90
60			SH 14	100 (100)		2.5		27	63	19	44	88

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L&G Engineering Laboratory
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BORING NUMBER BH-121

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
		(CH) Fat Clay, Reddish Brown, Moist, Stiff to Hard *(continued)*										
			SH 15	100 (100)		3.0		25	54	21	33	85
70			SH 16	100 (100)		4.5		20	63	25	38	99
			SH 17	100 (100)		4.0		22				86
80												
			SH 18	100 (100)		4.5		23	53	25	28	98
90		(CL) Lean Clay, Reddish Brown, Very Moist, Hard	SH 19	100 (100)		3.0		18	28	19	9	78
			SH 20	100 (100)		4.5		19	35	19	16	95
100			SH 21	100 (100)		4.5		30				94
		(CH) Fat Clay, Reddish Brown, Moist, Hard	SPT 22	100 (100)	28-27-38 (65)			16	55	23	32	84
		(SC) Clayey Sand, Brown, Moist, Very Dense	SPT 23	100 (100)	26-36-43 (79)			25				27
110		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Very Dense										
			SPT 24	100 (100)	24-50-14 (64)			20				9
120			SH 25	100 (100)		0.5		22				11

Bottom of borehole at 120.0 feet.

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BORING NUMBER BH-122

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/15/09 **COMPLETED** 4/15/09
GROUND ELEVATION 60.82 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 32.00 ft / Elev 28.82 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 45' / Mud Rotary to 60'
AFTER DRILLING --- No water 24 hours after completion

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	(CL) Lean Clay w/ Calc. Nodules, Moist, Firm to Hard	SPT 1	100 (100)	4-6-8 (14)			9	36	14	22	
		SPT 2	100 (100)	3-5-7 (12)			18	43	2	41	58
		SH 3	100 (100)		4.0		11	43	13	30	63
10		SH 4	100 (100)		3.5		17				
		SH 5	100 (100)		3.5		16	49	17	32	
20	(CH) Fat Clay w/ Calc. Nodules, Moist, Firm	SH 6	100 (100)		2.0		20				
		SPT 7	100 (100)	4-5-4 (9)			24	54	17	37	
30		SPT 8	100 (100)	5-6-6 (12)			16				99
	(SP-SC) Poorly Graded Sand w/ Clay, Brown, Moist, Very Dense to Dense	SPT 9	100 (100)	15-23-27 (50)			17				10
40		SPT 10	100 (100)	20-26-32 (58)			17				
		SPT 11	100 (100)	19-20-25 (45)			22				7
50		SPT 12	100 (100)	21-23-25 (48)			23				7
	(CH) Fat Clay, Brown, Moist, Hard	SPT 13	100 (100)	16-18-24 (42)			24	51	9	42	79
	(CL) Lean Clay, Brown, Moist, Hard										
60		SPT 14	100 (100)	18-21-25 (46)			28	45	13	33	

Bottom of borehole at 60.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 5/20/09 10:04 - \\S300\LABORATORY\GINT\PROJECTS\NFE2.GPJ

L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

BORING NUMBER BH-123

CLIENT S&B Infrastructure
PROJECT NAME North Floodway Imp. Project - East & West Segments
PROJECT NUMBER NFE2
PROJECT LOCATION Hidalgo County, Texas
DATE STARTED 4/15/09 **COMPLETED** 4/15/09
GROUND ELEVATION 60.7 ft **HOLE SIZE** 4" inches
DRILLING CONTRACTOR L&G Engineering
GROUND WATER LEVELS:
DRILLING METHOD Solid Stem Auger / Mud Rotary
AT TIME OF DRILLING 28.00 ft / Elev 32.70 ft
LOGGED BY R. CANTU **CHECKED BY** O. De Leon
AT END OF DRILLING ---
NOTES Solid Stem Auger to 30' / Mud Rotary to 60'
AFTER DRILLING 21.00 ft / Elev 39.70 ft 24 hours after completion

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		(CL) Lean Clay, Silty, Brown, Moist, Firm to Hard	SPT 1	100 (100)	4-6-7 (13)			13	43	16	27	
			SPT 2	100 (100)	3-5-7 (12)			15				74
			SH 3	100 (100)		3.5		15	38	15	23	
10			SH 4	100 (100)		2.5		14				
			SH 5	100 (100)		3.0		19	44	16	28	85
20			SH 6	100 (100)		2.0		17				
			SH 7	100 (100)		3.5		18	39	13	26	78
30		(SC) Clayey Sand, Brown, Wet, Medium Dense	SPT 8	100 (100)	3-4-7 (11)			26				13
		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Medium Dense to Very Dense	SPT 9	100 (100)	6-8-10 (18)			24				6
40			SPT 10	100 (100)	14-26-26 (52)			20				8
		(SC) Clayey Sand, Brown, Very Moist, Dense	SPT 11	100 (100)	20-24-22 (46)			22				13
50		(SP-SC) Poorly Graded Sand w/ Clay, Brown, Very Moist, Medium Dense	SPT 12	100 (100)	15-19-21 (40)			23				9
		(CL) Lean Clay, Brown, Moist, Stiff	SPT 13	100 (100)	7-8-11 (19)			18	46	24	22	97
60			SPT 14	100 (100)	9-10-13 (23)			25	40	29	11	

Bottom of borehole at 60.0 feet.

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