CUY-90-14.90

PID 77332/85531

APPENDIX GE-15

Supplemental Boring Program Report
(Reference Document)

State of Ohio
Department of Transportation
Jolene M. Molitoris, Director

Innerbelt Bridge
Construction Contract Group 1 (CCG1)

Revision Date: May 24, 2010

4 - Addendum No. 4 - New Appendix

PROJECT: CUY-90-14.90	DRILLING FIRM / OPERATOR: OTB / D. HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 137+86, 42.5 LT
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: B&P / WESTERVILLER	HAMMER: SIMCO AUTO	ALIGNMENT: IR-90
PID: 77332 BR ID:	DRILLING METHOD: 3.25" HSA / NQ	CALIBRATION DATE: 10/22/09	ELEVATION: 579.8 (MSL) EOB: 190.0 ft.
START: 4/14/10 END: 4/19/10	SAMPLING METHOD: SPT / NQ	ENERGY RATIO (%): 83.4	COORD: 664302.390 N, 2190333.753 E

EXPLORATION ID B-039-1-10

PAGE 1 OF 6

MATERIAL DESCRIPTION AND NOTES	ELEV. 579.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
CONCRETE, 8.0"	579.0																	
MEDIUM DENSE, BLACK AND BROWN, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, LITTLE TO SOME SILT, FEW CINDERS, MOIST	576.8	0.25 hr; W 15 hr; 1–2	7 14 7	29	83	SS-1	n/a	-	-	-	-	-	-	-	-	12	A-1-b (V)	
LOOSE, BLACK AND BROWN, **COARSE AND FINE SAND**, SOME GRAVEL, WITH SILT, FEW CINDERS, WET	574.3	3–5	2 2 4	8	89	SS-2	n/a	-	-	-	-	-	-	-	-	27	A-3a (V)	
VERY LOOSE TO LOOSE, BROWN CHANGING TO GRAY, **SANDY SILT**, LITTLE CLAY, WET		6–7	1 1 1	3	100	SS-3	n/a	0	1	41	42	16	22	18	4	21	A-4a (5)	
		8–9	WOH	-	100	SS-4	n/a	-	-	-	-	-	-	-	-	24	A-4a (V)	
	564.8	13–14	1 1 3	6	100	SS-5	0.6 - 0.7	-	-	-	-	-	-	-	-	27	A-4a (V)	
LOOSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET	557.3	18–19	1 2 2	6	56	SS-6	n/a	7	26	55	11	1	NP	NP	NP	22	A-3a (0)	
WOOD	555.5	22–23	18 17 13	42	67	SS-7	n/a	-	-	-	-	-	-	-	-	-		
LOOSE, GRAY, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, WET	550.6	28–29	3 4 4	11	94	SS-8	n/a	-	-	-	-	-	-	-	-	20	A-3a (V)	
							1.9 -	0	0	2	64	34	26	20	6	23	A-4b (8)	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 137+86, 42.5 LT	START: 4/14/10	END: 4/19/10	PG 2 OF 6	B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
STIFF TO VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE FINE SAND, MOIST *(continued)*	549.8	31					3.2											
		32																
		33																
		34	3 5 7	17	100	SS-9	2.3 - 3.3	-	-	-	-	-	-	-	-	23	A-4b (V)	
		35																
		36																
		37																
		38																
		39	3 7 8	21	100	SS-10	3.0 - 3.3	-	-	-	-	-	-	-	-	21	A-4b (V)	
		40																
		41																
	537.8	42																
STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, CONTAINS FEW SILT LENSES, MOIST		43																
		44	2 2 3	7	100	SS-11	1.1 - 1.5	-	-	-	-	-	-	-	-	27	A-6a (V)	
		45																
		46																
	532.8	47																
STIFF TO VERY STIFF, GRAY, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, MOIST		48																
		49	3 4 5	13	67	SS-12	1.4 - 2.1	2	9	12	44	33	23	16	7	17	A-4a (8)	
		50																
		51																
	527.8	52																
STIFF TO VERY STIFF, GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, MOIST TO WET		53																
		54	1 3 5	11	78	SS-13	1.0 - 1.5	2	2	3	36	57	33	17	16	24	A-6b (10)	
		55																
		56																
		57																
		58																
		59	2 3 5	11	83	SS-14	1.0 - 1.3	-	-	-	-	-	-	-	-	24	A-6b (V)	
		60																
		61																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 137+86, 42.5 LT	START: 4/14/10	END: 4/19/10	PG 3 OF 6	B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
STIFF TO VERY STIFF, GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, MOIST TO WET *(continued)*	517.7	63																
		64	2 3 5	11	83	SS-15	1.1 - 1.3	-	-	-	-	-	-	-	-	24	A-6b (V)	
		65																
		66																
		67																
		68																
		69	2 4 6	14	100	SS-16	1.0 - 1.3	-	-	-	-	-	-	-	-	23	A-6b (V)	
		70																
		71																
		72																
		73																
		74	2 4 6	14	100	SS-17	1.0 - 1.3	1	3	4	37	55	33	19	14	21	A-6b (V)	
		75																
		76																
		77																
		78																
		79	3 5 9	19	83	SS-18	1.9 - 2.1	-	-	-	-	-	-	-	-	23	A-6b (V)	
		80																
		81																
		82																
		83																
		84	3 5 7	17	94	SS-19	1.3 - 2.0	-	-	-	-	-	-	-	-	25	A-6b (V)	
		85																
		86																
		87																
		88																
		89	3 4 6	14	100	SS-20	1.3 - 1.5	-	-	-	-	-	-	-	-	29	A-6b (V)	
		90																
		91																
	487.8	92																
SOFT TO MEDIUM STIFF, GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, WET		93																
		94	2				0.3 -											

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 137+86, 42.5 LT	START: 4/14/10	END: 4/19/10	PG 4 OF 6	B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
SOFT TO MEDIUM STIFF, GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, WET *(continued)*	485.5		2 4	8	100	SS-21	0.7	-	-	-	-	-	-	-	-	31	A-6b (V)	
LOOSE, GRAY, **SILT**, TRACE SAND, FEW SILTY CLAY SEAMS, WET	483.8	95 96 97 98																
HARD TO STIFF, GRAY, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST	480.1	99	2 5 11	22	100	SS-22	n/a	-	-	-	-	-	-	-	-	25	A-4b (V)	
		100					4.5+	-	-	-	-	-	-	-	-	12	A-6a (V)	
		101 102 103																
		104	14 18 25	60	72	SS-23	4.5+	3	6	10	35	46	29	18	11	15	A-6a (8)	
		105 106 107 108																
		109	12 23 29	72	100	SS-24	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)	
		110 111 112 113																
		114	7 11 14	35	100	SS-25	3.2 - 4.5+	-	-	-	-	-	-	-	-	26	A-6a (V)	
		115 116 117 118																
		119	3 4 6	14	100	SS-26	1.1 - 1.8	0	1	2	36	61	34	19	15	27	A-6a (10)	
		120 121 122 123																
		124	3 5 6	15	100	SS-27	1.3 - 1.5	-	-	-	-	-	-	-	-	32	A-6a (V)	
		125 126																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 137+86, 42.5 LT	START: 4/14/10	END: 4/19/10	PG 5 OF 6	B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
HARD TO STIFF, GRAY, **SILT AND CLAY**, LITTLE SAND, TRACE GRAVEL, DAMP TO MOIST *(continued)*	453.4	127, 128																
		129–130	3 5 6	15	100	SS-28	1.3 - 1.5	-	-	-	-	-	-	-	-	25	A-6a (V)	
	447.3	131, 132, 133																
HARD, GRAY, **SANDY SILT**, TRACE CLAY, TRACE GRAVEL, MOIST		134–135	9 12 20	44	78	SS-29	n/a	6	25	28	34	7	NP	NP	NP	16	A-4a (1)	
		136, 137, 138																
		139–140	40 53 58	154	83	SS-30	4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)	
		141, 142, 143																
Very Stiff Layer 144.2' to 146.0'		144–145	20 26 29	76	72	SS-31	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)	
							3.3 - 4.0	-	-	-	-	-	-	-	-	19	A-4a (V)	
		146, 147, 148																
		149–150	31 25 35	83	83	SS-32	4.5+	26	18	12	26	18	26	17	9	9	A-4a (2)	
		151, 152, 153																
	426.3																	
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY**, (SHALE FRAGMENTS), DAMP		154	50/5"	-	100	SS-33	n/a	-	-	-	-	-	-	-	-	11	A-2-6 (V)	
	424.3	155																
SHALE, GRAY, HIGHLY WEATHERED, VERY WEAK. Encountered methane gas @ 155.5'		TR 156, 157, 158																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 137+86, 42.5 LT	START: 4/14/10	END: 4/19/10	PG 6 OF 6	B-039-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
SHALE, GRAY, HIGHLY WEATHERED, VERY WEAK. Encountered methane gas @ 155.5' *(continued)*	421.3	159	50/2"	-	100	SS-34	n/a	-	-	-	-	-	-	-	-	-	Rock (V)	
SHALE, GRAY TO DARK GRAY, SLIGHTLY WEATHERED, MODERATELY STRONG TO STRONG, VERY THICK BEDDED, BEDDING DISCONTINUITIES AND LOW ANGLE AT 171.0', 176.4', AND 177.3', LIMESTONE LAMINA AT 171.0' AND 184.0'; INTACT, TIGHT TO NARROW, VERY ROUGH TO SLIGHLY ROUGH; RQD 95.8%, REC 100%.	419.8	160																
		165	92		100	NQ-1											CORE	
168.4' - 169.0' Qu = 6234 psi @ 1.4% Strain, E = 9.0 X 10^5 psi		170																
173.5' - 173.9' Qu = 1830 psi @ 1.5% Strain, E = 2.1 X 10^5 psi		175	96		100	NQ-2											CORE	
@180.0'; SLIGHTLY PYRITIC.		180																
		185	100		100	NQ-3											CORE	
		EOB 190																

NOTES: GW ENCOUNTERED DURING DRILLING AT 3.0', AFTER DRILLING: 2.5'. 15 HOURS AFTER DRILLING: 2.5'. WATER USED AS CIRCULATING FLUID FROM 33.5' TO 190.0'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 1 BAG BENTONITE POWDER; PUMPED 1 BAG CEMENT

PROJECT: CUY-90-14.90	DRILLING FIRM / OPERATOR: OTB / D. HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 155+14, 9.8 RT
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: B&P / WESTERVILLER	HAMMER: SIMCO AUTO	ALIGNMENT: IR-90
PID: 77332 BR ID:	DRILLING METHOD: 3.25" HSA / NQ	CALIBRATION DATE: 10/22/09	ELEVATION: 586.4 (MSL) EOB: 190.0 ft.
START: 4/9/10 END: 4/14/10	SAMPLING METHOD: SPT / ST / NQ	ENERGY RATIO (%): 83.4	COORD: 665849.687 N, 2191091.013 E

EXPLORATION ID B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 586.4	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
ASPHALT, 6.0"	585.9																
AGGREGATE BASE, 5.0"	585.5																
LOOSE TO MEDIUM DENSE, BLACK, **COARSE AND FINE SAND**, (CINDERS) LITTLE GRAVEL, LITTLE SILT, MOSTLY CINDERS, WET **(FILL)**	583.4	5 5 4	13	72	SS-1	n/a	-	-	-	-	-	-	-	-	29	A-3a (V)	
LOOSE, BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE GRAVEL, CONTAINS WOOD AND FEW CINDERS, MOIST **(FILL) Strong petroleum odor @ 6.0'**	579.4	5 4 3	10	67	SS-2	n/a	-	-	-	-	-	-	-	-	9	A-3a (V)	
		42 50/2"	-	6	SS-3	n/a	-	-	-	-	-	-	-	-	-	A-3a (V)	
SOFT TO STIFF, GRAY, **SILTY CLAY**, LITTLE SAND, SLIGHTLY ORGANIC, CONTAINS DESSICATED ROOTS, MOIST		WOH 2 2	6	83	SS-4	0.3 - 0.8	-	-	-	-	-	-	-	-	29	A-6b (V)	
UC = 1077 psf @ 12% strain				95	ST-5	0.9 - 1.3	0	1	11	51	37	37	19	18	33	A-6b (11)	
SOFT TO MEDIUM STIFF, GRAY, **ORGANIC CLAY**, TRACE SAND, CONTAINS DESSICATED VEGETATION, WET	569.4	WOH WOH 1	1	100	SS-6	0.4 - 0.8	-	-	-	-	-	-	-	-	70	A-8b (V)	
LOOSE, GRAY, **SILT**, INTERLAYERED WITH SILTY CLAY, TRACE FINE SAND, WET	564.4	WOH 2 2	6	89	SS-7	0.7 - 0.8	-	-	-	-	-	-	-	-	23	A-4b (V)	
MEDIUM STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, FEW SILT LENSES, DAMP TO MOIST UC = 6620 psf @ 4.7% strain	559.9			99	ST-8	2.3 - 2.8	1	0	1	52	46	31	18	13	22	A-6a (9)	

DEPTHS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

W

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 155+14, 9.8 RT	START: 4/9/10	END: 4/14/10	PG 2 OF 6	B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 556.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, FEW SILT LENSES, DAMP TO MOIST *(continued)*		31																
		32																
		33																
		34	3 2 3	7	50	SS-9	0.7 - 1.3	-	-	-	-	-	-	-	-	23	A-6a (V)	
		35																
		36																
		37																
		38																
		39	3 5 8	18	100	SS-10	1.6 - 2.3	-	-	-	-	-	-	-	-	22	A-6a (V)	
		40																
		41																
		42																
		43																
		44	3 6 8	19	100	SS-11	3.3 - 3.6	0	0	0	46	54	33	18	15	22	A-6a (10)	
		45																
		46																
		47																
		48																
		49	4 6 7	18	78	SS-12	2.1 - 2.3	-	-	-	-	-	-	-	-	24	A-6a (V)	
		50																
		51																
		52																
		53																
		54	4 7 10	24	83	SS-13	2.5 - 3.0	-	-	-	-	-	-	-	-	21	A-6a (V)	
		55																
		56																
		57																
		58																
		59	4 7 10	24	72	SS-14	1.8 - 2.6	-	-	-	-	-	-	-	-	22	A-6a (V)	
		60					3.0 - 3.1	-	-	-	-	-	-	-	-	20	A-6a (V)	
		61																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 155+14, 9.8 RT	START: 4/9/10	END: 4/14/10	PG 3 OF 6	B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, FEW SILT LENSES, DAMP TO MOIST *(continued)*	524.3	63																
		64	3 6 10	22	78	SS-15	2.3 - 3.0	2	4	5	34	55	32	18	14	20	A-6a (10)	
		65																
		66																
		67																
		68																
		69	4 6 10	22	67	SS-16	2.3 - 2.8	-	-	-	-	-	-	-	-	15	A-6a (V)	
		70																
		71																
	514.4	72																
STIFF, GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, MOIST		73																
		74	3 6 7	18	89	SS-17	1.8 - 1.9	-	-	-	-	-	-	-	-	22	A-6b (V)	
		75																
		76																
		77																
		78																
		79	2 5 7	17	78	SS-18	1.5 - 1.7	2	3	3	37	55	33	17	16	22	A-6b (10)	
		80																
		81																
		82																
		83																
		84	3 5 8	18	94	SS-19	1.5 - 1.9	-	-	-	-	-	-	-	-	20	A-6b (V)	
		85																
		86																
		87																
		88																
		89	2 6 7	18	83	SS-20	1.3 - 1.5	-	-	-	-	-	-	-	-	22	A-6b (V)	
		90																
		91																
	494.4	92																
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST		93																
		94	3				2.0 -											

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 155+14, 9.8 RT	START: 4/9/10	END: 4/14/10	PG 4 OF 6	B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
STIFF TO VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST *(continued)*	492.1		7 9	22	94	SS-21	2.3	-	-	-	-	-	-	-	-	23	A-6a (V)	
		95																
		96																
		97																
		98																
		99	3 5 8	18	89	SS-22	1.8 - 2.0	0	0	1	41	58	34	19	15	24	A-6a (10)	
		100																
		101																
		102																
		103																
changes from gray to gray-brown		104	3 5 7	17	100	SS-23	1.5 - 1.8	-	-	-	-	-	-	-	-	24	A-6a (V)	
		105																
		106																
		107																
		108																
		109	4 7 8	21	100	SS-24	1.3 - 1.5	-	-	-	-	-	-	-	-	31	A-6a (V)	
		110																
		111																
		112																
	473.9	113																
HARD, GRAY, **SANDY SILT**, SOME CLAY, TRACE GRAVEL, DAMP		114	14 19 31	70	83	SS-25	4.5+	4	6	13	45	32	23	14	9	11	A-4a (8)	
		115																
		116																
		117																
		118																
		119	10 23 37	83	94	SS-26	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		120																
		121																
		122																
		123																
	462.4	124	13 21 29	70	89	SS-27	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
HARD, **SILT AND CLAY**, TRACE SAND, MANY SILT LENSES, DAMP		125					4.5+	-	-	-	-	-	-	-	-	19	A-6a (V)	
		126																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 155+14, 9.8 RT	START: 4/9/10	END: 4/14/10	PG 5 OF 6	B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
HARD, **SILT AND CLAY**, TRACE SAND, MANY SILT LENSES, DAMP *(continued)*	460.0																	
	458.4																	
VERY DENSE, GRAY, **SILT**, LITTLE SAND, TRACE CLAY, WET		127, 128, 129, 130, 131	30 38 37	104	89	SS-28	n/a	0	0	11	79	10	NP	NP	NP	19	A-4b (8)	
	454.4																	
VERY DENSE, GRAY, **COARSE AND FINE SAND**, DAMP		132, 133, 134, 135	10 18 27	63	67	SS-29	n/a	-	-	-	-	-	-	-	-	12	A-3a (V)	
	450.4																	
HARD, GRAY, **SILT AND CLAY**, DAMP		136, 137, 138, 139, 140	17 32 41	101	94	SS-30	4.5+	0	0	0	47	53	31	18	13	16	A-6a (9)	
	441.7	141, 142, 143, 144	13 21 31	72	100	SS-31	4.5+	-	-	-	-	-	-	-	-	21	A-6a (V)	
HARD, DARK BROWN MOTTLED WITH GRAY, **SANDY SILT**, TRACE GRAVEL AND SHALE FRAGMENTS, DAMP	440.4	145					4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	
HARD, GRAY, **SILTY CLAY**, TRACE SAND, TRACE GRAVEL, DAMP		146, 147, 148, 149, 150	11 19 27	64	100	SS-32	4.5+	-	-	-	-	-	-	-	-	24	A-6b (V)	
	430.9	151, 152, 153, 154, 155	15 25 42	93	100	SS-33	4.5+	4	6	2	37	51	35	19	16	19	A-6b (10)	
VERY DENSE, GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT**, (WEATHERED SHALE FRAGMENTS)		156, 157, 158																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 155+14, 9.8 RT	START: 4/9/10	END: 4/14/10	PG 6 OF 6	B-044-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 427.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
GREY HIGHLY WEATHERED SHALE	427.4	159	35 50/4"	-	100	SS-34	n/a n/a	- -	- -	- -	- -	- -	- -	- -	- -	11 7	A-2-4 (V) Rock (V)	
Enountered methane gas at 159'	426.4	TR 160																
SHALE, GRAY TO DARK GRAY, SLIGHTLY TO MODERATELY WEATHERED, SLIGHTLY TO MODERATELY STRONG, VERY THICK BEDDED, BEDDING DICONTUITIES AND HIGH ANGLE AT 164.9' TO 165.4'AND 188.3' TO 188.7'; LOW ANGLE 161.5', 167.8', 171.8', 173.7', 176.6', 185.5', 185.8', AND 186.0'; LIMESTONE LAMINA AT 165.4' TO 165.5'; INTACT, NARROW TO TIGHT, SLIGHTLY ROUGH TO VERY ROUGH.; RQD 93.8%, REC 98.1%. Weak zone 162.5 to 170; slightly fractured 160.0' to 163.6' 164.4' - 164.9' Qu = 4597 psi @ 2.0% Strain, E = 6.0 X 10^5 psi 166.8' - 167.4' Qu = 6278 psi @ 1.8% Strain, E = 5.2 X 10^5 psi		161 162 163 164 165 166 167 168 169 170	87		94	NQ-1											CORE	
171.8' - 172.3' Qu = 7656 psi @ 1.8% Strain, E = 6.9 X 10^5psi		171 172 173 174 175 176 177 178 179 180	98		100	NQ-2											CORE	
		181 182 183 184 185 186 187 188 189 190	92		100	NQ-3											CORE	
	396.4	EOB																

NOTES: GW ENCOUNTERED DURING DRILLING AT 6.0', AT COMPLETION: 6.4'. WATER USED AS CIRCULATING FLUID FROM 43.5' TO 190.0'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG BENTONITE PELLETS; PUMPED 1 BAG BENTONITE POWDER; PUMPED 2 BAG CEMENT

PROJECT: CUY-90-14.90	DRILLING FIRM / OPERATOR: OTB / D. HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 160+75, 56.2 LT
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: B&P / WESTERVILLER	HAMMER: SIMCO AUTO	ALIGNMENT: IR-90
PID: 77332 BR ID:	DRILLING METHOD: 3.25" HSA / NQ	CALIBRATION DATE: 10/22/09	ELEVATION: 666.5 (MSL) EOB: 248.5 ft.
START: 4/5/10 END: 4/8/10	SAMPLING METHOD: SPT / NQ	ENERGY RATIO (%): 83.4	COORD: 666324.253 N, 2191401.822 E

EXPLORATION ID B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 666.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
CONCRETE, 8.0"	665.8																	
MEDIUM DENSE, BROWN, DARK BROWN AND DARK GRAY, **COARSE AND FINE SAND**, LITTLE TO TRACE GRAVEL, LITTLE TO TRACE SILT, MOIST Contains Brick Fragments **(FILL)**		1 2 3 4 5 ▼ 0.25 hr	5 8 4	17	28	SS-1	n/a	-	-	-	-	-	-	-	-	6	A-3a (V)	
VERY LOOSE, BROWN, **COARSE AND FINE SAND**, TRACE GRAVEL, TRACE SILT, TRACE CLAY, DRY Contains Brick Fragments **(FILL)**	661.0	6 7 8 9 10 11 12	1 2 1	4	67	SS-2	n/a	-	-	-	-	-	-	-	-	9	A-3a (V)	
STIFF TO VERY STIFF, BROWN, **SILT AND CLAY**, TRACE FINE SAND, CONTAINS FEW SILT LENSES, DAMP	654.5	13																
MEDIUM DENSE, BROWN, **FINE SAND**, TRACE COARSE SAND, TRACE SILT, TRACE CLAY, DAMP	652.5	14 15 ▼ 15 hr	1 5 9	19	89	SS-3	1.6 - 2.5	-	-	-	-	-	-	-	-	21	A-6a (V)	
							n/a	-	-	-	-	-	-	-	-	16	A-3 (V)	
STIFF, BROWN, **SILT**, SOME CLAY, LITTLE SAND, WET	650.0	16 17 18 19 20 21	4 2 4	8	100	SS-4	1.0 - 1.8	0	2	11	60	27	27	19	8	25	A-4b (8)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, DRY	644.5	22 23 24 25 26	5 5 8	18	100	SS-5	n/a	-	-	-	-	-	-	-	-	5	A-3a (V)	
MEDIUM DENSE, GRAY-BROWN, **SANDY SILT**, TRACE CLAY, MOIST	639.5	27 28 29	4 7 7	19	83	SS-6	n/a	0	10	48	35	7	NP	NP	NP	16	A-4a (1)	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 2 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM DENSE, GRAY-BROWN, **SANDY SILT**, TRACE CLAY, MOIST *(continued)*	636.5																	
DENSE, GRAY-BROWN, **COARSE AND FINE SAND**, TRACE SILT, DAMP	634.5	31, 32, 33																
		34, 35	8 11 12	32	78	SS-7	n/a	-	-	-	-	-	-	-	-	21	A-3a (V)	
MEDIUM DENSE TO DENSE, GRAY-BROWN, **SILT**, LITTLE CLAY, TRACE SAND, TRACE GRAVEL, MOIST	629.5	36, 37, 38																
		39, 40	5 8 12	28	89	SS-8	n/a	1	0	6	76	17	NP	NP	NP	17	A-4b (8)	
		41, 42, 43																
		44, 45	6 7 7	19	89	SS-9	n/a	-	-	-	-	-	-	-	-	21	A-4b (V)	
		46, 47, 48																
		49, 50	12 14 14	39	100	SS-10	n/a	-	-	-	-	-	-	-	-	17	A-4b (V)	
		51, 52, 53																
		54, 55	5 7 9	22	83	SS-11	n/a	-	-	-	-	-	-	-	-	18	A-4b (V)	
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST	611.5	56, 57, 58																
		59, 60	4 7 9	22	78	SS-12	3.5 - 4.5+	0	0	1	70	29	30	19	11	21	A-6a (8)	
		61																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 3 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 604.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST *(continued)*		63																
		64	3 5 6	15	89	SS-13	2.3 - 3.5	-	-	-	-	-	-	-	-	21	A-6a (V)	
		65																
		66																
	599.5	67																
MEDIUM STIFF TO STIFF, GRAY, **SILTY CLAY**, TRACE SAND, MOIST		68																
		69	1 2 3	7	100	SS-14	0.80	-	-	-	-	-	-	-	-	31	A-6b (V)	
		70																
		71																
		72																
		73																
		74	1 2 3	7	100	SS-15	0.8 - 1.0	0	0	1	42	57	37	17	20	26	A-6b (12)	
		75																
		76																
		77																
	589.0	78																
HARD, GRAY, **SILT**, "AND" CLAY, TRACE FINE SAND, MOIST		79	7 9 12	29	72	SS-16	4.5+	-	-	-	-	-	-	-	-	20	A-4b (V)	
		80																
		81																
		82																
		83																
		84	7 11 14	35	83	SS-17	4.5+	-	-	-	-	-	-	-	-	19	A-4b (V)	
		85																
		86																
		87																
		88																
		89	7 10 11	29	83	SS-18	4.5+	0	0	0	57	43	28	18	10	20	A-4b (8)	
		90																
		91																
	574.5	92																
STIFF TO VERY STIFF, GRAY-BROWN, **SILT**, "AND" CLAY, TRACE SAND, TRACE GRAVEL, MOIST		93																
		94	4				1.5 -											

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 4 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 572.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
STIFF TO VERY STIFF, GRAY-BROWN, **SILT**, "AND" CLAY, TRACE SAND, TRACE GRAVEL, MOIST *(continued)*		95	5 7	17	100	SS-19	2.0	-	-	-	-	-	-	-	-	26	A-4b (V)	
		96																
		97																
		98																
		99	4 6 8	19	89	SS-20	1.3 - 1.8	-	-	-	-	-	-	-	-	24	A-4b (V)	
		100																
		101																
		102																
		103																
		104	4 7 9	22	94	SS-21	1.8 - 2.3	1	0	1	56	42	27	18	9	22	A-4b (8)	
		105																
		106																
	559.5	107																
MEDIUM STIFF, GRAY-BROWN, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, CONTAINS FEW SILT LENSES, MOIST		108																
		109	1 3 3	8	100	SS-22	0.8 - 0.9	-	-	-	-	-	-	-	-	29	A-6a (V)	
		110																
		111																
	554.5	112																
STIFF, GRAY-BROWN, **SILT**, "AND" CLAY, TRACE SAND, MOIST		113																
		114	2 4 5	13	100	SS-23	1.0 - 1.3	-	-	-	-	-	-	-	-	23	A-4b (V)	
		115																
		116																
		117																
		118																
		119	2 5 7	17	100	SS-24	1.5 - 1.9	0	0	1	53	46	28	19	9	22	A-4b (8)	
		120																
		121																
	544.5	122																
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, MOIST		123																
		124	5 9 12	29	83	SS-25	2.3 - 3.5	-	-	-	-	-	-	-	-	22	A-6a (V)	
		125																
		126																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 5 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 540.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF, GRAY, **SILT AND CLAY**, TRACE SAND, TRACE GRAVEL, MOIST *(continued)*		127, 128																
		129–130	5 11 16	38	78	SS-26	2.3 - 3.3	-	-	-	-	-	-	-	-	21	A-6a (V)	
		131, 132, 133																
		134–135	6 10 15	35	83	SS-27	3.3 - 3.8	1	0	2	41	56	30	18	12	22	A-6a (9)	
		136, 137, 138																
		139–140	7 11 16	38	100	SS-28	3.0 - 3.8	-	-	-	-	-	-	-	-	22	A-6a (V)	
		141, 142, 143																
		144–145	4 9 12	29	100	SS-29	2.8 - 3.8	-	-	-	-	-	-	-	-	25	A-6a (V)	
		146, 147, 148																
	517.5	149–150	4 10 13	32	83	SS-30	2.0 - 2.3 / 2.5 - 4.5+	- / 3	- / 6	- / 10	- / 41	- / 40	- / 26	- / 16	- / 10	26 / 17	A-6a (V) / A-4a (8)	
VERY STIFF TO HARD, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, DAMP		151																
	514.5	152, 153																
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST		154–155	7 14 20	47	100	SS-31	4.1 - 4.5+	0	4	6	38	52	30	17	13	18	A-6a (9)	
		156, 157, 158																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 6 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF TO HARD, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST *(continued)*	508.0	159	7 15 20	49	100	SS-32	3.5 - 4.5+	-	-	-	-	-	-	-	-	18	A-6a (V)	
		160																
		161																
		162																
		163																
		164	7 11 13	33	100	SS-33	2.6 - 3.3	-	-	-	-	-	-	-	-	21	A-6a (V)	
		165																
		166																
		167																
		168																
		169	4 9 12	29	100	SS-34	2.3 - 3.2	-	-	-	-	-	-	-	-	20	A-6a (V)	
		170																
		171																
		172																
		173																
		174	6 13 20	46	100	SS-35	3.6 - 4.0	-	-	-	-	-	-	-	-	22	A-6a (V)	
		175																
		176																
		177																
		178																
		179	5 10 12	31	100	SS-36	2.5 - 2.8	-	-	-	-	-	-	-	-	23	A-6a (V)	
		180																
		181																
	484.5	182																
STIFF, GRAY, **SILTY CLAY**, TRACE SAND, MOIST		183																
		184	1 4 6	14	100	SS-37	1.2 - 1.4	0	0	1	25	74	38	19	19	28	A-6b (12)	
		185																
		186																
		187																
		188																
		189	2 4 6	14	100	SS-38	1.0 - 1.3	-	-	-	-	-	-	-	-	28	A-6b (V)	
		190																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 7 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
STIFF, GRAY, **SILTY CLAY**, TRACE SAND, MOIST *(continued)*	475.9	191																
	474.0	192																
MEDIUM STIFF, GRAY, **SILT**, "AND" CLAY, TRACE SAND, WET		193																
		194	5 2 5	10	100	SS-39	0.5 - 1.0	0	0	1	51	48	23	16	7	28	A-4b (8)	
		195																
		196																
		197																
	468.5	198																
HARD, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, DAMP TO MOIST		199	13 25 33	81	56	SS-40	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	
		200																
		201																
		202																
		203																
		204	14 27 37	89	78	SS-41	4.5+	4	11	13	36	36	21	14	7	12	A-4a (7)	
		205																
		206																
		207																
		208																
		209	13 28 32	83	72	SS-42	4.0 - 4.5+	0	0	2	44	54	28	19	9	20	A-4a (8)	
		210																
		211																
		212																
	454.0	213																
VERY DENSE, GRAY, **SANDY SILT**, LITTLE CLAY, TRACE GRAVEL, DAMP		214	16 29 48	107	83	SS-43	n/a	8	20	20	39	13	NP	NP	NP	12	A-4a (3)	
		215																
		216																
	449.5	217																
HARD, GRAY, **SANDY SILT**, "AND" CLAY TRACE GRAVEL, DAMP		218																
		219	16 24 29	74	78	SS-44	4.5+	-	-	-	-	-	-	-	-	19	A-4a (V)	
		220																
		221																
	444.5	222																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 160+75, 56.2 LT	START: 4/5/10	END: 4/8/10	PG 8 OF 8	B-047-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY DENSE, GRAY, **SILT**, TRACE TO SOME SAND, LITTLE CLAY, DAMP *(continued)*	443.7	223																
		224	18 27 38	90	100	SS-45	n/a	-	-	-	-	-	-	-	-	14	A-4b (V)	
		225																
		226																
		227																
		228																
		229	28 32 42	103	100	SS-46	n/a	-	-	-	-	-	-	-	-	8	A-4b (V)	
		230																
	435.0	231																
VERY DENSE, DARK GRAY, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY**, (SHALE FRAGMENTS), DAMP		232																
		233																
		234	28 34 52	120	83	SS-47	n/a	-	-	-	-	-	-	-	-	17	A-2-6 (V)	
		235																
		236																
	429.5	TR 237																
SHALE, GRAY, SLIGHTLY WEATHERED, SLIGHTLY STRONG, VERY THICK BEDDED, MANY DIAGONAL FRACTURES FROM 238.5' TO 244.6' LOW ANGLE: 239.9', 241.8', AND 244.5'. HIGH ANGLE: 238.6' T O 239.0', 239.3' TO 239.6', 240.0' TO 240.4', 204.4' TO 240.9'. 240.9' TO 241.8', 242.2' TO 242.4'. THIN BANDS (1/8" OR LESS) OF LIMESTONE AT 242.6', 242.7', 246.5'. NARROW, SLIGHTLY ROUGH; RQD 93.8%, REC 99.6%.		238															
		239																
		240																
		241																
		242																
		243	84		100	NX-1											CORE	
		244																
		245																
Qult = 2460 psi @ 0.7% strain - 245.7' to 246.1'		246																
		247																
	418.0	EOB 248																

NOTES: GW NOT NOTED DURING DRILLING, AT COMPLETION: 4.7'. 15 HOURS AFTER DRILLING: 15.5'. WATER USED AS CIRCULATING FLUID FROM 48.5' TO 248.5'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 1 BAG BENTONITE GROUT; PUMPED 1 BAG CEMENT; PLACED SOIL CUTTINGS

PROJECT: CUY-90-14.90	DRILLING FIRM / OPERATOR: OTB / D. HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 524+47, 115.0 RT
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: B&P / WESTERVILLER	HAMMER: SIMCO AUTO	ALIGNMENT: TEMPORARY I-90 WB
PID: 77332 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/22/09	ELEVATION: 662.0 (MSL) EOB: 100.0 ft.
START: 4/23/10 END: 4/27/10	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 83.4	COORD: 667587.535 N, 2193939.024 E

EXPLORATION ID B-069-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 662.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL, 2.4"	661.8																	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE FINE GRAVEL, SOME SILT, DRY **(FILL)**	659.0	1 2	4 4 4	11	78	SS-1	n/a	-	-	-	-	-	-	-	-	5	A-3a (V)	
VERY LOOSE TO LOOSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE GRAVEL, TRACE CLAY, MOIST		3 4 5	3 3 2	7	100	SS-2	n/a	7	19	58	9	7	NP	NP	NP	11	A-3a (0)	
		6 7	1 2 1	4	72	SS-3	n/a	-	-	-	-	-	-	-	-	8	A-3a (V)	
		8 9	1 2 3	7	72	SS-4	n/a	-	-	-	-	-	-	-	-	11	A-3a (V)	
	652.0	10																
MEDIUM DENSE TO DENSE, BROWN TO GRAY-BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, TRACE CLAY, MOIST TO WET		11 12	3 4 6	14	78	SS-5	n/a	9	17	60	9	5	NP	NP	NP	12	A-3a (0)	
		W 13																
13.5' changes to wet		14 15	6 8 9	24	100	SS-6	n/a	-	-	-	-	-	-	-	-	24	A-3a (V)	
		16 17	5 9 10	26	89	SS-7	n/a	-	-	-	-	-	-	-	-	22	A-3a (V)	
		18 19	2 4 6	14	78	SS-8	n/a	-	-	-	-	-	-	-	-	25	A-3a (V)	
		20 21 22 23																
		24 25	7 13 15	39	72	SS-9	n/a	0	2	83	12	3	NP	NP	NP	23	A-3a (0)	
		26 27 28																
		29	3 5 9	19	78	SS-10	n/a	-	-	-	-	-	-	-	-	21	A-3a (V)	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 524+47, 115.0 RT	START: 4/23/10	END: 4/27/10	PG 2 OF 4	B-069-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM DENSE TO DENSE, BROWN TO GRAY-BROWN, **COARSE AND FINE SAND**, TRACE TO LITTLE SILT, TRACE GRAVEL, TRACE CLAY, MOIST TO WET *(continued)*	632.0	31, 32, 33																
DENSE TO MEDIUM DENSE, GRAY-BROWN, **SILT**, "AND" TO LITTLE SAND, TRACE TO LITTLE CLAY, TRACE GRAVEL, WET TO DAMP	629.0	34, 35	8 10 12	31	94	SS-11	n/a	1	0	40	51	8	NP	NP	NP	25	A-4b (5)	
		36, 37, 38																
		39, 40	8 5 8	18	89	SS-12	n/a	0	0	15	72	13	21	20	1	20	A-4b (8)	
		41, 42, 43																
STIFF TO VERY STIFF, GRAY, **SILT**, SOME CLAY, TRACE SAND, TRACE GRAVEL, MOIST	620.0	44, 45	2 2 3	7	100	SS-13	1.0 - 1.3	-	-	-	-	-	-	-	-	21	A-4b (V)	
		46, 47																
UC = 2044 psf @ 4.4% strain		48, 49			100	ST-14	1.0 - 1.8	1	1	1	66	31	26	18	8	23	A-4b (8)	
		50, 51, 52, 53																
		54, 55	3 4 6	14	89	SS-15	2.1 - 2.8	0	0	1	72	27	26	20	6	21	A-4b (8)	
		56, 57, 58																
		59, 60	3 5 7	17	94	SS-16	2.2 - 2.5	-	-	-	-	-	-	-	-	20	A-4b (V)	
		61																
	600.0																	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 524+47, 115.0 RT	START: 4/23/10	END: 4/27/10	PG 3 OF 4	B-069-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM STIFF TO HARD, GRAY, **SILT AND CLAY**, MOIST *(continued)*	599.9	63																
		64	1 3 3	8	100	SS-17	0.8 - 1.0	-	-	-	-	-	-	-	-	24	A-6a (V)	
		65																
		66																
		67																
		68																
UC = 4258 psf @ 6.0% strain		69			75	ST-18	2.25 - 4.5+	0	0	0	52	48	31	20	11	23	A-6a (8)	
		70																
		71																
	590.0	72																
STIFF TO HARD, GRAY, **SILT**, "AND" CLAY, MOIST		73																
		74	4 6 8	19	83	SS-19	2.9 - 4.5+	-	-	-	-	-	-	-	-	21	A-4b (V)	
		75																
		76																
		77																
		78																
		79	4 8 11	26	72	SS-20	2.8 - 4.0	0	0	0	64	36	26	19	7	21	A-4b (8)	
		80																
		81																
		82																
		83																
		84	2 4 5	13	100	SS-21	1.8 - 2.5	-	-	-	-	-	-	-	-	25	A-4b (V)	
		85																
	576.0	86																
MEDIUM STIFF TO VERY STIFF, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, MOIST		87																
		88																
		89	1 2 2	6	100	SS-22	0.5 - 0.6	-	-	-	-	-	-	-	-	29	A-4a (V)	
		90																
		91																
		92																
		93																
UC = 2876 psf @ 15.0% strain		94																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 524+47, 115.0 RT	START: 4/23/10	END: 4/27/10	PG 4 OF 4	B-069-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM STIFF TO VERY STIFF, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, MOIST *(continued)*	567.7	95			88	ST-23	0.8 - 1.3	1	2	3	45	49	28	18	10	23	A-4a (8)	
		96																
		97																
		98																
		99	5 8 9	24	100	SS-24	1.8 - 3.3	-	-	-	-	-	-	-	-	22	A-4a (V)	
	562.0	EOB 100																

NOTES: GROUNDWATER ENCOUNTERED DURING DRILLING AT 12.5'. WATER USED AS CIRCULATING FLUID FROM 50.0' TP 98.5'. CAVE DEPTH 12.0'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG CEMENT; PLACED SOIL CUTTINGS

PROJECT: CUY-90-14.90	DRILLING FIRM / OPERATOR: OTB / D. HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 524+97.48, 128.83 RT
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: B&P / WESTERVILLER	HAMMER: SIMCO AUTO	ALIGNMENT: TEMPORARY I-90 WB
PID: 77332 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/22/09	ELEVATION: 663.5 (MSL) EOB: 100.0 ft.
START: 4/22/10 END: 4/23/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.4	COORD: 667604.962 N, 2193988.378 E

EXPLORATION ID B-069-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 663.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL, 2.4"	663.3																	
DENSE, BROWN, **COARSE AND FINE SAND**, DAMP contains brick fragments **(FILL)**	660.5	1 2	6 13 14	38	89	SS-1	n/a	-	-	-	-	-	-	-	-	6	A-3a (V)	
MEDIUM DENSE, BROWN, **COARSE AND FINE SAND**, TRACE SILT, TRACE CLAY, MOIST	658.0	3 4 5	4 5 4	13	67	SS-2	n/a	-	-	-	-	-	-	-	-	11	A-3a (V)	
LOOSE TO MEDIUM DENSE, BROWN, **GRAVEL AND STONE FRAGMENTS WITH SAND**, TRACE SILT, TRACE CLAY, DAMP TO MOIST		6 7	2 2 2	6	78	SS-3	n/a	2	54	36	5	3	NP	NP	NP	7	A-1-b (0)	
		8 9	4 5 6	15	67	SS-4	n/a	-	-	-	-	-	-	-	-	6	A-1-b (V)	
		10 11 12	3 4 3	10	89	SS-5	n/a	-	-	-	-	-	-	-	-	21	A-1-b (V)	
		W 13 14	5 8 9	24	67	SS-6	n/a	-	-	-	-	-	-	-	-	20	A-1-b (V)	
few silt seams below 15.0'		15 16 17	2 6 10	22	89	SS-7	n/a	-	-	-	-	-	-	-	-	22	A-1-b (V)	
		18 19 20	5 10 10	28	67	SS-8	n/a	-	-	-	-	-	-	-	-	21	A-1-b (V)	
	641.5	21 22																
MEDIUM DENSE TO DENSE, GRAY-BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, WET		23 24 25	3 5 9	19	56	SS-9	n/a	1	2	78	16	3	NP	NP	NP	23	A-3a (0)	
		26 27 28 29	7 10 12	31	61	SS-10	n/a	-	-	-	-	-	-	-	-	24	A-3a (V)	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 524+97.48, 128.83 RT	START: 4/22/10	END: 4/23/10	PG 2 OF 4	B-069-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM DENSE TO DENSE, GRAY-BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE CLAY, TRACE GRAVEL, WET *(continued)*	633.5	31, 32, 33																
DENSE TO MEDIUM DENSE, GRAY, **SILT**, SOME CLAY, LITTLE FINE SAND, WET TO MOIST	630.5	34, 35, 36, 37, 38, 39, 40, 41, 42, 43	6 10 15	35	28	SS-11	n/a	0	0	14	68	18	NP	NP	NP	26	A-4b (8)	
			3 6 14	28	83	SS-12	n/a	-	-	-	-	-	-	-	-	17	A-4b (V)	
VERY DENSE, GRAY-BROWN, **COARSE AND FINE SAND**, SOME SILT, TRACE CLAY, WET	621.5	44, 45, 46, 47, 48	6 17 22	54	100	SS-13	n/a	0	0	68	28	4	NP	NP	NP	23	A-3a (0)	
HARD, GRAY, **SILT**, LITTLE CLAY, TRACE FINE SAND, DAMP	616.5	49, 50, 51, 52, 53	6 12 20	44	100	SS-14	n/a	0	0	3	80	17	25	22	3	19	A-4b (8)	
MEDIUM STIFF TO HARD, GRAY, **SILT**, SOME TO "AND" CLAY, TRACE FINE SAND, MOIST	611.5	54, 55, 56, 57, 58	3 4 6	14	100	SS-15	1.3 - 1.9	0	0	1	67	32	27	20	7	22	A-4b (8)	
		59, 60, 61	3 5 8	18	100	SS-16	2.3 - 2.8	-	-	-	-	-	-	-	-	19	A-4b (V)	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 524+97.48, 128.83 RT	START: 4/22/10	END: 4/23/10	PG 3 OF 4	B-069-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM STIFF TO HARD, GRAY, **SILT**, SOME TO "AND" CLAY, TRACE FINE SAND, MOIST *(continued)*	601.4	63																
		64–65	WOH 2 3	7	100	SS-17	0.9 - 1.2	-	-	-	-	-	-	-	-	24	A-4b (V)	
		66–68																
		69–70	2 3 5	11	100	SS-18	1.0 - 1.5	-	-	-	-	-	-	-	-	23	A-4b (V)	
		71–73																
At 73.0' changes to very stiff to hard.		74–75	5 8 11	26	72	SS-19	4.5+	0	0	0	64	36	28	19	9	20	A-4b (8)	
		76–78																
		79–80	6 9 16	35	89	SS-20	4.5+	-	-	-	-	-	-	-	-	19	A-4b (V)	
		81–83																
		84–85	5 7 9	22	89	SS-21	3.1 - 4.5+	0	0	0	64	36	27	20	7	21	A-4b (8)	
		86–88																
MEDIUM STIFF TO STIFF, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, WET TO MOIST	577.0	89–90	1 2 2	6	100	SS-22	0.8 - 0.9	1	0	0	47	52	30	20	10	28	A-4a (8)	
		91–93																
		94	3				0.8 -											

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 524+97.48, 128.83 RT	START: 4/22/10	END: 4/23/10	PG 4 OF 4	B-069-2-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM STIFF TO STIFF, GRAY, **SANDY SILT**, "AND" CLAY, TRACE GRAVEL, WET TO MOIST *(continued)*	569.3		5 5	14	94	SS-23	1.3	-	-	-	-	-	-	-	-	21	A-4a (V)	
	567.5	95 96 97 98																
SOFT, GRAY, **SILT AND CLAY**, TRACE SAND, MOIST		99	WOH WOH 2	3	100	SS-24	0.3 - 0.5	0	1	2	24	73	39	22	17	33	A-6b (11)	
	563.5	EOB 100																

NOTES: GROUNDWATER ENCOUNTERED DURING DRILLING AT 12.5'. WATER USED AS CIRCULATING FLUID FROM 40.0' TO 100.0'. CAVE DEPTH 6.6'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG CEMENT; PLACED SOIL CUTTINGS

PROJECT: CUY-90-14.90	DRILLING FIRM / OPERATOR: OTB / D. HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 23+36.43, 23.74 RT
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: B&P / WESTERVILLER	HAMMER: SIMCO AUTO	ALIGNMENT: E. 9TH
PID: 77332 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/22/09	ELEVATION: 670.1 (MSL) EOB: 150.0 ft.
START: 4/20/10 END: 4/21/10	SAMPLING METHOD: SPT	ENERGY RATIO (%): 83.4	COORD: 665827.802 N, 2192754.416 E

EXPLORATION ID B-074-1-10

PAGE 1 OF 5

MATERIAL DESCRIPTION AND NOTES	ELEV. 670.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
LOOSE, BROWN AND BLACK, **GRAVEL AND/OR STONE FRAGMENTS WITH SAND**, TRACE SILT, CONTAINS CINDERS, DAMP **(FILL)**	665.1	1 2 3 4 5	2 2 2	6	56	SS-1	n/a	-	-	-	-	-	-	-	-	12	A-1-b (V)	
LOOSE, BROWN, **COARSE AND FINE SAND**, INTERBEDDED WITH VERY STIFF SILTY CLAY, TRACE FINE GRAVEL, FEW SILT LENSES, DAMP		6 7 8																
at 8.5' Hand Pentrometer reading indicates Relative Consistency of 3.0" Silty Clay layer only.		9 10 11 12	3 3 3	8	89	SS-2	2.60	-	-	-	-	-	-	-	-	14	A-3a (V)	
MEDIUM DENSE TO DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, DRY TO DAMP	657.6	13 14 15 16 17 18	4 8 8	22	100	SS-3	n/a	6	18	63	11	2	NP	NP	NP	3	A-3a (0)	
at 18.5' Hand Pentrometer reading indicates Relative Consistency of 2.0" Silty Clay layer only.		19 20 21 22 23	4 5 5	14	89	SS-4	2.60	-	-	-	-	-	-	-	-	2	A-3a (V)	
		▼ 0.25 hr 24 25 26 27 28	7 9 9	25	89	SS-5	n/a	-	-	-	-	-	-	-	-	4	A-3a (V)	
at 27.0' becomes dense		29	5 15 16	43	89	SS-6	n/a	-	-	-	-	-	-	-	-	3	A-3a (V)	

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 23+36.43, 23.74 RT	START: 4/20/10	END: 4/21/10	PG 2 OF 5	B-074-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
MEDIUM DENSE TO DENSE, BROWN, **COARSE AND FINE SAND**, LITTLE SILT, TRACE GRAVEL, TRACE CLAY, DRY TO DAMP *(continued)*		31, 32, 33																
at 33.5' changes to some silt		34, 35	13 17 17	47	100	SS-7	n/a	0	3	66	27	4	NP	NP	NP	8	A-3a (0)	
	632.6	36, 37																
DENSE TO MEDIUM DENSE, GRAY, **SILT**, TRACE CLAY, TRACE SAND, TRACE GRAVEL, MOIST TO WET		38, 39	11 17 18	49	100	SS-8	n/a	-	-	-	-	-	-	-	-	16	A-4b (V)	
at 39.5' Encountered Slight Seepage		15 hr, 40, 41, 42, W																
		43, 44	14 16 13	40	100	SS-9	n/a	1	0	9	80	10	NP	NP	NP	19	A-4b (8)	
		45, 46, 47, 48																
at 48.5' medium dense		49, 50	4 8 8	22	100	SS-10	n/a	-	-	-	-	-	-	-	-	17	A-4b (V)	
		51, 52, 53																
at 53.5 very dense		54, 55	10 19 18	51	94	SS-11	n/a	-	-	-	-	-	-	-	-	16	A-4b (V)	
Changes to DENSE TO MEDIUM DENSE, GRAY, **SILT**, SOME CLAY, TRACE SAND, DAMP TO MOIST		56, 57, 58																
		59, 60	9 11 12	32	89	SS-12	n/a	0	0	3	74	23	27	20	7	17	A-4b (8)	
		61																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 23+36.43, 23.74 RT	START: 4/20/10	END: 4/21/10	PG 3 OF 5	B-074-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 608.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
DENSE TO MEDIUM DENSE, GRAY, **SILT**, SOME CLAY, TRACE SAND, DAMP TO MOIST *(continued)*		63																
		64	7 10 13	32	89	SS-13	n/a	-	-	-	-	-	-	-	-	17	A-4b (V)	
		65																
		66																
		67																
		68																
		69	7 7 6	18	89	SS-14	n/a	0	0	3	64	33	28	21	7	25	A-4b (8)	
		70																
		71																
	598.1	72																
VERY STIFF TO HARD, GRAY, **SILT**, SOME CLAY, DAMP TO WET		73																
		74	7 12 16	39	83	SS-15	4.5+	0	0	0	65	35	27	18	9	18	A-4b (8)	
		75																
		76																
		77																
		78																
		79	6 12 12	33	100	SS-16	4.0 - 4.3	-	-	-	-	-	-	-	-	21	A-4b (V)	
		80																
		81																
		82																
		83																
at 83.5' Medium Dense		84	6 8 9	24	89	SS-17	3.5 - 4.0	0	0	0	68	32	NP	NP	NP	22	A-4b (8)	
		85																
		86																
		87																
		88																
		89	4 7 10	24	100	SS-18	2.6 - 3.0	-	-	-	-	-	-	-	-	21	A-4b (V)	
		90																
		91																
	578.1	92																
STIFF, GRAY, **SANDY SILT**, "AND" CLAY, MOIST		93																
		94	3				1.4 -											

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 23+36.43, 23.74 RT	START: 4/20/10	END: 4/21/10	PG 4 OF 5	B-074-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV. 575.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
STIFF, GRAY, **SANDY SILT**, "AND" CLAY, MOIST *(continued)*			6 7	18	78	SS-19	1.7	-	-	-	-	-	-	-	-	22	A-4a (V)	
		95 96 97 98																
		99 100	3 6 7	18	100	SS-20	1.6 - 1.8	0	2	5	45	48	30	21	9	23	A-4a (8)	
		101 102 103																
		104 105	2 4 5	13	100	SS-21	1.1 - 1.5	-	-	-	-	-	-	-	-	24	A-4a (V)	
		106 107 108																
	562.1																	
STIFF TO VERY STIFF, GRAY - BROWN, **SILT AND CLAY**, TRACE SAND, MOIST		109	3 6 8	19	100	SS-22	1.9 - 2.0	0	0	1	57	42	30	18	12	21	A-6a (9)	
		110 111 112 113																
		114 115	4 8 10	25	89	SS-23	2.0 - 2.3	-	-	-	-	-	-	-	-	22	A-6a (V)	
		116 117 118																
	553.1																	
VERY STIFF, GRAY - BROWN, **SILT**, "AND" CLAY, TRACE SAND, MOIST		119	7 11 15	36	78	SS-24	3.0 - 3.8	0	0	1	55	44	28	20	8	21	A-4b (8)	
		120 121 122 123																
		124 125	6 12 14	36	72	SS-25	2.3 - 2.9	-	-	-	-	-	-	-	-	22	A-4b (V)	
		126																

PID: 77332	BR ID:	PROJECT: CUY-90-14.90	STATION / OFFSET: 23+36.43, 23.74 RT	START: 4/20/10	END: 4/21/10	PG 5 OF 5	B-074-1-10

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
VERY STIFF, GRAY - BROWN, **SILT**, "AND" CLAY, TRACE SAND, MOIST *(continued)*	542.1																	
VERY STIFF, GRAY - BROWN, **SILT AND CLAY**, FEW SILT LENSES, MOIST		127																
		128																
		129	6 11 15	36	83	SS-26	2.8 - 3.3	-	-	-	-	-	-	-	-	23	A-6a (V)	
		130																
		131																
		132																
		133																
		134	6 11 14	35	100	SS-27	2.0 - 3.0	0	0	0	39	61	30	18	12	24	A-6a (9)	
		135																
		136																
		137																
		138																
		139	8 11 14	35	100	SS-28	2.3 - 3.0	-	-	-	-	-	-	-	-	25	A-6a (V)	
		140																
		141																
		142																
		143																
		144	7 12 15	38	89	SS-29	3.0 - 3.5	-	-	-	-	-	-	-	-	24	A-6a (V)	
		145																
		146																
		147																
		148																
		149	7 10 13	32	89	SS-30	2.4 - 3.1	-	-	-	-	-	-	-	-	24	A-6a (V)	
	520.1	EOB 150																

NOTES: GW ENCOUNTERED DURING DRILLING AT 42.5', AFTER DRILLING: 23.9'. 15.0 HOURS AFTER DRILLING: 40.1'. WATER USED AS CIRCULATING FLUID FROM 48.5' TP 148.5'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 1 BAG BENTONITE PELLETS; PUMPED 1 BAG CEMENT; PLACED SOIL CUTTINGS