

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 1	Location ID: 208
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10'0" ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 7/5/12 1354	Date/Time Total Depth Reached: 7/5/12 1402	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) SAS19 (1450) Sr-90			
Geologist: Timothy Morse	Checked By / Date: J Robbins 7/10/12			

Radiological Background: 4347 / 2665	Radiological Equipment Used: Micro / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. (CPM)
0.0			0.0	60	Sandy Silt: Dark Yellowish Brown (10YR 4/4) 80% silt, 15% fine grained sand, 5% clay, trace asphalt and fill gravel, trace rootlets, dry, no odor, soft, low strength, low toughness	AF/ML	2621 2958
0.5			0.0	78		4197	
1.0			0.0	54	Silty clay w/sand: Dark Yellowish Brown (10YR 4/4) 40% silt, 50% clay, 10% fine grained sand, dry, no odor, med. stiff/firm, med strength/toughness	CL	4804
1.5			0.0	54		4862	
2.0			0.0	48	Silty clay: Dark Brown (10YR 3/3) 20% silt, 80% clay, dry, no odor, very stiff/firm, High strength, medium to high toughness, trace rootlets	CL	4912
2.5			0.0	54		5016	
3.0			0.0	42	----- Same as above, silty clay		4998
3.5			0.0	60		5097	
4.0			0.0	48		5001	
4.5			0.0	60		4833	
5.0			0.0	72		4980	
5.5			0.0	54		5029	
6.0			0.0	66		5109	

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 1	Location ID: 209
Drilling Company: HGL		Driller: J. Leborgne	Ground Elevation: NA		Total Depth Drilled: 6.0 ft bgs.
Drilling Equipment: Hand Auger		Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/28/12 0914	Date/Time Total Depth Reached: 6/28/12 1018	
Type of Sampling Device: Hand Auger			Samples Collected: 1	One 1/2 Gallon Bag (5-lbs.) 50521(1020)	
Geologist: LRobbins			Checked By / Date: M. Robbins 7-3-12		
Radiological Background: 13/2707/45		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm	

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			0.0	12/90	~3.5' asphalt (0.25")	AF	3034
0.5			0.0	78	Silty clay: very dark grayish brown (10YR 3/2), 55% clay, 45% silt, trace fine sand, moist, med. stiff, no odor or staining, asphalt debris	CL / AF	3780
1.0			0.0	30	(-20mm max)	CL / AF	4345
2.0			0.0	72			4507
2.5			0.0	72			4630
3.0			0.0	30			4782
3.5			0.0	80			4721
4.0			0.0	72	Silty clay: yellowish brown (10YR 5/6), moist, soft, no odor or staining, 65% clay, 35% silt, trace fire sand + clay nodules, asphalt debris (3'0")	CL / AF	4785
4.5			0.0	48			4683
5.0			0.0	72			4921
5.5			0.0	72			4666
6.0			0.1	66	Clayey sand: brownish yellow (10YR 6/6), moist, loose, no odor or staining, 80% sand, 20% clay nodules, trace silt	SC	4605
6.0			0.0	72	weathered sandstone: pale brown (2.5Y 7/4), no odor or staining, moist, mechanically weathered (SP)	SP bedrock	4940

TD= 6.0' bgs, refusal on sandstone
no GW encountered
no anomalies

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 1	Location ID: 210	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 10'0" ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 7/5/12 1126		Date/Time Total Depth Reached: 7/5/12 1130	
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) S0523 (1200)			
Geologist: Timothy Morse				Checked By / Date: J Robbins 7/10/12			
Radiological Background: 38 cpm / 2774		Radiological Equipment Used: Micro / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings	
							Feet bgs.	(CPM)
			0.0	60			10.5	2853
0.5			0.0	72	Sandy silt: Dark Yellowish Brown (10YR 4/4) 80% silt, 15% fine grained sand, 5% clay, trace asphalt and gravel, trace rootlets, dry, no odor, soft, low strength, low toughness	AF ML		3563
1.0			0.0	60	0'8" Sand w/silt: Yellowish Brown (10YR 5/6) 80% fine grained sand, 10% med. grained sand, 10% silt, dry, no odor, loose	AF SM		4622
			0.0	60				4881
2.0			0.0	54	Silty clay: Dark Brown (10YR 3/3) 20% silt, 80% clay, dry, no odor, very stiff, High strength, medium toughness, trace rootlets			4920
			0.0	60				4926
3.0			0.0	72				5063
			0.0	60				5173
4.0			0.0	54	Same as above Silty clay...			4990
			0.0	60				5110
5.0			0.0	66				5017
			0.0	72				5210
			0.0	66				4977
6.0			0.0	66	6'0"			4898

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN		Group: 1		Location ID: 211	
Drilling Company: HGL		Driller: J. LeVangie		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.			
Drilling Equipment: Trowel/Shovel		Borehole Diameter: N/A		Date/Time Drilling: Started: 6/28/12 10:42		Date/Time Total Depth Reached: 6/28/12 10:52			
Type of Sampling Device: Trowel/Shovel		Geologist: L. Robbins		Samples Collected: One 1/2 Gallon Bag (Approx 1/2 lbs.)		50524 (1050)			
Radiological Background: 12/3120 / 71		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background:		0.0 ppm			

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0 - 0.5			0.0	14/60	Silty clay: very dark grayish brown (10YR 3/2), 60% clay, 40% silt, moist, med-stiff, no odor or staining, asphalt debris	CL/AF	
0.5 - 1.0			0.0	14/78	TD=0.5' no GW encountered		
1.0 - 2.0							
2.0 - 3.0							
3.0 - 4.0							
4.0 - 5.0							
5.0 - 6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 1	Location ID: 211
Drilling Company: HGL	Driller: J. LeVergie	Ground Elevation: NA	Total Depth Drilled: 9.83 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/28/12 1053	Date/Time Total Depth Reached: 6/29/12 1219	
Type of Sampling Device: Hand Auger	Geologist: L. Robbins	Samples Collected: 1 One 1/2 Gallon Bag (\$ lbs.)	50525(1215)	
Radiological Background: 21/3120/71	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm	

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs.
					AF = artificial fill		1052937 (CPM)
0.0			60		silty clay: very dark grayish brown (10YR 3/2), 60% clay; 40% silt, moist, med. stiff, no odor or staining, asphalt debris	CL	3518
0.5			78	CL		4222	
1.0			84	AF		4735	
1.5			84			4595	
2.0			66		silty clay: brown (10YR 4/3), same as above, note CaCO ₃ nodules + stringers, no asphalt	CL	4547
2.5			60	CL		4562	
3.0			48		--- increase in CaCO ₃ content		4417
3.5			72		silty sand: dark yellowish brown (10YR 4/4): 85% fine sand w/ mica flakes, 15% silt, moist, loose, trace quartz crystals; no odor or staining	SM	4248
4.0			60	SM		4415	
4.5			60			4517	
5.0			72			4571	
5.5			72				4700
6.0			66				4858

continue page two

Project Name:		Project Number:		Subarea:	Group:	Location ID:		
SSFL Area IV Radiological Study		EP038.01.22.04.03		SDN	i	211		
Radiological Background:		Radiological Equipment Used:		PID Used:				
21/3120/71		Micro R / Downhole / Pancake Meters		Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings (CPM)	
					(Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)			
6.0			0.0	60	Clayey sand: light olive brown (2.5Y 5/4), 85% fine sand, 15% clay, trace silt , trace subrounded/subangular siltstone gravel, moist, no odor or staining, Fe-O ₂ matting, CaCO ₃ nodules, loose Siltstone gravel increase size Clayey sand w/ gravel: light yellowish brown (2.5Y 6/4), 60% fine sand, 25% clay, 15% subangular siltstone gravel, moist, no odor or staining, Fe-O ₂ matting, siltstone nodules (5Y 8/2) pale yellow (trace amount), loose TD = 9.83' bgs, refusal on sandstone ^{siltstone} no GW encountered refusal	SC	6	4858
			0.0	60			7	5076
7.0			0.0	60			8	5381
			0.0	72			9	5901
			0.0	72			10	6316
8.0			0.0	60			11	6285
			0.0	60			12	6398
9.0			0.0	90			13	6507
			0.0	72			14	6623
10.0							bedrock	
11.0								
12.0								
13.0								



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 2	Location ID: 212	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/26/12 1015		Date/Time Total Depth Reached: 6/26/12 1019	
Type of Sampling Device: Shovel/Trowel		Geologist: Ian Stone		Samples Collected: (1) Bag (Approx. 1 lbs.)		50526-1020	
Radiological Background: 2490 / 44		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background:		0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	66	<p>AF = artificial fill</p> <p>Clayey Silt, Dark Brown (3/3 10-2R) 5% fine sand, 65% silt, 30% clay, trace rathlets, trace gravel, dry, soft, low tough, low strength, med plasticity, no odor or staining</p> <p>TD = 0.5 ft bgs no gw encountered</p>	AE/ML	
1.0			0.0	84			
2.0							
3.0							
4.0							
5.0							
6.0							

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 2	Location ID: 212	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 6/26/12 1021		Date/Time Total Depth Reached: 6/26/12 1023	
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50527-1100			
Geologist: I. Stone				Checked By / Date: Cliff Knight 6/28/12			
Radiological Background: 2490 / 44		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2804 (CPM)
			0.0	60	AF = artificial fill		
0.5			0.0	66	Clayey silt w/ sand, Dark Brown (3/3 10YR) 5% fine sand, 65% silt, 30% clay, trace rootlets, trace gravel, dry, soft, low tough, low strength, med plasticity, no odor or staining	AF/ML	3151
1.0			0.0	66			4366
			0.0	66			4734
			0.0	96			4702
2.0			0.0	78	Silty Clay, Dark Brown (3/2 7.5YR) 5% fine sand, 35% silt, 60% clay, moist, med tough, med strength, med plasticity, stiff, no odor or staining	CL	4746
			0.0	84			4854
			0.0	66			4984
			0.0	78			5089
			0.0	84			5180
			0.0	66			5026
4.0			0.0	54	Silty Clay w/ sand, Yellowish Brown (5/4 10YR) 10% fine sand, 40% silt, 50% clay, moist, med stiff, med tough, med strength, med plasticity, trace calcium carbonate, no odor or staining	CL	5398
			0.0	66			5293
5.0			0.0	72			5257

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 50N	Group: 2	Location ID: 213	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/25/12 1433		Date/Time Total Depth Reached: 6/25/12 1438	
Type of Sampling Device: Shovel/Trowel		Geologist: Ian Stone		Samples Collected: (1) Bag (Approx. 1 lbs.)		50528-1440 50656 50655-NT	
Radiological Background: 2671 / 39		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background:		0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	72	AF = Artificial fill Silty Clay w/ sand, Dark yellowish brown (4/4/104P)	AF/CL	
1.0			0.0	66	10% fine sand, 40% silt, 50% clay, trace gravel, dry, soft, med tough, med strength, med plasticity, no odor or staining		
2.0							
3.0							
4.0							
5.0							
6.0							

TD = 0.5 ft bgs
no gw encountered

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 213
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/25/12 1444	Date/Time Total Depth Reached: 6/25/12 1453	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50529-1530	
Geologist: I. Stou	Checked By / Date: Chris [Signature] 6/26/12			
Radiological Background: 2671 / 39	Radiological Equipment Used: Micro R7 Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
					AF = artificial fill			±0.5' = 2812
0.5			0.0	72	Silty Clay w/ sand, Dark yellowish brown (4/4 10YR)	AF/CL		3196
			0.0	78	10% fine sand, 40% silt, 50% clay, trace gravel (quartzite, max size 1/8"), dry, soft, med tough, med strength, med plasticity, no odor or staining			4206
1.0			0.0	72	(0-1.0')		1	4616
			0.0	60	Silty Clay, Dark yellowish brown (3/4 10YR)			4706
			0.0	54	5% fine sand, 35% silt, 60% clay, moist, med stiff, med tough, med strength, med plasticity, no odor or staining	CL	2	4832
2.0			0.0	48	(1.0-2.4')			4838
			0.0	60	Sandy Clay w/ silt, Dark yellowish brown (4/6 10YR)	CL	3	5022
			0.0	54	30% fine sand, 10% silt, 60% clay, moist, med stiff, med tough, med strength, med plasticity, no odor or staining			5104
3.0			0.0	60			4	5129
			0.0	48				5067
4.0			0.0	54			5	5257
			0.0	54				5282
5.0			0.0	54	(2.4-6.0')		6	5588

Project Name:		Project Number:		Subarea:	Group:	Location ID:	
SSFL Area IV Radiological Study		EP038.01.22.04.03		SDU	2	213	
Radiological Background:		Radiological Equipment Used:			PID Used:		
2671 / 39		Micro R / Downhole / Pancake Meters			Mini Rae 3000 - Background: 0.2 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	54	Silty Sand, Yellowish Brown (5/4 10YR) 60% 50% fine sand, 10% medium sand, 40% silt, moist, med dense, no odor or staining	SM	5588
			0.0	72			5325
7.0			0.0	66	(6.0-7.2')		5290
			0.0	60	Silty Clay w/ sand, Dark yellowish brown (4/4 10YR) 15% 10% fine sand, 35% silt, 50% clay, moist, stiff, med. tough, med strength, med plasticity, no odor or staining	CL	5224
8.0			0.0	72			(7.2-8.3')
			0.0	66	Silty Sand, Yellowish brown (5/4 10YR) 60% fine sand, 10% medium sand, 30% silt, moist, dense, no odor or staining	SM	5203
9.0			0.0	72			5351
			0.0	54			5325
10.0			0.0	72	(8.3-10.0')		5029
					TD=10.0 ft bgs no gw encountered no refusal		
11.0							
12.0							
13.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 214
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/22/12 1400	Date/Time Total Depth Reached: 6/22/12 1404	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. / lbs.) 50530 - 1405		Checked By / Date: J. Robbins 6/27/12	
Geologist: Ian Stone				

Radiological Background: 2727 / 43	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	72	AF = Artificial fill			
0.5			0.0	54	Sandy silt, Brown (3/3 10YR) 30% fine sand, 10% medium sand, trace coarse sand, 60% silt, trace gravel, dry soft, low tough, low strength, low plasticity, no odor or staining	AF/ML		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no gw encountered

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50N	Group: 2	Location ID: 214
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/22/12 1410	Date/Time Total Depth Reached: 6/22/12 1420	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50531-1505			
Geologist: I. Stone	Checked By / Date: J. Robbins 6/27/12			

Radiological Background: 2727 / 43	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
					AF=artificial fill		20.5 = 2896
0.5			0.0	54	Sandy Silt, Brown (3/3 10YR)	AF/ML	4151
			0.0	72	30% fine sand, 10% medium sand, trace coarse sand, 60% silt, trace gravel, dry, soft, low tough, low strength, ^{low} plasticity,		4816
1.0			0.0	66	(0-1.0') no odor or staining		5075
			0.0	60	Silty Clay w/ sand, Dark yellowish brown (4/6 10YR)	CL	5080
			0.0	66	10% fine sand, 30% silt, 60% clay, dry, stiff, med toughness, med strength, med plasticity, no odor or staining		5294
			0.0	66			5162
3.0			0.0	60			5308
			0.0	48	Sandy Silt w/ clay, Yellowish brown (5/6 10YR)	ML	5623
			0.0	60	30% fine sand, 60% silt, 10% clay, moist, med stiff, low tough, low strength, med low plasticity, no odor or staining, trace calcium carbonate stringers and nodules.		5338
			0.0	66			5273
5.0			0.0	54			5085
			0.0	60			5251
			0.0	54			5376



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 215
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/26/12 0850	Date/Time Total Depth Reached: 6/26/12 0754	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.) 50532 - 0855		Checked By / Date: J Robbins 6/28/12	
Geologist: Ian Stone				

Radiological Background: 2816 / 38	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	78	AF = artificial fill			
0.5			0.0	66	Silty sand, yellowish brown (5/4 (01R)) 50% fine sand, 20% medium sand, 5% coarse sand, 25% silt, trace gravel, dry, loose, no odor or staining	AF / Sm		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 50N	Group: 2	Location ID: 215	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 100 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 6/26/12 0900		Date/Time Total Depth Reached: 6/26/12 0910	
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50533 - 0945			
Geologist: I. Howe		Checked By / Date: Cliff Knight 6/28/12					
Radiological Background: 2816 / 38		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
					AF = artificial fill		+0.5' = 2801
			0.0	54	Silty Sand, yellowish brown (5/4 10YR) 50% fine sand, 20% medium sand, 5% coarse sand, 25% silt, trace gravel, dry, loose, no odor or staining	AF/SM	3354
0.5			0.0	66			(0.0-0.75')
1.0			0.0	60	Silty Clay, Dark yellowish brown (3/4 10YR) 5% fine sand, 35% silt, 60% clay, moist, stiff, med tough, med strength, med plasticity, no odor or staining	CL	4697
			0.0	78			4907
2.0			0.0	84			4795
			0.0	78			5102
3.0			0.0	60			5235
			0.0	66	Sandy Silt, yellowish brown (5/6 10YR) 35% fine sand, 60% silt, 5% clay, moist, low strength, low tough, low plasticity, med stiff, no odor or staining	ML	5060
4.0			0.0	60			4892
			0.0	60			4856
5.0			0.0	54			4907
			0.0	60			5079
6.0			0.0	66			5185

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 216
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 6/26/12 13:13	Date/Time Total Depth Reached: 6/26/12 13:25	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.)		50534 (1320)	
Geologist: L. Robbins	Checked By / Date: C. Knight 6/29/12			

Radiological Background: 2735/46	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			00	60	Artificial Fill silty clay w/ sand: brown (10YR 5/3), 60% clay, 25% clay, 15% fine sand, dry, no odor or staining, soft, trace rootlets, asphalt + concrete debris, small granitic gravel pieces, glass piece (~2mm)	CL AF		
1.0			00	60				
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5' bgs
no GW encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 216
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 5.0' ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/26/12 1321	Date/Time Total Depth Reached: 6/26/12 1429	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50535 (1430)	
Geologist: L. Robbins	Checked By / Date: Cliff Knight 6/29/12			

Radiological Background: 0735/46	Radiological Equipment Used: Micro R+ Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			60		Surface: dead grass AF = artificial fill		10.5 = 2583
0.5			60		Silty clay w/ sand: brown (10YR 5/3), 60% clay, 25% silt, 15% fine sand, dry, no odor or staining	CL / AF	3098
1.0			54		soft, trace rootlets, asphalt + concrete debris, small granitic gravel pieces, glass piece (2mm), trace gravel fragments (1'0")	AF	3599
2.0			60		Silty clay: dark yellowish brown (10YR 4/4), 60% clay, 40% silt, trace fine sand, dry, soft, no odor or staining, trace rootlets, asphalt debris, granitic gravel fragments + cobbles, mica flakes	CL / AF	4450
3.0			60		(2'6")		4769
4.0			54		Silty sand: yellowish brown (10YR 5/6), 75% fine sand, 25% silt, trace clay, dry moist, loose, med. dilatancy, no odor or staining, trace clay pockets	SM	4785
5.0			84				4642
			60		gradational contact (4'0")		4982
			72		light yellowish brown (10YR 6/4), 90% fine sand, 10% silt, trace clay pockets, moist, loose, rapid dilatancy, no odor or staining	SP	5157
			84		(5'0")		5078
					Sandstone (bedrock, mechanically weathered); (2.54 5/6) light olive brown, moist, loose, no odor or staining	SP (bedrock)	4864

TD = 5.0' bgs, refusal on sandstone
no GW encountered
no anomalies

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 217
Drilling Company: HGL	Driller: S. Lapeyre-Montrose	Ground Elevation: NA	Total Depth Drilled: 05 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 6/27/12 1127	Date/Time Total Depth Reached: 6/27/12 1138	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.)		50536(1135)	
Geologist: L Robbins	Checked By / Date: Matthew R. King 6-29-12			

Radiological Background: 316/WS	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.2	84	<p>(R) (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)</p> <p>AF = Artificial Fill</p> <p>Silty clay: brown (10YR 4/3), dry, med. stiff, no odor or staining, trace rootlets, 80% clay, 20% silt, trace fine sand</p> <p>TD = 0.5' bgs no GW encountered</p>	CL AF	
0.5			0.0	72			
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 217
Drilling Company: HGL	Driller: S. Lapeyre-Montrose	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/27/12 1:38	Date/Time Total Depth Reached: 6/27/12 1415 Field Dup	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50537 (1415) 50653 (NT)	
Geologist: L Robbins	Checked By / Date: M. [unclear] 6-29-12			

Radiological Background: 3161 / 65	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings (CPM)
					(Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)		
					AF = artificial fill		
0.5			00	84	silty clay: brown (10YR 4/3), dry, med. stiff, no odor or staining, trace rootlets, trace cl , 80% clay, 20% silt, trace fine sand, some Fe-Oxide mottling	CL / AF	3889
			00	72		4524	
1.0			00	78		4651	
2.0			00	78	(1'6")	CL	4758
			00	30	silty clay: dark ^{light} yellowish brown (10YR 6/4), dry, soft, no odor or staining, 65% clay, 35% silt, trace sand, asphalt debris - asphalt piece (~10 mm)	CL / AF	4674
			00	56			4637
3.0			00	48			4609
			0.0	54			4585
4.0			0.0	72			4531
			0.0	54			4496
5.0			0.0	30	(5'0")	CL	4505
			0.0	64	clayey sandy sandy clay w/ silt: yellowish brown (10YR 7/6), 60% clay, 25% fine sand, 15% silt, moist, no odor or staining, soft, trace asphalt debris	CL / AF	4504
			0.0	54			4593

Continued next page

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 217				
Radiological Background: 3161/65		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm					
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable) AF=artificial fill	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)	
6.0			0.0	54	unit same as above: sandy clay w/ silt	CL AF	6	4593	
			0.0	48			7	4625	
7.0			0.0	66			8	4681	
			0.0	42			9	4662	
8.0			0.0	80			10	4840	
			0.0	66			11	4807	
9.0			0.0	84			12	4908	
			0.0	72			13	5035	
10.0			0.0	108					
11.0									
12.0									
13.0									

TD=108' bgs, no refusal
no bw encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 218
Drilling Company: HGL	Driller: S. Lapeyre-Montrose	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling: Started 6/27/12 0810	Date/Time Total Depth Reached: 6/27/12 0816	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.) 50538(0815)		Checked By / Date: M. Ryan 6-29-12	
Geologist: L. Robbins				

Radiological Background: 2951/62	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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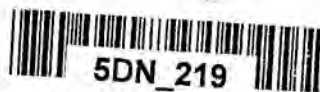
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0	0.0	54	0.0	54	AF = artificial fill			
0.5	0.0	66	0.0	66	silty clay: brown (10YR 4/3), dry, stiff, no odor or staining, trace rootlets, trace granitic gravel piece (~3mm), 80% clay, 20% silt, trace fine sand	CL AF		
TD = 0.5' bgs no GW encountered								

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 218
Drilling Company: HGL		Driller: S. Lapayre-Mantrose	Ground Elevation: NA		Total Depth Drilled: 8.75 ft bgs.
Drilling Equipment: Hand Auger		Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/27/12 0815	Date/Time Total Depth Reached: 6/27/12 1049	
Type of Sampling Device: Hand Auger			Samples Collected: One 1/2 Gallon Bag (5 lbs.) 50539 (1050)		
Geologist: Robbins			Checked By / Date: [Signature] Rm 6-29-12		
Radiological Background: 2951/62		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm	

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	54	(2'0") Silty clay: brown (10YR 4/3), dry, med. stiff, no odor or staining, trace rootlets, trace granitic gravel piece (~3mm), 80% clay, 20% silt, trace fine sand	CL / AF		2996
0.5			0.0	66				3450
1.0			0.0	70				4215
1.5			0.0	42				4441
2.0			0.0	60	(2'0") Silty clay: dark yellowish brown (10YR 4/4), dry soft, no odor or staining, 65% clay, 35% silt, trace sand, small concrete debris	CL / AF		4646
2.5			0.0	54				4631
3.0			0.0	66				4558
3.5			0.0	96				4620
4.0			0.0	42	(4'0") Unit same as above: Silty clay note color change: light yellowish brown (10YR 6/4) w/ abundant CaCO ₃ concretions	CL / AF		4424
4.5			0.0	36				4324
5.0			0.0	114				4368
5.5			0.0	48				4408
6.0			0.0	60	contact @ 6'0"			4422

Continued next page

SSFL BORING LOG



5DN_219

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: <u>5DN</u> Group: <u>2</u>	Location ID: <u>219</u>
Drilling Company: HGL	Driller: <u>M. Birney</u>	Ground Elevation: NA	Total Depth Drilled: <u>0.5</u> ft bgs.
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: <u>6/26/12 1444</u>	Date/Time Total Depth Reached: <u>6/26/12 1451</u>
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.) <u>S0540 (1450)</u>		
Geologist: <u>L. Robbins</u>	Checked By / Date: <u>Cliff Knight 6-29-12</u>		

Radiological Background: <u>2909 / 50</u>	Radiological Equipment Used: <u>Micro R / Downhole / Pancake Meters</u>	PID Used: Mini Rae 3000 - Background: <u>0.0</u> ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	60	Surface: dead weeds, soil			
0.5			0.0	78	Silty clay w/ sand: brown (10YR 5/3), 60% clay, 25% clay, 15% fine sand, dry, no odor or staining, soft, trace rootlets, asphalt + concrete pieces, small granitic gravel, glass pebbles	CL AF		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5' bgs
no FW encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 50N	Group: 2	Location ID: 219	
Drilling Company: HGL		Driller: M. Birney		Ground Elevation: NA		Total Depth Drilled: 6.67 8.67 (L) ft. bgs.	
Drilling Equipment: Hand Auger		Borehole Diameter: 3.0 inches		Date/Time Drilling Started: 6/26/12 1459		Date/Time Total Depth Reached: 6/26/12	
Type of Sampling Device: Hand Auger				Samples Collected: One 1/2 Gallon Bag (5 lbs.) 50541 (1547)			
Geologist: L. Robbins				Checked By / Date: Cliff Throught 6/29/12			
Radiological Background: 2909/50		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			

Depth (ft. bgs.)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5 = 2827 (CPM)
			0.0	60	(L) (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable) AF = Artificial Fill		
0.5			0.0	78	Silty clay w/ sand: brown (10YR 5/3), 60% clay, 25% silt, 15% fine sand, dry, no odor or staining, soft, trace rootlets, asphalt + concrete pieces, small granitic gravel	CL / AF	2907
1.0			0.0	84	(1'0")		3596
			0.0	60	Silty clay: dark yellowish brown (10YR 4/4), 60% clay, 40% silt, trace fine sand, dry, soft, no odor or staining, trace rootlets, asphalt debris, granitic gravel fragments, mica flakes	CL / AF	4379
2.0			0.0	60	--- large asphalt piece (~10mm), trace CaCO ₃ concretions		4650
			0.0	72			4692
			0.0	60			4470
3.0			0.0	88	(3'0")		4443
			0.0	48	Silty sand: yellowish brown (10YR 5/6), 75% fine sand, 25% silt, trace clay, moist, loose, med. dilatancy, no odor or staining, trace clay pockets	SM	4317
4.0			0.0	66			4629
			0.0	60			5296
5.0			0.0	84			5251
			2.5	72			5128
5.0			0.0	54	contact		5025

Continued next page

Project Name:		Project Number:		Subarea:	Group:	Location ID:	
SSFL Area IV Radiological Study		EP038.01.22.04.03		SON	2	219	
Radiological Background:		Radiological Equipment Used:		PID Used:			
2909/SD		Micro R- / Downhole / Pancake Meters		Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings (CPM)
					(Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)		
6.0			0.0	54	(6'0") sand: light yellowish brown (10YR 6/4), 90% fine sand, 10% silt, trace clay pockets, moist, loose, rapid dilatancy, no odor or staining	SP	5025
			0.0	84	weathered bedrock (mechanically weathered to SP), light olive brown (2.5Y 5/6) moist, loose, no odor or staining	(SP) Bedrock	5061
7.0							
8.0					TD = 0.5' bgs, refusal on sandstone no refusal no GW encountered no anomalies		
9.0							
10.0							
11.0							
12.0							
13.0							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 220
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/22/12 1130	Date/Time Total Depth Reached: 6/22/12 1134	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.)		50542 - 1435	
Geologist: Ian Stone		Checked By / Date: J Robbins 6/27/12		

Radiological Background: 2873 / 53	Radiological Equipment Used: Mini R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			60		AF = artificial fill		
0.5			84		Sandy Clay w/ silt, Brown (4/3 10YR) 20% fine sand, 10% medium sand, 10% silt, 60% clay, trace gravel, trace roots, trace debris, med stiff, med tough, med strength, med plasticity, no odor or staining	AP /CL	
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

TD = 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 220
Drilling Company: Boart Longyear		Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 7.0 ft bgs.
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/22/12 1136	Date/Time Total Depth Reached: 6/22/12 1151	
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50543-1215			
Geologist: I. Stone		Checked By / Date: J Robbins 6/27/12			
Radiological Background: 2873 / 53		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm	

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2870 (CPM)
					AF = artificial fill		
0.5			0.0	72	Sandy Clay w/ silt, Brown (4/3 10YR)	AF/CL	3666
			0.0	60	20% fine sand, 10% medium sand, 10% silt, 60% clay, trace gravel, trace rootlets, dry, med stiff, med tough, med plasticity, no odor or staining	AF/CL	4723
1.0			0.0	72	(0.0-1.0') Silty Clay w/sand, Dark Yellowish Brown (4/4 10YR)	AF/CL	4968
			0.0	66	10% fine sand, 30% silt, 60% clay, dry, stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	4916
2.0			0.0	60	(0.8-2.0') Sand Clay, Yellowish brown (5/6 10YR)	AF/CL	5167
			0.0	66	30% fine sand, 10% medium sand, 60% clay, trace gravel, dry, stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	5149
3.0			0.0	60			5096
			0.0	54			5348
4.0			0.0	60			5872
			0.0	54	(2.0-4.25') Silty Sand, Yellowish brown (5/4 10YR)	SM	5879
5.0			0.0	60	60% fine sand, 20% medium sand, 20% silt, moist, dense, no odor or staining	SM	5663
			0.0	60			5484
6.0			0.0	66			5701

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SPN	Group: 2	Location ID: 220		
Radiological Background: 2873 / 53		Radiological Equipment Used: Micro B / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	66	Silty Sand, same as above (4.5-6.3)	SM	6	5701
			0.0	78	Sand (weathered sandstone), Brownish Yellow (C16 lope) 70% fine sand, 25% medium sand, 5% silt, moist, very dense, no odor or shining (6.3-7.0')	SP/ bed rock		5533
7.0			0.0	66			7	5600
8.0							8	
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

TD = 7.0 ft bgs
no gw encountered
refusal on sandstone



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 2	Location ID: 221	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/22/12 1021		Date/Time Total Depth Reached: 6/22/12 1024	
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) Bag (Approx. 1 lbs.)		S0544-1025			
Geologist: Ian Stone		Checked By / Date: J Robbins 6/26/12					
Radiological Background: 2877 / 42		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background:		0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	72	<p>AF = artificial fill</p> <p>Sandy Clay w/ silt, Brown (4/3 10_{yr}) 20% fine sand, 10% medium sand, 10% silt, 60% clay, trace gravel, dry, med stiff, med tough, med strength, med plasticity, no odor or shinning</p> <p>TD = 0.5 ft bgs No gas encountered</p>	AF / CL	

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 221
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/22/12 1027	Date/Time Total Depth Reached: 6/24/12 1037	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50545-1110			
Geologist: I. Stone	Checked By / Date: J Robbins 6/27/12			

Radiological Background: 2877 / 42	Radiological Equipment Used: Micro / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. ±0.5' = 2861 (CPM)
					AF = artificial fill		
0.5			0.0	54	Sandy Clay w/ silt, Brown (4/3 10YR)	AF/CL	3413
			0.0	60	20% fine sand, 10% medium sand, 10% silt, 60% clay, trace gravel, dry, med stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	4713
1.0			0.0	72	(0-0.8')		
			0.0	60	Silty Clay w/ sand, Dark yellowish brown (4/4 10YR)	AF/CL	5030
			0.0	60	10% fine sand, 30% silt, 60% clay, dry, stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	5116
2.0			0.0	66	(0.8'-1.75')		
			0.0	66	Sandy Clay, Yellowish brown (5/6 10YR)	AF/CL	5472
			0.0	72	30% fine sand, 10% medium sand, 60% clay, trace gravel, dry, stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	5313
3.0			0.0	66			5362
			0.0	60			5148
4.0			0.0	66			5168
			0.0	54			5276
5.0			0.0	84	Silty Sand, Brownish Yellow (6/6 10YR), 60% fine sand, 20% medium sand, 20% silt, moist, dense, no odor or staining	SM	4989
			0.0	54	Silt Clayey Silt, light olive brown (5/4 2.5Y)	ML	5172
			0.0	66	5% fine sand, 65% silt, 30% clay, moist, stiff, med tough, med strength, low plasticity, no odor or staining	ML	5450

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 222
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/21/12 1136	Date/Time Total Depth Reached: 6/21/12 1143	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50547-1215	
Geologist: I. Stone	Checked By / Date: J. Robbins 6/22/12			

Radiological Background: 2867 / 46	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	6.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2949 (CPM)
0.5			0.0	72	Silty Clay w/ sand, Dark yellowish brown (4/4 10YR)	AF/CL	3908
			0.0	84	10% fine sand, 30% silt, 60% clay, trace gravel, trace rootlets, med stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	4536
1.0			0.0	60	(0.0-1.0') Star 23 Silty clay, Brown (4/3 10YR)	AF/CL	4613
			0.0	72	20% fine sand, 10% medium sand, 5% coarse sand, 5% silt, 60% clay, dry, stiff, med tough, med strength, low plasticity, no odor or staining, trace gravel	AF/CL	4655
2.0			0.0	54			4767
			0.0	54			4805
3.0			0.0	66			4853
			0.0	72			4919
4.0			0.0	66			4817
			0.0	84			4929
5.0			0.0	60			4756
			0.0	48			4787
6.0			0.0	54	Clay, Dark Brown (3/3 10YR), 5% fine sand, 5% silt, 90% clay, trace gravel, moist, stiff, med tough, med strength, med plasticity, no odor or staining, trace asphalt	AF/CL	4766

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 2	Location ID: 222			
Radiological Background: 2867 / 46		Radiological Equipment Used: Micro-RAD Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	54	Clay, same as above	AF/CL	6	4766
			0.0	54			7	4877
7.0			0.0	60			8	4787
			0.0	66			9	4928
8.0			0.0	72			10	4875
			0.0	78			11	4955
9.0			0.0	54			12	4947
			0.0	48			13	4974
10.0			0.0	66				
11.0								
12.0								
13.0								

Sandy clay, dark yellowish brown (4/10YR)
20% fine sand, 10% medium sand,
5% silt, 65% clay, trace gravel,
moist, stiff, med toughness,
med strength, med plasticity,
no odor or staining

TD=10.0 ft bgs
no gw encountered
no refusal
no anomalies detected



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 51W	Group: 2	Location ID: 223	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/21/12 1355		Date/Time Total Depth Reached: 6/21/12 1359	
Type of Sampling Device: Shovel/Trowel				Samples Collected: (1) 1/2 Gallon Bag (Approx. 1/2 lbs.) (13) 50548-1400			
Geologist: Ian Stone				Checked By / Date: J. Robbins 6/22/12			
Radiological Background: 2739 / 44		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.2 ppm			

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.2	72	Artificial fill			
0.5			0.2	66	Silty clay w/ sand, Dark yellowish brown (4/4 color) 10% fine sand, 30% silt, 60% clay, trace gravel, trace rootlets, dry, med stiff, med tough, med. strength, med plasticity, no odor or staining	AC/ CL		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
No gw encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDU	Group: 2	Location ID: 223
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 100 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/21/12 1406	Date/Time Total Depth Reached: 6/21/12 1410	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50549-1440	
Geologist: I. Stone	Checked By / Date: J. Robbins 6/22/12			

Radiological Background: 2739 / 44	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2953 (CPM)
			0.0	78	Silly Clay w/ sand, Dark yellowish brown (4/4 10%R) 10% fine sand, 30% silt, 60% clay, trace gravel, trace rootlets, dry, med stiff, med strength, med toughness, med plasticity, no odor or staining	AF/CL	3742
0.5			0.0	66	----- gravel, trace rootlets, dry, med stiff, med strength, med toughness, med plasticity, no odor or staining		4617
1.0			0.0	84	Sandy Clay, Brown (4/3 10%R)	AF/CL	4847
			0.0	78	20% fine sand, 10% medium sand, 5% coarse sand, 5% silt, 60% clay, trace gravel, stiff, med tough, med strength, med plasticity, no odor or staining		4904
2.0			0.0	54			5011
			0.0	66			5050
3.0			0.0	54			4950
			0.0	72	Sandy Clay w/silt, Dark yellowish brown (4/4 10%R) 20% fine sand, 10% medium sand, trace coarse sand, 10% silt, 60% clay, dry, trace gravel, med stiff, med strength, med toughness, med plasticity, no odor or staining	AF/CL	4874
4.0			0.0	60			4907
			0.0	54			4734
5.0			0.0	60	Clay, w/sand, Strong brown (4/6 7.5%R), 10% fine sand, 5% silt, 85% clay, trace calcium carbonate nodules and stringers, moist, stiff, med tough, med strength, med plasticity, no odor or staining	CL	4807
			0.0	60			4956
6.0			0.0	72			5165

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 224
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/20/12 1110	Date/Time Total Depth Reached: 6/20/12 1114	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		50550(1115)	
Geologist: Ian Stone	Checked By / Date: Cliff Lough		6/21/12	

Radiological Background: 2100 / 54	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	64	AF = artificial fill			
0.5			0.0	66	Silty clay: brown (10YR 5/3), 80% clay, 20% silt, trace fine sand, dry, soft, no odor or staining, med. plasticity, trace granitic gravel pieces, trace rootlets + twigs, small asphalt pieces	CL AF		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5' bgs
no GW encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 224
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 25.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/20/12 1110	Date/Time Total Depth Reached: 6/20/12 1443	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx lbs.)		50551 (1445)	
Geologist: L Robbins	Checked By / Date: Cliff Rasmussen 6/21/12			

Radiological Background: 2700/54	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5 = 2917 (CPM)
0.0			0.0	60	Silty clay: brown (10YR 5/3), 80% clay, 20% silt, trace fine sand; dry, soft, no odor or staining, med. plasticity, trace granitic gravel, trace rootlets + twigs, small asphalt debris;	CL / AF	3407
0.5			0.0	54			4545
1.0			0.0	54			4636
			0.0	78			4787
2.0			0.0	66	- 2'7" : sandstone cobble, med. grained		4888
			0.0	54			4691
3.0			0.0	60	- 36" : subangular granitic gravel		4666
			0.0	84			5000
4.0			0.0	54			4982
			0.0	48	- 4'2" silty clay: dark grayish brown (10YR 4/2), 80% clay, 20% silt, moist, stiff, med. plasticity, no odor or staining	CL / AF	5185
5.0			0.0	66			5073
			0.0	60			4982
6.0			0.0	72	- asphalt pieces + granitic gravel fragments.		5098

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SD1	Group: 2	Location ID: 224			
Radiological Background: 2700/54		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	72	silty clay unit same as above	CL / AF	6	5098
			0.0	48	6'8" asphalt piece ~ 5mm (L)			4926
7.0			0.0	60			7	5054
			0.0	78				4902
8.0			0.0	66	7'8" asphalt piece ~ 5mm		8	4891
			0.0	60	8'3" plastic liner			4894
			0.0	66	8'6" asphalt ~ 2" thick		9	4645
9.0			0.0	66	9'0" plastic liner, abundant CaCO ₃ nodules, no stringers w/ some clay described above			4903
			0.0	54				4903
10.0			0.0	48	10'0" abundant CaCO ₃ stringers in a clay matrix		10	4673
			0.0	60				4796
11.0			0.0	78	silty clay w/ sand; dark yellowish brown (104R 4/6), 60% clay, 25% silt, 15% sand, soft, ^{dry} med-plasticity, no odor or staining (L)	CL / AF	11	4872
			0.0	60				4853
12.0			0.0	54			12	4767
			0.0	60				4837
13.0			0.0	66			13	4685

Continued

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 224			
Radiological Background: 2700/54		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
13.0	6.0		0.0	66	Unit same as above: silty clay w/ sand	AF	6.0	4685
			0.0	60	Silty sand: light yellowish brown (2.5Y 6/4), 70% clay, 30% silt, dry, dense, low plasticity, no odor or staining, trace mica flakes + opagnes. Small asphalt pieces. trace FeO ₂ nodules + CaCO ₃ nodules + stringers	SM	6.31	4805
14.0	7.0		0.0	48		AF	7.14	4673
			0.0	66				4799
15.0	8.0		0.0	60			8.15	4828
			0.0	54				5029
16.0	9.0		0.0	60			9.16	5018
			0.0	60				5007
17.0	10.0		0.0	78			10.17	5113
			0.0	54				5075
18.0	11.0		0.0	60			11.18	4957
			0.0	54				4792
19.0	12.0		0.0	48	Sand: light yellowish brown (10 YR 6/4), 90% fine sand, 10% silt, loose, moist, no odor or staining	SP / AF	12.19	4836
			0.0	54	Sand w/ silt: pale yellow (2.5Y 7/4), 85% fine to med. sand, 15% silt, med-dense, dry, no odor or staining	SM / AF		4791
20.0	13.0		0.0	78			13.20	4901

Continue

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 225
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/20/12 0835	Date/Time Total Depth Reached: 6/20/12 0844	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx. 6 lbs.)		50552 (0845)	
Geologist: Jan Stone L. Robbins	Checked By / Date: Cliff Knight 6/21/12			

Radiological Background: 2818/29	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	66	AF = artificial fill			
0.5			0.0	54	Silty clay: brown (10YR 5/3), 80% clay, 20% silt, trace fine sand, dry, soft, no odor or staining, med. plasticity, trace granitic gravel (subangular) about 2" in size, trace rootlets, twigs + grass seeds, trace asphalt debris, small ceramic pipe (about 2" size).	CL / AF		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD=0.5' bgs
no GW encountered

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 225
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 20.5 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/20/12 0858	Date/Time Total Depth Reached: 6/20/12 1054	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50553 (1055)	
Geologist: L Robins	Checked By / Date: Cliff Knight 6/21/12			

Radiological Background: 2818 / 29	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
					AF = artificial fill			+0.5 = 2857 (CPM)
0.5			0.0	60	Silty clay: (10YR 5/3) brown, 80% clay, 20% silt, trace fine sand, dry, soft, no odor or staining, med. plasticity, trace granitic gravel pieces (subangular), trace asphalt, rootlets, twigs, seeds	CL / AF		3679
			0.0	54				4662
1.0			0.0	48				4771
			0.0	60	1'6"			4872
2.0			0.0	72	Silty clay: very dark grayish brown (10YR 3/2), 75% clay, 20% silt, 5% fine sand, moist, med. stiff, med. plasticity, subrounded quartzite gravel piece (1" size), trace CaCO ₃ stringers, + nodules, also Fe ²⁺ FeO ₂ nodules.	CL / AF		4835
			0.0	66				4654
3.0			0.0	54				4724
			0.0	60				4901
4.0			0.0	72				4684
			0.0	60				4673
5.0			0.0	66				4583
			0.0	72				4494
6.0			0.0	60	Continued next page			4529

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 225			
Radiological Background: 2818/29		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	60	Continued from above: silty clay	CL	6	4529
			0.0	48	Continued from above: silty clay	AF		4542
7.0			0.0	54	note color change: yellowish brown (10YR 5/4)	CL	7	4724
			0.0	66	abundant CaCO ₃ nodules + stringers	AF		4779
8.0			0.0	84			8	4981
			0.0	60				4776
9.0			0.0	66			9	4523
			0.0	54				4575
10.0			0.0	48			10	4671
			0.0	54				4855
11.0			0.0	48	clayey sand w/ silt & silty clay w/ sand:	CL	11	4892
			0.0	42	dark yellowish brown (10YR 4/6), 55% clay,	AF		5130
			0.0	60	30% silt, 15% fine sand, soft, moist, med. plasticity,		12	5106
12.0			0.0	60	no odor or staining, trace mica flakes & opaques,			4853
			0.0	54	trace charcoal, small gravel fragments			
13.0			0.0	60	Continued		13	4902

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 2	Location ID: 225	
Radiological Background: 29.18/29			Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
13.0			0.0	60	Unit same as above: CLAY	CL / AF	4902
			0.0	54			4682
14.0			0.0	66			4968
			0.0	54	Silty sand: light yellowish brown (2.5Y 6/4), 65% ^{75%} fine sand, 35% ^{25%} silt, trace clay, moist, dense, low plasticity, no odor or staining, trace mica flakes + opaques	SM / AF	4873
15.0			0.0	48			4888
			0.0	60			4964
16.0			0.0	54	Silty clay: olive brown (2.5Y 4/4), 65% clay, 35% silt, moist, med stiff, med plasticity, no odor or staining, abundant CaCO ₃ nodules + stringers, FeO ₂ and MnO ₂ concretions,	CL / AF	4759
			0.0	48			4793
17.0			0.0	60	Silty sand: same as unit above from 14.25' to 14.5' bgs.	SM / AF	4717
			0.0	48	Silty clay: olive brown (2.5Y 4/4) same as unit above from 14.5' to 16.25' bgs - large CaCO ₃ nodule	CL / AF	4784
18.0			0.0	54	poorly graded sand: yellowish brown (10YR 5/6), loose, moist, ^{100%} rapid dilatancy, fine grained, no odor or staining	SP / AF	4754
			0.0	60	Silty sand clayey sand: yellowish brown (10YR 5/6), 80% fine to med sand, 20% clay, moist, soft, med. plasticity, no odor or staining.	SC	4696
19.0			0.0	72	Silty sand: light olive brown (2.5Y 5/4), 65% fine sand, 35% silt, moist, med. dense, low plasticity, no odor or staining, trace CaCO ₃ stringers.	SM	4768
			0.0	60			4828
20.0			0.0	72	Sandstone bedrock: pale brown (10YR 6/3), moist, loose, no plasticity, no odor or staining, mechanically weathered to SP	SP	4964

Continued

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 50N	Group: 2	Location ID: 225		
Radiological Background: 2818/29			Radiological Equipment Used: Micro-R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft. bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)	
20.0	68		0.0	72	Sandstone bedrock (same as above)	SP	6 4964	
			0.0	60				5255
21.0	70				TD = 20'6" no GW encountered no anomalies		7	
								8
22.0	86							9
								10
23.0	96							11
								12
24.0	106							13
25.0	126							
26.0	128							
27.0	128							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 226
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/21/12 1506	Date/Time Total Depth Reached: 6/21/12 1514	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: 50555-1540 (1) 1/2 Gallon Bag (Approx / lbs.)			
Geologist: Ian Stone	Checked By / Date: J Robbins 6/22/12			

Radiological Background: 2771 / 44	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2953 (CPM)
			0.0	66	Silty Clay w/ sand (3) Sandy Clay w/ silt, Dark Brown (3/8 10YR)	AF/CL	3485
0.5			0.0	60	(0-0.5') 30% fine sand, 10% silt, 60% clay, trace gravel, trace rootlets, dry, med stiff, med toughness, med strength, med plasticity, no odor or skinning		4427
1.0			0.0	54	Silty Clay w/ sand, Dark yellowish brown (3/4 10YR)	AF/CL	4664
			0.0	54	10% fine sand, 20% silt, 70% clay, trace gravel, dry, stiff, med tough, med strength, med plasticity, no odor or skinning		4841
2.0			0.0	48			4929
			0.0	54			4888
3.0			0.0	60			4748
			0.0	72			4876
4.0			0.0	60 (60)			4848
			0.0	72 (72)			4651
5.0			0.0	54	(0.5-5.0') Silty Clay w/ sand, Dark yellowish brown (4/6 10YR)	AF/CL	4754
			0.0	60	10% fine sand, 40% silt, 50% clay, med stiff, trace gravel, moist, med tough, med strength, med plasticity, no odor or skinning		4768
6.0			0.0	78			4803



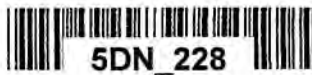
Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 2	Location ID: 227	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/22/12 0840		Date/Time Total Depth Reached: 6/22/12 0844	
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) Bag (Approx. 1 lbs.)		50556-0845			
Geologist: Ian Stone		Checked By / Date: J. Robbins 6/26/12					
Radiological Background: 2776 / 46		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background:		0.0 ppm	

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	60	<p>Sandy Clay w/silt, Brown (4/3 10YR)</p> <p>20% fine sand, 10% medium sand, 10% silt, 60% clay, trace gravel, trace rootlets, med silt, med tough, med strength, med plasticity, no odor or staining, dry</p> <p>TD = 0.5 ft bgs no gw encountered</p>			
0.5			0.0	84				
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 227
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/22/12 0846	Date/Time Total Depth Reached: 6/22/12 0854	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: 5557-0925 (1) 1/2 Gallon Bag (Approx 5 lbs.)			
Geologist: I. Stone	Checked By / Date: J. Robbins 6/26/12			

Radiological Background: 2776 / 46	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 2863 (CPM)
					AF = artificial fill			
0.5			0.0	66	Sandy Clay w/ silt, Brown (4/3 10YR)	AF/CL		3354
			0.0	60	(0-0.6') 20% fine sand, 10% medium sand, 10% silt, 60% clay, trace gravel, trace routhlets, med stiff, med strength, med toughness, med plasticity, no odor or staining, dry			4165
1.0			0.0	96	Silty Clay w/sand, Dark Yellowish Brown (3/4 10YR)	AF/CL	1	4684
			0.0	54	10% 5% fine sand, 5% medium sand, 30% silt, 70% clay, trace gravel (granite, quartzite, max size = 1.5"), stiff, med tough, med strength, med plasticity, no odor or staining, dry			4666
2.0			0.0	78			2	4299
			0.0	48				4863
3.0			0.0	66			3	4858
			0.0	60				4844
4.0			0.0	48			4	4998
			0.0	54				5080
5.0			0.0	60	(0.6-5.0') Silty Clay w/sand, Dark yellowish brown (4/6 10YR)	AF/CL	5	5134
			0.0	60	10% fine sand, 30% silt, 60% clay, trace gravel, moist, stiff, med tough, med strength, med plasticity, no odor or staining			5053
6.0			0.0	54			6	4917



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 2	Location ID: 228	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.9 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/18/12 1422		Date/Time Total Depth Reached: 6/18/12 1438	
Type of Sampling Device: Shovel/Trowel				Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 50558 (1440)			
Geologist: Jan Stone <u>L Robbins</u>				Checked By / Date: <u>M. R. King</u>			
Radiological Background: 2682/31		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	60	~ 5" asphalt	AF	
1.0			0.0	66	Silty clay: dark yellowish brown (10YR 3/4), 65% clay, 35% silt, trace fine sand, moist, med. soft, med. plasticity, no odor or staining, trace asphalt pieces	CL / AF	
2.0					no GW encountered TD=0.9' bgs		
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5N	Group: 2	Location ID: 228
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/18/12 1448	Date/Time Total Depth Reached: 6/18/12 1534	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50559 (1535)			
Geologist: L Robbins	Checked By / Date: XXXXXXXXXX 6-19-12			

Radiological Background: 2682 / 31	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
					AF artificial fill		4057 = 3126
0.5			0.0	66	~5" asphalt	AF	4046
1.0			0.0	72	5" silty clay: 65% clay, 35% silt, trace fine sand, moist, med-soft, med-plasticity, no odor or staining, trace asphalt pieces, dark yellowish brown (10YR 3/4)	CL / AF	4712
1.5			0.0	54			5033
2.0			0.0	66			4852
2.5			0.0	48			4913
3.0			0.0	42			4991
3.5			0.0	72	3'5" silty clay w/sand: 60% clay, 35% silt, 5% sand; moist, soft, med-plasticity, no odor or staining, trace mottling w/ iron oxide & magnesium oxide concretions, yellowish brown (10YR 5/4)	CL / AF	5053
4.0			0.0	66			5141
4.5			0.0	66			5135
5.0			0.0	42			5078
5.5			0.0	48			4947
6.0			0.0	66			5952
6.5			0.0	60			4834

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 229
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.8 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/19/12 10:17	Date/Time Total Depth Reached: 6/19/12 10:29	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		50560-1030	
Geologist: Ian Stone		Checked By / Date: J. Robbins 6/21/12		

Radiological Background: 2620 / 35	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0 - 0.3			0.0	60	ASPHALT (0.0-0.3')		
0.3 - 0.8			0.0	90	Silty Clay, Dark Brown (3/10 10YR) 5% fin sand, 30% silt, 65% clay, moist, medium stiff, med tough, med strength, and plasticity, no odor or staining	CL	
0.8 - 6.0					TD = 0.8 ft bgs no gw encountered		

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 2	Location ID: 229
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/19/12 1038	Date/Time Total Depth Reached: 6/19/12 1048	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50561-1115	
Geologist: I. Stone	Checked By / Date: J. Robbins 6/21/12			

Radiological Background: 2620 / 35	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3195 (CPM)
			0.0	72	Asphalt (0.0-0.3')			4193
0.5			0.0	78	Silty Clay, Dark Brown (3/3 10YR) 5% fine sand, 30% silt, 65% clay, moist, medium stiff, med tough, med strength, med plasticity,	CL		5189
1.0			0.0	72	(0.3-1.0') no odor or staining		1	5142
			0.0	60	Clay, very dark grayish brown (3/2 10YR) 5% fine sand, 5% silt, 90% clay, moist stiff medium tough, medium strength,			5187
2.0			0.0	72	medium plasticity, no odor or staining		2	5219
			0.0	54		CL		5206
3.0			0.0	60			3	5470
			0.0	54	(1.0-3.5')			5429
			0.0	48	Silty Clay w/ sand, Dark Yellowish Brown (4/4 10YR) 10% fine sand, 25% silt, 65% clay, trace calcium carbonate stringers, moist, stiff,	CL	4	5308
4.0			0.0	66	med toughness, med strength, med plasticity, no odor or staining			5155
			0.0	66	(3.5-5.0')		5	5207
5.0			0.0	60	Sandy Clay w/silt, Dark yellowish brown (4/6 10YR) 25% fine sand, 10% silt, 65% clay, moist, trace calcium carbonate stringers and nodules,	CL		4940
6.0			0.0	54	stiff, med tough, med strength, med plasticity, no odor or staining		6	4998

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 2	Location ID: 230	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/19/12 0854		Date/Time Total Depth Reached: 6/19/12 0904	
Type of Sampling Device: Shovel/Trowel				Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 50562-0905			
Geologist: Ian Stone				Checked By / Date: J Robbins 6/21/12			
Radiological Background: 2518 / 28		Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	84	ASPHALT (0-0.5')			
0.5			0.0	84	Silly Clay, Dark Brown (3/3 10YR) 50% fine sand, 30% silt, 65% clay, moist, med stiff, med strength, med toughness, med plasticity, no odor or staining	CH		
1.0			0.0	90				
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 1.0 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 230
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 100 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/19/12 0911	Date/Time Total Depth Reached: 6/19/12 0921	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx lbs.)		50563 - 0955	
Geologist: I. Shum	Checked By / Date: J. Robbins 6/21/12			

Radiological Background: 2518 / 28	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 10.5' = 3504 (CPM)
			0.0	66	ASPHALT (0.0-0.5')			4519
0.5			0.0	66	Silty Clay, Dark Brown (3/3 10YR)	CL		5057
1.0			0.0	78	(0.5-1.0') med. stiff, med tough, med strength, med plasticity, no odor or staining		1	5150
			0.0	66	Clay, Very dark grayish brown (3/2 10YR)	CL		5298
2.0			0.0	54	5% silt, 95% clay, 5% fine sand, moist, stiff, med toughness, med strength, med plasticity		2	5144
			0.0	54				5168
3.0			0.0	60			3	5139
			0.0	72	(0.0-3.5') Silty Clay w/ sand, Dark Yellowish brown (4/4 10YR)			5057
4.0			0.0	78	10% fine sand, 25% silt, 65% clay, moist, trace calcium carbonate nodules and stringers, med toughness, med strength, med plasticity, no odor or staining	CL	4	4944
			0.0	66				4897
5.0			0.0	54	(3.5-5.0) Sandy Clay w/ silt, Dark Yellowish brown (4/6 10YR)		5	4937
			0.0	66	25% fine sand, 10% silt, 65% clay, moist, trace calcium carbonate stringers and nodules, stiff, med tough, med strength, med plasticity	CL		4809
6.0			0.0	48	no odor or staining		6	4787

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 231
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/18/12 1133	Date/Time Total Depth Reached: 6/18/12 1224	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1/2 lbs.)		50565 (1225) 4230 (12)	
Geologist: L Robbins	Checked By / Date: M. Bin 6-19-12			

Radiological Background: 2998/33	Radiological Equipment Used: Micro R+ Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. (CPM)
			0.0	66	3.5' thick asphalt	AF	3693
0.5			0.0	60	Silty clay: 65% clay, 35% silt, trace fine sand, moist, med. soft, med. plasticity, no odor or staining, trace asphalt pieces, dark yellowish brown (10YR 3/4).	CL / AF	4891
1.0			0.0	54			5089
			0.0	66	----- gradational contact -----		5173
2.0			0.0	48	Silty clay: 60% clay, 40% silt, trace fine sand w/ mica flakes, moist, soft, med. plasticity, no odor or staining, yellowish brown (10YR 5/4), trace mottling w/ iron oxide + magnesium oxide, some calcian carbonate stringers + nodules + concretions,	CL / AF	5257
			0.0	48			5269
3.0			0.0	60			5081
			0.0	72			5284
4.0			0.0	60			5093
			0.0	66			4991
5.0			0.0	54			4974
			0.0	60			4845
6.0			0.0	72			4694

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 002	Group: 2	Location ID: 232	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.8 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 7/3/12 0945		Date/Time Total Depth Reached: 7/3/12 0954	
Type of Sampling Device: Shovel/Trowel				Samples Collected: (1) Bag (Approx. 1 lbs.) 50566 - 0155			
Geologist: Ian Stone				Checked By / Date: J Robbins 7/10/12			
Radiological Background: 282 / 40		Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.3 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	66	Asphalt (0-0.3')		
1.0			0.0	78	Silly sand, Brown (4/3 10%R) 60% fine sand, 15% medium sand, 30% silt, trace gravel, moist, dense, no odor or staining	AE/ Sun	1
2.0					TD = 0.8 ft bgs no gw encountered		2
3.0							3
4.0							4
5.0							5
6.0							6

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 2	Location ID: 233
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 5.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 7/2/12 1516	Date/Time Total Depth Reached: 7/2/12 1522	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: 50569 - 1540 (1) 1/2 Gallon Bag (Approx 1 lbs.)			
Geologist: I. Stone	Checked By / Date: W. Knight 7/3/12			

Radiological Background: 292 / 37	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 90 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet + 0.5' = 3007 (CPM)
0.0 - 0.5			0.0	66	Sandy silt, Dark yellowish brown (4/4 10YR) 20% fine sand, 75% silt, 5% clay, trace rocklets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	4408
0.5 - 1.0		0.0	72	5082			
1.0 - 2.0		0.0	66	5089			
2.0 - 3.0		0.0	48	5030			
3.0 - 4.0			0.0	60	Silty Clay w/ sand, Brown (4/4 7.5YR) 10% fine sand, 30% silt, 60% clay, dry, stiff, med tough, med strength, med plasticity no odor or staining	CL	5107
4.0 - 5.0		0.0	66	5281			
5.0 - 6.0		0.0	66	5176			
4.0 - 4.8			0.0	72	(1.7-4.0') Sandy silt, Strong brown (5/6 7.5YR) 30% fine sand, 40% medium sand, 60% silt, moist, low tough, low strength, low plasticity, med stiff, (4.0-4.8') no odor or staining	ML	5197
4.8 - 5.0		0.0	90	5234			
5.0 - 5.5			0.0	90	Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, very dense, no odor or staining (4.8-5.0')	SP/ Brock	5108
5.5 - 6.0			0.0	90			NA

TD = 5.0 ft bgs, no gas encountered
 refusal on sandstone, no anomalies detected

Unable to widen hole past 4.5 ft bgs



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 2	Location ID: 234	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 7/3/12 0846		Date/Time Total Depth Reached: 7/3/12 0849	
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) Bag (Approx. 1 lbs.)		50570-0850		50660-(NT) (1) 1 lb. bag	
Geologist: Ian Stone		Checked By / Date: J Robbins 7/10/12					

Radiological Background: 2891 / 39	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	60	<p>Sandy Silt, Dark yellowish brown (3M 10YR)</p> <p>30% fine sand, 65% silt, 5% clay, dry, med stiff, low tough, low strength, low plasticity, no odor or staining</p> <p>TD = 0.5 ft bgs no gw encountered</p>	ML		
0.5			0.0	66				
1.0							1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 2	Location ID: 234
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 3.5 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 7/3/12 0855	Date/Time Total Depth Reached: 7/3/12 0903	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: 50571 - 0620 @ 0925 (1) 1/2 Gallon Bag (Approx 1 lbs.)			
Geologist: I. Stone	Checked By / Date: J Robbins 7/10/12			

Radiological Background: 2891 / 39	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2722 (CPM)
0.0			0.0	78	Sandy silt, Dark yellowish brown (3H 10YR) 30% fine sand, 65% silt, 5% clay, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	3364
0.5			0.0	72			4551
1.0			0.0	60	(0-1.2)		5011
1.5			0.0	78	Silty clay w/ sand, Yellowish brown (5/4 10YR) 10% fine sand, 30% silt, 60% clay, moist, stiff, med tough, med strength, med plasticity, no odor or staining	CL	5095
2.0			0.0	90			4993
2.5			0.0	72	(1.2'-2.7')		5039
3.0			0.0	78	Sand (weathered sandstone), Yellowish Brown (5/8 10YR) 70% fine sand, 25% medium sand, 5% silt, very dense, no odor or staining, moist	SP/ RD mk	5517
3.5			0.0	54	(2.7'-3.5')		5438
4.0					TD = 3.5 ft bgs no gw encountered refused on sandstone no geomatics detected		
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 235
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 8.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/14/12 1420	Date/Time Total Depth Reached: 6/14/12 1501	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50573(1500)	
Geologist: L Robbins	Checked By / Date: Matthew Brin 6-18-12			

Radiological Background: 2459/44	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. (CPM)
0.0			0.0	66	Silty clay: dark yellowish brown (10YR 4/4), dry, stiff, common rootlets, low plasticity, no odor, no staining, trace asphalt pieces, 70% clay, 25% silt, 5% fine sand	CL / AF	3655
0.5			0.0	60			4562
1.0			0.0	54	----- gradational contact -----		4881
1.5			0.0	60	clay: dark yellowish brown (10YR 3/3), dry, stiff, low plasticity, no odor, no staining, 65% clay, 35% silt, trace fine sand, small granitic gravel	CL / AF	4919
2.0			0.0	48			4920
2.5			0.0	60			5033
3.0			0.0	54			4999
3.5			0.0	54			4968
4.0			0.0	48			5097
4.5			0.0	54			5036
5.0			0.0	66			4886
5.5			0.0	54			4654
6.0			0.0	48			4396

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 236
Drilling Company: HGL	Driller: F. Morse I. Stone	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/14/12 1133	Date/Time Total Depth Reached: 6/14/12 1140	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		50574 (1143)	
Geologist: Ian Stone L Robbins	Checked By / Date: M. Stone R. Stone 6-13-12			

Radiological Background: 2850/39	Radiological Equipment Used: Micro R ² Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			66		Surface: Senscent weeds, soil AF = Artificial Fill			
0.5			54		Silty clay: very dark grayish brown (10YR 3/2), dry, medium soft, no odor or staining, 70% clay, 30% silt, trace fine sand, trace rootlets, metal debris - Small 1" wire	CL / AF		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD=0.5' bgs
no GW encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 236
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 7.35 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/14/12 1133	Date/Time Total Depth Reached: 6/14/12 1223	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx. 5 lbs.)		50575 (1225) 50575	
Geologist: L. Robbins	Checked By / Date: M. [Signature] 6-18-12			

Radiological Background: 2850 / 39	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
					Surface: senscent weeds, soil AF = Artificial Fill		2950
0.5			0.0	66	clayey silt (CL) Silty clay: very dark grayish brown (10YR 3/2), dry, medium soft, no odor or staining, 70% clay, 30% silt, trace fine sand, trace rootlets, metal debris - small 1" wire	ML (CL) CL AF	3290 4457
1.0			0.0	66	13" 2" thick asphalt	AF	4744
2.0			0.0	60	Clay: 65% clay, 35% silt, trace fine sand, small granitic gravel, dark yellowish brown (10YR 4/6), dry, soft, no odor or staining, trace iron-oxide concretions	CL AF	4861
3.0			0.0	66			4802
4.0			0.0	84			4707
5.0			0.0	78			4938
6.0			0.0	66			4736
			0.0	60			4602
			0.0	48			4403
			0.0	60			4384
			0.0	60			4378
			0.0	54			4397

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 236			
Radiological Background: 2850/39		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs	Borehole Gamma Readings (CPM)
6.0			0.0	54	unit same as above: clay	CL	6	4397
			0.0	66		AF		4422
7.0			0.0	72	6'8" Silty sand: dark yellowish brown (10YR 4/6), 70% fine sand, 30% silt, trace clay, moist, dense, no odor or staining	SM	7	4821
8.0					Sand (weathered bedrock): light olive brown (2.5Y 5/4), moist, loose, no odor or staining	SP	8	
9.0					refusal @ 7'4", no GW encountered no anomalies		9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 237
Drilling Company: HGL	Driller: I Morse I Stone	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/14/12 1520	Date/Time Total Depth Reached: 6/14/12 1523	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx. 1 lbs.)		50576 (1525)	
Geologist: Ian Stone	Checked By / Date: L. Robbins 6-12-12			

Radiological Background: 3091/48	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	66	AF = Artificial Fill			
0.5			0.0	72	Clay: dark yellowish brown (10R 4/6), 65% clay, 35% silt, trace fine sand, small granitic gravel (<0.25' max), dry, stiff, med. plasticity, no odor or staining	CL / AF		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5' bgs
no GW encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 237
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/14/12 1527	Date/Time Total Depth Reached: 6/14/12 1604	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50577 (1605)	
Geologist: L Robbins	Checked By / Date: XXXXXXXXXX Pm, 6-12-12			

Radiological Background: 3091/48	Radiological Equipment Used: Micro R7 Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5 = 3043 (CPM)
0.5			0.0	66	clay: 65% dark yellowish brown (10YR 4/6), 65% clay, 35% silt, trace fine sand, small granitic gravel (<0.25' max), dry, stiff, med plasticity, no odor or staining AF = Artificial Fill	CL	4209
			0.0	72		AF	4757
1.0			0.0	78		4772	
			0.0	66		4876	
2.0			0.0	72		5043	
			0.0	66		5114	
3.0			0.0	54		5073	
			0.0	48		5203	
4.0			0.0	60	-small charcoal pieces (>0.25')		5241
			0.0	72			5289
5.0			0.0	66			5201
			0.0	54			5204
6.0			0.0	66	Silty sand (see next page)		5056

6'0"

SM/AF

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 3	Location ID: 238	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/15/12 1018		Date/Time Total Depth Reached: 6/15/12 1016	
Type of Sampling Device: Shovel/Trowel				Samples Collected: (1) 1/2 Gallon Bag (Approx 8 lbs.)			
Geologist: Jan Stone (12) L. Robbins				Checked By / Date: MAITR (12) RM 6-18-12			
Radiological Background: 34		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background:		
					0-0 ppm		
Depth (ft. bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	72	clay: brown (10YR 4/3), stiff, dry, med. plasticity 75% clay, 25% silt, trace fine sand, trace rootlets, concrete "pebbles" some magnesium oxide → iron oxide mottling, no odor or staining	CL AF	
1.0			0.0	78			
					TD = 0.5' bgs no GW encountered		
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 238
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 8.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/5/12 1020	Date/Time Total Depth Reached: 6/15/12 1105	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50579 (1105)			
Geologist: L. Robbins	Checked Back Date: 6-18-12			

Radiological Background: 3949 / 34	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5 = 3143 (CPM)
			0.0	60	<p>silty AF = Artificial Fill</p> <p>clay: brown (10YR 4/3), stiff, dry, med. plasticity</p> <p>75% clay, 25% silt, trace fine sand, trace rocklets + concrete "pebbles", some magnesium oxide + iron oxide mottling; no odor or staining</p>	<p>Ⓜ Ⓜ AF</p>	4106
0.5			0.0	72			5050
1.0			0.0	54			5150
			0.0	42			5106
2.0			0.0	54			5074
			0.0	66			5058
3.0			0.0	48			5047
			0.0	60			5189
4.0			0.0	66			5250
			0.0	54			5327
5.0			0.0	48			5568
			0.0	54			5938
6.0			0.0	60	5807		

continued next page

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 1	Location ID: 238			
Radiological Background: 2949/34		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	60	silty same as above: clay	CL AF	6	5807
			0.0	72				5669
7.0			0.0	54	Sand: yellowish brown (10YR 6/6); 90% fine to medium sand, 10% silt, trace clay, moist, med-dense, no plasticity, no odor or staining, trace mica flakes + opaques	Sp	7	5651
			0.0	48				5674
8.0			0.0	54	Siltstone: olive yellow (2.5Y 6/6), no odor or staining, interbedded sandstone, trace iron oxide staining, mechanically weathered	ML	8	NA
9.0								
10.0								
11.0								
12.0								
13.0					TD= 8.0' bgs, refusal on siltstone no GW encountered			

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 1	Location ID: 239
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/15/12 0846	Date/Time Total Depth Reached: 6/15/12 0850	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)	50580 (0850)		
Geologist: Ian Stone <i>IA</i> L Robbins	Checked By / Date: <i>Matthew Ring</i> 6-18-12			

Radiological Background: 3101/35	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	54	silty AF=artificial fill			
0.5			0.0	60	clay: dark yellowish brown (10YR 4/4), soft, dry, med. plasticity, no odor or staining, 65% clay, 25% silt, 10% fine sand, trace rootlets, small, trace concrete "pebbles" (±0-10" average)	CL / AF		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD=0.5' bgs
no GW encountered

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 239
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/15/12 0852	Date/Time Total Depth Reached: 6/15/12 0940	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50581 (0943)	
Geologist: L Robbins	Checked By / Date:			

Radiological Background: 3101 / 35	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
			0.0	66	Silty AF = Artificial Fill		105 = 2974 (CPM)
0.5			0.0	72	clay: dark yellowish brown (10YR 4/4), soft, dry, med. plasticity, no odor or staining, 65% clay, 25% silt, 10% fine sand, trace rootlets, small, trace, concrete "pebbles" (~0.10" average)	CL / AF	4177
1.0			0.0	60			4990
2.0			0.0	54			5135
			0.0	54			5157
			0.0	48			5013
				54			8101
3.0				60			5074
				54			5084
4.0				48			5114
				54			3057
5.0				42			5277
				66	Slight color change, with unit same as above: (10YR 4/6) dark yellowish brown		5141
6.0				60		CL / AF	5264

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 3	Location ID: 239	
Radiological Background: 3101 / 35			Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	60	Unit same as above silty clay	CL / AF	5264
			0.0	54			5435
			0.0	66	Silty sand w/ clay: 20% clay, 25% silt, 55% fine to med. sand, moist, med. dense, slow dilatancy, no odor or staining, slightly mottled, dark yellowish brown (10YR 4/4) 7' 6"	SM	5477
7.0			0.0	48	Clay: dark yellowish brown (10YR 4/4), soft, dry, med. plasticity, no odor or staining, 65% clay, 25% silt, 10% fine sand 8' 2"	CL	5840
			0.0	60			6276
			0.0	42	Sand: brownish yellow yellowish brown (10YR 6/6) 90% fine to medium sand, 10% silt, trace clay, moist, med. dense, no plasticity, no odor or staining, trace mica flakes + spicules 9' 14"	SP	6532
8.0			0.0	66			6665
			0.0	60	Siltstone: olive yellow (2.5Y 6/6), olive yellow (2.5Y 6/6) no odor or staining, interbedded sandstone, trace iron oxide staining, mechanically weathered 10'	SL ML	6592
			0.0	66			6571
10.0					TD=10.0' bgs, no refusal no GW encountered no anomalies		
11.0							
12.0							
13.0							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 240
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/28/12 1425	Date/Time Total Depth Reached: 6/28/12 1429	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.)		50582 - 1430	
Geologist: Ian Stone		Checked By / Date: J Robbins 6/29/12		

Radiological Background: 3012 / 44	Radiological Equipment Used: Micro / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			66		Silty Sand, light yellowish brown (6Y 10/2) 60% fine sand, 10% medium sand, 30% silt, dry, med dense, no odor or staining	SM		
0.5			78					
1.0							1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

TD = 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 240
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 2.2 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/28/12 1432	Date/Time Total Depth Reached: 6/28/12 1440	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: 50583-1455 (1) 1/2 Gallon Bag (Approx 1 lbs)			
Geologist: I. Stone	Checked By / Date: J Robbins 6/29/12			

Radiological Background: 3012 / 44	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. ±0.5' = 3053 (CPM)
0.0			0.0	60	Silty Sand, light yellowish brown (6/4 10YR) 60% fine sand, 15% medium sand, 30% silt, dry, med dense, no odor or staining	SM	3272
0.5			0.0	78	Sandy silt w/ clay, Dark Brown (3/4 7.5YR) 30% fine sand, 60% silt, 10% clay, dry, med stiff, low to high, low strength, low plasticity, no odor or staining	ML	4569
1.0			0.0	54	(0.5-1.1)		4873
2.0			0.0	66	Sand (weathered sandstone), interbedded Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, trace siltstone, very dense, dry, no odor or staining	SP	5394
3.0			0.0	78	(1.1-2.2)		NA
4.0					TD = 2.2 ft bgs no gw encountered Refract on sandstone no anomalies detected unable to widen hole past 1.5 ft bgs		
5.0							
6.0							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 242
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/28/12 1115	Date/Time Total Depth Reached: 6/28/12 1119	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.)		50586-1120	
Geologist: Ian Stone	Checked By / Date: J Robbins 6/29/12			

Radiological Background: 3186 / SS	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	90 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			72		Sandy Silt, Dark yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace rootlets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML		
0.5			84					
1.0							1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

TD = 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 52N	Group: 3	Location ID: 242
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 3.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/28/12 1126	Date/Time Total Depth Reached: 6/28/12 1141	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: 50587 - 1150 (1) 1/2 Gallon Bag (Approx 1 lbs.)			
Geologist: I. Stone	Checked By / Date: Robbins 6/29/12			

Radiological Background: 3186 / 55	Radiological Equipment Used: Micro-R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings ±0.5 = 3310 (CPM)
0.0			0.0	66	Sandy silt, Dark yellowish brown (4/4 10YR)			3842
0.5			0.3	54	30% fine sand, 70% silt, trace pebbles dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML		4952
1.0			0.0	78	Sandy silt w/ clay, Dark brown (3/4 7.5YR)		1	5354
			0.0	54	30% fine sand, 60% silt, 10% clay, stiff, dry, med low tough, low strength, low plasticity, no odor or staining	ML		5517
2.0			0.0	60	Sand w/silt, Yellowish Brown (5/6 10YR)	SP	2	5443
			0.0	66	60% fine sand, 30% medium sand, 10% silt, med dense, dry, no odor or staining			5558
3.0			0.0	60	Silty sand, Dark yellowish brown (4/6 10YR), 60% fine sand, 10% medium sand, 70% silt, med dense, no odor or staining	SM		
			0.0	60	Sand (weathered sandstone), Brownish yellow (6/6 10YR)	SP	3	5424
					70% fine sand, 25% medium sand, 5% silt, dry, very dense, no odor or staining			
4.0							4	
5.0							5	
6.0							6	

TD = 3.0 ft bgs
no gw encountered
refused on sandstone
no anomalies detected



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 243
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/28/12 1030	Date/Time Total Depth Reached: 6/28/12 1034	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.)		50588-1035	
Geologist: Ian Stone		Checked By / Date: <i>J Robbins</i> 6/29/12		

Radiological Background: 3416 / 51	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			72		Silty Sand, Dark yellowish brown (4/4 10R) 60% fine sand, 10% medium sand, 30% silt, dry, dense, no odor or staining TD = 0.5 ft bgs no gw encountered	SM		
0.5			90					
1.0							1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: Spr	Group: 3	Location ID: 245
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 4.5 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/29/12 0848	Date/Time Total Depth Reached: 6/29/12 0858	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50593-0920	
Geologist: I. Stone	Checked By / Date: Cliff Knapp 7/3/12			

Radiological Background: 3230 / 48	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 3262 (CPM)
0.0			0.0	54	Sandy Silt, Yellowish Brown (5/4 10YR) 30% fine sand, 10% medium sand, 60% silt, trace rootlets, dry, med. stiff low strength, low tough, low plasticity, no odor or staining	ML	3740
0.5			0.0	78			5094
1.0			0.0	66			5439
2.0			0.0	66	Silty Clay, Olive Yellow (6/6 2.5Y) 5% fine sand, 35% silt, 60% clay, dry, stiff, med tough, med strength, med plasticity, no odor or staining	CL	5585
2.5			0.0	84			5636
3.0			0.0	84			5610
3.5			0.0	60	Siltstone, light olive brown (5/4 2.5Y) very stiff, slaty texture, dry, no odor or staining	Bed-rock	5648
4.0			0.0	84			5752
4.5			0.0	72			5745
5.0			0.0	54	TD = 4.5 ft bgs no gw encountered refused on siltstone no anomalies detected		5727
6.0							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 3	Location ID: 246
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/29/12 0931	Date/Time Total Depth Reached: 6/29/12 0934	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.) 50594 - 0935			
Geologist: Ian Stone	Checked By / Date: Cliff Kinglet 7/3/12			

Radiological Background: 3154 / 53	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			6.0	78	Ⓟ Sandy silt, yellowish brown (5/4 10YR) 30% fine sand, 10% medium sand, 60% silt, trace rootlets, dry, med. stiff, low tough, low strength, low plasticity, no odor or skinning TD=0.5 ft bgs no gw encountered	ML	
0.5		6.0	90	1			
1.0							2
2.0							3
3.0							4
4.0							5
5.0							6
6.0							

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5200	Group: 3	Location ID: 246	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 4.0 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 6/29/12 0940		Date/Time Total Depth Reached: 6/29/12 0952	
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)			
Geologist: I. Stone				Checked By / Date: Cliff Kuntz 7/3/12			
Radiological Background: 3154 / 53				Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings ±0.5 = 3529 (CPM)
0.0			0.0	54	Sandy Silt, Yellowish brown (5/4 10YR) 30% fine sand, 10% medium sand, 60% silt, trace rootlets, dry, med stiff, low tough, (0-0.75') low strength, low plasticity, no odor or staining	ML	3658
0.5			0.0	60			4933
1.0			0.0	54	Sandy Silt w/ clay, Brownish yellow (6/6 10YR) 30% fine sand, 10% medium sand 60% silt, 10% clay, dry, med stiff, low tough, low strength, low med plasticity, no odor	ML	5581
2.0			0.0	72			5690
3.0			0.0	60			5536
4.0			0.0	54	(0.75-2.2')		5510
5.0			0.0	72	Silty Sand, Yellowish Brown (5/6 10YR) 60% fine sand, 20% medium sand, 20% silt, dry, med dense, no odor or staining	SM	5645
6.0			0.0	66	(2.2-3.5')		5846
			0.0	90	Siltstone, light olive brown (5/4 2.5Y) very stiff, dry, silty/flaky texture, no odor or staining	Bed-rock	NA
					TD: 4.0 ft bgs no gw encountered refusal on sandstone no anomalies detected Unable to widen hole past 3.5 ft bgs		

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 3	Location ID: 247	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 6/29/12 1025		Date/Time Total Depth Reached: 6/29/12 1029	
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) Bag (Approx. 1 lbs.)		50596 -1030			
Geologist: Ian Stone				Checked By / Date: <i>Cliff Knight</i> 7/3/12			
Radiological Background: 3210 / 36		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	90	<p>(FS) Sandy silt, yellowish brown (5Y 10/4R) 30% fine sand, 10% medium sand, 60% silt, trace rootlets, dry, medium stiff, low tough, low strength, low plasticity, no odor or staining</p> <p>TD = 0.5 ft bgs No gw encountered</p>	ML	
1.0			0.0	84			
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50W	Group: 3	Location ID: 247
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 4.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/29/12 1038	Date/Time Total Depth Reached: 6/29/12 1049	
Type of Sampling Device: 1.75" macrocore with acetate liner	Geologist: J. Stone		Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50597-1110	
Radiological Background: 3210 / 36		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs.
							+0.5' = 3366 (CPM)
0.0			0.0	66	Sandy silt, yellowish brown (5/4 10R) 30% fine sand, 10% medium sand, 60% silt, trace rootlets, dry, med stiff, no odor or staining, low tough, low strength, low plasticity,	ML	3732
0.5			0.0	78	(0.0-0.7')		5095
1.0			0.0	66	Sandy silt w/ clay, brownish yellow (6/6 10R) 30% fine sand, 60% silt, 10% clay, dry, med stiff, low tough, low strength, med plasticity, no odor or staining	ML	5490
1.5			0.0	78	Silty sand, yellow (7/6 2.5Y) 80% fine sand, 20% silt, dry, med dense, no odor or staining	SM	5224
2.0			0.0	54			5032
2.5			0.0	78	(1.3-2.8')		5183
3.0			0.0	84	Sandy silt, light yellowish brown (6/4 10YR) 40% fine sand, 60% silt, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	5541
3.5			0.0	66	(2.8-3.7')		5629
4.0			0.0	60	Siltstone, light olive brown (5/4 2.5Y), dry, very stiff, slaty/foliated texture, no odor or staining	sd-rock	NA
4.5					TD = 4.0 ft bgs no gw encountered refusal on siltstone no anomalies detected unable to widen hole past 3.7 ft bgs		
5.0							
6.0							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 248
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 7/2/12 0904	Date/Time Total Depth Reached: 7/2/12 0908	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.) 50598 - 0910			
Geologist: Ian Stone	Checked By / Date: Chad Knight 7/3/12			

Radiological Background: 3020 / 36	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	90	Sandy silt, Dark yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace pebbles, dry, medium stiff, low tough, low strength, low plasticity, no odor or staining	ML		
0.5			0.0	72				
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 50N	Group: 3	Location ID: 248			
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.			
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 7/2/12 0912		Date/Time Total Depth Reached: 7/2/12 0924			
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)				S0599-1000	
Geologist: I. Sims				Checked By / Date: Cliff Knight 7/3/12					
Radiological Background: 3020 / 36		Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background:			0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 3073 (CPM)		
0.0			0.0	84	Sandy Silt, Dark yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace rootlets, dry, med stiff.	ML	3131		
0.5			0.0	60	(0-0.5) low tough, low strength, low plasticity, no odor or staining		4458		
1.0			0.0	60	Sandy Silt w/ clay, Dark yellowish brown (4/6 10YR) 20% fine sand, 70% silt, 10% clay, dry, med stiff, low tough, low strength, med plasticity, no odor or staining	ML	5305		
			0.0	66			5632		
2.0			0.0	54			5806		
			0.0	60	Silty Clay w/ sand, Strong Brown (4/6 10YR) 10% fine sand, 30% silt, 60% clay, moist, med stiff, med tough, med strength, med plasticity, no odor or staining	CL	5784		
3.0			6.0	60			5847		
			0.0	66			5757		
4.0			6.0	60			5895		
			0.0	72			5690		
5.0			0.0	60	Sandy Clay w/ silt, Yellowish brown (5/4 10YR) 30% fine sand, 10% silt, 60% clay, moist, stiff, med tough, med strength, med plasticity, no odor or staining	CL	5665		
			0.0	72			5638		
6.0			0.0	78			5505		

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50W	Group: 3	Location ID: 249
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 7/2/12 1018	Date/Time Total Depth Reached: 7/2/12 1023	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx 1/2 lbs.)		50600 - 1025	
Geologist: Ian Stone		Checked By / Date: Cliff Knight 7/3/12		

Radiological Background: 3267 / 03250	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	72	Sandy silt, Dark yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace roots, dry, and stiff, low tough, low strength, low plasticity, no odor or staining	ML		
0.5			0.0	54				
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no gas encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 500	Group: 3	Location ID: 249	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 815 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 7/2/12 1028		Date/Time Total Depth Reached: 7/2/12 1045	
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 50601-1115					
Geologist: I. Stone		Checked By / Date: Cliff Knight 7/3/12					
Radiological Background: 3267 / 50				Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +2.5' = 3253 (CPM)
0.0			0.0	66	Sandy silt, Dark yellowish brown (4/4 104R)	ML	3543
0.5			0.0	54	30% fine sand, 70% silt, trace rootlets, dry, med stiff, no odor or staining, med low tough, low strength, low plasticity		4961
1.0			0.0	72	Sandy silt w/ clay, Dark yellowish brown (4/6 104R)	ML	5622
			0.0	72	20% fine sand, 70% silt, 10% clay, dry, med stiff, low tough, low strength, med plasticity, no odor or staining		5807
2.0			0.0	66			5662
			0.0	72	Sandy clay @ Silty Clay w/ sand, Strong Brown (4/6 7054R)	CL	5461
			0.0	90	10% fine sand, 30% silt, 60% clay, moist, med stiff med tough, med strength, med plasticity, no odor or staining		5243
			0.0	54			5230
4.0			0.0	60	Silty Sand, Brownish Yellow (6/6 104R)	SM	5670
			0.0	54	60% fine sand, 40% silt, moist, dense, no odor or staining		
			0.0	54	Sandy Clay w/ silt, Yellowish brown (5/4 104R)	CL	5884
			0.0	78	30% fine sand, 10% silt, 60% clay, moist, stiff, med tough, med strength, med plasticity, no odor or staining		5827
5.0			0.0	66			5655
			0.0	54	Silty Sand, Yellowish brown (5/6 104R)	SM	5756
6.0			0.0	54	60% fine sand, 10% medium sand, 30% silt, moist, dense, no odor or staining		



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDW	Group: 3	Location ID: SDW @ 250
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 7/2/12 1130	Date/Time Total Depth Reached: 7/2/12 1134	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.) 50602 - 1135			
Geologist: Ian Stone		Checked By / Date: Cliff Knight 7-3-12		

Radiological Background: 3259 / 37	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	96	Sandy silt. Dark yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace rock bits, dry, med stiff, low tight, low strength, low plasticity, no odor or staining	DL	
1.0			0.0	108			
2.0					TD = 0.5 ft bgs no ge encountered		
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 500	Group: 3	Location ID: 250	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 5.0 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 7/2/12 1140		Date/Time Total Depth Reached: 7/2/12 1148	
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50603-1200			
Geologist: I. Stone		Checked By / Date: <i>Cliff Threlkeld</i> 7/3/12					
Radiological Background: 3259 / 37		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings 70.5' = 3436 (CPM)
0.0			0.0	84	Sandy silt, Dark yellowish brown (4/14 10YR) 30% fine sand, 70% silt, trace rocklets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	4865
0.5			0.0	84 (0-0.5')	Sandy silt w/ clay, Dark yellowish brown (4/6 10YR) 20% fine sand, 30% silt, 10% clay, dry, med stiff, low strength, low tough, med plasticity, no odor or staining	ML	5790
1.0			0.0	78	Siltstone, light olive brown (5/3 2.5Y) mechanically weathered to ML, very stiff, no odor or staining, slaty/flakey texture, dry	Bed-rock	5946
1.5			0.0	72 (0.5-1.5')			6304
2.0			0.0	60			6413
2.5			0.0	66			6824
3.0			0.0	60			6604
3.5			0.0	90			NA
4.0			0.0	72			NA
4.5			0.0	114			NA
5.0			0.0	90 (1.5-5.0)			NA
TD = 5.0 ft bgs no gw encountered refused on siltstone no anomalies detected							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50~	Group: 3	Location ID: 251
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 7/2/12 1336	Date/Time Total Depth Reached: 7/2/12 1339	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.)		50604 - 1340	
Geologist: Ian Stone		Checked By / Date: Cliff Houghton 7/3/12		

Radiological Background: 343 / 40	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.3 ppm
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Depth (ft. bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs	Borehole Gamma Readings (CPM)
0.0			6.0	66	Sandy silt, Dark Yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace rutile, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	1	
0.5			0.0	72			2	
1.0							3	
2.0							4	
3.0							5	
4.0							6	
5.0								
6.0								

TD: 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 50N	Group: 3	Location ID: 251	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 9.5 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 7/2/12 1343		Date/Time Total Depth Reached: 7/2/12 1359	
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: (1) 1/2 Gallon Bag (Approx 1/2 lbs.) 50605-1430			
Geologist: I. Stone				Checked By / Date: Cliff Knight 7/3/12			
Radiological Background: 3143 / 40		Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs. Borehole Gamma Readings +0.5' = 3161 (CPM)
0.0			0.0	66	Sandy Silt, Dark yellowish brown (4/4 10YR) 30% fine sand, 70% silt, trace rocklets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	4474
0.5			0.0	84	(0-0.5') Sandy silt, Dark yellowish brown (4/6 10YR) w/clay 20% fine sand, 70% silt, 10% clay, dry, med stiff, low tough, low strength, med plasticity, no odor or staining	ML	5557
1.0			0.0	90		ML	6008
			0.0	60	(0.5-1.75')		6106
2.0			0.0	48	Silty Clay w/ sand, Brown (4/4 7.5YR) 10% fine sand, 30% silt, 60% clay, moist, stiff, med tough, med strength, med plasticity, no odor or staining	CL	5991
			0.0	60			6049
3.0			0.0	72			6126
			0.0	66			6077
4.0			0.0	54	Silty Clay, Dark grayish brown (4/2 2.5Y) 30% silt, 70% clay, moist, stiff, med tough, med strength, med plasticity, no odor or staining	CL	6174
			0.0	78			6017
5.0			0.0	72			6277
			0.0	60			6546
6.0			0.0	78			6305



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 2	Location ID: 252	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 7/3/12 1131		Date/Time Total Depth Reached: 7/3/12 1134	
Type of Sampling Device: Shovel/Trowel				Samples Collected: 50606 - 1135 (1) Bag (Approx. 1 lbs.)			
Geologist: Ian Stone				Checked By / Date: J Robbin 7/10/12			
Radiological Background: 2934 / 45		Radiological Equipment Used: Micro-R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	72	<p>Clayey S.H., Brown (4/4 Z.54R) 5% fine sand, 65% silt, 30% clay, trace rootlets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining</p> <p>TD = 0.5 ft bgs no gw encountered</p>	ML	1
1.0			0.0	72			2
2.0							3
3.0							4
4.0							5
5.0							6

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50W	Group: 2	Location ID: 252
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 7/3/12 140	Date/Time Total Depth Reached: 7/3/12 1150	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		50607-1230	
Geologist: I. Stone	Checked By / Date: J. Robbins 7/10/12			

Radiological Background: 2934 / 45	Radiological Equipment Used: Micro RT Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 3119 (CPM)
0.5			0.0	54	Clayey silt, Brown (4/4 7.54R) 5% fine sand, 35% silt, 65% silt, 30% clay, trace rootlets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	4053
			0.0	84			4949
1.0			0.0	54			5272
			0.0	48			5293
2.0			0.0	54			5379
			0.0	72			Silty Clay w/ sand, Dark Brown (3/3 7.54R) 5% fine sand, 30% silt, 65% clay, dry, stiff, med tough, med strength, med plasticity, no odor or staining
3.0			0.0	54	5285		
				48	5412		
4.0			0.0	60	5348		
			0.0	42	5358		
5.0			0.0	48	5268		
			0.0	54	5398		
6.0			0.0	48	5427		



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 2	Location ID: 253	
Drilling Company: HGL		Driller: T. Morse		Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel		Borehole Diameter: NA		Date/Time Drilling Started: 7/3/12 1410		Date/Time Total Depth Reached: 7/3/12 1414	
Type of Sampling Device: Shovel/Trowel				Samples Collected: (1) Bag (Approx. 1 lbs.) 50608-1415			
Geologist: Ian Stone				Checked By / Date: J. Robbins 7/10/12			
Radiological Background: 2999 / 60		Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			72		Clayey silt w/ sand, Brown (4/3 10R) 10% fine sand, 60% silt, 30% clay, trace pebbles, dry, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	
0.5			90				
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

TD=0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: <i>500</i>	Group: <i>2</i>	Location ID: <i>253</i>	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: <i>10.0</i> ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: <i>7/3/12 1418</i>		Date/Time Total Depth Reached: <i>7/3/12 1428</i>	
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: <i>50609 - 1505</i> (1) 1/2 Gallon Bag (Approx 5 lbs.)			
Geologist: <i>I. Stone</i>				Checked By / Date: <i>J. Robbins 7/10/12</i>			
Radiological Background: <i>2999 / 60</i>			Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: <i>0.0</i> ppm	

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 3027 (CPM)
			0.0	60	<i>See ③ Clayey silt w/sand, Brown (4/3 10YR) 10% fine sand, 60% silt, 30% clay, trace rootlets, dry, med stiff, low tough, low strength, low plasticity, no odor or staining</i>	<i>ML</i>	
0.5			0.0	48			
1.0			0.0	72			
			0.0	78			
2.0			0.0	90			<i>Silty (clay, see ③) Dark Brown (3/3 7.5YR) 5% fine sand, 30% silt, 65% clay, dry, stiff, med tough, med strength, med plasticity, no odor or staining</i>
			0.0	84			
3.0			0.0	60			
			0.0	66			
4.0			0.0	78			
			0.0	54			
5.0			0.0	60			
			0.0	66	<i>- moist</i>		
6.0			0.0	54			



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 254
Drilling Company: HGL	Driller: T. Morse I. Stone	Ground Elevation: NA	Total Depth Drilled: 0.5' ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 7/5/12 0835	Date/Time Total Depth Reached: 7/5/12/0840	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.) 50610 (0840) sr-90			
Geologist: Timothy Morse		Checked By / Date: J. Robbins 7/10/12		

Radiological Background: 45cpm/3010	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			0.0	84	<p>Clayey silt: Dark Yellowish Brown (10YR 3/4) 20% clay, 75% silt, 50% fine grained sand, dry, no odor, low strength, low toughness, trace rootlets, medium stiff/firm</p> <p>Total sample depth 0.5' bgs. No GW encountered</p>	ML	
0.5			0.0	90			
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SBW	Group: 2	Location ID: 254	
Radiological Background: 45 cpm / 3010		Radiological Equipment Used: Micro-RV Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	72	Silty clay, same as above		5273
			0.0	78		CL	5236
7.0			0.0	60			5259
			0.0	48			5332
8.0			0.0	60	5'0" -----		5266
			0.0	72	Silty clay w/ sand; Brown (7.5 YR 4/4) 50% clay, 40% silt, 10% fine to med. grained sand, dry, no odor, med. strength, med. toughness, very stiff/firm	CL	5438
9.0			0.0	66			5342
			0.0	60			5387
10.0			0.0	66			5443
					TD = 10.0' bgs. total sample depth reached NO GW encountered NO anomalies		
11.0							
12.0							
13.0							



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 255
Drilling Company: HGL	Driller: T. Morse I. Stone	Ground Elevation: NA	Total Depth Drilled: 0.5' 10' 6" ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 7/5/12 0943	Date/Time Total Depth Reached: 7/5/12 0945	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) Bag (Approx. 1 lbs.)		50612 (0945) sr-90	
Geologist: Timothy Morse		Checked By / Date: J. Robbins 7/10/12		

Radiological Background: 39 cpm / 3147	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			0.0	78	surface; vegetation, trace asphalt		
0.5			0.0	78	Clayey silt: Dark Brown (10YR 3/3) 20% clay, 75% silt, 5% fine grained sand, trace rootlets, trace asphalt, dry, no odor, low strength, low toughness, med. stiff/firm	AF ML	
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

TD = 0.5' bgs
no GW encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDM	Group: 2	Location ID: 255
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10'0" ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 7/5/12 0950	Date/Time Total Depth Reached: 7/5/12 0957	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx. 5 lbs.)		50613 (1030)	
Geologist: Timothy Morse	Checked By / Date: J Robbins 7/10/12			

Radiological Background: 39 cpm / 3147	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. (CPM)
0.0			0.0	72	Clayey silt: Dark Brown (10YR 3/3) 20% clay, 75% silt, 5% fine grained sand, trace rootlets, trace asphalt in top 0-0.5', dry, no odor, low strength, low toughness, med. stiff/firm	AF ML	3498
0.5			0.0	78			4567
1.0			0.0	84			5079
1.6			0.0	54			5078
2.0			0.0	42	clayey silt: Brown (7.5YR 4/3) 40% clay, 55% silt, 5% fine grained sand, trace calcium carbonate stringers and deposits, no odor, dry, med. strength and toughness, stiff/firm	ML	5205
2.8			0.0	48			5281
3.0			0.0	60			5216
3.4			0.0	54			5361
4.0			0.0	54	Silty clay: Dark Brown (7.5YR 3/4) 40% silt, 55% clay, 5% fine grained sand, dry, no odor, med strength and toughness, very stiff/firm, presence of Calcium carbonate stringers and deposits	CL	5129
4.6			0.0	66			5110
5.0			0.0	54			5212
5.4			0.0	54			5085
6.0			0.0	60			5133

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 2	Location ID: 255	
Radiological Background: 39cpm / 3147		Radiological Equipment Used: Micro R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	60	Silty clay, same as above		5133
			0.0	54			5135
7.0			0.0	72	7'0" -----		5283
			0.0	66	Silty clay w/sand: Brown (7.5YR 4/4) 50% clay, 40 silt, 10% fine to medium grained sand, trace deposits of calcium carbonate, dry, no odor, med. strength/toughness, very firm/stiff	CL	5380
8.0			0.0	78			5357
			0.0	54			5413
9.0			0.0	66	9'0" -----		5277
			0.0	72	Same as above except presence of mottling and slightly more medium grained sand		5316
10.0			0.0	66	10'		5304
					TD = 10'0" bgs. no refusal NO GW encountered NO anomalies		
11.0							
12.0							
13.0							



Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 5DN	Group: 123	Location ID: 256	
Drilling Company: HGL		Driller: M. Birney		Ground Elevation: NA		Total Depth Drilled: ft bgs.	
Drilling Equipment: Trowel/Shovel		Borehole Diameter: N/A		Date/Time Drilling Started: 6/28/12 1410		Date/Time Total Depth Reached: 6/28/12 1423	
Type of Sampling Device: Trowel/Shovel		Geologist: L Robbins		Samples Collected: One 1/2 Gallon Bag (Approx 1/2 lbs.) 50614 (1425)		Checked By / Date: M. Birney 7-3-12	
Radiological Background: 12/3119/02		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0		ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	13/72	Silty clay: brown (10YR 4/3), 65% clay, 35% silt dry, soft, no odor or staining, trace rootlets	CL	
1.0			0.0	15/66	no GW encountered TD = 0.5' bgs		
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 256
Drilling Company: HGL	Driller: M. Bimey	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/28/12 1428	Date/Time Total Depth Reached: 6/28/12 1536	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50615 (US35)	
Geologist: L. Robbins	Checked By / Date: MB			

Radiological Background: 12/31/91/02	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings	
							Feet bgs.	+0.5 = 3202 (CPM)
			0.0	72	Silty clay: brown (10YR 4/3), 65% clay, 35% silt, dry, soft, no odor or staining, trace rootlets, --- Calc ₃ nodules and ¹⁴ Ca FeO ₂ mottling	CL		3244
0.5			0.0	66			3606	
1.0			0.0	54			4266	
			0.0	78			4779	
2.0			1.1	48			4914	
			0.6	54			4832	
3.0			0.0	54			4956	
			0.0	72			5033	
4.0			0.0	48			4916	
			0.0	54			4810	
5.0			0.0	54	4900			
			0.6	25	Unit same as above, note color change silty clay: (7.5YR 4/3) brown, small spagules	CL		4821
6.0			0.0	72			5023	

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 257
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 0820 7-5-12	Date/Time Total Depth Reached: 0828 7-5-12	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 1/2 lbs.)		50616 (0830)	
Geologist: m Birney	Checked By / Date: ms Jan 7/9/12			
Radiological Background: 12 / 3135 / 63	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	14/60	MR/pancake Surface: tall grass clayey silt, brown (10y, 5/3) 60% silt, 40% clay, stiff, dry, low plasticity, trace fine rootlets, no odor, no staining	ml	
1.0			0.0	15/54			
2.0					TD = 0.5 ft bgs no groundwater		
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50A	Group: 3	Location ID: 257
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7-5-12 0831	Date/Time Total Depth Reached: 7-5-12 0922	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50617 (0955)	
Geologist: M Birney	Checked By / Date: for [Signature] 7/2/12			

Radiological Background: 12 / 3135 / 63	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
					Surface: tall grass		3104
0.5			0.0	60	clayey silt: brown (10yr 5/3) 60% silt, 40% clay, stiff, dry, low plasticity, trace fine rootlets, no odor, no staining	cl _{mb}	3693
			0.0	54		ml	4416
1.0			0.0	54	(0-1.0)		4649
			0.0	66	silty clay: dark yellowish brown (10yr 3/4) 60% clay, 40% silt, trace fine sand, semi moist, low plasticity, trace fine rootlets, no odor, no staining, mottling, med stiff	cl	4787
2.0			0.0	60	--- Fe oxide nodules		4823
			0.0	60			4884
3.0			0.0	36			4950
			0.0	60			4910
4.0			0.0	42			4984
			0.0	72			5123
5.0			0.0	72	(1-5.0) same as above but increase of clay silty clay		4942
			0.0	66	70% clay, 30% silt, trace fine sand brown (7.5yr 4/4), semi moist med plasticity, med stiff, no odor, no staining, med mfs	cl	5013
6.0			0.0	84			4993

cont. to pg 2



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 258
Drilling Company: HGL	Driller: LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 6-29-12 0840	Date/Time Total Depth Reached: 6-29-12 0840	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 1/2 lbs.)	50618 (840)		
Geologist: m Birney	Checked By / Date: ms [Signature] 6/29/12			

Radiological Background: 13/3211/61	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			0.0	14/60	AF = Artificial Fill surface: tall grass		
0.5			0.0	13.5/42	silty clay, dark yellowish brown (10Yr 4/4) 65% clay, 35% silt, trace fine sand, trace rootlets, dry, no odor, no staining, med stiff plasticity, calc. present, med plasticity	CI / AF	
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

TD = 0.5 ft' bgs
NO GW present

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 258
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 10 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6-29-12 0942	Date/Time Total Depth Reached: 6-29-12 0942	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		(1017)	50619
Geologist: M Birney	Checked By / Date: ms 6/29/12			
Radiological Background: 13/3211/61	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. (CPM)
			0.0	60	AP = artificial fill surface: tall grass		3376
0.5			0.0	48	silty clay, dark yellowish brown (10yr 4/4) 65% clay, 35% silt, trace fine sand, trace rootlets, dry, no odor, no staining, med stiff, med plasticity; Calc ₃ present	CI / AF	4031
1.0			0.0	48	same as above with color change Dark yellowish brown (10yr 3/6)		4552
2.0			0.0	72			4827
			0.0	66			4972
3.0			0.0	72			4751
			0.0	90			5190
4.0			0.0	72			5106
			0.0	60	Iron oxide staining		5097
5.0			0.0	72			5085
			0.0	54	silty clay, dark yellowish brown (10yr 3/4) 75% clay 25% silt, slight moisture, med stiff, no odor, no staining, trace small/fine rootlets, plasticity is med	CI / AF	5043
6.0			0.0	90			4957
							4995

cont to pg 2



Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 259
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 6-29-12 10:55	Date/Time Total Depth Reached: 1040 6-29-12	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx. 5 lbs.)		2 50620 (1040)	
Geologist: M Birney	Checked By / Date: [Signature] 7/3/12			

Radiological Background: 14 / 3411 / 86	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	14/60	Surface - tall grass			
0.5			0.0	14/60	Silty clay, 65% clay, 35% silt dark yellowish brown (10yr 4/4) dry, med stiff, no odor, no staining, ^{low} plasticity, CaCO ₃ concretions, fine rootlets	CI		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no groundwater

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 259
Drilling Company: HGL	Driller: L Robbin J Le Vangier	Ground Elevation: NA	Total Depth Drilled: 10 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6-29-12 1042	Date/Time Total Depth Reached: 6-29-12 1145	
Type of Sampling Device: Hand Auger	Samples Collected: 2 One 1/2 Gallon Bag (5 lbs.)		50221 (1221)	
Geologist: M Birney	Checked By / Date: mib 7/3/12			

Radiological Background: 14/3411/56	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color, name & notation, minerology, bedding, plasticity, density, consistency; etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. 4.5 3231 (CPM)
			0.0	60	Surface: tall grass		3857
0.5			0.0	60	silty clay, 65% clay, 35% silt, dark yellowish brown (10gr 4/4), dry, med stiff, no odor, no staining, ^{low} plasticity, CaCO ₃ concretions, fine rootlets,	cl	4813
1.0			0.0	60			5015
			0.0	48			4924
2.0			0.0	54			5107
			0.0	48			5189
3.0			0.0	42	-----		5039
			0.0	90	same as above w/ color change Dark yellowish brown (10gr 3/4) slight moisture	cl	4953
4.0			0.0	78			4868
			0.0	72	-----		4892
5.0			0.0	60	silty clay, Dark yellowish brown (10gr 3/4) 80% clay, 20% silt, trace fine sand, ^{med} plasticity, Fe ₂ O ₃ staining present, no odor, no staining,	cl	4950
			0.0	42	med stiff, trace fine rootlets, mottling, semi moist.		5081
6.0			0.0	54			4938

cont to pg 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 260
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/2/12 1440	Date/Time Total Depth Reached: 7/2/12 1446	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx. 5 lbs.)		50622 (1449)	
Geologist: L Robbins	Checked By / Date: MMMAA Bir 7-6-12			

Radiological Background: 13/3176/72	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs.)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0	1/4	1/4	0.0	14/60	clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor & staining trace rootlets TD = 0.5' no GW encountered	ML	
0.5	1/4	1/4	1.5	13/60			
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50N	Group: 3	Location ID: 260
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 10.0' ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/2/12 1446	Date/Time Total Depth Reached: 7/2/12 1551	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50623 (1550)	
Geologist: L. Robbins	Checked By / Date:			

Radiological Background: 13/3176/72	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5=3146 (CPM)
0.0			0.0	60	Clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor or staining, trace rootlets (0'6")	ML	3243
0.5			0.0	66		ML	4423
1.0			0.6	48	Clayey silt same as above note color change dark yellowish brown (10YR 3/4), slightly mottled		4862
1.5			0.4	76 24 4			5101
2.0			0.0	60			5357
2.5			0.0	72			5225
3.0			0.0	60			5378
3.5			0.1	66			5236
4.0			0.0	60	silty clay: dark yellowish brown (10YR 4/6), 70% clay, 30% silt, moist, soft, low plasticity, slightly mottled, no odor or staining	CL	5304
4.5			0.0	90			5069
5.0			0.0	66			5280
5.5			0.0	48			5165
6.0			0.0	60			5214

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Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 261
Drilling Company: HGL	Driller: J. LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/2/12 0900	Date/Time Total Depth Reached: 7/2/12 0906	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 1/2 lbs.)		50624 (0905)	
Geologist: L. Robbins	Checked By / Date: [Signature] 7-3-12			

Radiological Background: 14 B184/61	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0 - 0.5			0.0	14 15 96	<p>← UR/CPM</p> <p>Clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, stiff med. soft, low plasticity, no odor or staining, trace rootlets + plant seeds</p> <p>TP=0.5 no GW encountered</p>	ML	

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 3	Location ID: 261
Drilling Company: HGL	Driller: J. Letangio	Ground Elevation: NA	Total Depth Drilled: 10 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/2/12 906	Date/Time Total Depth Reached: 7/2/12 1014	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (2 lbs) 50625 (1015)			
Geologist: LRobbins	Checked By / Date: M. Robbins 7-3-12			

Radiological Background: 14/3184/61	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.5			0.0	108	clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor or staining, trace rootlets + plant seeds	ML	3278
			0.0	96			3824
1.0			0.0	60	(1'0") clayey silt: dark yellowish brown (10YR 3/4), 55% silt, 45% clay, moist, soft, low plasticity, slightly mottled, no odor or staining	ML	4703
			0.0	78			5115
2.0			0.0	60	color change: brown (7.5YR 4/4), unit same as above		5090
			0.0	78			5158
3.0			0.0	54			5138
			0.0	54			5064
4.0			0.0	84	(4'0") silty clay: dark yellowish brown (10YR 4/6), 65% clay, 35% silt, moist, soft, low plasticity, slightly mottled, no odor or staining	CL	5024
			0.0	66			4940
5.0			0.0	48			5288
			0.0	48			5118
6.0			0.0	42			5129

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Project Name:		Project Number:	Subarea:	Group:	Location ID:		
SSFL Area IV Radiological Study		EP038.01.22.04.03	SDN	3	2601		
Radiological Background:		Radiological Equipment Used:		PID Used:			
14/384/61		Micro R / Downhole / Pancake Meters		Mini Rae 3000 - Background: 0.0 ppm			
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	42	silty clay - dark yellowish brown - nut same as above	CL	5129
			2.0	54			5210
7.0			0.7	78			5161
			2.3	54			5163
8.0			1.3	90	(8'0") silty clay w/ sand: dark yellowish brown	ML CL	5197
			0.0	48	(1042 4/6), soft, moist, no odor or staining, 60% clay, 20% silt, 20% fine sand, ^{med} plasticity		5079
9.0			0.0	78			5072
			0.0	78			5073
10.0			0.0	54	(10'0")		5133
					TD=10' bgs, no refusal no GW encountered no anomalies		
11.0							
12.0							
13.0							

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 262
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/2/12 1030	Date/Time Total Depth Reached: 7/2/12 1035	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx. 5 lbs.)		50626 (1035)	Field Dup: 50652 (NT)
Geologist: LRobbins	Checked By / Date: M. Birney 7-3-12			

Radiological Background: 14 / 395 / 53	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0 - 0.5			0.0	66	clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor or staining	ML	
0.5 - 1.0			0.4	84	trace rootlets + plant seeds		
					TD = 0.5' bgs no GW encountered		
1.0 - 2.0							
2.0 - 3.0							
3.0 - 4.0							
4.0 - 5.0							
5.0 - 6.0							

8

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 262
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 100 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/2/12 1035	Date/Time Total Depth Reached: 7/2/12 1128	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (6 lbs.)		50627 (1140)	
Geologist: L Robbins	Checked By: <u>MMR, Rm</u>		Date: 7-5-12	

Radiological Background: 14/395/53	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings 10.5' = 3184 (CPM)
0.0			0.0	66	Clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor or staining trace rootlets + plant seeds (1'0")	ML	3120
0.5			0.0	84		4119	
1.0			0.0	96	Clayey silt: dark yellowish brown (10YR 3/4), 55% silt, 45% clay, moist, soft, low plasticity, slightly mottled, no odor or staining (2'10")	ML	4918
1.5			0.0	90		5132	
2.0			0.0	78	Silty clay: dark yellowish brown (10YR 4/6), 65% clay, 35% silt, moist, soft, low plasticity, no odor or staining, slightly mottled	CL	5102
2.5			0.0	54		5086	
3.0			0.0	48			5163
3.5			0.0	98			5112
4.0			0.0	78			5045
4.5			0.0	70			5040
5.0			0.0	60			4922
5.5			0.0	60			5101
6.0			0.0	66			5140

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Project Name:		Project Number:		Subarea:	Group:	Location ID:	
SSFL Area IV Radiological Study		EP038.01.22.04.03		5DN	3	262	
Radiological Background:			Radiological Equipment Used:			PID Used:	
14/3195/53			Micro R / Downhole / Pancake Meters			Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	66	Unit continued from above: silty clay	CL	5140
			0.0	60			5130
7.0			0.0	54			5310
			0.0	72			5453
8.0			0.0	78			5211
			0.0	78	(8'6")		5005
			0.0	66	Silty sand w/ silty clay w/ sand: dark yellowish brown (10YR 4/6), soft, moist, no odor or staining, 60% clay, 20% fine sand, 20% silt, med. plasticity	CL	5057
9.0			0.0	66			5025
			0.0	54	(10'0")		5115
10.0					no GW encountered TD = 68 10' bgs no anomalies, no refusal		
11.0							
12.0							
13.0							

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 263
Drilling Company: HGL	Driller: J. LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/2/12 1326	Date/Time Total Depth Reached: 7/2/12 1331	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 1/2 lbs.)		50628 (1330)	
Geologist: L. Robbins	Checked By / Date: <i>[Signature]</i> 7-5-12			
Radiological Background: 14/3218/56	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:		0.0 ppm

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			0.0	14/78	Clayey silt - brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor or staining, trace rootlets	ML	
0.5			0.0	14/66			
1.0					TD=0.5' bgs no GW encountered		
2.0							
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 3	Location ID: 263
Drilling Company: HGL	Driller: J. LeVangie	Ground Elevation: NA	Total Depth Drilled: 8.58' ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/12/12 1350	Date/Time Total Depth Reached: 7/12/12 1434	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50629 (1435)	
Geologist: Rottens	Checked By / Date: M. P. ... 7-6-12			

Radiological Background: 14/3278/50	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5 = 433 (CPM) (R)
0.0			0.0	78	clayey silt: brown (10YR 5/3), 60% silt, 40% clay, dry, med. soft, low plasticity, no odor or staining, trace rootlets (1'0")	ML	3319
0.5			0.0	66		4043	
1.0			0.0	66		4917	
2.0			0.0	60	clayey silt (same as above), note color change: dark yellowish brown (10YR 3/4), slightly mottled (4'0")	ML	5327
2.5			0.0	60		5269	
3.0			0.1	30		5232	
3.5			0.0	84	silty clay: dark yellowish brown (10YR 4/6), 65% clay, 35% silt, moist, soft, low plasticity, slightly mottled, no odor or staining (4'0")	CL	5196
4.0			0.0	48			5127
4.5			0.0	60			5042
5.0			0.0	66			5069
5.5			0.0	102			5132
6.0			0.0	90			5163
6.5			0.0	78		5240	

3143

Project Name:		Project Number:		Subarea:	Group:	Location ID:	
SSFL Area IV Radiological Study		EP038.01.22.04.03		SDN	3	263	
Radiological Background:			Radiological Equipment Used:		PID Used:		
14/3278/56			Micro R / Downhole / Pancake Meters		Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole
							Gamma Readings (CPM)
6.0			0.0	78	unit same as above: silty sand w/ clay	CL	5240
			0.0	60			5170
7.0			0.0	78	7'0"		5333
			0.0	72	silty clay w/ sand: dark yellowish brown (10YR 4/6), soft, moist, no odor or staining, 60% clay, 20% silt, 20% fine sand, med. plasticity	CL	5246
8.0			0.0	96	8'0"		5150
			2.2	66	sand w/ clay: 85% fine sand, 15% ^{clay} fine sand brownish yellow (10YR 6/6), loose, moist, no odor or staining.	SC	4944
9.0					TD = 8.58' or 8'7" no GW encountered refusal on sandstone no anomalies		
10.0							
11.0							
12.0							
13.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DN	Group: 2	Location ID: 264
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Shovel/Trowel	Borehole Diameter: NA	Date/Time Drilling Started: 6/19/12 1446	Date/Time Total Depth Reached: 6/19/12 1449	
Type of Sampling Device: Shovel/Trowel	Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) (3)	Checked By / Date: J Robbins 6/21/12		

Radiological Background: 2811 / 42	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 210 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			66		Silty Clay w/ sand, Brown (4/3 10YR) 10% fine sand, 30% silt, 60% clay, trace gravel (granite, max size = 2in), dry, medium stiff, med plasticity, med tough med strength, no odor or staining, trace metal, plastic (artificial fill)	AP / CL		
0.5		84						
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no gw encountered

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SDN	Group: 2	Location ID: 264	
Drilling Company: Boart Longyear		Driller: D. Hansen		Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600		Borehole Diameter: 1.75"		Date/Time Drilling Started: 6/19/12 453		Date/Time Total Depth Reached: 6/19/12 1502	
Type of Sampling Device: 1.75" macrocore with acetate liner				Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.) 5063i - 1530			
Geologist: I. Stave				Checked By / Date: J. Robbins 6/21/12			
Radiological Background: 2811 / 42		Radiological Equipment Used: Micro / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings to 5' : 2860 (CPM)
0.5			0.0	66	Silty Clay w/ sand, Brown (4/3 10YR) 10% fine sand, 30% silt, 60% clay, trace gravel (granite, max size = 2"), dry medium stiff, med plasticity, med tough, med strength, no odor or staining trace metal plaster	AF / CL	3698 4519 4709
1.0			0.0	60			4812
2.0			0.0	48	(0-2.0') Clay, Dark Brown (3/3 10YR) 5% fine sand, 5% silt, 90% clay, dry, stiff, med tough, med strength, med plasticity, no odor or staining	CL	4845 4968
3.0			0.0	60	(2.0-3.0') Clayey silt w/ sand, Yellowish Brown (5/4 10YR) 15% fine sand, 50% silt, 35% clay, dry, stiff, low tough, low strength, low toughness, med plasticity, no odor or staining, trace calcium carbonate stringers	ML	4939 5001 4750
4.0			0.0	54			48.37
5.0			0.0	42	(3.0-5.0') Sandy silt. w/ clay, Yellowish brown (5/6 10YR) 30% fine sand, 60% silt, 10% clay, trace calcium carbonate stringers, dry, stiff, low tough, low strength, low plasticity, no odor or staining	ML	4767 4723
6.0			0.0	60			5203

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDN	Group: 2	Location ID: 265
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 25.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/21/12 0900	Date/Time Total Depth Reached: 6/22/12 0938	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50633-1055 50634-1105 (1) 1/2 bag	
Geologist: I. Storz		Checked By / Date: J. Robbins 6/22/12		

Radiological Background: 2677 / 40	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5' = 2828 (CPM)
					AF = arklin, fill		
0.0			60		Silty Clay w/ sand, 1/2 yellowish Brown (5/4 10YR)	AF/CL	3198
0.5			54		10% fine sand, 30% silt, 60% clay, trace rootlets, trace gravel (granule, max size = 1.0"); med stiff, med toughness, med strength, med plasticity, (0.0-0.8) no odor or staining, dry	AF/CL	4347
1.0			60		Clay, Dark Brown (3/3 10YR)	AF/CL	4744
			60		5% fine sand, 5% silt, 90% clay, trace brick, trace rootlets, dry, stiff, med toughness, med strength, med plasticity, no odor or staining		4824
2.0			72				4964
			54				5064
3.0			60				5058
			72				4879
4.0			66				4864
			54				4612
5.0			60				4716
			66		(0.8-5.5')		4705
			72		Silty Clay, Yellowish Brown (5/6 10YR), 50% fine sand, 35% silt, 60% clay, trace calcium carbonate nodules + stringers, dry, stiff, med tough, med strength, med plasticity, no odor or staining, trace gravel	AF/CL	4665

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03	Subarea: 52a	Group: 2	Location ID: 265			
Radiological Background: 2677/ 40		Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 3000 - Background: 0.0 ppm				
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	72	Silty Clay, same as above	AF/CL	6	4665
			0.0	60			7	4695
7.0			0.0	54			8	4831
			0.0	66			9	4982
8.0			0.0	84	Silty Clay, Reddish Brown (4/4 5R2) 5% fine sand, 20% silt, 75% clay, trace calcium carbonate nodules and stringers, dry, stiff, med tough, med strength, med plasticity, no odor or staining	AF/CL	8	4735
			0.0	72			9	4825
9.0			0.0	66			10	4776
			0.0	78			11	4714
10.0			0.0	66			12	4702
			0.0	66			13	4713
11.0			0.0	54	Sandy silt w/clay, Strong brown (4/6 10YR) 30% fine sand, 60% silt, 10% clay, trace calcium carbonate stringers and nodules, moist, med stiff, low strength, low tough, med plasticity	AF/ML	11	4809
			0.0	60			12	4866
12.0			0.0	54			13	4725
			0.0	60				4756
13.0			0.0	66				4812

Project Name:		Project Number:		Subarea:	Group:	Location ID:	
SSFL Area IV Radiological Study		EP038.01.22.04.03		SDU	2	265	
Radiological Background:			Radiological Equipment Used:			PID Used:	
2672 / 40			Micro R / Downhole / Pancake Meters			Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
13.0			0.0	66	Sandy silt w/ clay, same as above	AF/ML	4812
			0.0	72	Sandy silt w/clay, yellowish brown (5/6 10YR) 25% fine sand, 65% silt, 10% clay, trace calcium carbonate nodules and stringers, moist, med stiff, low strength, low tough, med plasticity, no odor or staining	AF/ML	4712
14.0			0.0	60			4796
			0.0	48			4819
15.0			0.0	60			4994
			0.0	66			4686
16.0			0.0	72			4927
			0.0	54			4904
17.0			0.0	78			4862
			0.0	84			4992
18.0			0.0	60	Silty Sand, yellowish brown (5/6 10YR) 70% fine sand, 30% silt, moist, med dense, no odor or staining	AF/SM	4985
			0.0	60	Sandy silt, yellowish brown (5/4 10YR) 30% fine sand, 65% silt, 5% clay, moist, med stiff, low tough, low strength, low plasticity, no odor or staining	AF/ML	4819
19.0			0.0	48			4964
			0.0	60	Silty Sand, yellowish brown (5/6 10YR) 70% fine sand, 30% silt, moist, med dense, no odor or staining	AF/SM	4868
20.0			0.0	66			4872

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: SPN	Group: 2	Location ID: 265	
Radiological Background: 2677 / 40		Radiological Equipment Used: Micro P / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm		
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
20.0			0.0	66	Silty Sand, same as above	AF/SM	4872
			0.0	66			5180
21.0			0.0	72	(19-21.5') Sand, Olive Yellow (6/6, 2.54) 65% fine sand, 35% medium sand, 5% silt	PT/SP	5138
			0.0	60	(21-21.5) moist, lousy, no odor or staining		5107
22.0			0.0	54	Sandy Silt, Strong Brown (4/6 7.5/2) 40% fine sand, 60% silt, moist, med stiff, low tough, low strength, low plasticity, no odor or staining	ML	5120
			0.0	84			4977
23.0			0.0	72			4873
			0.0	60	(21.5-23.0)		5012
24.0			0.0	54	Sand (weathered sandstone), Brownish Yellow (6/6 10/2) 70% fine sand, 25% medium sand, 5% silt, moist, very dense, no odor or staining	SP	4884
			0.0	54			NA
25.0			0.0	60	(23.5-25.0)		NA
					TID = 25.0 ft bgs no gw - encountered refusal on sandstone no anomalies detected NA = not available, unable to widen hole past 24 ft bgs.		

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 50W	Group: 2	Location ID: 266
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA	Total Depth Drilled: 10.0 ft bgs.	
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 6/19/12 1346	Date/Time Total Depth Reached: 6/19/12 1355	
Type of Sampling Device: 1.75" macrocore with acetate liner	Samples Collected: (1) 1/2 Gallon Bag (Approx 1 lbs.)		50635-1430	
Geologist: D. Shine	Checked By / Date: J Robbins 6/21/12			

Radiological Background: 2785 / 35	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 10.5' = 2906 (CPM)
			0.0	78	Silty Clay w/ sand, Brown (4/3 10YR)	AF		3964
0.5			0.0	60	10% fine sand, 30% silt, 60% clay, trace gravel, trace concrete, dry, stiff, med toughness, med strength, low plasticity, no odor or staining (ark haul fill)	/CL		4652
1.0			0.0	54	Clay, Dark Brown (3/3 10YR)	AF (S)	1	4786
			0.0	60	5% fine sand, 5% silt, 90% clay, dry, stiff, med plasticity, med strength, med toughness, no odor or staining	/CL		4858
2.0			0.0	72			2	4957
			0.0	60				5026
3.0			0.0	54			3	5061
			0.0	66	(0.75-3.75')			5161
4.0			0.0	60	Clayey Silt w/ sand, Yellowish Brown (5/4 10YR)	ML	4	5130
			0.0	54	15% fine sand, 50% silt, 35% clay, dry, trace calcium carbonate stringers, stiff, low tough, low strength, med plasticity, no odor or staining			5025
5.0			0.0	48	(3.75-5.0')		5	4814
			0.0	54	Sandy Silt w/ clay, Yellowish brown (5/6 10YR)	ML		4839
			0.0	66	30% fine sand, 60% silt, 10% clay, trace calcium carbonate stringers and nodules, dry, stiff, low strength, low toughness, low plasticity, no odor or staining		6	4818

Project Name: SSFL Area IV Radiological Study		Project Number: EP038.01.22.04.03		Subarea: 52W	Group: 2	Location ID: 266	
Radiological Background: 2785 / 35			Radiological Equipment Used: Micro-R / Downhole / Pancake Meters			PID Used: Mini Rae 3000 - Background: 0.0 ppm	
Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
6.0			0.0	66	Sandy silt w/clay, same as above	MC	4818
			0.0	72			4889
7.0			0.0	78	(5.0' - 7.1')		4872
			0.0	66	Silty Sand, Brownish Yellow (6/6 109R) 60% fine sand, 35% silt, 5% clay, dry, dense no odor or staining	SM	4857
8.0			0.0	66	(7.1 - 7.5')		5031
			0.0	72	Silty Clay w/ sand, Brown (4/4 7.59R) 10% fine sand, 30% silt, 60% clay, some calcium carbonate stringers, nodules, and beds (laminar), dry, stiff, med tough, med strength, med plasticity, no odor or staining	CL	4924
9.0			0.0	60			4778
			0.0	54			4669
10.0			0.0	66			4686
					TD = 10.0 ft bgs no gw encountered no anomalies detected		
11.0							
12.0							
13.0							



9

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 42
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 1430 7-5-12	Date/Time Total Depth Reached: 1437 7-5-12	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.) 50638 (1437)			
Geologist: M Birney	Checked By / Date: [Signature] 7/10/12			

Radiological Background: 13/4337 177	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	19/130 21/138	<p>Surface: grass + monkey flower</p> <p>Sandy silt, 60% silt, 40% fine sand, dark yellowish brown (10gr 3/4) non plasticity, dry: soft, no odor, no staining, med dilatancy, leaf litter, rootlets.</p> <p>TPD = 0.5 ft bgs no groundwater</p>	ml		

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDS	Group: 4	Location ID: 42
Drilling Company: HGL	Driller: J Le Vengie	Ground Elevation: NA	Total Depth Drilled: 2.5 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 1430 7-5-12	Date/Time Total Depth Reached: 1450 7-5-12	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50637 (1508)	
Geologist: M Birney	Checked By / Date: [Signature] 7/10/12			

Radiological Background: 18/4337/77	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. +0.5 4127 (CPM)
0.0			0.0	138	Surface: tall grass + monkey flowers		
0.5			0.0	139	sandy silt, 60% silt, 40% fine sand, dark yellowish brown (10yr 3/4), non plasticity, dry, soft, no odor, no staining, med dilucy, leaf litter, rootlets,	Ml	4182
1.0			0.0	39	(0-1.0)		7146
1.5			0.0	132	silty sand, yellowish brown, (10yr 5/6) 65% fine to med sand, 35% silt, trace subangular sandstone, dry, loose, non plasticity, rootlets, no odor, no staining,	SM	8368
2.0			0.0	54			9438
2.5			0.0	66	(1.0-2.5)		1005 mb 10,053
3.0					TD = 2.5 ft bgs no groundwater refusal on sandstone	BR	
4.0							
5.0							
6.0							

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 4A 43
Drilling Company: HGL	Driller: J. LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/6/12 0847	Date/Time Total Depth Reached: 7/6/12 0851	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.)		50640 (0850)	
Geologist: L Robbins	Checked By / Date: [Signature] 7-9-12			

Radiological Background: 16 H2SO4 / 70	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings	
							Feet bgs.	(CPM)
0.0	0.0	4008	0.0	11	<p>← <i>MR/CPM</i></p> <p>Sandy silt: yellowish brown (10YR5/4), 60% silt, 40% sand, trace clay, trace rootlets + grass seeds, dry, ⁽¹³⁾ soft low plasticity, no odor or staining</p> <p>TD = 0.5' bgs no GW encountered</p>	ML		
0.5	0.0		18	72				
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDS	Group: 4	Location ID: 43 43
Drilling Company: HGL	Driller: J. LeVangie	Ground Elevation: NA	Total Depth Drilled: 1.5 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/6/12 082	Date/Time Total Depth Reached: 7/6/12 0910	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50641 (0910)	
Geologist: L Robbins	Checked By / Date: M. Robbins 7-10-12			

Radiological Background: 16/4008/70	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole
							Feet bgs.
0.0			0.0	54	Sandy silt: yellowish brown (10YR 5/4), 60% silt, 40% sand, trace clay, trace rootlets + grass, seeds, dry, low plasticity, no odor or staining, soft	ML	4218
0.5			0.0	72			5983
1.0			0.0	112			6967
1.5			0.0	78	Silty sand: brownish yellow (10YR 6/6), 60% fine sand, 40% silt, trace subangular fine grained sandstone gravel, trace rootlets, dry, slow dilatancy, low plasticity, no odor or staining, loose	SM	7063
2.0							
2.5					TD: 1.5 bgs, refusal on sandstone		
3.0					no CW encountered		
4.0					no anomalies		
5.0							
6.0							

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 44
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/6/12 0932	Date/Time Total Depth Reached: 7/6/12 0937	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.) 50642 (0937) / Field dup: 50657 (na) (e)			
Geologist: L Robbins	Checked By / Date: MMAA Pin 7-10-12			

Radiological Background: 19/4187/57	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Biological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0 - 0.5	0.0 - 0.5		0.0	MR/cpm	Sandy silt: yellowish brown (10YR 5/4), 60% silt, 40% sand, trace clay, trace rootlets + grass seeds, dry, low plasticity, no odor or staining soft	ML	
0.5 - 1.0					TD=0.5' no GW encountered		

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDS	Group: 4	Location ID: 44
Drilling Company: HGL	Driller: M. Birney	Ground Elevation: NA	Total Depth Drilled: 1.5 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/6/12 0937	Date/Time Total Depth Reached: 7/6/12 1007	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50643 (1010)	
Geologist: L. Robbins	Checked By / Date: <i>[Signature]</i> 7-10-12			

Radiological Background: 19/4187/57	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings 10.5 = 4828 (CPM)
0.0			108	← MR/CPS	sandy silt; yellowish brown (10YR 5/4), 60% silt, 40% sand, trace clay, trace rootlets + grass seeds, dry, low plasticity, no odor or staining, trace subangular fine grained sandstone gravel (~ 2" max size), soft	ML	5259
0.5			96				7710
1.0			181	96			10125
2.0			0.0	108			11272
<p>TD = 1.5' bgs, refusal on sandstone no GW encountered no anomalies</p>							

SSFL BORING LOG



5DS_045

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 503	Group: 4	Location ID: 45
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 1324 7-5-12	Date/Time Total Depth Reached: 1315 7-5-12	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.)		50644 (1315)	
Geologist: m Birney	Checked By / Date: for [signature] 7/10/12			

Radiological Background: 1874276/62	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0	18/96		0.0		Surface: tall grass		
0.5	19/120		0.0		sandy silt, brown (7.5 gr 4/3) 55% silt 45% fine sand, dry, soft, non plasticity, no odor no staining, trace rootlets, low-med dilatency	ml	
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

TD = 0.5
no groundwater

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 45
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 1 ft 6" ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 1316 7-5-12	Date/Time Total Depth Reached: 1323 7-5-12	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50645 (CNA)	
Geologist: M Birney	Checked By / Date: [Signature] 7/10/12			

Radiological Background: 12/4276162	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
					pancake surface: tall grass		
0.0			0.0	46	sandy silt, brown (7.5gr 4/3) 55% silt, 45% fine sand, dry, soft, non plasticity, no odor, (10-12)	ML	
0.5			0.0	120	no staining, trace rootlets, low dilatency	SM	
1.0			0.0	126	silty sand, Dark yellowish brown, (10gr 4/4) 65% fine sand, 35% silt, trace sub angular sandstone < 1cm, fine rootlets, non plasticity no odor, no staining, med dense, dry (0.5-1.0')	BR	
2.0					Bedrock; sandstone		
3.0					TD = 1 ft 6" bgs no groundwater no sample, shallow refusal		
4.0							
5.0							
6.0							

SSFL BORING LOG

9

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: SDS	Group: 4	Location ID: 46
Drilling Company: HGL	Driller: J Le Vangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 1340 7-5-12	Date/Time Total Depth Reached: 1347 7-5-12	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.)		50646	(1348)
Geologist: M Birney	Checked By / Date: J. Star 7/12/12			

Radiological Background: 17/4461/79	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			20	17/46	surface: tall grass			
0.5			0.0	20/72	sandy silt, brown (7.5yr 4/3) 60% silt 40% fine sand w/ trace subangular sandstone, dry soft, non plasticity, med dilatency, no abrs, no staining	ml		
1.0								
2.0								
3.0								
4.0								
5.0								
6.0								

TD = 0.5 ft bgs
no groundwater

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 46
Drilling Company: HGL	Driller: Le Vangie	Ground Elevation: NA	Total Depth Drilled: 2.0 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 1348 7-5-12	Date/Time Total Depth Reached: 1355 7-5-12	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50647 (1408)	
Geologist: M Birney		Checked By / Date: Jan 12 7/10/12		

Radiological Background: 17/4461/79	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background:	0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings Feet bgs. 4196 (CPM)
			0.0	96	pancake Surface: tall grass		4509
0.5			0.0	72	sandy silt, brown (7.5 _{gr} (4/3)) 60% silt, 40% fine sand w/ trace subangular sandstone, dry, ^{mb} soft, non plasticity, med dilancy, no odor, no staining (0.0-0.5)	M	5681
1.0			0.0	56	silty sand, dark yellowish brown, ^{mb} 60% fine sand		6548
			0.0	48	35% silt, 5% sub angular sandstone up to 2.5cm med density, dry, non plasticity, no odor, no staining, (0.5-2.0)	SM	6777
2.0			0.0	42	refused on sandstone TD = 2.0 ft bgs no groundwater no anomalies		6885
3.0							
4.0							
5.0							
6.0							

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 47
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7-5-12 1040	Date/Time Total Depth Reached: 7-5-12 1048	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.) 50650 (1048) 50654 (1048)			
Geologist: M Birney	Checked By / Date: Dan Ho 7/6/12		parent m/s 50648 dup	

Radiological Background: 19/4222/81	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			20	84	Surface: tall grass		
0.5			20	114	sandy silt, brown (7.5yr 4/3) 60% silt, 40% fine sand w/ trace subangular sandstone ≈ 1cm, dry, soft, non plasticity fine rootlets, no odor, no staining	ML	
1.0							
2.0							
3.0							
4.0							
5.0							
5.0							

TD = 0.5 ft bgs
no groundwater

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5A5	Group: 4	Location ID: 47
Drilling Company: HGL	Driller: J LeVangie	Ground Elevation: NA	Total Depth Drilled: 1.0 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 1056 7-5-12	Date/Time Total Depth Reached: 1056 7-5-12	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.)		50649 (NA)	
Geologist: M Birney	Checked By / Date: J LeVangie 7/9/12			

Radiological Background: 1914222/81	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description	USCS Symbol	Borehole Gamma Readings (CPM)
					(Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)		
					Surface: tall grass		
0.5			0.0	84	Sandy silt, brown (7.5 yr 4/3) 60% silt, 40% fine sand with trace subangular sandstone flm, dry, soft, non plasticity, fine rootlets, no odor, no staining	ML	
1.0			0.0	78	Bedrock, sandstone	BR	
2.0					TD = 2.0 ft bgs no groundwater		
3.0					no sample due to shallow refusal		
4.0							
5.0							
6.0							

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Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5DS	Group: 4	Location ID: 48
Drilling Company: HGL	Driller: S. Lapeyre-Monrose	Ground Elevation: NA	Total Depth Drilled: 0.5 ft bgs.	
Drilling Equipment: Trowel/Shovel	Borehole Diameter: N/A	Date/Time Drilling Started: 7/10/12 1049	Date/Time Total Depth Reached: 7/10/12 1052	
Type of Sampling Device: Trowel/Shovel	Samples Collected: One 1/2 Gallon Bag (Approx 5 lbs.)		50650(1052) / 50657(NT) ^{Field DWP}	
Geologist: L. Robbins	Checked By / Date: M. Bin 7-11-12			

Radiological Background: 20/4618/75	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm
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Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0	19/20		0.0	400/CPM	Sandy silt; brown (7.5YR 4/3), 60% silt, 40% fine sand w/ trace subangular sandstone (~10m), dry, soft, non plastic. fine rootlets. trace charcoal, no odor or staining	ML	
0.5	20/70		0.0				
1.0							
2.0							
3.0							
4.0							
5.0							
6.0							

TD = 0.5' bgs
no GW encountered

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 5D5	Group: 4	Location ID: 49
Drilling Company: HGL	Driller: LeVangie	Ground Elevation: NA	Total Depth Drilled: 1.0 ft bgs.	
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 1123-7-5M	Date/Time Total Depth Reached: 1128 7-5-12	
Type of Sampling Device: Hand Auger	Samples Collected: One 1/2 Gallon Bag (5 lbs.) 50651 (NA)			
Geologist: M Birney	Checked By / Date: J. [Signature] 7/11/12			
Radiological Background: 20/4675/75	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Borehole Gamma Readings (CPM)
0.0			0.0	90	surface: tall grass		
0.5			0.0	70	sandy silt, brown, (7.5 yr 4/3) 60% silt, 40% fine sand w/ trace subangular sandstone ≈ 1cm, dry, soft, non plasticity, fine rootlets, charcoal, no odor, no staining (0-0.5)	m2	
1.0			0.0	72	silty sand, dark yellowish brown, (10 yr 4/4) 60% fine sand, 35% silt, 5% sandstone gravel ≈ 2cm, semi moist, loose, non plasticity, no odor, no staining (0.5-1.0)	sm	
2.0					refusal on sandstone		
3.0					TD = 1.0 ft bgs		
4.0					no groundwater encountered		
5.0					no sample due to shallow refusal		
6.0							