HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

6_327

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 327
Drilling Company: HGL	Driller: ~~D. Hansen~~ (ES) T. Morse	Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.
Drilling Equipment: ~~Geoprobe 6600~~ (ES) trowel/shovel	Borehole Diameter: ~~1.75 inches~~ (ES) NA	Date/Time Drilling Started: 3/20/12 0850		Date/Time Total Depth Reached: 3/20/12 0852
Type of Sampling Device: ~~1.75" macrocore with acetate liner~~ (ES) trowel/shovel		Samples Collected: (1) 1/2 Gallon Bag (Appox 8 lbs.)	5 ~~90~~ (ES) 60556-0855	60750-(NT) (1) 1/2 gallon bag ~ 5lb
Geologist: Ian Stone		Checked By / Date: (ES) Andrew Shuttle 3-21-12		

Radiological Background: 12 / 2587 / 51

Radiological Equipment Used: Micro R / Downhole / Pancake Meters

PID Used: Mini Rae 2000 - Background: 0.0 ppm

Depth (ft bgs)	Interval	Recovery	PID	Radiological (µR/Pancake)	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	12/66	Af: Artificial Fill Silty Sand. Dark Brown (3/3 10YR) 80% fine sand, 20% silt, trace gravel (max size=1"), trace concrete, dry, low dense, no odor or staining	AF/SM		
1.0			0.0	12/48				
2.0								
3.0								
4.0								
5.0								
6.0					TD: 0.5ft bgs no gw encountered			

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 327
Drilling Company: ~~HGL~~ Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75 inches	Date/Time Drilling Started: 3/20/12 0908		Date/Time Total Depth Reached: 3/20/12 0922
Type of Sampling Device: 1.75 " macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx. 8 lbs.) 5		~~60557-1~~ 60557-1000
Geologist: Ian Stone		Checked By / Date: Cliff Wright 3-21-12		
Radiological Background: 12 / 2587 / 51	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings +0.5' = 2981 (CPM)
			0.0	72	Silty Sand, Dark Brown (3/3 10YR) 80% fine sand, 20% silt, trace gravel (max size = 1"), trace concrete, dry, low dense, no odor or staining, trace rootlets	AF/ SM		2991
0.5			0.0	78				4354
					Sandy Silt, Strong Brown (4/6 10YR 7.5) 40% fine sand, 60% silt, trace gravel, trace gravel, trace rootlets, dry, low toughness, low strength, low plasticity, no odor or staining	AF/ ML	1	5173
1.0			0.0	72				
			0.0	66				5495
					Silty Sand, Strong Brown (5/6 10YR 7.5) 70% fine sand, 30% silt, dry, med dense, no odor or staining	SM	2	5682
2.0			0.0	48				
			0.0	48				5772
					Silty Sand, Reddish ~~Brown~~ Yellow (6/6 10YR 7.5) 80% fine sand, 20% silt, dry, med dense, no odor or staining	SM	3	5538
3.0			0.0	72				
			0.0	66				5524
4.0			0.0	48				
					Silty Sand, Reddish Yellow (6/6 7.5YR) ~~60~~ 70% fine sand, 30% silt, dry, med dense, no odor or staining	SM	4	5559
			0.0	54				5623
5.0			0.0	84	Sand w/ silt Brownish Yellow (6/6 10YR) (weathered sandstone) 90% fine sand, 10% silt, dry, high dense, no odor or staining	SP	5	5563
6.0					TD = 5ft bgs; no gw encountered; refusal on sandstone		6	

no anomalies detected

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 328
Drilling Company: HGL	Driller: ~~D. Hansen~~ (E) T. Morse	Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.
Drilling Equipment: ~~Geoprobe 6600~~ (E) trowel/shovel	Borehole Diameter: ~~1.75 inches~~ (E) NA	Date/Time Drilling Started: 3/20/12 1057		Date/Time Total Depth Reached: 3/20/12 1102
Type of Sampling Device: ~~1.75" macrocore with acetate liner~~ (E) shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx. 5 lbs.)	5	60558 - 1105
Geologist: Ian Stone		Checked By / Date: (S) [signature] 3-21-12		

Radiological Background: 14 / 3470 / 64

Radiological Equipment Used: Micro R / Downhole / Pancake Meters

PID Used: Mini Rae 2000 - Background: 0.0 ppm

Depth (ft bgs)	Interval	Recovery	PID	Radiological (MR/Pancake)	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	19/84	Silty Sand, Dark Brown (3/3 10YR)	SM		
0.5			0.0	14/78	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining			
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: ~~238~~ 328
Drilling Company: ~~HGL~~ (J) Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 3.5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75 inches	Date/Time Drilling Started: 3/20/12 1108		Date/Time Total Depth Reached: 3/20/12 1116
Type of Sampling Device: 1.75 " macrocore with acetate liner		Samples Collected: (24) 60559 - 1145 (1) 1/2 Gallon Bag (Appox 8 lbs.)		
Geologist: Ian Stone		Checked By / Date: 5 [signature] 3-21-12		
Radiological Background: 14 / 3470 / 64	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings 0.5' = 3468 (CPM)
			0.0	78	Silty Sand, Dark Brown (3/3 10YR)			3608
0.5			0.0	72	70% fine sand, 30% silt, trace rootlets, moist low dense, no odor or staining	SM		4703
1.0			0.0	90			1	5345
			0.0	72				5816
					Sand, Pale Yellow (7/4/2.5Y) (mechanically weathered sandstone cobble) 80% fine sand, 15% medium sand, ~~5~~ 5% silt, no odor or staining	SP		
2.0			0.0	84			2	5684
					Silty Sand, Dark Yellowish Brown (4/4 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining	SM		5895
3.0			0.0	66			3	5755
					Sand w/silt, Brownish Yellow (6/6 10YR) (weathered sandstone) 75% fine sand, 15% medium sand, 10% silt, dry, high dense, no odor or staining	SP		
			0.0	72				5860
4.0					TD = 3.5 ft bgs		4	
					no gw encountered			
					refusal on sandstone			
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 329
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: 4/12/12 1121		Date/Time Total Depth Reached: 4/12/12 1124 0.5
Type of Sampling Device: Shovel/trowel		Samples Collected: 60560-1130 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Adriana Garcia 4/13/12		
Radiological Background: 3223 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	66	Silty Sand, Dark Brown (3/2 7.5YR)	SM		
0.5			0.0	78	60% fine sand, 40% silt, trace rootlets, moist, loose, no odor or staining			
1.0					TD = 0.5 ft bgs no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 329
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.5 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/12/12 1131		Date/Time Total Depth Reached: 4/12/12 1135 1.5
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60561 - NO SAMPLE
Geologist: I. Stone		Checked By / Date: Coleen Garcia 4/13/12		
Radiological Background: 3223 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Silty Sand, Dark brown (7/3 10YR 2) 60% fine sand, 40% silt, trace rootlets, moist, loose, no odor or staining	SM		
1.0			0.0	78				
			0.0	60				
2.0			0.0	90	TD = 1.5 ft bgs no gw encountered refusal on sandstone			
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 330
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: 3/20/12 1330		Date/Time Total Depth Reached: 3/20/12 1334
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		~~30~~ 60562-1335
Geologist: I. Stone		Checked By / Date: Cliff Knight 3-21-12		
Radiological Background: 15 / 3522 / 78	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - Background:		0.0 ppm

Depth (ft bgs)	Interval	Recovery	PID	Radiological (MR/Pancake)	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	15/72	Silty Sand Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining;	SM		
1.0			0.0	15/66			1	
2.0					TD: 0.5 ft bgs		2	
3.0					no gw encountered		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 330
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.5 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/20/12 1339		Date/Time Total Depth Reached: 3/20/12 1346
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: ~~60563~~ (EB) 60563-1405 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3-21-12		

Radiological Background: 16 / 3522 / 78	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings r0.5' = 3228 (CPM)
			0.0	78	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3457
0.5			0.0	60				4827
1.0			0.0	72	Silty Sand, Brown (5/3 10YR) 60% fine sand, 20% medium sand, 20% silt, trace gravel (sandstone, max size=0.75"), dry, med. dense no odor or staining	SM	1	5419
			0.0	78	Sand, Pale Yellow (7/4 2.5Y), 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5804
2.0			0.0	66	Silty Sand, Brown (5/3 10YR), 60% fine sand, 20% medium sand, 20% silt, dry, med dense, no odor or staining	SM	2	5964
			0.0	96	Sand (weathered Sandstone) ~~95%~~ Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, dry high dense, no odor or staining	SP		5734
3.0							3	
					TD = 2.5 ft bgs no gw encountered no anomalies detected refusal on Sandstone			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 331
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: 3/20/12 1422		Date/Time Total Depth Reached: 3/20/12 1426
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60564 - 1430
Geologist: I. Stone		Checked By / Date:		3-21-12
Radiological Background: 14 / 3402 / 89	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	14/66	Af: Artificial Fill Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace concrete, asphalt + wire, moist, low dense, no odor or staining, trace rootlets	Af/SM	1	
1.0			0.0	14/72				
2.0					TD = 0.5 ft bgs no gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 331
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 4 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/20/12 1435		Date/Time Total Depth Reached: 3/20/12 1443
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60565-1505 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3-21-12		
Radiological Background: 14 / 3402 / 89	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings 0.5' = 3289 (CPM)
			0.0	60	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace concrete, asphault, twigs, trace rootlets, moist, low dense, no odor or staining	Af/SM		4096
0.5			0.0	48				5389
1.0			0.0	54	Silty Sand, Dark Yellowish Brown (4/4 10YR) 60% fine sand, 40% silt, trace gravel (sandstone, max size = 0.75"), dry, low dense, no odor or staining	SM	1	5986
			0.0	48				5935
2.0			0.0	54			2	5948
			0.0	72	Silty Sand, Brown (4/3 10YR) 70% fine sand, 20% silt, 10% medium sand, dry, med dense, no odor or staining	SM		5899
3.0			0.0	42			3	6130
			0.0	66				6267
4.0			0.0	72	Silty Sand, Brown (4/3 7.5YR) 70% fine sand, 30% silt, dry, med dense, no odor or staining	SM	4	6126
					Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, high dense, dry, no odor or staining	SP		
5.0					TD = 4 ft bgs no gw encountered refusal on sandstone no anomalies detected		5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 332
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: 3/20/12 1526		Date/Time Total Depth Reached: 3/20/12 1529
Type of Sampling Device: shovel/trowel		Samples Collected: 60566 - 1530 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: I. Stone		Checked By / Date: Chris Kramb 3-21-12		
Radiological Background: 13 / 2943 / 68	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological (MR/Pancake)	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	13/72	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, moist, med dense, trace rootlets, trace asphault at surface, no odor or staining	SM		
1.0			0.0	13/84			1	
2.0					TD = 0.5 ft bgs; no gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 332
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 10 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/20/12 1536		Date/Time Total Depth Reached: 3/20/12 1542
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60567-1620 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date:		

Radiological Background: 13 / 2943 / 68 | Radiological Equipment Used: Micro R / Downhole / Pancake Meters | PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings +0.5' = 2991 (CPM)
			0.0	66	~~N/A~~ 3 Silty Sand, Dark Brown (3/3 10YR)			3174
0.5			0.0	72	70% fine sand, 30% silt, moist, med dense, trace rootlets, no odor or staining trace broken asphalt at surface	SM		4378
1.0			0.0	54			1	5072
			0.0	66	Silty Sand, Yellowish brown (5/6 10YR) ~~50~~ E5 70% fine sand, 10% medium sand, 20% silt, moist, med dense, no odor or staining	SM		5402
2.0			0.0	66			2	5530
			0.0	42				5779
3.0			0.0	48			3	5606
			0.0	60	Sand w/ silt (mechanically weathered sandstone cobble), Pale Yellow (5Y 8/2.5Y) 80% fine sand, 10% medium sand, 10% silt, dry, ~~med~~ (55) high dense, no odor or staining	SP		5786
4.0			0.0	72	Silty Sand, Brown (4/3 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining	SM	4	6035
			0.0	66				6077
5.0			0.0	84			5	6172
			0.0	66				6287
6.0			0.0	60			6	6327

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 332
Radiological Background:	Radiological Equipment Used: Micro R / Downhole / Pancake Meters		PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	60	Silty Sand, Same as above	SM	6	6327
			0.0	54				6207
7.0			0.0	78			7	6253
			0.0	72				6197
8.0			0.0	54			8	6154
			0.0	60				6155
9.0			0.0	60			9	6194
			0.0	54	Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high drain, no odor or staining	SM		NM
10.0			0.0	60		SP	10	NM (Unable to widen hole past 9ft)
					TD = 10ft bgs No gw encountered No anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 333
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: 3/21/12 0945		Date/Time Total Depth Reached: 3/21/12 0950
Type of Sampling Device: shovel/trowel		Samples Collected: 60568 - 1000 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: I. Storm		Checked By / Date: Cliff Thuffle 3-28-12		
Radiological Background: 2877 / 70	Radiological Equipment Used: ~~Micro R~~ / Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 6.0 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace asphalt, trace gravel (sandstone, max size = 1"), moist, low dense, no odor or staining, AF: Artificial Fill	AF SM	1	
1.0			0.0	78				
2.0					TD = 0.5 ft bgs No gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 333
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 7 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/21/12 0953		Date/Time Total Depth Reached: 3/21/12 1005
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60569-1040 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: 3/28/12		
Radiological Background: 2877 / 70	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	Feet bgs.	Borehole Gamma Readings FG.5': 2967 (CPM)
			0.0	54	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace asphalt, trace gravel (sandstone, max size = 1.0"), moist, low dense, no odor or staining	AF/ SM		3152
0.5			0.0	78	0.5'			4525
					Silty Sand, Brown (4/3 10YR) 60% fine sand, 20% medium sand, 20% silt, trace gravel (sandstone), moist, low dense, no odor or staining	SM	1	5196
1.0			0.0	66	1.25'			
			0.0	54	Sand w/silt, Yellowish Brown (5/4 10YR) 60% fine sand, ~~30~~ 25% medium sand, 10% silt, 5% gravel (sandstone, max size = 1"), dry, med dense, no odor or staining	SP		5429
2.0			0.0	54			2	5726
			0.0	60				5745
3.0			0.0	48	same as above, with sandstone cobble	SP	3	5816
					3.25'			
			0.0	60	Silty Sand, Dark ~~Yellowish~~ brown (3/3 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining	SM		6183
4.0			0.0	66			4	6199
			0.0	72				6500
5.0			0.0	60			5	6451
			0.0	72	5.5'			6300
6.0			0.0	96	Silty Sand, Strong Brown (5/6 7.5YR) 70% fine sand, 10% medium sand, 20% silt, dry, med dense, no odor or staining	SM	6	6139

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Sheet 2 of 2

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	333

Radiological Background:	Radiological Equipment Used:	PID Used:
2877 / 70	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	96	Silty Sand, same as above	SM	6	6139
			0.0	66	Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 80% fine sand, 15% medium sand, 5% silt, dry, high dense, no odor, iron oxide staining	SP		NM
7.0			0.0	78			7	NM (unable to widen hole past 6ft)
					TD = 7.0 ft bgs no gw encountered no anomalies detected refusal on sandstone			
8.0							8	
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_334

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 334
Drilling Company: HGL	Driller: J. Morse	Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.
Drilling Equipment: shovel/trowel	Borehole Diameter: NA	Date/Time Drilling Started: 3/21/12 1124		Date/Time Total Depth Reached: 3/21/12 1128
Type of Sampling Device: shovel/trowel		Samples Collected: 60570-1130 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: I. Stone		Checked By / Date: 3-20-12		
Radiological Background: 3099 / 71	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace gravel (max size = 1"), moist, loose dense, no odor or staining	SM		
1.0			0.0	102	TD = 0.5 ft bgs no gw. encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 334
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 3.5 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/21/12 1134		Date/Time Total Depth Reached: 3/21/12 1142
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60571-1205 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knuth 3-28-12		

Radiological Background: 3099 / 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	Feet bgs.	Borehole Gamma Readings 0.5' = 311 8 (CPM)
					AF: Artificial Fill			
0.5			0.0	72	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace gravel (max size 1"), moist, low dense, no odor or staining	AF/ SM		3839
			0.0	66	Silty Sand, Brown (4/3 10YR), 60% fine sand, 20% medium sand, 20% silt, trace gravel (granite, max size 0.75"), dry, low dense, no odor or staining 0.75'	AF/SM		4983
1.0			0.0	72	Sand w/ silt, Yellowish Brown (5/4 10YR), 60% fine sand, 25% medium sand, 10% silt, 5% gravel (sandstone, max size = 0.75"), dry, med dense, no odor or staining 1.5'	SP	1	5562
			0.0	72	Silty Sand, Brown (5/3 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining, trace gravel (sandstone, max size 0.5") 2'	SM	2	5471 5615
2.0			0.0	60	Sand w/ silt (mechanically weathered sandstone), 80% fine sand, 20% medium sand, 10% silt, dry, high dense, no odor or staining 2.5'	SP		5530
			0.0	78	Silty Sand, Brown (5/3 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining	SM	3	5616
3.0			0.0	66	3.25'			
			0.0	78	Sand (weathered sandstone), Pale Yellow (7/4 7.5YR) 80% fine sand, 15% medium sand, 5% silt, dry, high dense, no odor or staining 3.5'	SP		5602
4.0							4	
5.0							5	
6.0							6	

TD = 3.5 ft bgs

no gw encountered

refusal on sandstone

no anomalies detected

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_335

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 335
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: 4/19/12 1029		Date/Time Total Depth Reached: 4/19/12 1033
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60572-1035 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kratt 4/20/12		

Radiological Background: 3410 / 75

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 (IS) (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	84	Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 20% med.-coarse sand, 30% silt, trace gravel (sandstone, max size = 1.5"), moist, loose, no odor or staining	SM	1	
1.0			0.0	83	TD: 0.5 ft bgs no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 335
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 3.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/19/12 1040		Date/Time Total Depth Reached: 4/19/12 1100
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60573 - 1120 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: I. Stone		Checked By / Date: [signature] 4/20/12		
Radiological Background: 3410 / 75	Radiological Equipment Used: ~~Micro-Rd~~ 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	Feet bgs.	Borehole Gamma Readings ±0.5': 3400 (CPM)
			0.0	84	Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 20% medium sand, ~~25~~ 30% silt, ~~5%~~ clay, trace gravel (sandstone, max size = 1.5"), moist, loose, no odor or staining	SM		3894
0.5			0.0	83				4862
1.0			0.0	83	0-1		1	5279
			0.0	101	Silty Sand, Dark Yellowish brown (4/4 10YR) 50% fine sand, 20% medium sand, 25% silt, 5% clay, moist, trace gravel (sandstone, max size = 1"), loose, no odor or staining	SM		5452
2.0			0.0	89	1-2		2	5439
			0.0	83	Sand (weathered sandstone), Yellowish brown (5/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, dense, no odor or staining	SP		5482
3.0			0.0	95	2-3		3	5482
					TD: 3.0 ft bgs no gw encountered refusal on sandstone no anomalies detected			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_336

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 336
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: 4/19/12 1405		Date/Time Total Depth Reached: 4/19/12 1408
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60574-1410 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/20/12		
Radiological Background: 3246 / 89	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 (IS) (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	90	Silty Sand, Dark Yellowish Brown (3/4 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel (sandstone, max size = 1"), trace rootlets, moist, loose, no odor or staining		1	
0.5			0.0	84				
1.0					TD = 0.5 ft bgs			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 336
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 2.8 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/19/12 1413		Date/Time Total Depth Reached: 4/19/12 1435
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60575 - 1450 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: I. Stone		Checked By / Date: [signature] 4/20/12		
Radiological Background: 3246 / 89	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	Feet bgs.	Borehole Gamma Readings ~~0.5'~~: 3338 (CPM)
			0.0	90	Silty Sand, Dark yellowish brown (3/4 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel (sandstone, max size = 1in), trace rootlets, moist, loose, no odor or staining	SM		3734
0.5			0.0	84				4903
1.0			0.0	72			1	5299
			0.0	95	Silty Sand, Yellowish brown (5/6 10YR) 50% fine sand, 30% medium sand, 20% silt, moist, med dense, no odor or staining	SM		5503
2.0			0.0	73			2	5995
			0.0	85	Sand (weathered sandstone), Yellowish Brown (5/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, dense, no odor or staining	SP		5876
								5744
3.0					TD = 2.8 ft bgs no gw encountered Refusal on sandstone		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

6_337

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 337
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: ~~0.5~~ 0.6 ft bgs.
Drilling Equipment: Shovel/trowel	Borehole Diameter: NA	Date/Time Drilling Started: 4/19/12 0840		Date/Time Total Depth Reached: 4/19/12 0849
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60576 - 0850
Geologist: Ian Stone		Checked By / Date:		4/20/12

Radiological Background: 2912 / 70
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	Feet bgs.	Borehole Gamma Readings (CPM)
					0.0-0.1 ASPHAULT			
0.5			0.0	68	Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel (sandstone, max size = 1"), moist, med dense, no odor or staining	SM		
1.0			0.0	61				
					TD = 0.6 ft bgs			
					no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 337
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 7.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/19/12 0853		Date/Time Total Depth Reached: 4/19/12 0940
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60577 - 1005 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: I. Stone		Checked By / Date: [signature] 4/20/12		
Radiological Background: 2912 / 70	Radiological Equipment Used: ~~Micro Rd~~ 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	Feet bgs.	Borehole Gamma Readings ±0.5' = 3206 (CPM)
			0.0	68	0.0-0.1 ASPHALT			3847
0.5			0.0	61	Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel (sandstone, max size = 1"), moist, med dense, no odor or staining	SM		5085
1.0			0.0	99	0.1-1.0 Silty Sand, Yellowish brown (5/4 10YR) 50% fine sand, 30% medium sand, 20% silt, moist, trace gravel (sandstone, max size: 0.25"), med dense, no odor or staining	SM	1	5518
			0.0	84				5604
2.0			0.0	93			2	5751
			0.0	54				5819
3.0			0.0	78			3	5922
			0.0	103				5919
4.0			0.0	92			4	5916
			0.0	84				6044
5.0			0.0	80			5	6017
			0.0	61				6005
6.0			0.0	76	Silty Sand, same as above	SM	6	6280

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	337

Radiological Background:	Radiological Equipment Used:	PID Used:
2912 / 70	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	76	S.lty Sand, same as above		6	6280
			0.0	63		SM		6037
					6.0 - 6.8			
7.0			0.0	88	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, ~~dry~~ moist, very dense, ~~sand~~ no odor or staining 6.8-7.0	SP	7	5874
8.0					TD = 7.0 ft bgs no gw encountered refusal on sandstone no anomalies detected		8	
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HydroGeoLogic, Inc
Exceeding Expectations

6_338

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 338
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: 4/19/12 1505		Date/Time Total Depth Reached: 4/19/12 1508
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60578-1510
Geologist: Ian Stone		Checked By / Date: Cliff Munn 4/20/12		
Radiological Background: 3049 / 60	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	88	Silty Sand, Dark yellowish brown (4/6 10YR) 50% fine sand, 20% medium sand, 30% silt, trace rootlets, moist, no odor or staining	SM	1	
			0.0	80				
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 338
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/19/12 1514		Date/Time Total Depth Reached: 4/19/12 1608
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60579 - 1640
Geologist: I. Stone		Checked By / Date:		4/20/12
Radiological Background: 3049 / 60	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3170 (CPM)
			0.0	88	Silty Sand, Dark Yellowish brown (4/6 10YR) 50% fine sand, 20% medium sand, 30% silt, trace rootlets, moist, no odor or staining			4278
0.5			0.0	80		SM		5033
1.0			0.0	88			1	5313
			0.0	84	Silty Sand, Yellowish Brown (5/6 10YR) 50% fine sand, 10% medium sand, 40% silt, dry, med dense, no odor or staining, trace gravel (sandstone, max size = 1")			5445
2.0			0.0	74		SM	2	5578
			0.0	49				5647
3.0			0.0	57			3	5366
			0.0	95				5529
4.0			0.0	66	Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining, slow dilatency		4	5750
			0.0	74		SM		5923
5.0			0.0	79	Silty Sand w/ clay, Strong brown (4/6 7.5YR) 60% fine sand, 30% silt, 10% clay, dry, dense, no odor or staining, slow dilatency		5	5973
			0.0	67		SM		6030
6.0			0.0	76			6	6143

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	338

Radiological Background:	Radiological Equipment Used:	PID Used:
3049 / 60	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	76	Silty sand, same as above	SM	6	6143
			0.0	60				6330
7.0			0.0	87			7	6383
			0.0	88				6320
8.0			0.0	82			8	6141
			0.0	77	Silty Sand, Brownish yellow (6/6 10YR)			6277
9.0			0.0	89	80% fine sand, 20% silt, dry, dense, no odor or staining.	SM	9	6262
			0.0	87				6357
10.0			0.0	75			10	6147
					TD=10ft bgs			
					no gw encountered			
					no anomalies			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_339

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 339
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: 4/20/12 0841		Date/Time Total Depth Reached: 4/20/12 0844
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60580 - 0845 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Thurtell		

Radiological Background: 3281 / 86
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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	86	Silty Sand, Strong Brown (5YR 7.5/6)	SM		
			0.0	87	60% fine sand, 10% medium sand, 30% silt, moist, trace rootlets, loose, no odor or staining			
1.0							1	
					TD: 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 339
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 4.8 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/20/12 0851		Date/Time Total Depth Reached: 4/20/12 0925
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60581-0945
Geologist: I. Stone		Checked By / Date:		4-23-12
Radiological Background: 3281 / 86	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	Feet bgs.	Borehole Gamma Readings 40.5' = 3673 (CPM)
			0.0	86	Silty Sand, Strong Brown (5/6 7.5YR) 60% fine sand, 10% medium sand (subrounded), 30% silt, trace rootlets, loose, no odor or staining, moist	SM		4608
0.5			0.0	87				5225
1.0			0.0	86	0.0-1.0' Silty Sand, Yellowish brown (5/6 10YR) 60% fine sand, 20% medium sand (subrounded), 20% silt, moist, med dense, no odor or staining	SM	1	5697
			0.0	93				5767
2.0			0.0	102	1.0-2.0' Silty Sand, Dark Yellowish brown (4/6 10YR) 70% fine sand, 10% medium sand, 20% silt, moist, med dense, no odor or staining	SM	2	5787
			0.0	107				5825
3.0			0.0	100			3	6029
			0.0	77				5978
4.0			0.0	87	2.0-4.0' Silty Sand, Dark yellowish brown (4/6 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, dense, no odor or staining	SM	4	6154
			0.0	81	4.0-4.8			6203
5.0					TD = 4.8 ft bgs no gw encountered no anomalies detected Refusal on sandstone		5	
6.0							6	

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HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 340
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: 4/19/12 1143		Date/Time Total Depth Reached: 4/19/12 1144
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60582-1145 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/20/12		

Radiological Background: 3492 / 83

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 (IS) (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	89	Silty Sand, Dark Yellowish brown (4/4 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel (sandstone, max size = 2.0"), moist, loose, no odor or staining	SM		
1.0			0.0	97				
2.0					TD = 0.5 ft bgs			
3.0					no gw encountered			
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 340
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 2.2 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/19/12 1151		Date/Time Total Depth Reached: 4/19/12 1205
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		CO583-1220
Geologist: I. Stone		Checked By / Date: [signature] 4/20/12		
Radiological Background: 3492 / 83	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 0.5' = 3770 (CPM)
			0.0	89	Silty Sand, Dark Yellowish Brown (4/4 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel (sandstone, max size = 2.0"), moist, loose, no odor or staining			4122
0.5			0.0	97		SM		4923
1.0			0.0	93	Silty Sand, Dark Yellowish Brown (4/6 10YR) 50% fine sand, 30% medium sand, 20% silt, trace gravel (sandstone, max size = 1"), moist, loose, no odor or staining		1	5329
			0.0	87		SM		5556
2.0			0.0	89	(I3)		2	5624
					TD = 2.2 ft bgs no gw encountered refusal on sandstone no anomalies detected			
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 341
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: 3/22/12 0854		Date/Time Total Depth Reached: 3/22/12 0859
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60584-0900
Geologist: I. Stone		Checked By / Date: [signature] 3-27-12		
Radiological Background: 3811 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 10% medium sand, 30% silt, trace gravel, trace roots, trace plastic, moist, low dense, no odor or staining	AF/SM	1	
1.0			0.0	102	TD: 0.5 ft bgs no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 341
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.25 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/22/12 0904		Date/Time Total Depth Reached: 3/22/12 0913
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60535-0940
Geologist: Ian Stone		Checked By / Date: Cliff Knight 3-27-12		

Radiological Background: 3811 / 53 | Radiological Equipment Used: ~~Micro R~~7 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	Feet bgs.	Borehole Gamma Readings 0.5': 3360 (CPM)
			0.0	60	AF: Artificial Fill Silty Sand, Dark Yellowish brown (4/4 10YR), 50% fine sand, 10% medium sand, 30% silt, trace gravel, trace roots, moist, low dense, no odor or staining	AF/SM		3846
0.5			0.0	78	trace plastic 0-0.5'			5064
1.0			0.0	60	Silty Sand, Dark yellowish brown (4/6 10YR) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace rootlets, trace gravel) (sandstone, max size = 1"), moist, med dense, no odor or staining	SM	1	5865
			0.0	72				6332
2.0			0.0	78			2	6115
					Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 20% medium sand, 5% coarse sand, 5% silt, dry, high dense, no odor or staining	SP		
3.0					TD = 2.25 ft bgs no gw encountered refusal on sandstone no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 342
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: 3/21/12 1406		Date/Time Total Depth Reached: 3/21/12 1409
Type of Sampling Device: shovel/trowel		Samples Collected: 60586 - 1410 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: I. Stone		Checked By / Date: [signature] 3-28-12		
Radiological Background: 3084 / 49	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	60	Silty Sand, light Yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse Sand, 20% silt, moist, low dense, rapid dilatancy, no odor or staining	SM	1	
1.0			0.0	60				
2.0					TD: 0.5 Ft bgs		2	
3.0					no gw encountered		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 342
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.33 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/21/12 1415		Date/Time Total Depth Reached: 3/21/12 1423
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60587-1445 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3-28-12		
Radiological Background: 3084 / 49	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	Feet bgs.	Borehole Gamma Readings FO.5'=2796 (CPM)
0.5			0.0	66	Silty Sand, light Yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, moist, low dense, rapid dilatancy, no odor	AF/ SM		3604
			0.0	72	0.5' Sandy Silt, Brown (4/3 10YR) 35% fine sand, 60% silt, 5% clay, trace gravel, moist, low tough, low strength, no odor or staining, slow dilatancy	AF/ ML		4566
1.0			0.0	60	1.1' high density concrete w/ rebar		1	5719
			0.0	78	Sand (weathered sandstone), Very pale brown (7/4 10YR) FS 70% fine sand, 25% medium sand, 5% silt, dry, FS high dense, no odor or staining	SP		5481
2.0			0.0	66	2.33'		2	6292
3.0					TD = 2'4" bgs (2.33 ft bgs) no gw encountered refusal on sandstone no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGéoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 343
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: 3/21/12 1504		Date/Time Total Depth Reached: 3/21/12 1508
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		6058 - 1510
Geologist: I. Stone		Checked By / Date: [signature] 3-28-12		
Radiological Background: 290c / 68	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	72	Silty Sand, light yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel (max size = 1.5"), moist, low dense, no odor or staining	SM		
1.0			0.0	60				
2.0					TD = 0.5 ft bgs			
3.0					no gw encountered			
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 343
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.5 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/21/12 1511		Date/Time Total Depth Reached: 3/21/12 @~~1515~~ 1524
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60589 - 1540
Geologist: Ian Stone		Checked By / Date: Chris Thomas 3-28-12		

Radiological Background: 2900 / 68

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	Feet bgs.	Borehole Gamma Readings 0.5 = 2861 (CPM)
0			0.0	60	Silty Sand, light yellowish brown (6/4 2.5Y), 50% fine sand 20% medium sand, 10% coarse sand, 20% silt, trace gravel (max size = 1.5"), moist, low dense, no odor or staining	AF/ SM		2939
0.5			0.0	54	0.5'			4620
1.0			0.0	60	Sand Silt, Brown (4/3 10YR), 35% fine sand, 60% silt, 5% clay, trace gravel (max size = 0.75"), moist, low strength, low toughness, slow dilatency, no odor or staining	AF/ ML	1	5100
			0.0	66	- asphalt (1.5")			5800
2.0			0.0	72	2.25"		2	6035
			0.0	78	Sand (weathered sandstone), very pale brown (7/4 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5992
3.0			0.0		2.5'		3	
					TD = 2.5 ft bgs			
					No gw encountered			
					refusal on sandstone			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 344
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: 3/22/12 1000		Date/Time Total Depth Reached: 3/22/12 1004
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.) 60590-1005		
Geologist: I. Stone		Checked By / Date: [signature] 3-27-12		
Radiological Background: 2838 / 58	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	54	Silty Sand, light yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, low dense, no odor or staining	AF/SM	1	
1.0			0.0	84	TD = 0.5 ft bgs no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 344
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 1.25 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/22/12 1010		Date/Time Total Depth Reached: 3/22/12
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60591 - no sample
Geologist: Ian Stone		Checked By / Date: [signature] 3-27-12		

Radiological Background: 2888 / 58

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	Feet bgs.	Borehole Gamma Readings 0.5': NM (CPM)
0.5			0.0	72	Silty Sand, light yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, low dense, no odor or staining	AF/SM		NM
1.0			0.0	78	Sandy Silt, Yellowish brown (5/4 10YR) 30% fine sand, 60% silt, 5% gravel, 5% clay, dry, low toughness, low strength, low plasticity, no odor or staining	AF/ML	1	NM
2.0			0.0	66	Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 20% medium sand, 5% coarse sand, 5% silt, dry, high dense, no odor or staining	SP	2	
3.0					TD = 1.25 ft bgs no gw encountered refusal on sandstone		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 345
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: 3/22/12 1040		Date/Time Total Depth Reached: 3/22/12 1048
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60592-1050 60748-(NT) Duplicate (1) 1/2 gallon bag (5lbs)
Geologist: I. Stone		Checked By / Date: [signature] 3-27-12		
Radiological Background: 2851 / 85	Radiological Equipment Used: ~~Micro R~~ / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	90	Silty Sand, light yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, trace pebbles, low dense, no odor or staining	AF/SM	1	
1.0			0.0	84				
2.0					TD = 0.5 ft bgs		2	
3.0					no gw encountered		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 345
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 1.33 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/22/12 1055		Date/Time Total Depth Reached: 3/22/12 1103
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60593 - NO SAMPLE (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: 3-27-12		
Radiological Background: 2851 / 85	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings 0.5' = NM (CPM)
0			0.0	78	Silty Sand, light yellowish brown (6/4 2.5Y) 50% fine sand, 20% medium sand, 10% coarse sand, 0-0.5' 20% silt, trace gravel, low dense, no odor or staining	AF/Sm	0	NM
0.5			0.0	72	Sandy Silt, yellowish brown (5/4 10YR), 30% fine sand, 60% silt, 5% gravel, 5% clay, ~~SS~~ unified, low tough, low	AF/ML		NM
1.0			0.0	54	0.5-1.2 strength, low plasticity, no odor or staining		1	NM (due to shallow refusal)
					Sand (weathered sandstone), Pale Yellow (7/4 2.5Y), 70% fine sand, 20% medium sand, 5% coarse sand, 5% silt, dry, high dense, no odor or staining 1.2'-1.33'	SP		
2.0							2	
					TD = 1.33 ft bgs			
					no gw encountered			
3.0					refusal on sandstone		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_346

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 346
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: 3/22/12 1450		Date/Time Total Depth Reached: 3/22/12 1454
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60544-1455
Geologist: I. Stone		Checked By / Date: [signature] 3-27-12		
Radiological Background: 2836 / 62	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Clayey Silt w/ Sand, Dark Yellowish Brown (4/4 10YR) 10% fine sand, 60% silt, 30% clay, trace gravel, trace rootlets, dry, low tough, low strength, med plasticity, no odor or staining	AF/ML	1	
1.0			0.0	78	TD = .5 ft bgs. no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 346
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/22/12 1507		Date/Time Total Depth Reached: 3/22/12 1517
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60595 - 1555 (1) 1/2 Gallon Bag (Appox 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: 3-27-12		
Radiological Background: 2836 / 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 (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' = 2866 (CPM)
			0.0	60	Af: Artificial Fill Clayey Silt w/sand, Dark Yellowish brown (4/4 10YR) 10% fine sand, 60% silt, 30% clay, trace gravel, trace rootlets, dry, low tough, low strength, med plasticity, no odor or staining	AF/ML		3782
0.5			0.0	78				4382
1.0			0.0	84	0-1.25'		1	4649
			0.0	84	Silty Clay, Brown (5/3 10YR) 5% fine sand, 40% silt, 55% clay, trace gravel, med tough, med strength, med plasticity, no odor or staining, dry	AF/CL		4647
2.0			0.0	54			2	4864
			0.0	66				5025
3.0			0.0	54			3	5161
			0.0	66				5241
4.0			0.0	60			4	5385
			0.0	54	1.25 - 4.5			5060
5.0			0.0	48	~~Sandy Silt~~ Silty Sand, Dark Yellowish Brown (4/6 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, trace gravel, med dense, no odor or staining	AF/SM	5	4668
			0.0	54	4.5-5.5'			4786
6.0			0.0	54	Clayey Silt w/Sand, Dark Brown (4/4 10YR), no odor or staining, 10% fine sand, 60% silt, 30% clay, dry, low-med tough, strength, med plasticity, trace gravel	AF/ML	6	4962

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	346

Radiological Background:	Radiological Equipment Used:	PID Used:
2836 / 62	~~Micro R~~/ Downhole / Pancake Meters	Mini Rae 2000 - 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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	54	ASPHALT 6-6.1		6	4962
			0.0	84	Clayey Silt w/ sand, Yellowish brown (5/4 10YR) 10% fine sand, 50% silt, 40% clay, trace gravel, dry, med tough, med strength, med plasticity, no odor or staining	AF/ML		4779
7.0			0.0	72	Concrete 7-7.33		7	4819
			0.0	90	Clayey Silt w/ sand, Yellowish Brown (5/4 10YR) 10% fine sand, 50% silt, 40% clay, trace gravel, dry, med tough, med strength, med plasticity 7.33-8.33'	AF/ML		4723
8.0			0.0	84			8	4578
			0.0	72	Concrete 8.33-8.67			4643
9.0			0.0	54	~~Silty Clay~~ (IS) Silty Clay ~~Clayey Silt~~ (SA) Brown (5/3 10YR) 5% fine sand, ~~50%~~ (E) ~~45%~~ 40% (S) silt, 55% clay, trace gravel, dry, med tough, med strength, med plasticity, no odor or staining	AF/CL	9	4759
			0.0	60				4626
10.0			0.0	72	8.67-10.0		10	4621
					TD = 10ft bgs no gw encountered no anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_347

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 347
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: 3/22/12 1309		Date/Time Total Depth Reached: 3/22/12 1314
Type of Sampling Device: shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60596 - 1315
Geologist: I. Stone		Checked By / Date: Keith Johnson 3-27-12		
Radiological Background: 2900 / 66	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	84	(1) Af: Artificial Fill Clay Silt, Dark Yellowish brown (4/4 10YR)			
0.5			0.0	78	5% fine sand, 60% silt, 35% clay, trace gravel, trace rootlets, dry, low toughness, low strength, med plasticity, no odor or staining	Af/ML		
1.0							1	
2.0					TD = 0.5 ft bgs no gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, inc Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 347
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 9.0 ft bgs.
Drilling Equipment: Geoprobe 6600	1.75 inches	Date/Time Drilling Started: 3/22/12 1320		Date/Time Total Depth Reached: 3/22/12 1335
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Appox 5 lbs.)		60597-1410
Geologist: Ian Stone		Checked By / Date: [signature] 3-27-12		
Radiological Background: 2900/66	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	Feet bgs.	Borehole Gamma Readings 0.5' = 2738 (CPM)
			0.0	84	Clayey Silt, Dark yellowish brown (4/4 10YR), 5% fine sand, 60% silt, 35% clay, trace gravel, trace rootlets, dry, low tough, low strength, med plasticity, no odor or staining	AF/ML		2941
0.5			0.0	54				4161
1.0			0.0	78			1	4628
			0.0	90	Silty Clay, Brown (5/3 10YR) 5% fine sand, 40% silt, 55% clay, trace gravel, med tough, med strength, med plasticity, no odor or staining	AF/CL		4790
2.0			0.0	84			2	4852
			0.0	90				4805
3.0	3.5'		0.0	78	Clayey Silt, Dark grayish brown (4/2 10YR) 5% fine sand, 70% silt, 25% clay, trace gravel, low tough, low strength, med plasticity, dry, no odor or staining	AF/ML	3	4671
			0.0	72				4875
4.0			0.0	66	Sandy Silt w/Clay, Yellowish brown (5/6 10YR) 20% fine sand, 10% medium sand, 60% silt, 10% clay, trace gravel, dry, low tough, low strength, med plasticity, no odor or staining	AF/ML	4	5049
			0.0	78				5132
5.0			0.0	72	Silty Sand, Dark Yellowish brown (4/6 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, trace gravel, med dense, no odor or staining	AF/SM	5	5549
			0.0	78				5781
6.0			0.0	72			6	5795

1.25'-2.75'

2.75'-3.5'

3.5'-5.0'

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	347

Radiological Background:	Radiological Equipment Used:	PID Used:
2900 / 66	Micro R / Downhole / Pancake Meters	Mini Rae 3000 - Background: 000 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)
6.0			0.0	72	Silty Sand, same as above		6	5795
			0.0	90		AF/SM		5691
7.0			0.0	78			7	5657
			0.0	66				5708
8.0			0.0	60	5.0'-8.0'		8	5584
			0.0	90	Silty Sand w/ gravel, Olive Yellow (6/6 2.5Y) 40% fine sand, 20% medium sand, 10% coarse Sand, 20% silt, 10% gravel, moist, med dense, no odor or staining	AF/SM		5767
9.0			0.0	96	8.0'-9.0'		9	6308
					TD = 9ft bgs no gw encountered no anomalies detected			
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 348
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: 4/18/12 1437		Date/Time Total Depth Reached: 4/18/12 1439
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60598-1440
Geologist: Ian Stone		Checked By / Date:		Cliff Knight 4-17-12
Radiological Background: 3285 / 78	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	65	Silty Sand, Dark yellowish brown (3/4 10YR) 60% fine sand, 10% medium sand, 30% silt, trace gravel, trace asphalt, moist, loose, no odor or staining (Artificial fill)	AF/SM	1	
1.0			0.0	94				
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

TD = 0.5 ft bgs

no gw encountered

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 348
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/18/12 1443		Date/Time Total Depth Reached: 4/18/12 1534
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60599 - 1620 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Hampton 4-19-12		
Radiological Background: 3285 / 78	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3343 (CPM)
			0.0	65	Silty Sand, Dark yellowish brown (3/4 10YR) 60% fine sand, 10% medium sand, 30% silt, trace gravel, trace asphalt, moist, loose, no odor or staining (artificial fill)	AF/SM		3981
0.5			0.0	94				4901
1.0			0.0	71			1	5295
			0.0	70				5465
2.0			0.0	60	Silty Sand, Dark Yellowish brown (4/6 10YR) 60% fine sand, 40% silt, dry, med dense, no odor or staining.	SM	2	5637
			0.0	71				5770
3.0			0.0	69			3	5959
			0.0	57				5844
4.0			0.0	70			4	6019
			0.0	75				6062
5.0			0.0	74	Silty Sand, Yellowish brown (5/8 10YR) 60% fine sand, 20% medium sand, 20% silt, dry, med dense, no odor or staining	SM	5	6167
			0.0	71				6113
6.0			0.0	69			6	6161

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	348

Radiological Background: 3285 / 78

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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	69	Silty Sand, same as above	SM	6	6161
			0.0	83				6148
7.0			0.0	91	Silty Sand, light yellowish brown (CY4 10YR) 70% fine sand, 10% medium sand, 20% silt, dry, dense, no odor or staining	SM	7	6004
			0.0	59				5873
8.0			0.0	65			8	5794
			0.0	78				5779
9.0			0.0	79			9	5992
			0.0	64				5795
10.0			0.0	80			10	5866
					TD: 10.4 bgs			
					no gw encountered			
11.0					no anomalies detected		11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_349

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 349
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: 3/23/12 0856		Date/Time Total Depth Reached: 3/23/12 0859
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		0600-0900
Geologist: Ian Stone		Checked By / Date:		
Radiological Background: 3166 / 58	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	72	Silty Sand, Dark Yellowish Brown (4/6 10YR)	AF/SM	1	
			0.0	66	60% fine sand, 40% silt, trace gravel (max size 1"), moist, low-med dense no odor or staining			
1.0								
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 349
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 9 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/23/12 0903		Date/Time Total Depth Reached: 3/23/12 0918
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60601-0955 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3-27-12		
Radiological Background: 3166 / 58	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	Feet bgs.	Borehole Gamma Readings 0.5' = 3054 (CPM)
					Af: Artificial Fill			
			0.0	78	2" ASPHALT			4079
0.5			0.0	60	Silty Sand, Dark Yellowish Brown (4/6 10YR) 60% fine sand, 40% silt, trace gravel, moist, med dense, no odor or staining	AF/SM		5140
1.0			0.0	90			1	5553
			0.0	84	Sandy Silt, Dark Yellowish Brown (4/4 10YR) 40% fine sand, 60% silt, moist, low toughness, low strength, no odor or staining	AF/ML		5875
2.0			0.0	54			2	6050
			0.0	78				6239
3.0			0.0	66			3	6093
			0.0	84	Silty Sand, Yellowish Brown (5/4 10YR) 60% fine sand, 10% medium sand, 30% silt, dry, med dense, no odor or staining,	AF/SM		6214
4.0			0.0	60			4	6156
			0.0	60				6112
5.0			0.0	54 60			5	6148
			0.0	60				6020
6.0			0.0	72	Silty Sand, ~~Yellowish brown (5/4 10YR)~~ Strong Brown (5/6 7.5YR) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, dry, med dense, slight mottling, no odor	AF/SM	6	6140

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	349

Radiological Background:	Radiological Equipment Used:	PID Used:
3166 / 58	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	72	Silty Sand, same as above	AF/SM	6	6140
			0.0	72				5927
7.0			0.0	72	Silty Sand, ~~Str~~ light Yellowish Brown (6/4 10YR)		7	5886
			0.0	84	70% fine sand, 30% silt, dry, loose dense, no odor, trace roots,	SM		5733
8.0			0.0	72			8	5574
			0.0	66	Sand (weathered sandstone), Very Pale Brown (7/4 10YR) 70% fine sand, 20% medium sand, ~~10%~~ 5% coarse sand, 5% silt, dry, high dense, no odor or staining	SP		5420
9.0			0.0	72			9	5420
					TD = 9 ft bgs			
10.0					no gw encountered		10	
					refusal on sandstone			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 350
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: 4/18/12 1326		Date/Time Total Depth Reached: 4/18/12 1329
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60602 - 1330 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [illegible] 4/19/12		

Radiological Background: 3438 / 55

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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	78	Silty Sand, Brown (4/3 10YR) 50% fine sand, 20% medium sand, 30% silt, trace rootlets, trace debris (asphalt, glass, 3-hole punch), moist, loose, no odor or staining	AF SM	1	
0.5			0.0	87				
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 350
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 4.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/18/12 1336		Date/Time Total Depth Reached: 4/18/12 1404
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60603-1425 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Wright 4-19-12		
Radiological Background: 3438 / 55	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3397 (CPM)
			0.0	78	Silty Sand, Brown (4/3 10YR) 50% fine sand, 20% medium sand, 30% silt, trace rootlets, trace debris (asphault, glass, 3-hole punch), moist, loose, no odor or staining	AF/SM		3901
0.5			0.0	87				4876
1.0			0.0	76			1	5305
			0.0	86	(0-1.5) (artificial fill) Silty Sand, Strong Brown (4/6 7.5YR) 60% fine sand, 20% medium sand, 20% silt, moist, med dense, no odor or staining	SM		5554
2.0			0.0	56			2	5652
			0.0	66				5972
3.0			0.0	76	root		3	5824
			0.0	69				5724
4.0			0.0	87	1.5-3.9 Sand (weathered sandstone), Yellowish brown (5/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, very dense, no odor or staining 3.9-4.0	SW	4	5691
5.0					TD = 4.0 ft bgs. no gw encountered Refusal on sandstone		5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_351

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 351
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: 4/17/12 1511		Date/Time Total Depth Reached: 4/17/12 1514
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60604-1515 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/18/12		
Radiological Background: 3072 / 66	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	68	Silty Sand, Dark Yellowish brown (4/6 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, loose, no odor or staining	SM		
0.5			0.0	67				
1.0					TD = 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	351
Drilling Company:	**Driller:**	**Ground Elevation:**		**Total Depth Drilled:**
HGL	T. Morse	NA		7.5 ft bgs.
Drilling Equipment:	**Borehole Diameter:**	**Date/Time Drilling Started:**		**Date/Time Total Depth Reached:**
Hand Auger	2.75"	4/17/12 1520		4/17/12 1603
Type of Sampling Device:		**Samples Collected:**		
2.75" hand auger bucket		(1) 1/2 Gallon Bag (Approx 5 lbs.)		60605 - 1635
Geologist: Ian Stone		**Checked By / Date:**		4/19/12

Radiological Background: 3072 / 66 **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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	68	Silty Sand, Dark yellowish brown (4/6 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, loose, no odor or staining	SM		3907
0.5			0.0	67				4472
1.0			0.0	77			1	4350
			0.0	65				5009
2.0			0.0	64	Silty Sand, Dark Brown (3/3 7.5YR), 10% medium sand, 70% fine sand, ~~30%~~ 20% silt, trace sandstone gravel (max size = 1"), moist, loose, no odor or staining	SM	2	5255
			0.0	81				5526
3.0			0.0	67	Silty Sand, Brown (4/4 7.5YR), 60% fine sand, 40% silt, dry, med dense, no odor or staining	SM	3	5898
			0.0	65				6217
4.0			0.0	66			4	6453
			0.0	65				6602
5.0			0.0	70			5	6630
			0.0	83				6475
6.0			0.0	78			6	6645

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	351

Radiological Background:	Radiological Equipment Used:	PID Used:
3072 / 66	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	78	Silty Sand, same as above	SM	6	6645
			0.0	60				6673
7.0			0.0	69			7	6602
			0.0	88				6796
8.0					TD= 7.5 ft bgs no gw encountered Refusal on sandstone no anomalies detected		8	
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_352

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 352
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: 4/18/12 0924		Date/Time Total Depth Reached: 4/18/12 0927
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60606-0930 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knuffke 4/19/12		
Radiological Background: 3096 / 67	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	63	Silty Sand, Dark yellowish brown (4/6 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel, moist, loose, no odor or staining (artificial fill)	AF/SM	1	
1.0			0.0	69				
2.0					TD = 0.5 ft bgs No gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 352
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 10.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/18/12 0931		Date/Time Total Depth Reached: 4/18/12 1020
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60607-1125 60755-(WT) (1) 1/2 gallon bag (5lbs)
Geologist: Ian Stone		Checked By / Date: [signature] 4/19/12		
Radiological Background: 3096 / 67	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 10.5' = 3120 (CPM)
			0.0	63	Silty Sand, Dark Yellowish brown (4/6 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel, moist, loose, no odor or staining (Artificial Fill)	AF/SM		3243
0.5			0.0	69				4446
1.0			0.0	61			1	5006
			0.0	65				5082
2.0			0.0	64	0-2.0 Silty Sand, Dark Brown (3/4 7.5YR) ~~70~~ 70% fine sand, ~~30~~ 30% silt, moist, ~~med~~ (FS) med dense – dense, no odor or staining	SM	2	5629
			0.0	64				6027
3.0			0.0	56			3	6156
			0.0	72				6196
4.0			0.0	68	2.0-4.0 Silty Sand, Strong brown (5/6 7.5YR) 60% fine sand, 40% silt, dry, dense, no odor or staining	SM	4	6272
			0.0	66				6312
5.0			0.0	67			5	6354
			0.0	75				6227
6.0		↓	0.0	57			6	6203

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	352

Radiological Background:	Radiological Equipment Used:	PID Used:
3096 / 67	~~Micro R~~ / Downhole / Pancake Meters	Mini Rae 3000 - Background: 00 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)
6.0			0.0	57	Silty Sand, same as above	SM	6	6203
			0.0	70				6223
7.0			0.0	68			7	6118
			0.0	70				6140
8.0			0.0	69			8	6291
			0.0	59				6468
9.0			0.0	82			9	6471
			0.0	77				6462
10.0			0.0	64	4.0 - 10.0		10	6379
					TD: 10 ft bgs No gw encountered no anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 353
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: 4/13/12 1350		Date/Time Total Depth Reached: 4/17/12 1354
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60608-1355 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knuffke 4/18/12		

Radiological Background: 2693 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	52	Af: Artificial Fill Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 10% medium sand, 30% silt, trace gravel, moist, loose, no odor or staining (artificial fill)	AF/SM		
1.0			0.0	59				
					TD = 0.5 ft bgs no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 353
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 2.3 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/17/12 1400		Date/Time Total Depth Reached: 4/17/12 1435
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60609 - ~~1445~~ (FS) 1450
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/18/12		
Radiological Background: 2693 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5" = 2647 (CPM)
0.5			0.0	52	Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 10% medium sand, 30% silt, trace gravel, moist, loose, no odor or staining (Artificial Fill)	AF/SM		3204
			0.0	59				3234
1.0			0.0	85	0-1.0		1	2698
			0.0	63		AF/SM		2874
2.0			0.0	60	Silty Sand, Very dark grayish brown (3/2 10YR) 50% fine sand, 30% medium sand, 20% silt, some ~~gravel~~ (FS) construction debris (asphalt, concrete) 1.0-2.3 moist, med dense, no odor or staining, (artificial fill)	AF/SM	2	3262
3.0					TD = 2.3 ft bgs no gw encountered refusal on construction debris No anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 354
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: 4/17/12 1052		Date/Time Total Depth Reached: 4/17/12 1054
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		G0610 - 1055
Geologist: Ian Stone		Checked By / Date:		4/18/12

Radiological Background: 2530 / 55
Radiological Equipment Used: ~~Micro R / Ratemeter~~ 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	80	Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 40% silt, trace asphalt, trace gravel, moist, loose, no odor or staining (Artificial fill)	AF/SM	1	
			0.0	52				
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 354
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 2.2 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/17/12 1100		Date/Time Total Depth Reached: 4/17/12 1133
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60611 ~1155
Geologist: Ian Stone		Checked By / Date: Cliff Knights 4/18/12		

Radiological Background: 2530 / 55
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	Feet bgs.	Borehole Gamma Readings 0.5' = 2803 (CPM)
			0.0	80	Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 40% silt, trace asphault, trace gravel, moist, loose, no odor or staining (artificial fill)	AF/SM		2987
0.5			0.0	52				3696
1.0			0.0	70			1	4001
			0.0	58	0-1.5			4619
					Silty Clay w/sand, Brown (4/3 10YR) 10% fine sand, 30% silt, 60% clay, moist, mod tough, med tough, med plasticity, no odor or staining	AF/CL		
2.0			0.0	57	1.5-2.0		2	4605
					Silty Clay w/ gravel, Black (2/1 10YR) 5% fine sand, 30% silt, 55% clay, 10% gravel, wet, med tough, med strength, med plasticity, no odor or staining (artificial fill)	AF/CL		
					TD = 2.2 ft bgs no gw encountered no anomalies Refusal on debris			
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

6_355

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 355
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: 4/18/12 0842		Date/Time Total Depth Reached: 4/18/12 0844
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60612 - 0845 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/19/12		

Radiological Background: 2804 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	59	Af - Artificial Fill Sandy Silt w/ clay, Dark Brown (3/3 10YR) 30% fine sand, 60% silt, 10% clay, trace rootlets, some concrete (construction debris), moist, low toughness, low strength, low plasticity, no odor or staining (artificial fill)	Af/ML		
1.0			0.3	74				
2.0					TD = 0.5 ft bgs no gw encountered			
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 355
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/18/12 0850		Date/Time Total Depth Reached: 4/18/12 0910
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60613 - NO SAMPLE (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/19/12		
Radiological Background: 2304 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings ±0.5' = NA (CPM)
0.5			0.0	59	Af; Artificial Fill Sandy Silt w/ clay, Dark brown (3/3 10yr 2)	AF/ML		NA
			0.0	74	30% fine sand, 60% silt, 10% clay, trace rootlets, some concrete (construction debris), moist, low toughness, low strength, low plasticity, no odor or staining (artificial fill)			NA
1.0			0.0				1	NA
					TD = 1.0 ft bgs no gw encountered refusal on construction debris			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 356
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: 4/17/12 0926		Date/Time Total Depth Reached: 4/17/12 0929
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60614-0930
Geologist: Ian Stone		Checked By / Date: Cliff Kuntz 4-18-12		
Radiological Background: 3067 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	85	(25) Sandy Silt, Dark yellowish brown (4/4 10YR) 40% fine sand, 60% silt, trace debris, trace gravel, moist, low strength, low tough, no odor or staining (artificial fill)	AF/ SM (25) ML	1	
			0.0	84				
1.0								
2.0					TD = 0.5 ft bgs; no gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 356
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 3.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/17/12 0940		Date/Time Total Depth Reached: 4/17/12 1005
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60615-1036
Geologist: Ian Stone		Checked By / Date:		4/18/12

Radiological Background: 3067 / 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	Feet bgs.	Borehole Gamma Readings +0.5' = 3049 (CPM)
			0.0	85	Sandy Silt, Dark yellowish brown (4/4 10YR)	AF/ML		3372
0.5			0.0	84	40% fine sand, 60% silt, trace debris, trace gravel, moist, low strength, low toughness, no odor or staining (Artificial fill)			4474
1.0			0.0	93			1	4805
			0.0	80				4787
2.0			0.0	67	Clayey Silt w/sand, Very dark grayish brown (3/2 10YR) 10% fine sand, 60% silt, 30% clay, trace gravel, moist, low toughness, low strength, med plasticity, no odor or staining, burnt wood debris, construction debris (Artificial fill)	AF/ML	2	4348
			0.0	65				3464
3.0			0.0	52			3	3305
					TD = 3.0 ft bgs no gw encountered refusal on construction debris no anomalies detected			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_357

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 357
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: 4/16/12 1426		Date/Time Total Depth Reached: 4/16/12 1429
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60616 - 1430
Geologist: Ian Stone		Checked By / Date: Cliff Wright 4-17-12		
Radiological Background: 3339 / 69	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	Feet bgs.	Borehole Gamma Readings (CPM)
0			0.0	96	Silty Sand, Very dark brown (2/2 10YR), 60% fine sand, 20% medium sand, 20% silt, moist, loose, no odor or staining, plant litter on surface	SM	0	
0.5			0.0	84			1	
1.0					TD = 0.5 ft bgs no gw encountered		2	
2.0							3	
3.0							4	
4.0							5	
5.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 357
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 0.5 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/16/12 1434		Date/Time Total Depth Reached: 4/16/12 1437
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60617 - NO SAMPLE
Geologist: I. Stone		Checked By / Date: [signature] 4-17-12		
Radiological Background: 3339 / 69	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	96	Silty Sand, very dark brown (2/2 10YR), 60% fine sand, 20% medium sand, 20% silt, moist, loose, plant litter at surface, no odor or staining	SM	0.5 = NA	NA
			0.0	84				NA
1.0					TD = 0.5 ft bgs; no gw encountered refusal on sandstone		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_358

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 358
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: 4/16/12 1452		Date/Time Total Depth Reached: 4/16/12 1454
Type of Sampling Device: Shovel/trowel		Samples Collected: 60618 - 1455 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-17-12		
Radiological Background: 3405 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	60	Silty Sand, Dark yellowish brown (3/4 10YR) 60% fine sand, 20% medium sand, 20% silt, trace rootlets, moist, loose, no odor or staining	SM		
0.5			0.0	72				
1.0							1	
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 358
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 3.5 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/16/12 1456		Date/Time Total Depth Reached: 4/16/12 1520
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 60619 - 1540		
Geologist: I. Stone		Checked By / Date:		
Radiological Background: 3405 / 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	Feet bgs.	Borehole Gamma Readings (0.5' = 3673 CPM)
			0.0	60	Silty Sand, Dark yellowish brown (3/4 10YR) 60% fine sand, 20% medium sand, 20% silt, trace rootlets, moist, loose, no odor or staining,	SM		3813
0.5			0.0	72				4855
1.0			0.5	78	0-1.0		1	5483
			0.4	72	Silty Sand, Dark yellowish brown (4/6 10YR) 60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, loose, no odor or staining	SM		5986
					- Root			
2.0			0.5	66			2	6270
			0.0	72	1.0 - 2.5'			6550
3.0			0.0	78	Sandy Silt w/ clay, Brownish Yellow (6/6 10YR) 30% fine sand, 60% silt, 10% clay, moist, low tough, low strength, low plasticity, no odor or staining	ML	3	6615
					2.5 - 3.25'			
			0.0	60	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, Dense, no odor or staining 3.25 - 3.5	SP		6433
4.0					TD = 3.5 ft bgs No gw encountered Refusal on sandstone No anomalies detected		4	
5.0							5	
6.0							6	

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HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 359
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: 4/5/12 1500		Date/Time Total Depth Reached: 4/5/12 1504
Type of Sampling Device: Shovel/trowel		Samples Collected: 60620-1505 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-9-12		
Radiological Background: 3260 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	78	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dens., no odor or staining	SM	1	
			0.0	72				
1.0					TD = 0.5ft bgs			
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	2	359
Drilling Company:	**Driller:**	**Ground Elevation:**		**Total Depth Drilled:**
Boart Longyear	D. Hansen	NA		2.5 ft bgs.
Drilling Equipment:	**Borehole Diameter:**	**Date/Time Drilling Started:**		**Date/Time Total Depth Reached:**
Geoprobe 6600	1.75"	4/5/12 1507		4/5/12 1513
Type of Sampling Device:		**Samples Collected:**		60621-1535
1.75" macrocore with acetate liner		(1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		**Checked By / Date:**		

Radiological Background:	Radiological Equipment Used:	PID Used:
3260 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3136 (CPM)
			0.0	78	Silty Sand, Dark Brown (3/3 10YR)			3762
0.5			0.0	66	70% fine sand, 30% silt, trace rootlets, moist low dense, no odor or staining	SM		4751
1.0			0.0	60			1	4962
			0.0	54				4558
2.0			0.0	60			2	4844
			0.0	54	Roots at base of unit 0-2.25 Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining 2.25-2.5	SP		4876
3.0					TD = 2.5 ft bgs no gw encountered refusal on sandstone No anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_360

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 360
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: 4/9/12 1536		Date/Time Total Depth Reached: 4/9/12 1539
Type of Sampling Device: Shovel/trowel		Samples Collected: 60622-1540 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-10-12		
Radiological Background: 3362 / 66	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Silty Sand, Dark Brown (3/3 10YR), 60% fine sand, 40% silt, trace rootlets, moist, low density, no odor or staining	SM		
1.0			0.0	66				
					TD=0.5 ft bgs			
					No gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 360
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 2.2 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 1541		Date/Time Total Depth Reached: 4/9/12 1556
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60623 - 1605
Geologist: J. Stone		Checked By / Date:		4/10/12
Radiological Background:	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3415 (CPM)
			0.0	66	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 40% silt, moist, trace rootlets, low dense, no odor or staining	SM		4154
0.5			0.0	66				4696
1.0			0.0	72			1	5113
			0.0	72	Silty Sand Dark Brown (3/3 10YR) 60% fine sand, 10% medium sand, 30% silt, moist, low dense, no odor or staining, trace rootlets,	SM		5389
2.0			0.0	66			2	5247
					TD = 2.2 ft bgs. no gw encountered no anomalies detected Refusal on sandstone			
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

6_361

SSFL BORING LOG

Sheet 1 of 1

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	2	361
Drilling Company:	**Driller:**	**Ground Elevation:**		**Total Depth Drilled:**
HGL	T. Morse	NA		0.5 ft bgs.
Drilling Equipment:	**Borehole Diameter:**	**Date/Time Drilling Started:**		**Date/Time Total Depth Reached:**
Shovel/trowel	NA	4/9/12 1511		4/9/12 1514
Type of Sampling Device:		**Samples Collected:**		
Shovel/trowel		(1) 1/2 Gallon Bag (Approx 5 lbs.)		60624-1515
Geologist: Ian Stone		**Checked By / Date:**		4/10/12

Radiological Background:	Radiological Equipment Used:	PID Used:
3917 / 66	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 40% silt, trace debris (glass, burnt wood), moist, low dense, no odor or staining (artificial fill)	AF/SM	1	
1.0			0.0	72				
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 361
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 1516		Date/Time Total Depth Reached: 4/9/12 1519
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60625 - NO SAMPLE
Geologist: I. Stone		Checked By / Date: Cliff Knight 4-10-12		
Radiological Background: 3917 / 66	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark Brown (7.5YR 3/3)	AF/SM		
			0.0	72	60% fine sand, 40% silt, trace debris (glass, burnt wood), moist, low dense, no odor or staining, (artificial fill)			
1.0			0.0	66	0-1.0'		1	
					TD = 1.0 ft bgs			
					no gw encountered			
					refusal on sandstone			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 362
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: 4/20/12 1123		Date/Time Total Depth Reached: 4/20/12 1124
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60626 - 1125 60756 - 1127 (1) ½ gallon bag (5lbs)
Geologist: Ian Stone		Checked By / Date: Chris Thomas 4/23/13		
Radiological Background: 30+2 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	78	Silty Sand, very dark brown (2.5/2 7.5YR) 60% fine sand, 10% medium sand, 30% silt, moist, loose, no odor or staining	SM		
0.5			0.0	81				
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 362
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/20/12 1130		Date/Time Total Depth Reached: 4/20/12 1137
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60627 - NO SAMPLE
Geologist: I. Stone		Checked By / Date: Cliff Trumpfheller 4/23/12		
Radiological Background: 3082 / 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	Feet bgs.	Borehole Gamma Readings ±0.5'=NA (CPM)
0			0.0	78	Silty Sand, very dark brown (2.5/2 7.5YR)		0	NA
0.5			0.0	81	~~70%~~ 60% fine sand, 10% medium sand, 30% silt, moist, loose, no odor or staining	SM	0.5	NA
1.0			0.0	79			1	NA
					TD = 1.0 ft bgs no gw encountered Refusal on sandstone			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 363
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: 4/5/12 1355		Date/Time Total Depth Reached: 4/5/12 1359
Type of Sampling Device: Shovel/trowel		Samples Collected: 60628 - 1400 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Bung 4-9-12		
Radiological Background: 3176 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	78	Silty Sand, Dark Brown (3/3 10YR)			
0.5			0.0	72	70% fine sand, 30% silt, trace rootlets, moist, low dens, no odor or staining	SM		
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 363
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/5/12 1404		Date/Time Total Depth Reached: 4/5/12 1410
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		66294 M25
Geologist: Ian Stone		Checked By / Date:		

Radiological Background: 3176 / 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	Feet bgs.	Borehole Gamma Readings +0.5' = 3101 (CPM)
			0.0	60	Silty Sand, Dark Brown (3/3 10YR)			3496
0.5			0.0	63	70% fine sand, 30% silt, trace rootlets, dry moist, low dense, no odor or staining	SM		4352
1.0			0.0	78			1	4575
			0.0	60	0-1.7 root at base of unit			4685
2.0			0.0	54	Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining. 1.7-2.0	SP	2	4717
3.0					TD = 2.0 ft bgs no gw encountered refusal on sandstone		3	
4.0							4	
5.0							5	
6.0							6	

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HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 364
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: 4/9/12 1448		Date/Time Total Depth Reached: 4/9/12 1453
Type of Sampling Device: Shovel/trowel		Samples Collected: 60630 - 1455 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/10/12		

Radiological Background: 3284 / 47
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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	96	Silty Sand, Dark Yellowish Brown (4/4 10YR) 70% fine sand, 30% silt, trace rootlets, trace debris (copper wire, glass), moist, low density, no odor or staining (Artificial Fill)	SF/SM	1	
			0.0	72				
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 2	Location ID: 364
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 1456		Date/Time Total Depth Reached: 4/9/12 1500
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60631 - NO SAMPLE (shallow refusal) (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: I. Stone		Checked By / Date: Cliff Hunkin 4-10-12		
Radiological Background: 3284 / 47	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	96	Silty Sand, Dark Yellowish brown (4/4 10YR) 70% fine sand, 30% silt, trace rootlets,	AF/ SM		
			0.0	72	trace debris (copper wire, glass), moist, low dense, no odor or staining (artificial fill)			
1.0			0.0	66	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	1	
2.0					TD = 1.0 ft bgs no gw encountered refusal on sandstone		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 365
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: 4/9/12 0900		Date/Time Total Depth Reached: 4/9/12 0904
Type of Sampling Device: Shovel/trowel		Samples Collected: ~~60633~~ 60632 - 0905 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-10-12		

Radiological Background: 2848 / 70

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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Silty Sand, very dark grayish brown (3/2 10YR) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, trace rootlets, trace glass, moist, low dense, no odor or staining (artificial fill)	PF/SM	1	
1.0			0.0	84				
2.0					TD = 0.5 ft bgs no groundcontact		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 365
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.7 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 0910		Date/Time Total Depth Reached: 4/9/12 0940
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60633-0955
Geologist: I. Stone		Checked By / Date:		[signature] 4-10-12
Radiological Background: 2848 / 70	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 (#3) (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' = 3230 (CPM)
0.5			0.0	66	Af: Artificial Fill Silty Sand, Very dark grayish brown (3/2 10YR) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, trace rootlets, trace glass, moist, low dense, no odor or staining (artificial fill)	Af/SM		3872
1.0			0.0	84				4660
			0.0	66	0-1.1'		1	4568
					ASPHAULT 1.1'-1.2			
			0.0	72	Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 30% medium sand, 20% silt, moist, low dense, no odor or staining	SM		4574
2.0					TD = 1.7 ft bgs no gw encountered Refusal on sandstone no anomalies detected		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 366
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: 4/9/12 1209		Date/Time Total Depth Reached: 4/9/12 1014
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 60634-1015		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/10/12		

Radiological Background: 3465 / 80

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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	72	Af: Artificial Fill Silty Sand, very dark grayish brown (3/2 10YR) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, trace rootlets, low dense, no odor or staining (artificial fill)	Af/SM		
0.5			0.0	66				
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

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 366
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.8 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 1016		Date/Time Total Depth Reached: 4/9/12 1035
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: 60635 - 1050 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: I. Stone		Checked By / Date: Cliff Knight 4-10-12		
Radiological Background: 3465 / 80	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	Feet bgs.	Borehole Gamma Readings 0.5' = 3670 (CPM)
			0.0	72	Silty Sand, Very dark grayish brown (3/2 10YR) 50% fine sand, 20% medium sand, 10% coarse sand, 20% silt, trace gravel, trace rootlets, (artificial fill) no odor or staining	AF/SM		4234
0.5			0.0	66	0-0.8'			4667
1.0					ASPHAULT 0.8-1.0		1	
			0.0	84	Silty Sand, Dark yellowish brown (4/4 10YR) (artificial fill) 50% fine sand, 30% medium sand, 20% silt, moist, low dense, no odor or staining, trace gravel,	AF/SM		5174
			0.0	108	Asphault 1.4-1.6			5977
2.0					Silty Sand, Yellowish Brown (5/6 10YR) 60% fine sand, 40% silt, moist, med dense, no odor or staining	SM	2	
3.0					TD = 1.8 ft bgs no gw encountered Refusal on sandstone/siltstone no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 367
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: 4/9/12 1110		Date/Time Total Depth Reached: 4/9/12 1138
Type of Sampling Device: Shovel/trowel		Samples Collected: 60636-1140 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/10/12		
Radiological Background: 3840 / 86	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	72	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0			0.0	84				
					TD = 0.5 ft bgs			
					no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 367
Drilling Company: HGL	Driller:	Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 1141		Date/Time Total Depth Reached: 4/9/12 1147
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60637 - No Sample
Geologist:		Checked By / Date: Cliff Kruft 4/10/12		
Radiological Background: 3840 / 86	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	Feet bgs.	Borehole Gamma Readings (CPM)
0			0.0	72	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		NA
0.5			0.0	84				NA
1.0			0.0	72	0-0.9 Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, 0.9-1.0' moist, high dense, no odor or staining	SW	1	NA
2.0					TD = 1.0 ft bgs no gw encountered Refusal on sandstone		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	1	368

Drilling Company:	Driller:	Ground Elevation:	Total Depth Drilled:
HGL	T. Morse	NA	0.5 ft bgs.

Drilling Equipment:	Borehole Diameter:	Date/Time Drilling Started:	Date/Time Total Depth Reached:
Shovel/trowel	NA	4/9/12 1346	4/9/12 1349

Type of Sampling Device:	Samples Collected:	
Shovel/trowel	60638-1350	60749-NT
	(1) 1/2 Gallon Bag (Approx 5 lbs.)	(1) 1/2 gallon bag (5lbs)
Geologist: Ian Stone	Checked By / Date:	Chris Knight 4/10/12

Radiological Background:	Radiological Equipment Used:	PID Used:
3624 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	90	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0			0.0	84				
2.0					TD = 0.5 ft bgs no gw encountered			
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 368
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.25 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/9/12 1353		Date/Time Total Depth Reached: 4/9/12 1358
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60639 - NO SAMPLE Due to shallow refusal
Geologist: I. Stone		Checked By / Date: Cliff Hunnicutt		
Radiological Background: 3624 / 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	Feet bgs.	Borehole Gamma Readings ±0.5': NA (CPM)
0.5			0.0	90	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		NA
1.0			0.0	84				NA
			0.0	78			1	NA
					Sand (weathered sandstone), Brownish Yellow (10YR 6/6) 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining	SP		NA
2.0							2	
					TD = 1.25ft bgs no gw encountered refusal on sandstone			
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 369
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: 4/10/12 1040		Date/Time Total Depth Reached: 4/10/12 1044
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60640 - 1045
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-11-12		
Radiological Background: 3344 / 50	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)
			0.0	54	Silty Sand, Brown (4/3 10YR) 60% fine sand, 10% medium sand, 30% silts, trace gravel, trace rootlets, trace asphalt, dry, low dense, no odor or staining (artificial fill)	AF/SM		
0.5			0.0	66				
1.0					TD = 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 369
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: 4/10/12 1050		Date/Time Total Depth Reached: 4/10/12 1057
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60641 - 1130 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-11-12		
Radiological Background: 3344 / 80	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3371 (CPM)
			0.0	72	Af: Artificial Fill Silty Sand, Brown (4/3 10YR) 60% fine sand, 10% medium sand, 30% silt, trace gravel, trace asphalt, dry, low dense, trace rootlets, no odor or staining (artificial fill)	Af/SM		3996
0.5			0.0	66	0-0.7'			5250
1.0			0.0	54	Silty Sand, Dark Yellowish brown (4/6 10YR) 70% fine sand, 30% silt, dry, med dense, no odor or staining	SM	1	5519
			0.0	66				5622
2.0			0.0	54	0.7-2.7		2	5481
			0.0	78	Sand w/ silt Yellowish Brown (5/6 10YR), 60% fine sand, (2.7-25) 30% medium sand, 10% silt, dry, med dense, no odor or staining	SP		5621
3.0			0.0	66	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry (2.5-3.0) high dense, no odor or staining	SP	3	5391
4.0					TD = 3.0 ft bgs no gw encountered refusal on sandstone no anomalies detected		4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 370
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: 4/16/12 0850		Date/Time Total Depth Reached: 4/16/12 0854
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60642 - 0855
Geologist: Ian Stone		Checked By / Date:		4-17-21
Radiological Background: 3237 / 94	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	90	Silty Sand, Very dark grayish brown (3/2 10YR) 60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, loose, no odor or staining	SM		
0.5			0.0	84				
1.0							1	
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 370
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 3.7 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/6/12 0857		Date/Time Total Depth Reached: 4/6/12 0929
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60643 - 0955 60754 - (NT) (1) 1/2 gall. bag (5lbs)
Geologist: I. Stone		Checked By / Date: Cliff Rumsey 4-17-12		
Radiological Background: 3237 / 94	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	Feet bgs.	Borehole Gamma Readings +0.5: 3581 (CPM)
			0.0	90	Silty Sand, Very Dark grayish brown (3/2 10YR)			4373
0.5			0.0	84	60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, loose, no odor or staining	SM		5738
1.0			0.0	54	PID readings downhole as much as 17.5 ppm		1	6311
			0.0	72	0.0-1.5			6991
2.0			0.0	84	Sandy Silt w/ clay, Dark yellowish brown (4/4 10YR) 30% fine sand, 60% silt, 10% clay, moist, low tough, low strength, low plasticity, no odor or staining	ML	2	6924
			0.4	84	1.5-2.3			7215
3.0			0.4	90	Silty Sand, Yellowish brown (5/6 10YR) 60% fine sand, 40% silt, trace siltstone gravel, moist, med dense, no odor or staining	SM	3	7301
			0.6	84	~~Clay~~ (ES) Silty Clay, light olive brown (5/3 2.5Y) 5% clay, 30% silt, 65% clay, moist, med tough, med strength, med plasticity, no odor or staining	CL		6973
4.0					Siltstone, light yellowish brown (6/3 10YR), 5% fine sand, 95% silt, very hard, Slaky structure	Bedrock	4	
5.0					TD = 3.7 ft bgs no gw encountered Refusal on siltstone		5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 371
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: 4/10/12 0901		Date/Time Total Depth Reached: 4/10/12 0904
Type of Sampling Device: Shovel/trowel		Samples Collected: 60644-0905 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/11/12		
Radiological Background: 2900 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	72	Af: Artificial Fill			
			0.0	78	Silty Sand, Dark Yellowish brown (4/4 10YR) 60% fine sand, 40% medium sand, 30% silt, trace gravel, trace rootlets, moist, low dense, no odor or staining, (artificial fill)	Af/SM		
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 371
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: 4/10/12 0910		Date/Time Total Depth Reached: 4/10/12 0920
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60645-1000 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Will Knight 4-11-12		
Radiological Background: 2900 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings ±0.5': 3024 (CPM)
			0.0	66	Silty Sand, Dark Yellowish brown (4/4 10YR) 10% medium Sand) 60% fine sand, 30% silt, trace gravel, trace rootlets, moist, low dense, no odor or staining (artificial fill)	AF/SM		3269
0.5			0.0	72				4440
1.0			0.0	60			1	5402
					- siltstone ~~cob~~ chat (coarse gravel size) 0-1.3'			
			0.0	78	Silty Sand, Dark Yellowish brown (3/4 10YR), 60% fine sand, 40% silt, trace gravel, moist, (artificial fill) low dense, no odor or staining 1.3-1.7	AF/SM		5772
2.0			0.0	54	Silty Sand, Yellowish brown (5/4 10YR) 50% fine sand, 10% medium sand, 40% silt, trace gravel, med dense, dry, no odor or staining	AF/SM	2	5895
			0.0	48	(artificial fill) 4.2 cm (S) (FS)			5865
3.0			0.0	60	Same as above		3	5940
			0.0	54				6045
4.0			0.0	66	1.7-4.0		4	6096
			0.0	72	~~Sandy Silt,~~ (S) Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 40% silt, dry, low dense no odor or staining	SM		6160
5.0			0.0	78			5	6351
			0.0	60				6499
6.0			0.0	66			6	6430

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Sheet 2 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 371
Radiological Background: 2900 / 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, minerology, 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 4.0 - 6.4	SM	6	6430
			0.0	54	Sandy Silt w/ clay, Strong Brown (4/6 7.5YR) 30% fine sand, 60% silt, 10% clay; dry, low tough, low strength, low plasticity, no odor or staining	ML		6261
7.0			0.0	54			7	6237
			0.0	66				6070
8.0			0.0	60			8	6316
			0.0	66	6.4 - 8.5			6303
					Clayey silt w/ sand, Yellowish brown (5/4 10YR) 10% fine sand, 60% silt, 30% clay, dry, low strength, low toughness, med plasticity, no odor or staining	ML		
9.0			0.0	66			9	NA
			0.0	72				NA
10.0			0.0	66	8.5 - 9.2 Sand (weathered sandstone), Very pale brown (7/4 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	10	NA (Could be to widen hole past 8.5 ft)
					TD = 10 ft bgs No gw encountered No anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_372

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 372
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: 4/16/12 1023		Date/Time Total Depth Reached: 4/16/12 1027
Type of Sampling Device: Shovel/trowel		Samples Collected: 60646 - 1030 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Chris Knight 4-17-12		
Radiological Background: 3058 / 48	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	84	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, loose, no odor or staining	SM		
0.5			0.0	72				
1.0					TD = 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 372
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/16/12 1031		Date/Time Total Depth Reached: 4/16/12 1050
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60647-1100
Geologist: I. Stone		Checked By / Date:		4-17-12
Radiological Background: 3058 / 48	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3218 (CPM)
			0.0	84	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, loose, no odor or staining	SM		3525
0.5			0.0	72				4446
					Silty Sand, Yellowish Brown (5/6 10YR) 50% fine sand, 20% medium sand, 30% silt, moist, med dense, no odor or staining, trace rootlets	SM		
1.0			0.0	78			1	5175
			0.0	84				5602
2.0			0.0	78			2	6007
					TD = 2.0 ft bgs no gw encountered refusal on sandstone no anomalies detected			
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

6_373

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 373
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: 4/6/12 1136		Date/Time Total Depth Reached: 4/6/12 1137
Type of Sampling Device: Shovel/trowel		Samples Collected: 60648-1140 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-9-12		
Radiological Background: 2842 / 49	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	Feet bgs.	Borehole Gamma Readings (CPM)
					AF: Artificial Fill			
			0.0	108	Silty Sand, Dark yellowish brown (4/6 10YR) 70% fine sand, 30% silt, trace gravel, trace rootlets, moist, low dense, no odor or staining (Artificial Fill)	AF/SM		
0.5			0.0	78				
1.0					TD = 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 373
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: 4/6/12 1141		Date/Time Total Depth Reached: 4/6/12 1148
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60649-1210 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [illegible] 4-9-12		
Radiological Background: 2842 / 49	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 +0.5' = 3077 (CPM)
			0.0	60	Silty Sand, Dark yellowish brown (4/6 10YR) (artificial fill) 70% fine sand, 30% silt, trace rootlets, trace gravel,	AF/ SM		4979
0.5			0.0	66	0-0.5 moist, low dense, no odor or staining			5762
					Silty Sand, Dark yellowish brown (3/6 10YR) 60% fine sand, 10% medium sand, 30% silt,	AF/	1	
1.0			0.0	78	trace gravel, moist, mod dense, no odor or staining	SM		6138
			0.0	66	(artificial fill) 0.5-1.5			6297
					Sandy Silt, Strong Brown (4/6 7.5YR) 30% fine sand, 10% medium sand, 60% silt,		2	
2.0			0.0	72	moist, trace gravel, low tough, low strength,	AF/		6638
			0.0	66	low plasticity, no odor or staining Quartzite rock fragment (1") a 2.25'	ML		6748
3.0			0.0	60	1.5-3.0 (artificial fill)		3	6543
					Silty Sand, Dark yellowish brown (4/6 10YR) 60% fine sand, 20% medium sand, 20% silt,			
			0.0	66	moist, medium dense, no odor			6376
4.0			0.0	54	or staining	SM	4	6047
			0.0	60				5841
5.0			0.0	54	Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry high dense, no odor or staining	SP	5	5824
					TD = 5.0 ft bgs, no gw encountered refusal on sandstone, no anomalies detected			
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_374

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 374
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: 4/6/12 0853		Date/Time Total Depth Reached: 4/6/12 0858
Type of Sampling Device: Shovel/trowel		Samples Collected: 60650-0900 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Chris Knight 7/9/12		
Radiological Background: 2800 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	84	Asphalt			
0.5			0.0	84	Silty Sand, Yellowish Brown (5/6 10YR), 60% fine sand, 20% medium sand, 20% silt, trace gravel, moist, med dense, no odor or staining (artificial fill)	AF/SM		
					TD = 0.8 ft bgs.			
					no gw encountered			
1.0							1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 374
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 12.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/6/12 0905		Date/Time Total Depth Reached: 4/6/12 0915
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60651-0950 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Brian 4-9-12		
Radiological Background: 2805 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 10.5' = 2981 (CPM)
					AF: Artificial Fill			
			0.0	60	Asphault 0-0.3'			4585
0.5			0.0	60	Silty Sand, Yellowish brown (5/6 10YR) 60% fine sand, 20% medium sand, 20% silt, trace gravel, moist, med dense, no odor	AF/SM		5401
1.0			0.0	54	0.3-1.0' - staining (artificial fill)		1	5951
			0.0	60	Silty Sand, Dark yellowish brown (4/4 10YR) 60% fine sand, 10% medium sand, 30% silt, trace coarse sand, trace gravel, moist, med dense, slight mottling, no odor (artificial fill)	AF/SM		5915
2.0			0.0	66			2	5912
			0.0	72				6021
3.0			0.0	76			3	6009
			0.0	60	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 40% silt, moist, low dense, no odor or staining	SM		6488
4.0			0.0	54			4	6326
			0.0	66	Clayey Silts w/ sand, Strong Brown (4/6 7.5YR) 10% fine sand, 60% silt, 30% clay, moist, low strength, low toughness, med plasticity, no odor or staining	ML		5988
5.0			0.0	60			5	5783
			0.0	66				5655
6.0			0.0	78			6	5657

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	4	374

Radiological Background: 2800 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	78	Clayey Silt w/ sand, same as above	ML	6	5657
			0.0	66				5805
7.0			0.0	60	Silty Sand, Strong Brown (5/6 7.5YR) 50% fine sand, 20% medium sand, 30% silt, moist, med dense, no odor or staining	SM	7	5918
			0.0	54				5847
8.0			0.0	72			8	6071
			0.0	54				6125
9.0			0.0	60			9	6275
			0.0	84	Sand w/ silt, Pale Yellow (7/4 2.5Y) 90% fine sand, 10% silt, moist, med dense, no odor or staining	SP		6174
10.0			0.0	60			10	6169
					TD = 10.0 ft bgs No gw encountered no anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 375
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: 4/16/12 1150		Date/Time Total Depth Reached: 4/16/12 1154
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60652 - 1155
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-17-12		
Radiological Background: 3046 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	90	Silty Sand, Dark Brown (3/3 10YR)			
			0.0	84	60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, no odor or staining, loose.	SM		
1.0					TD = 0.5 ft bgs			
					No gw encountered			
2.0								
3.0								
4.0								
5.0								
0								

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 375
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.2 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/16/12 1156		Date/Time Total Depth Reached: 4/16/12 1205
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60653 - NO SAMPLE
Geologist: I. Stone		Checked By / Date:		4-17-12
Radiological Background: 3046 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 0.5 = NA (CPM)
0.5			0.0	90	Silty Sand, Dark Brown (7.5YR 3/3 10YR)		0.5	NA
			0.0	84	60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, loose, no odor or staining	SM		NA
1.0			0.0	54	0-1.2		1	NA
					TD = 1.2 ft bgs			
					no gw encountered			
					Refusal on sandstone			
					not sampled due to shallow refusal			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 376
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: 3/26/12 1504		Date/Time Total Depth Reached: 3/26/12 - 1509
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60654 - 1510
Geologist: Ian Stone		Checked By / Date:		3-28-12
Radiological Background: 2837 / 58	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	58	Silty Sand, Dark Brown (3/3 7.5YR)			
			0.0	77	60% fine sand, 40% silt, trace rootlets, low dense, no odor or staining	SM		
1.0					TD = 0.5 ft bgs		1	
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 376
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: 3/26/12 1511		Date/Time Total Depth Reached: 3/26/12 1521
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60655 - 1550 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3-28-12		
Radiological Background: 2837 / 58	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	Feet bgs.	Borehole Gamma Readings +0.5': 2800 (CPM)
			0.0	52	Silty Sand, Dark Brown (3/3 7.5YR)			2960
0.5			0.0	67 / 76	60% fine sand, 40% silt, trace rootlets, ~~roots~~ low-dense, no odor or staining, moist	SM		4627
					- wet,			
1.0			0.0	55	- root		1	5058
					0-1.25'			
			0.0	65	Sandy Silt, Brown (4/4 ~~10~~ 7.5YR) 5% clay ~~30~~% fine sand, ~~70~~% silt, 65% dry, low toughness,			5670
2.0			0.0	68	30% ~~fine~~ low strength, low plasticity, no odor or staining	ML	2	5791
			0.0	53				5942
					1.25'-2.75'			
3.0			0.0	65	Clayey Silt w/ sand, Yellowish Brown (5/4 10YR)		3	5807
			0.0	63	10% fine sand, 60% silt, 30% clay, dry, low-med tough, low-med strength, med plasticity, no odor or staining	ML		5969
4.0			0.0	46			4	6158
			0.0	49				6441
5.0			0.0	51	2.75-5.0'		5	6484
			0.0	63	Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP ~~SM~~		6711
6.0			0.0	80			6	6983

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	4	376

Radiological Background: 2837 / 58
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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	80	Sand (weathered sandstone) same as above	SP	6	6983
			0.0	73				7163
7.0			0.0	64			7	NM
			0.0	66				NM
					Siltstone, light yellowish brown (6/3 2.5Y) 100% silt, very tough, flakey, mechanically weathered, dry, no odor or staining	Bed rock		
8.0			0.0	72			8	NM
			0.0	64				NM
9.0			0.0	53			9	NM
			0.0	88				NM
10.0			0.0	100			10	NM
					TD = 10 ft bgs only able to widen hole to 6'4" bgs due to weathered sandstone. no anomalies detected			(unable to widen hole)
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_377

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 377
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: 3/27/12 0849		Date/Time Total Depth Reached: 3/27/12 0854
Type of Sampling Device: Shovel/trowel		Samples Collected: 60656 - 0855 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/29/12		

Radiological Background: 2924 / 57
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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	78	Silty Sand, Dark Brown (3/3 7.5YR)			
0.5			0.0	55	60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0					TD: 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 377
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 6 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/27/12 0903		Date/Time Total Depth Reached: 3/27/12 0916
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60657 - 0940
Geologist: Ian Stone		Checked By / Date:		3-29-12
Radiological Background: 2924 / 57	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2856 (CPM)
			0.0	63	Silty Sand, Dark Brown (3/3 7.5YR)			3039
0.5			0.0	66	60% fine sand, 40% silt, trace rootlets, moist, no odor or staining, low dense.	SM		4340
1.0			0.0	67			1	5179
			0.0	88	0-1.5'			5631
					Sandy Silt, Brown (4/4 7.5YR)			
2.0			0.0	83	30% fine sand, 65% silt, 5% clay, dry low toughness, low strength, low plasticity, no odor or staining	ML	2	5894
			0.0	61				5664
3.0			0.0	63	1.5-3		3	5775
					Clayey Silt w/ sand, Strong Brown (4/6 7.5YR)			
			0.0	55	10% fine sand, 60% silt, 30% clay, moist low-med toughness, low-med strength, med plasticity, no odor or staining	ML		5794
4.0			0.0	66			4	5785
			0.0	58				5912
5.0			0.0	71			5	6048
					3-5.5'			
			0.0	54	Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, high dense, moist, no odor or staining.	SP		6182
6.0			0.0	65	5.5-6'		6	5997

TD = 6 ft bgs

No anomalies detected

HGL HydroGeoLogic, Inc
Exceeding Expectations

6_378

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 378
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: 3/27/12 1037		Date/Time Total Depth Reached: 3/27/12 - 1034
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		6065B - 1035
Geologist: Ian Stone		Checked By / Date: Cliff Kuyl 3-29-12		
Radiological Background: 2676 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	68	Silty Sand, Dark Brown (3/3 7.5YR) 60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM	1	
			0.0	68				
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 378
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 4 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/27/12 1040		Date/Time Total Depth Reached: 3/27/12 1047
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60659 - 1105 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Christ Knight 3/29/12		
Radiological Background: 2676 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5 = 2695 (CPM)
			0.0	49	Silty Sand, Dark Brown (3/3 7.5YR)			3545
0.5			0.0	62	60% fine sand, 40% silt, trace rootlets, moist low dense, no odor or staining	SM		4862
1.0			0.0	65			1	5376
			0.0	58	0-1.67'			5774
2.0			0.0	67	~~Silt~~ Sandy Silt, ~~Stony~~ Brown (4/4 7.5YR) 20% fine sand, 10% medium sand, 65% silt, 5% clay, low toughness, low strength, low plasticity, no odor or staining, dry	ML	2	6061
			0.0	63				6641
3.0			0.0	60	1.67-3		3	6267
			0.0	71	Silty Clay, light olive brown (5/3 2.5Y) 5% fine sand, 30% silt, 65% clay, ~~dry~~, med tough, med strength, med plasticity, dry, no odor or staining	CL		6283
4.0			0.0	67	Sand (weathered sandstone) Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, high density, dry, no odor or staining	SP	4	NM (couldn't to widen past 3.5')
5.0					TD = 4ft bgs No gw encountered No anomalies detected Refusal on sandstone		5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_379

eet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 379
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: 3/23/12 1041		Date/Time Total Depth Reached: 3/23/12 1044
Type of Sampling Device: Shovel/trowel		Samples Collected: 60660 - 1045 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 3-27-12		
Radiological Background: 2175 / 49	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Af: Artificial fill Sand w/ silt, Yellowish brown (5/6 10YR), 60% fine sand, 30% medium sand, 10% silt, moist, trace gravel, loose dense, trace rootlets, trace brick, no odor or staining	Af/ SP		
1.0			0.0	78			1	
2.0					TD = 0.5 ft bgs no gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 379
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: 3/23/12 1046		Date/Time Total Depth Reached: 3/23/12 1056
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60661 - 1130 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 3-27-12		
Radiological Background: 2175 / 49	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	72	Sand w/silt, Yellowish Brown (5/6 10YR) 60% fine sand, 30% medium sand, 10% silt, moist, trace gravel, low dense, no odor or staining, trace cobbles trace brick	AF/SP		2756
0.5			0.0	78	0-0.5'			4224
					Silty Sand (2), Brown (4/4 7.5YR) 60% fine sand, 40% silt, moist, med dense, no odor or staining, ~~med dense~~ (2)	AF/SM	1	5597
1.0			0.0	54				
			0.0	48	0.5-1.5'			5956
					Silty Sand, Strong Brown (5/6 7.5 4R) 70% fine sand, 30% silt, moist, med dense, no odor or staining, slight mottling trace gravel	AF/SM	2	6154
2.0			0.0	90				
			0.0	96				6067
3.0			0.0	78			3	6148
					1.5-3.25'			
			0.0	72	Sandy Silt, Yellowish Brown (5/6 10YR) 40% fine sand, ~~60%~~ (2) 55% silt, 5% clay, trace gravel, dry, low tough, low strength, low plasticity, no odor, slight mottling	~~AF~~ ML		6363
4.0			0.0	84			4	6413
			0.0	60				6401
5.0			0.0	48	3.25'-5.0'		5	6346
					Sand (weathered sandstone) Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, ~~high dense~~, (2) med-high dense, no odor or staining	SP		5815
6.0			0.0	78				
				48			6	5492

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 379
Radiological Background: 2175 / 49	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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	48	Sand, same as above	SP	6	5492
			0.0	66				5237
7.0			0.0	54			7	NM
			0.0	54				NM
					Siltstone (mechanically weathered) light yellowish brown (6/4 2.5Y), 100% silt, dry, high density, no odor or staining	Bed rock		
8.0			0.0	78			8	NM (Unable to widen hole past 6.5')
9.0					TD = 8.0 ft bgs No gw encountered No anomalies detected Refusal on siltstone/sandstone		9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 380
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: ~~0.5~~ 0.8 ft bgs.
Drilling Equipment: Shovel/trowel	Borehole Diameter: NA	Date/Time Drilling Started: 4/6/12 1011		Date/Time Total Depth Reached: 4/6/12 1014
Type of Sampling Device: Shovel/trowel		Samples Collected: 6662-1015 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-9-12		
Radiological Background: 2674 / 61	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, minerology, bedding, plasticity, density, consistency, etc., as applicable) AF: Artificial Fill	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
			~~0.2~~	~~84~~	Asphalt 0-0.3'			
0.5			0.0	84	Silty Sand, Dark yellowish brown (4/4 10YR), 60% fine sand, 20% medium sand, 20% silt, trace gravel, moist, no odor or staining (artificial fill) med dense	AF/SM		
1.0			0.0	84	TD = 0.8 ft bgs		1	
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

SSFL BORING LOG

Sheet 1 of 1

HydroGeoLogic, Inc — Exceeding Expectations

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 380
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: 4/6/12 1026		Date/Time Total Depth Reached: 4/6/12 1034
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60663 - 1055 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [illegible] 4-9-12		
Radiological Background: 2674 / 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	Feet bgs.	Borehole Gamma Readings +0.5 = 3179 (CPM)
					AF: Artificial fill			
			0.0	48	Asphault, 0-0.3'			4476
0.5			0.0	42	Silty Sand, Dark yellowish brown (4/4 10YR), 60% fine Sand, 20% medium sand, 20% silt, trace gravel, med dense, moist, no odor or staining (artificial fill) 0.3-0.8	AF/SM		5896
1.0			0.0	42	Sandy Silt/clay, Brown (4/4 7.5YR) 30% fine sand, 60% silt, 10% clay, moist, low toughness, low strength, low plasticity, no odor or staining 0.8-1.5'	ML SM (F3)	1	6168
			0.0	48				6110
2.0			0.0	54	Silty Clay, Brownish Yellow (6/6 10YR), 5% fine sand, 40% silt, 55% clay, med tough, med strength, med plasticity, no odor or staining, moist 1.5-1.8	CL	2	6109
			0.0	72	Silty Sand, Yellowish Brown (5/6 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, med dense, no odor or staining	SM		6339
3.0			0.0	60			3	6512
			0.0	60				7058
4.0			0.0	72			4	6827
			0.0	54	Silty Clay, light yellowish brown (6/3 2.5Y) 5% fine sand, 25% silt, 70% clay, high tough, high strength, med plasticity, hard, no odor or staining, dry	CL		6773
5.0			0.0	48	Sand (weathered sandstone), Pale Yellow (7/4 10YR) 70% fine sand, 25% medium sand, 5% silty dry, high dense, no odor or staining;	SP	5	NA (Unable to widen hole past 4.5')
					TD = 5.0 ft bgs, no gw encountered refusal on sandstone, no anomalies detected			
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_381

sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 381
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: 4/10/12 1150		Date/Time Total Depth Reached: 4/10/12 1154
Type of Sampling Device: Shovel/trowel		Samples Collected: 60664-1155 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Schmidt 4-11-12		

Radiological Background: 3299 / 78

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	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	84	Silty Sand, Dark yellowish brown (3/4 10YR) 60% fine sand, 10% medium sand, 30% silt, trace gravel, trace rootlets, moist, low dense, no odor or staining (artificial fill)	AF/SM		
0.5			0.0	66				
1.0							1	
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 3	Location ID: 381
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/10/12 1156		Date/Time Total Depth Reached: 4/10/12 1202
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60665 - 1220 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-11-12		

Radiological Background: 3299 / 78 | 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	Feet bgs.	Borehole Gamma Readings 0.5' = 3150 (CPM)
			0.0	60	Af: Artificial Fill Silty Sand, Dark yellowish brown (3/4 10YR), 60% fine sand, 10% medium sand, 30% silt, trace gravel, trace rootlets, moist, low dense, no odor or staining (artificial)	Af/Sm		3441
0.5			0.0	60	0-0.8			4797
1.0			0.0	72	Sand (weathered sandstone), Brownish yellow (6/6 10YR) 60% fine sand, 35% medium sand, 5% silt, moist, high dense, no odor or staining, some interbedded siltstone	SP	1	5662
			0.0	66				5918
2.0			0.0	60			2	5773
					TD = 2.0 ft bgs no gw encountered no anomalies detected refusal on sandstone			
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 382
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 0.7 ft bgs.
Drilling Equipment: Shovel/trowel	Borehole Diameter: NA	Date/Time Drilling Started: 3/26/12 0927		Date/Time Total Depth Reached: 3/26/12 0937
Type of Sampling Device: Shovel/trowel		Samples Collected: 60666 - 0940 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: 3-28-12		
Radiological Background: 2752 / 57	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	89	2.5" Asphalt			
0.5			0.0	108	Silty Sand w/ gravel, Yellowish Brown (5/6 10YR) 30% fine sand, 30% medium sand, 10% coarse sand, 20% silt, 10% gravel, moist, low dense, no odor or staining	Af/SM		
1.0					TD = 0.7 ft bgs no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 382
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: 3/26/12 0944		Date/Time Total Depth Reached: 3/26/12 0955
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60667-1035 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 3-28-12		
Radiological Background: 2752 / 2657	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	Feet bgs.	Borehole Gamma Readings 0.5' = 2638 (CPM)
			0.2	43	2.5" Asphalt			3487
0.5			0.0	65	Silty Sand w/ gravel, Yellowish Brown (5/6 10YR), 30% fine sand, 30% medium sand, 10% coarse sand, 20% silt, 10% gravel, moist, low dense, no odor or staining	SM		4873
1.0			0.0	48	Silty Sand, Dark brown (3/3 7.5YR) 60% fine sand, 40% silt, moist, low dense, slow dilatancy, no odor or staining, trace gravel	SM	1	5216
			0.0	72				5928
2.0			0.0	86	Silty Sand, Dark brown (3/3 7.5YR) 60% fine sand, 40% silt, moist, low dense, slow dilatancy, no odor or ~~odor~~ staining		2	6062
			0.0	78				6134
3.0			0.0	81			3	6200
			0.0	69	Sandy Silt, Strong Brown (4/6 7.5YR) 40% fine sand, 60% silt, low toughness, low strength, dry, no odor or staining	ML		6223
4.0			0.0	67			4	5920
			0.0	76				6068
5.0			0.0	73			5	5853
			0.0	85	Sandy Silt w/clay, Strong Brown (5/6 7.5YR) 30% fine sand, 60% silt, 10% clay, moist, low tough, low strength, low plasticity, no odor or staining	ML		5843
6.0			0.0	63			6	6064

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 382
Radiological Background: 2752 / 57	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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	63	Sandy Silt w/ clay, same as above	ML	6	6064
			0.0	104				6222
7.0			0.0	82			7	6063
			0.0	88				6228
8.0			0.0	97	Silty Sand, Brownish Yellow (6/6 10YR) ~~60%~~ 70% fine sand, 30% silt, moist, med dense, no odor or staining	SM	8	6334
			0.0	73				6222
9.0			0.0	77			9	6240
			0.0	69				6168
10.0			0.0	79			10	5992
					TD = 10Ft bgs			
					no gw encountered			
11.0					No anomalies encountered		11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 383
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: ~~0.5~~ 0.7 ft bgs.
Drilling Equipment: Shovel/trowel	Borehole Diameter: NA	Date/Time Drilling Started: 3/26/12 1102		Date/Time Total Depth Reached: 3/26/12 1104
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60668 - 1105
Geologist: Ian Stone		Checked By / Date: [signature] 3/28/12		
Radiological Background: 2846 / 64	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	65	2" Asphalt			
0.5			0.0	84	Silty Sand, Dark Brown (7.5YR 3/3) 60% fine sand, 40% silt, moist, low dense, no odor or staining	SM		
1.0					TD = 0.7 ft bgs		1	
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 383
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: 3/26/12 1111		Date/Time Total Depth Reached: 3/26/12 1119
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60609-1155 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3-28-12		
Radiological Background: 2846 / 64	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2907 (CPM)
			0.0	63	2" Asphalt			4391
0.5			0.0	68	Silty Sand, Dark Brown (3/3 7.5YR) 60% fine sand, 40% silt, moist, low dense, no odor or staining	SM		5666
1.0			0.0	61	0.17-1' Silty Sand, Dark Brown (3/3 7.5YR) 60% fine sand, 40% silt, wet, low dense, no odor or staining	SM	1	5789
			0.0	66	1-1.5' ~~Sandy Silt~~ IS Silty Sand, Dark Brown (3/3 7.5YR) 60% fine sand, 40% silt, moist, low dense, no odor or staining	SM		6009
2.0			0.0	56	1.5-2.0' Sandy Silt, Strong Brown (4/6 7.5YR) 40% fine sand, 60% silt, low toughness, low strength, moist, no odor or staining.	ML	2	6128
			0.0	49				5892
3.0			0.0	37	2.0-3.0' Silty Sand, ~~Strong Brown (5/6 7.5YR)~~ IS Yellowish Brown (5/6 10YR) 3-3.4 80% fine sand, 20% silt, moist, med dense, no odor	SM	3	5749
			0.0	63	Sandy Silt w/ clay, Strong brown (5/6 7.5YR) 30% fine sand, 60% silt, 10% clay, moist, low tough, low strength, low plasticity, no odor or staining	ML		5763
4.0			0.0	69			4	5835
			0.0	65				5991
5.0			0.0	61	3.4-5' Silty Sand, Strong Brown (4/6 7.5YR) 60% fine sand, 40% silt, med dense, moist, no odor or staining	SM	5	6149
			0.0	66				6248
6.0			0.0	59			6	6250

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	4	383

Radiological Background:	Radiological Equipment Used:	PID Used:
2846 / 64	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	59	Silty Sand, same as above		6	6250
			0.0	55		SM		5976
7.0			0.0	66			7	6051
			0.0	49	5'-7.5'			5872
					Silty Sand, Brownish Yellow (G/6 10YR) 70% fine sand, 30% silt, moist, med dense, no odor or staining			
8.0			0.0	47		SM	8	5880
			0.0	69				6085
9.0			0.0	77			9	5927
			0.0	52				5831
					7.5-10.0'			
10.0			0.0	64			10	5962
					TD = 10ft bgs no gw encountered no anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 384
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: 3/26/12 1350		Date/Time Total Depth Reached: 3/26/12 1354
Type of Sampling Device: Shovel/trowel		Samples Collected: 6067@-1355 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kuhl 3-28-12		
Radiological Background: 2580 / 55	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark Brown (3/3 7.5YR)	SM		
			0.0	78	60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining			
1.0					TD = 0.5ft bgs		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 384
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: ~~1.0~~ (ES) 1.1 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/26/12 1357		Date/Time Total Depth Reached: 3/26/12 1400
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60671 - no sample
Geologist: Ian Stone		Checked By / Date:		3-28-12

Radiological Background: 2580 / 55
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	Feet bgs.	Borehole Gamma Readings 0.5 = NM (CPM)
			0.0	48	Silty Sand, Dark Brown (7/3 7.5YR) 60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM		NM
0.5			0.0	68				(ES) NM
					0-0.7			
1.0			0.0	61	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% med.-coarse sand, 5% silt, moist, high dense, no odor or staining	SP	1	NM (close to shallow refusal)
					0.7-1.1			
					TD = 1.1 ft bgs			
					no gw - encountered			
					refusal on sandstone			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 385
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: 4/20/12 1029		Date/Time Total Depth Reached: 4/20/12 1037
Type of Sampling Device: Shovel/Trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60672 - 1035
Geologist: Ian Stone		Checked By / Date: [signature] 4/27/12		
Radiological Background: 3113 / 91	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	93	Silty Sand, Dark Brown (3/3 10YR) 50% fine sand, 10% medium sand, 40% silt, trace gravel (sandstone, max size = 1.5"), moist, loose, no odor or staining	SM	0	
1.0			0.0	89			1	
2.0					TD = 0.5 ft bgs		2	
3.0					no gw encountered		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 385
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 1.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/20/12 1038		Date/Time Total Depth Reached: 4/20/12 1043
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60673 - NO SAMPLE
Geologist: I. Stone		Checked By / Date: Cliff Thurlkill 4/23/12		
Radiological Background: 3113 / 91	Radiological Equipment Used: ~~Micro-R+~~ Downhole / Pancake Meters	PID Used: Mini Rae 3000 - Background: 0.0 ppm		

Depth (ft bgs)	Interval	Recovery	PID	Radiological	(1) 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' = NA (CPM)
0.5			0.0	93	Silty Sand, Dark Brown (3/3 10YR) 50% fine sand, 10% medium sand, 40% silt, moist, loose, no odor or staining, trace gravel (sandstone, max size = 1.5")	SM		NA
1.0			0.0	89				NA
			0.0	82			1	NA
					TD = 1.0 ft bgs. no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 386
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: 3/28/12 1114		Date/Time Total Depth Reached: 3/28/12 1119
Type of Sampling Device: Shovel/trowel		Samples Collected: 60474 - 1120 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/30/12		

Radiological Background: 3095 / 70
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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	75	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, no odor or staining, low density.	SM		
			0.0	66				
1.0							1	
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 386
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: 3/23/12 1121		Date/Time Total Depth Reached: 3/23/12 1125
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60675 - 1145 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Chris Rumpf 3/30/12		
Radiological Background: 3095 / 70	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2959 (CPM)
			0.0	58	Silty Sand, Dark Brown (3/3 7.5YR)			4349
0.5			0.0	63	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		5257
1.0			0.0	62			1	5642
			0.0	69	0-1.5'			6041
					Clayey Silt w/ sand, Strong Brown (4/6 7.5YR)			
2.0			0.0	62	10% fine sand, 60% silt, 30% clay, dry, low toughness, low strength, med plasticity,	ML	2	6013
			0.0	55	no odor or staining			5756
3.0			0.0	68			3	5780
			0.0	74				5682
					1.5' - 3.67'			
					Sand (weathered sandstone), Yellow (7/6 10YR)			
4.0			0.0	77	70% fine sand, 25% medium sand, 5% silt,	SP	4	5712
			0.0	78	dry, high dense, no odor or staining			5551
5.0					3.67' - 5'		5	
			0.0	74				5599
					TD = 5ft bgs			
					no gw encountered			
					refusal on sandstone			
					no anomalies detected			
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 387
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: 3/28/12 1019		Date/Time Total Depth Reached: 3/28/12 1023
Type of Sampling Device: Shovel/trowel		Samples Collected: 60676-1025 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knuth 3/30/12		

Radiological Background: 2667 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	51	Silty Sand, Dark Brown (3/3 7.5YR)	SM		
			0.0	56	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining			
1.0							1	
					TD = 0.5 ft bgs			
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 387
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/28/12 1026		Date/Time Total Depth Reached: 3/28/12 1033
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60677 - 1045 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date:		
Radiological Background: 2667 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings ±0.5' = 2962 (CPM)
			0.0	49	Silty Sand, Dark Brown (3/3 7.5YR)			3337
0.5			0.0	53	70% ~~silt~~ fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		4680
1.0			0.0	61			1	5329
			0.0	75	0-1.5' Clayey Silt w/ Sand, Strong brown (5/6 7.5YR)	ML		5598
2.0			0.0	73	30% fine sand, 60% silt, 30% clay, moist, low tough, low strength, med plasticity, no odor or staining		2	5201
					1.5-1.75' Sand (weathered sandstone), Pale Yellow (7/4 2.5Y)	SP		
3.0					70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining 1.75'-2.0'		3	
					TD = 2.0 ft bgs			
					No gw encountered			
					Refusal on sandstone			
4.0					No anomalies detected		4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 388
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: 3/28/12 - 0934		Date/Time Total Depth Reached: 3/28/12 - 0939
Type of Sampling Device: Shovel/trowel		Samples Collected: 60678 - 0940 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 3/30/12		
Radiological Background: 2823 / 48	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM	1	
			0.0	49				
1.0					TD = 0.5 ft bgs			
					no gw encountered		2	
2.0								
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 388
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/28/12 0944		Date/Time Total Depth Reached: 3/28/12 0951
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60679 - 1005 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/30/12		
Radiological Background: 2823 / 48	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	Feet bgs.	Borehole Gamma Readings 40.5" = 2825 (CPM)
0.5			0.0	66	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3144
			0.0	62				4378
1.0			0.0	65			1	5093
			0.0	61	Sand (weathered sandstone), very pale brown (7/4 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5356
2.0			0.0	55			2	5400
3.0					TD = 2ft bgs no gw encountered Refusal on sandstone No anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 389
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: 3/28/12 0839		Date/Time Total Depth Reached: 3/28/12 0844
Type of Sampling Device: Shovel/trowel		Samples Collected: 60680-0845 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kuyper 3/30/12		

Radiological Background: 2768 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	75	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
			0.0	57				
1.0					TD = 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 389
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/28/12 0846		Date/Time Total Depth Reached: 3/28/12 0854
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60681-0910 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/30/12		
Radiological Background: 2768 / 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	(1) 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' = 2753 (CPM)
0.5			0.0	56	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3280
			0.0	52	0-0.8'			4477
1.0			0.0	70	Sand (weathered sandstone cobble), Brownish yellow (6/8 10YR) 70% fine sand, 25% medium sand, 5% silt, moist,	SP	1	4802
					0.8-1.33' high dense, no odor or staining			
			0.0	66	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, moist, ~~hard~~ dense, no odor or staining	SM		5063
2.0			0.0	83	Sand (weathered sandstone) Brownish Yellow (6/8 10YR) 70% fine sand, 25% medium sand, 5% ~~sand~~ silt, moist, high dense, no odor or staining	SP	2	5118
			0.0	73				4925
3.0					TD = 2.5 ft bgs no gw encountered refusal on sandstone no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 390
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: 3/27/12 1423		Date/Time Total Depth Reached: 3/27/12 1429
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 60682-1430		
Geologist: Ian Stone		Checked By / Date: Cliff Knuffke 3-29-12		
Radiological Background: 2651 / 65	Radiological Equipment Used: ~~Micro R~~ / Downhole / Pancake Meters (ED)	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	65	Silty Sand, Dark Brown (7/3 7.5YR) 70% fine sand, 30% silt, moist, low dense, no odor or staining	SM		
0.5			0.0	58				
1.0							1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0					TD = 0.5 ft bgs No gw encountered		6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 390
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 3 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/27/12 1453		Date/Time Total Depth Reached: 3/27/12 1503
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60683 - 1520 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/29/12		
Radiological Background: 2651 / 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)	USCS Symbol	Feet bgs.	Borehole Gamma Readings -0.5' = 2804 (CPM)
			0.0	61	Silty Sand, Dark Brown (3/3 7.5YR)			3248
0.5			0.0	66	70% fine sand, 30% silt, moist, low dense, no odor or staining	SM		4781
1.0			0.0	52			1	5388
			0.0	71				5651
2.0			0.0	65	0-2.0'		2	5434
			0.0	76	Sand (weathered sandstone), 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining	SP		5416
3.0			0.0	78	2-3'		3	5299
					TD = 3ft bgs no gw encountered			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 391
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: 3/27/12 1331		Date/Time Total Depth Reached: 3/27/12 1334
Type of Sampling Device: Shovel/trowel		Samples Collected: 60684 - 1335 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kruttle 3/29/12		
Radiological Background: 2622 / 58	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	58	Silty Sand, Dark Brown (3/3 10YR)	SM	1	
			0.0	66	70% fine sand, 30% silt, moist, low dense, no odor or staining			
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 391
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/27/12 1338		Date/Time Total Depth Reached: 3/27/12 1345
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60685-1410 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/29/12		
Radiological Background: 2622 / 58	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2886 (CPM)
			0.0	58	Silty Sand, Dark Brown (3/3 10YR)			4096
0.5			0.0	62	70% fine sand, 30% silt, moist, low dense, no odor or staining	SM		4953
1.0			0.0	67			1	5292
			0.0	65	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 40% silt, wet, low dense, no odor or staining	SM		5339
2.0			0.0	66			2	5491
			0.0	55	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, high dense, dry, no odor or staining	SP		5777
3.0			0.0	54			3	5622
			0.0	50				5531
4.0			0.0	63			4	5866
			0.0	86				5606
5.0			0.0	55			5	5875
					TD = 5ft bgs no gw encountered refusal on sandstone			
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 392
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: 3/27/12 1126		Date/Time Total Depth Reached: 3/27/12 1129
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60686 ~1130
Geologist: Ian Stone		Checked By / Date: Chris Knight 3/29/12		
Radiological Background: 2687 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0			0.0	58	Silty Sand, Dark Brown (3/3 7.5YR) 60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM	0	
0.5			0.0	77			1	
1.0					TD = 0.5ft bgs		2	
2.0					No gw encountered		3	
3.0							4	
4.0							5	
5.0							6	
6.0								

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 392
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 3 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/27/12 1135		Date/Time Total Depth Reached: 3/27/12 1200
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60687-1200 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/29/12		
Radiological Background: 2687 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings ↑0.5' = 2770 (CPM)
0.5			0.0	58	Silty Sand, Dark brown (3/3 7.5YR)			3403
			0.0	52	60% fine sand, 40% silt, tree rootlets, moist, low dense, no odor or staining	SM		4792
1.0			0.0	55			1	5243
			0.0	46				5327
2.0			0.0	53			2	5438
					0-2.53'			
			0.0	62	Sandy Silt, Brown (4/4 7.5YR) 20% fine sand, 10% medium sand, 65% silt, 5% clay, dry, low strength, low toughness, low plasticity, no odor or staining	ML		5626
					2.53-2.9'			
3.0			0.0	76	Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	3	5575
					2.9-3.0'			
4.0					TD = 3 ft bgs		4	
					No gw encountered			
					Refusal on sandstone			
5.0					No anomalies detected		5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 393
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: 3/30/12 0839		Date/Time Total Depth Reached: 3/30/12 0843
Type of Sampling Device: Shovel/trowel		Samples Collected: 60688-0845 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/2/12		

Radiological Background: 2940 / 81
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	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	84	Silty Sand, Dark Brown (3/3 10YR)			
0.5			0.0	78	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0					TD = 0.5 ft bgs			
2.0					no gw encountered			
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 393
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 8 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/30/12 0846		Date/Time Total Depth Reached: 3/30/12 0857
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60689 - 0930 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-2-12		
Radiological Background: 2940 / 81	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	Feet bgs.	Borehole Gamma Readings ±0.5': 2971 (CPM)
			0.0	54	Silty Sand, Dark Brown (3/3 10YR)	SM		3991
0.5			0.0	66	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining			5168
1.0			0.0	48			1	5353
			0.0	54				5486
2.0			0.0	48			2	5445
			0.0	60	0-2.5'			5700
					Sandy Silt w/clay, Dark yellowish brown (4/4 10YR)			
3.0			0.0	72	30% fine sand, 60% silt, 10% clay, dry, low toughness, low strength, low plasticity, no odor or staining	ML	3	5943
			0.0	78				6082
4.0			0.0	90			4	5968
			0.0	66				5887
5.0			0.0	66			5	5757
			0.0	60				5824
6.0			0.0	54			6	5711

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Sheet 2 of 2

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	4	393

Radiological Background:	Radiological Equipment Used:	PID Used:
2940 / 81	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	54	Sandy Silt, same as above 2.5'-6.5'	ML	6	5711
			0.0	60				5607
7.0			0.0	72	Silty Sand, Yellowish brown (5/6 10YR) 70% fine sand, 10% medium sand, 20% silt, dry, med dense, no odor or staining	SM	7	5685
					6.5'-7.5'			5694
			0.0	54	Sandy Silt, Dark Yellowish Brown (4/4 10YR 30% fine sand, 10% medium sand, 60% silt, dry,	ML		
8.0			0.0	54	7.5-7.99 low toughness, low strength, low plasticity, no odor or staining		8	5701
					Sand (weathered sandstone) Yellow (7/6 2.5Y) 70% fine sand, 25% medium sand, 5% silt, dry, high 7.99-8.0' dense, no odor or staining	SM/Bedrock		
					TD = 8.0 ft bgs no gw encountered			
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 394
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: 3/29/12 1434		Date/Time Total Depth Reached: 3/29/12 1439
Type of Sampling Device: Shovel/trowel		Samples Collected: 60690 - 1440 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-2-12		
Radiological Background: 2954 / 67	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	84	Silty Sand, Dark Brown (3/3 ~~7.5~~ 5 YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0			0.0	74	TD = 0.5 ft bgs no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 394
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: 3/29/12 1442		Date/Time Total Depth Reached: 3/29/12 1452
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60691 - 1525
Geologist: Ian Stone		Checked By / Date:		7/2/12
Radiological Background: 2954 / 67	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	Feet bgs.	Borehole Gamma Readings ±0.5 ≈ 2954 (CPM)
			0.0	56	Silty Sand, Dark Brown (3/3 7.5YR)			3834
0.5			0.0	62	70% fine sand, 30% silt, trace rootlets, moist, no odor or staining, low dense.	SM		5134
1.0			0.0	65	0-1.0'		1	5635
			0.0	67	Silty Sand, Dark yellowish brown (4/4 10YR) 80% fine sand, 20% silt, dry, med dense, no odor or staining	SM		5634
2.0			0.0	54			2	5763
			0.0	65				5684
3.0			0.0	60			3	5787
					1.0-3.25'			
			0.0	51	Clayey Silt w/ sand, Dark Yellowish Brown (4/6 10YR) 15% fine sand, 55% silt, 30% clay, dry, low tough, low strength, med plasticity, no odor or staining	ML		5723
4.0			0.0	57			4	5637
			0.0	53				5540
5.0			0.0	64	3.25-5.0		5	5657
			0.0	55	Silty Sand, light yellowish brown (6/4 10YR) 70% fine sand, 10% medium sand, 20% silt, dry, med dense, no odor or staining	SM		5767
6.0			0.0	67			6	5827

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Sheet 2 of 2

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	4	394

Radiological Background:	Radiological Equipment Used:	PID Used:
2954 / 67	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	67	Silty Sand, same as above		6	5827
			0.0	62		SM		6088
7.0			0.0	56			7	5979
			0.0	61				6057
8.0			0.0	62	5.0'-8.0' Sand, 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	8	5797
			0.0	53				NM
9.0			0.0	57	Clay, light olive brown (5/4 ~~10YR~~ ES 2.5Y) 5% fine sand, 5% silt, 90% clay, dry, high strength, high toughness, low plasticity, hard, no odor or staining	CL	9	NM
			0.0	46				NM
10.0			0.0	57	TD = 10 Ft bgs no gw encountered No anomalies detected		10	NM (Unable to water post 8 ft)
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 395
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: 3/29/12 1324		Date/Time Total Depth Reached: 3/29/12 - 1329
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60692 - 1330
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-2-12		
Radiological Background: 2927 / 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	(23) 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	56	Silty Sand, Dark Brown (3/3 7.5YR)	SM		
			0.0	59	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining			
1.0					TD = 0.5 ft bgs		1	
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 395
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/29/12 1331		Date/Time Total Depth Reached: 3/29/12 1338
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60693-1415 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Chill Thwaite 4-2-12		
Radiological Background: 2927 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 2840 (CPM)
			0.0	51	Silty Sand, Dark Brown (3/3 7.5YR)			3330
0.5			0.0	52	70% fine sand, 30% silt, trace roots, moist, low dense, no odor or staining	SM		4751
1.0			0.0	49	0-1.0' Silty Sand, Brown (4/3 10YR) 60% fine sand, 40% silt, wet, low dense, no odor or staining	SM	1	4881
			0.0	45	1.0-1.33' Sand ~~interbedded w~~ Brownish Yellow (6/4 10YR)			5024
2.0			0.0	58	70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining	SP	2	5120
			0.0	65	1.33-2.67'			5456
3.0			0.0	69	Sandy Silt w clay, Dark Yellowish Brown (4/4 10YR) 30% fine sand, 60% silt, 10% clay, wet, low toughness, low strength, low plasticity, no odor or staining	ML	3	5528
			0.0	86	Sand, Yellowish Brown (5/6 10YR) 70% fine sand, 30% silt, moist, high dense, no odor or staining	SP		5823
4.0			0.0	75			4	6282
			0.0	77				NM
5.0			0.0	66	Clay, Olive Yellow (6/6 2.5Y) 5% fine sand, 5% silt, ~~100%~~ 90% clay, dry, hard, high strength, high toughness, low plasticity, no odor or staining	CL	5	NM (caught to widen past 4')
					TD = 5ft bgs no gw encountered no anomalies			
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 396
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: 3/29/12 1035		Date/Time Total Depth Reached: 3/29/12 1039
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60694-1040
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-2-12		

Radiological Background: 2831 / 41	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	61	Silty Sand, Dark Brown (7.5YR 3/3)	SM		
			0.0	66	70% fine sand, 30% silt, moist, low dense, no odor or staining			
1.0					TD = 0.5 ft bgs; no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 396
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 6.5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/29/12 1045		Date/Time Total Depth Reached: 3/29/12 1055
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60695 - 1125 60751 - (NT) (1) ½ gallon bag (5 lbs)
Geologist: Ian Stone		Checked By / Date:		4-2-12
Radiological Background: 2831 / 41	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	Feet bgs.	Borehole Gamma Readings +0.5' 2785 (CPM)
			0.0	54	Silty Sand, Dark Brown (3/3 7.5YR)			2903
0.5			0.0	57	70% fine sand, 30% silt, trace roots, moist, low dense, no odor or staining	SM		4071
1.0			0.0	49			1	4732
			0.0	63				5152
2.0			0.0	77			2	5227
			0.0	80	0.0-2.5' Silty Sand, Brown (4/3 10YR)			5342
3.0			0.0	64	60% fine sand, 40% silt, wet, low dense, no odor or staining	SM	3	5304
			0.0	77				5689
4.0			0.0	85	2.5-3.75' Silty Sand, Strong brown (4/6 7.5YR) 70% fine sand, 30% silt, dry,		4	5723
			0.0	67	med dense, no odor or staining	SM		5981
5.0			0.0	62	3.75'-5'		5	5861
			0.0	55	Silty Sand, Dark yellowish brown (4/4 10YR) 70% fine sand, 10% medium sand, 20% silt, dry, med dense, no odor or staining	SM		6053
6.0			0.0	52			6	5779

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	4	396

Radiological Background:	Radiological Equipment Used:	PID Used:
2831 / 41	~~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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	52	5.0' ~~3.75~~ 6.25 (F3) Silty Sand, same as above	SM	6	5779
			0.0	64	Sand (weathered sandstone) Yellowish Brown (5/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining 6.25 - 6.5	SP		5805
7.0							7	
8.0					TD = 6.5 ft bgs no gw encountered refusal on sandstone no anomalies detected		8	
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 397
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: 3/29/12 0902		Date/Time Total Depth Reached: 3/29/12 0907
Type of Sampling Device: Shovel/trowel		Samples Collected: 60696-0910 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-2-12		
Radiological Background: 2773 / 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 (GS) (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	63	Silty Sand, Dark Brown (3/3 7.5YR)	SM		
			0.0	82	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining			
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 397
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: 3/29/12 0912		Date/Time Total Depth Reached: 3/29/12 0925
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60697-1000
Geologist: Ian Stone		Checked By / Date: Cliff Kuntz 4-2-12		
Radiological Background: 2773 / 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 (ES) (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': 2802 (CPM)
			0.0	56	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3189
0.5			0.0	79				4502
1.0			0.0	60			1	5155
			0.0	60				5129
2.0			0.0	55	0'-2.0' Silty Sand w/clay, Brown (4/4 7.5YR) 60% fine sand, 30% silt, 10% clay, moist, med dense, low plasticity, no odor or staining	SM	2	5265
			0.0	51				5365
3.0			0.0	63	2.0-3.0' Silty Sand, Dark Yellowish Brown (4/4 10YR) 70% fine sand, 30% silt, dry, med dense, no odor or staining	SM	3	5385
			0.0	69				5631
4.0			0.0	67			4	5604
			0.0	57				5769
5.0			0.0	69			5	5670
			0.0	64				5590
6.0			0.0	82			6	5672

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	C	4	397

Radiological Background: 2773 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	82	Silty Sand, same as above	SM	6	5672
			0.0	71	6.0 - 6.5'			5893
7.0			0.0	68	Silty Sand, Yellowish Brown (5/4 10YR) ~~SOIL~~ 60% fine sand, 20% medium sand, 20% silt, dry, med dense, no odor or staining	SM	7	5887
			0.0	65				5794
8.0			0.0	61	6.5 - 7.9		8	5860
					Sand (weathered sandstone), Pale Yellow (7/4 2.5Y) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		
9.0					7.9-8.0'		9	
					TD = 8.0 ft bgs			
					no gw encountered			
					refusal on sandstone			
10.0					no anomalies detected		10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 398
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: 3/28/12 1450		Date/Time Total Depth Reached: 3/28/12 1454
Type of Sampling Device: Shovel/trowel		Samples Collected: 60698 - 1455 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Dwight 3-30-12		
Radiological Background: 2780 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	76	Silty Sand, Dark Brown (3/3 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM	1	
1.0			0.0	57	TD = 0.5 ft bgs no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 398
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/28/12 1456		Date/Time Total Depth Reached: 3/28/12 1502
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60699 - 1520 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date:		
Radiological Background: 2780 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings ±0.5': 2800 (CPM)
0			0.0	47	Silty Sand, Dark Brown (3/3 7.5YR)		0	3394
0.5			0.0	49	70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM	0.5	4919
1.0			0.0	43	0-1.25'		1	5383
			0.0	62	Clayey Silt w/ Sand, Strong Brown (5/6 7.5YR)	ML		5759
2.0			0.0	58	10% fine sand, 60% silt, 30% clay, dry, low toughness, low strength, med plasticity, no odor or staining; 1.25-1.9		2	5867
					Sand (weathered sandstone), Brownish yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining; 1.9-2.0	SP		
3.0							3	
4.0							4	
5.0							5	
6.0							6	

TD = 2.0 ft bgs
no gw encountered
Basal on sandstone
no anomalies detected

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 399
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: 3/23/12 1355		Date/Time Total Depth Reached: 3/23/12 1359
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60700-1400
Geologist: Ian Stone		Checked By / Date: Cliff Hunts 3/30/12		
Radiological Background: 2807 / 57	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	75	Silty Sand, Dark Brown (~~10YR~~ 7.5YR 3/3)	SM		
			0.0	79	70% fine sand, 30% silt, trace cobbles, moist, low density, no odor or staining			
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 399
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/28/12 1405		Date/Time Total Depth Reached: 3/28/12 1413
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60701 - 1430 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 3/30/12		
Radiological Background: 2807 / 57	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2827 (CPM)
			0.0	62	Silty Sand, Dark brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist,	SM		3673
0.5			0.0	55	0-0.5' low dense, no odor or staining, trace siltstone gravel at base			5167
					Sandy Silt w/ clay, Dark Yellowish Brown (4/4 10YR) 30% fine sand, 60% silt, 10% clay, moist,	ML		
1.0			0.0	58	0.5-1.2' low tough, low strength, low plasticity, no odor or staining	ML	1	5901
			0.0	49	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5982
2.0			0.0	70			2	5755
					TD = 2ft bgs			
					no gw encountered			
					refusal on sandstone			
3.0					no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 400
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: 4/3/12 1504		Date/Time Total Depth Reached: 4/3/12 ~~1505~~ 1509
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60702 - 1510
Geologist: Ian Stone		Checked By / Date: Cliff Wright 4/5/12		

Radiological Background: 3183 / 83

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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	85	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM	1	
1.0			0.0	73	TD = 0.5 ft bgs; no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 400
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: 4/3/12 1511		Date/Time Total Depth Reached: 4/3/12 1516
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60703 - 1545 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kuyl 4/5/12		
Radiological Background: 3183 / 83	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	Feet bgs.	Borehole Gamma Readings + 0.5 = 3005 (CPM)
			0.0	63	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3314
0.5			0.0	61				4389
1.0			0.0	65			1	4981
			0.0	71				5083
					- root 0-2.0'			
2.0			0.0	69			2	5424
					Sandy Silt w/ clay, Strong Brown (5/6 7.5YR) 30% fine sand, 60% silt, 10% clay, dry, low toughness, low strength, low plasticity, no odor or staining	ML		
			0.0	62				5475
3.0			0.0	70			3	5579
			0.0	84				5556
					2.0-3.9' Sand (weathered sandstone), Yellow (7/6 10YR), 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining			
4.0			0.0	89	3.9-4.0'	SP	4	NA
					TD = 4 ft bgs No gw encountered Alluvial on sandstone no anomalies detected			
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_401

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 401
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: 4/3/12 1353		Date/Time Total Depth Reached: 4/3/12 1358
Type of Sampling Device: Shovel/trowel		Samples Collected: 60704-1400 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Chris Knuffke 4/5/12		

Radiological Background: 3217 / 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)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	78	Silty Sand, Dark Brown (3/2 7.5YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining.	SM		
0.5			0.0	75				
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 401
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 6.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/3/12 1401		Date/Time Total Depth Reached: 4/3/12 1414
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60705 - 1440 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kuyfat 4/5/12		
Radiological Background: 3217 / 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)	USCS Symbol	Feet bgs.	Borehole Gamma Readings + 0.5 = 3037 (CPM)
			0.0	45	Silty Sand, Dark Brown (3/2 10YR) 70% fine sand, 30% silt, trace roots, moist, low dense, no odor or staining	SM		3560
0.5			0.0	56				4826
1.0			0.0	65	0-1'		1	5052
			0.0	63	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 40% silt, moist, med dense, no odor or staining	SM		5039
2.0			0.0	76			2	5072
			0.0	72	1-2.33' Clayey Silt w/ sand, Brown (4/4 7.5YR) 10% fine sand, 60% silt, 30% clay, moist, low toughness, low strength, medium plasticity	ML		4958
3.0			0.0	84			3	5046
			0.0	70				5231
4.0			0.0	57			4	4968
			0.0	64				5225
5.0			0.0	55			5	5542
			0.0	68	2.33-5.75'			5734
6.0			0.0	52	Sand (weathered sandstone), Brownish Yellow (6/6 10YR), 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no	SP	6	NA

TD = 6ft bgs, no gw encountered, refusal on

odo- or staining

unable to

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_402

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 402
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: 4/3/12 0905		Date/Time Total Depth Reached: 4/3/12 0904
Type of Sampling Device: Shovel/trowel		Samples Collected: 60706-0905 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 7/5/12		
Radiological Background: 2934 / 69	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 (LS) (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	72	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0			0.0	66	TD = 0.5 ft bgs No gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 402
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: 4/3/12 0915		Date/Time Total Depth Reached: 4/3/12 0924
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60707-0945
Geologist: Ian Stone		Checked By / Date: Cliff Wright 4/5/12		
Radiological Background: 2934 / 69	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	Feet bgs.	Borehole Gamma Readings 0.5' = 2903 (CPM)
			0.0	62	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3332
0.5			0.0	72	0-0.5'			4544
					Sand (weathered mechanically sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand (subrounded), 5% silt, moist, high dense, no odor or staining	SP	1	5072
1.0			0.0	75				
			0.0	81				5203
2.0					0.5'-2.0'		2	
			0.0	66	Silty Sand, Brown (4/3 7.5YR) 70% fine sand, ~~25% medium sand, 5%~~ 30% silt, moist, low dense, no odor or staining	SM		4966
			0.0	57	2.0-2.5'			4899
					Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining	SP		
3.0			0.0	40	2.5-3.0'		3	NA (Couldn't to widen hole past 2.5')
					TD = 3ft bgs no gw encountered refusal on sandstone no anomalies detected			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_403

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 403
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: 4/20/12 1331		Date/Time Total Depth Reached: 4/20/12 1334
Type of Sampling Device: Shovel/Trowel		Samples Collected: 60708-1335 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Thurber 4/23/12		
Radiological Background: 3421 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	81	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, moist, loose, trace rootlets, no odor or staining	SM		
0.5			0.0	76				
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 403
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: 3.0 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 2.75"	Date/Time Drilling Started: 4/20/12 1336		Date/Time Total Depth Reached: 4/20/12 1354
Type of Sampling Device: 2.75" hand auger bucket		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60709 - 1410 60758 (NT) (1) ½ gallon bag (5lbs)
Geologist: I. Stone		Checked By / Date:		4/23/12
Radiological Background: 3421 / 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	Feet bgs.	Borehole Gamma Readings 0.5 = 3263 (CPM)
			0.0	81	Silty Sand, Dark Brown (3/3 10YR)			3959
0.5			0.0	76	70% fine sand, 30% silt, moist, loose, no odor or staining, trace rootlets	SM		5198
1.0			0.0	82	0-1.0'		1	5831
			0.0	74	Sandy Silt, Dark Brown (3/3 10YR) 40% fine sand, 60% silt, moist, trace rootlets, low toughness, low strength, no odor or staining	ML		6437
2.0			0.0	85			2	6597
			0.0	77	1.0-2.5			6429
3.0			0.0	72	Silty Clay, light yellowish brown (6/4 2.5Y) 2.5-2.9 5% fine sand, 35% silt, 60% clay; dry, high tough, high strength, med plasticity, stiff, no odor or stain	CL	3	6418
					Siltstone (mechanically weathered), Olive Yellow (6/6 2.5Y) 5% fine sand, 95% silt, dry, very stiff, flaky, no odor or staining 2.9-3.0	Bedrock		
4.0					TD = 3.0 ft bgs no gw encountered Refusal on siltstone no anomalies detected		4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_404

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 404
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: 4/3/12 1105		Date/Time Total Depth Reached: 4/3/12 1109
Type of Sampling Device: Shovel/trowel		Samples Collected: 60710 - 1110 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/5/12		
Radiological Background: 2959 / 74	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	93	Silty Sand, Dark Brown (3/3 10YR)			
0.5			0.0	77	70% fine sand, 30% silt, trace rootlets, moist, low density, no odor or staining	SM		
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 404
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: 4/3/12 1113		Date/Time Total Depth Reached: 4/3/12 1121
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60711 - 1140 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Rumpf 4/5/12		
Radiological Background: 2959 / 74	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3010 (CPM)
			0.0	65	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		4364
0.5			0.0	60				5205
1.0			0.0	55			1	5274
			0.0	66	0-1.25' Silty Sand, ~~Brown~~ (2) Strong Brown (4/6 7.5YR) 60% fine sand, 40% silt, moist, low dense, no odor or staining	SM		5363
2.0			0.0	73	1.25-1.75' Silty Sand, Yellowish Brown (5/6 10YR), 80% fine sand, 20% silt, dry, med dense, no odor or staining	SM	2	5255
			0.0	67	1.75-2.25' Sand (weathered sandstone), Very Pale Brown (7/4 10YR) ~~85%~~ (3) 85% fine sand, 10% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5142
3.0			0.0	97			3	5016
					TD = 3ft bgs no gw encountered refusal on sandstone no anomalies detected			
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

6_405

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 405
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: 4/3/12 1001		Date/Time Total Depth Reached: 4/3/12 1004
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60712 - 1005
Geologist: Ian Stone		Checked By / Date: [signature] 4/5/12		
Radiological Background: 2879 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	64	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		
			0.0	55				
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 405
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/3/12 1008		Date/Time Total Depth Reached: 4/3/12 1014
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60713-1035 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/8/12		
Radiological Background: 2879 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3126 (CPM)
			0.0	66	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3398
0.5			0.0	72				5046
1.0			0.0	57	0-1.0'		1	5472
			0.0	56	Silty Sand, Strong Brown (4/6 7.5YR) 60% fine sand, 40% silt, moist, low dense, no odor or staining	SM		5302
2.0			0.0	63			2	5238
			0.0	75	Sand (weathered sandstone), Yellow (7/6 10YR) ~~95%~~ fine sand, ~~25% medium~~ (F3) 5% silt, dry, high dense, no odor or staining	SP		4783
3.0					TD: 2.5 ft bgs no gw encountered refusal on sandstone no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_406

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 406
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: 4/2/12 1505		Date/Time Total Depth Reached: 4/2/12 1508
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60714 - 1510
Geologist: Ian Stone		Checked By / Date: Cliff Kuntz 4-4-12		

Radiological Background: 2942 / 64
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	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	80	Silty Sand, Dark Brown (3/3 10YR)			
0.5			0.0	75	70% fine sand, 30% silt, trace rootlets, moist, low dens, no odor or staining	SM		
1.0							1	
2.0					TD = 0.5 ft bgs no gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 406
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: 4/2/12 1515		Date/Time Total Depth Reached: 4/2/12 1521
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 60715 - 1545		
Geologist: Ian Stone		Checked By / Date:		
Radiological Background: 2942 / 64	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2949 (CPM)
			0.0	52	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		4520
0.5			0.0	55				5237
1.0			0.0	48			1	5386
			0.0	57				5459
					0-1.75'			
2.0			0.0	54	Sandy Silt w/ clay, Yellowish brown (5/6 10YR) 20% fine sand, 10% medium sand, 5% coarse sand, 55% silt, 10% clay, dry, low tough, low strength, low plasticity, no odor or staining	ML	2	5408
			0.0	58				5481
3.0			0.0	52			3	5323
			0.0	48				5069
4.0			0.0	50	1.75' - 4.0'		4	4933
			0.0	55	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5091
5.0			0.0	75	4.0-5.0		5	5070
					TD = 5.0 ft bgs no gw encountered Refusal on sandstone			
6.0							6	

6_407

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 407
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: 4/2/12 1405		Date/Time Total Depth Reached: 4/2/12 1408
Type of Sampling Device: Shovel/trowel		Samples Collected: 60716-1410 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Chris Knight 4-4-12		

Radiological Background: 2851 / 52
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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	72	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dens, no odor or staining	SM		
			0.0	82				
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 407
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/2/12 1419		Date/Time Total Depth Reached: 4/2/12 1428
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: ~~60716~~ (I) 60717 - 1450 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/4/12		
Radiological Background: 2851 / 52	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3006 (CPM)
			0.0	65	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		4029
0.5			0.0	63				4932
1.0			0.0	65			1	5251
			0.0	60	0-1.67'			5472
2.0			0.0	48	Sandy silt w/clay, Yellowish brown (5/6 10YR) 20% fine sand, 10% medium sand, 5% coarse sand, 55% silt, 10% clay, dry, low tough, low strength, low plasticity, no odor or staining	ML	2	5361
			0.0	45				5322
3.0			0.0	62			3	5348
			0.0	55	1.67-3.5'			5374
4.0			0.0	53	3.5'-4.0' Sand (weathered sandstone), ~~Yellowish Brown~~ Brownish Yellow (6/6 10YR), ~~50%~~ 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	4	5375
5.0					TD= ~~0~~ 4 ft bgs no gw encountered refusal on sandstone no anomalies detected		5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

6_408

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 408
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: 4/2/12 1000		Date/Time Total Depth Reached: 4/2/12 1005
Type of Sampling Device: Shovel/trowel		Samples Collected: 60718-1005 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date:		

Radiological Background: 2904 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	58	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, trace debris (pipe, soda can), moist, low density, no odor or staining	SM	1	
0.5			0.0	81	TD = 0.5 ft bgs No gw encountered			
1.0								
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 408
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: 4/2/12 1010		Date/Time Total Depth Reached: 4/2/12 1020
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60719 - 1040 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/4/12		
Radiological Background: 2904 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings 0.5': 2916 (CPM)
			0.0	61	Af: Artificial Fill Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, trace debris (pipe, sodacan), moist, low dense, no odor or staining (Artificial Fill)	AF/SM		4023
0.5			0.0	78	0-0.5'			5369
					Silty Sand, Brown (4/3 10YR), 60% fine sand, 40% silt, moist, low dense, no odor or staining		1	
1.0			0.0	74		SM		5430
			0.0	88	0.5-1.5'			5358
					Clayey Silt w/ sand, Yellowish Brown (5/6 10YR) 10% fine sand, 60% silt, 30% clay, dry, low toughness, low strength, med plasticity, no odor or staining			
2.0			0.0	85		ML	2	5573
			0.0	74				5564
3.0			0.0	69			3	5604
			0.0	54				5755
4.0			0.0	56	1.5'-4.0'		4	5508
					Sand (weathered sandstone), Yellow (7/8 10YR), 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining			
			0.0	55		SP		5586
5.0			0.0	53	4.0'-5.0'		5	5475
					TD = 5 ft bgs no gw encountered Refusal on sandstone no anomalies detected			
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_409

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 409
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: 4/2/12 1114		Date/Time Total Depth Reached: 4/2/12 1118
Type of Sampling Device: Shovel/trowel		Samples Collected: 60720 - 1120 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/4/12		
Radiological Background: 2702 / 64	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	64	Silty Sand, Brown (4/3 7.5YR) 60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM		
1.0			0.0	62				
					TD = 0.5 Ft bgs			
					no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 409
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: 4/2/12 1122		Date/Time Total Depth Reached: 4/2/12 1130
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		6721 - 1195
Geologist: Ian Stone		Checked By / Date: Cliff Thrall 4/4/12		
Radiological Background: 2702 / 64	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2919 (CPM)
			0.0	61	Silty Sand, Brown (4/3 7.5YR)			4394
0.5			0.0	68	60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM		5218
1.0			0.0	63			1	5479
			0.0	50	0-1.5'			5621
2.0			0.0	47	Clayey Silt w/ sand, Dark yellowish brown (4/4 10YR), 10% fine sand, 60% silt, 30% clay, dry, low tough, 1.5-2.0' low strength, med plasticity, no odor or staining	ML	2	5673
			0.0	81	Silty Sand, Yellowish Brown (5/6 10YR), 60% fine sand, 20% medium sand, 20% silt, dry, medium dense, no odor or staining	SM		5587
3.0			0.0	93			3	5536
			0.0	62				5455
4.0			0.0	66	2.0-4.0'		4	5308
			0.0	57	Sand (weathered sandstone), Yellow (7/6 2.5Y) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		5123
5.0			0.0	68	4.0-5.0'		5	5018
					TD = 5ft bgs no gw encountered Refusal on sandstone no anomalies detected			
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 410
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: 4/2/12 0856		Date/Time Total Depth Reached: 4/2/12 0859
Type of Sampling Device: Shovel/trowel		Samples Collected: 60722 - 0900 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kuntz 4/4/12		

Radiological Background: 2913 / 55

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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Silty Sand, Dark Brown (3/3 10YR)	SM		
			0.0	85	70% fine sand, 30% silt, trace rootlets, low dense, moist, no odor or staining			
1.0					TD = 0.5 ft bgs			
					no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 410
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/2/12 0906		Date/Time Total Depth Reached: 4/2/12 0913
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60723 - 0935 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4/4/12		

Radiological Background: 2913 / 55
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	Feet bgs.	Borehole Gamma Readings @0.5' = 2843 (CPM)
0			0.0	57	Silty Sand, Dark Brown (3/3 10YR), 70% fine sand, 30% silt, trace rootlets, low dense, no odor or staining, moist		0	3627
0.5			0.0	45	-	SM	0.5	4728
1.0			0.0	51			1	5296
			0.0	55	0-1.5'			5564
					Sandy Silt w/clay, Dark Yellowish brown, 30% fine sand, 60% silt, 10% clay, dry, low toughness, low strength, low plasticity, trace rootlets, no odor or staining	ML		
2.0			0.0	84	1.5-1.8'	SP	2	5548
					Sand (weathered sandstone), Yellow (7/6 10YR), 70% fine Sand, 25% medium sand, 5% silt, dry, high dense, 1.8-2.0' no odor or staining			
3.0					TD = 2.0ft bgs No gw encountered refusal on sandstone no anomalies detected		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 411
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: 3/30/12 1045		Date/Time Total Depth Reached: 3/30/12 1049
Type of Sampling Device: Shovel/trowel		Samples Collected: 60724-1050 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Thuss 4/2/12		
Radiological Background: 3168 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	66	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, moist, trace rootlets, low dense, no odor or staining trace gravel (artificial fill)	SF/ SM		
0.5			0.0	78				
1.0					TD: 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 411
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: 3/30/12 1051		Date/Time Total Depth Reached: 3/30/12 1058
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60725 - 1120 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-2-12		
Radiological Background: 3168 / 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	Feet bgs.	Borehole Gamma Readings 0.5' = 3216 (CPM)
			0.0	66	Silty Sand, Dark Brown (3/3 10YR) (Artificial fill) 70% fine sand, 30% silt, trace rootlets, moist,	AF/		3953
0.5			0.0	60	trace gravel, low dense, no odor or staining 0-0.5'	SM		5372
1.0			0.0	72	Silty Sand, Dark Brown (3/3 10YR) 70% fine sand, 30% silt, moist, low dense, no odor or staining	SM	1	5839
			0.0	54	0.5-1.75'			6079
2.0			0.0	60	Clayey Silt w/sand, Brown (5/4 7.5YR) 10% fine sand, 60% silt, 30% clay, dry, low tough, low strength, low plasticity, no odor or staining	ML	2	5944
			0.0	72	1.75-2.75			6145
3.0			0.0	66	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	3	6030
4.0					TD = 3.0 ft bgs no gw encountered refusal on sandstone no anomalies detected		4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

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Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 412
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: 3/30/12 1129		Date/Time Total Depth Reached: 3/30/12 1133
Type of Sampling Device: Shovel/trowel		Samples Collected: 60726 - 1135 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-3-12		
Radiological Background: 2657 / 58	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	60	Sand w/ silt, Dark brown (7.5YR 3/3 10YR)	AF/ SP		
0.5			0.0	66	80% fine sand, 10% medium sand, 10% silt, trace gravel, moist, low density, no odor or staining			
1.0					TD = 0.5 ft bgs		1	
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 412
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/30/12 1136		Date/Time Total Depth Reached: 3/30/12 1142
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: G0727-1210 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/3/12		
Radiological Background: 2657 / 58	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2821 (CPM)
			0.0	66	Af: Artificial Fill Sand w/ silt, Dark Brown (3/3 10YR)	Af/SP		3828
0.5			0.0	72	0-0.5' 80% fine sand, 10% medium sand, 10% silt, trace gravel, moist, low dense, no odor or staining. (Artificial Fill) Asphalt			4695
1.0			0.0	60	~~Silty Sand~~, (S1) 0.5-0.7 Clayey Silt w/sand, Brown (4/3 10YR) moist 10% fine sand, 60% silt, 30% clay, low tough, low strength, med plasticity, no odor or staining, trace gravel (artificial fill)	Af/ML	1	5529
			0.0	54				5657
2.0			0.0	48			2	5694
			0.0	66	Clayey Silt w/ sand, ~~same as above~~ (S2) Brown (4/3 10YR) 10% fine sand, 60% silt, 30% clay, moist, low tough, low strength, med plasticity, no odor or staining	(S1) Af/ML		5979
3.0			0.0	72			3	6819
			0.0	54	Clayey Silt, Dark grayish brown (4/2 10YR) 5% fine sand, 65% silt, 30% clay, wet, low tough, low strength, med plasticity, no odor or staining	ML		6494
4.0			0.0	48			4	6289
			0.0	66	Silty Clay w/ (S3), Yellowish brown (5/4 10YR) 5% fine sand, 40% silt, 55% clay, dry, ~~tough~~ strength, high tough, med plasticity, hard, no odor or staining	CL		6198
5.0			0.0	78			5	NM (unable to widen past 5')
					TD = 5ft bgs no gw encountered no anomalies detected			
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

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SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 413
Drilling Company: HGL	Driller: T. Morse	Ground Elevation: NA		Total Depth Drilled: ~~0.5~~ 0.8 ft bgs.
Drilling Equipment: Shovel/trowel	Borehole Diameter: NA	Date/Time Drilling Started: 3/30/12 1405		Date/Time Total Depth Reached: 3/30/12 1409
Type of Sampling Device: Shovel/trowel		Samples Collected: GO728-1410 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Kmutt 4-3-12		

Radiological Background: 2461 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0 ↓ 0.0 ↓	78 ↓ 54 ↓	Asphalt 0-0.3'			
					Sand, Yellowish Brown (5/6 10YR), 30% fine sand, 50% medium sand, 20% coarse sand, moist, med dense, no odor or staining 0.3-0.5	SW		
1.0					Clayey Silt w/ sand Brown (4/3 10YR), 10% fine sand, 60% silt, 30% clay, moist, low tough, low strength, med plasticity, no odor or staining	ML	1	
					TD = 0.8 ft bgs; No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 413
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 3/30/12 1415		Date/Time Total Depth Reached: 3/30/12 1421
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.) 60729-1450		
Geologist: Ian Stone		Checked By / Date: Cliff Knight 4-3-12		
Radiological Background: 2461 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5': 2801 (CPM)
			0.0	72	Asphalt 0-0.3			3783
0.5			0.0	54	Sand, Yellowish Brown (5/6 10YR) 30% fine sand, 50% medium sand, 20% coarse sand, moist, med dense, no odor or staining 0.3-0.5'	SW		5278
1.0			0.0	66	Clayey Silt with sand, Brown (4/3 10YR) 10% fine sand, 60% silt, 30% clay, moist, low tough, low strength, med plasticity, no odor - possible staining 1.5-1.75',	ML	1	5890
			0.0	72				5736
2.0			0.0	66	0.5-2.3		2	5762
			0.0	72	Clayey Silt (FS) ~~with Sand~~, Dark grayish brown (4/2 10YR) 5% fine sand, 65% silt, 30% clay wet, low tough, low strength, med plasticity, no odor or staining	ML		5742
3.0			0.0	54			3	6288
			0.0	60	~~Clay~~ (FS) Silty Clay, Yellowish brown (5/4 10YR) 5% fine sand, 40% silt, 55% clay, dry, high strength, high toughness, med plasticity, hard, no odor or staining	Ch		7373
4.0			0.0	54			4	8472
			0.0	48				8324
5.0			0.0	60	Sand (weathered sandstone), Brownish Yellow (6/6 10YR 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	5	NDM (unable to widen past 4.5')
6.0					TD = 5ft bgs no gw encountered; refusal on sandstone, No anomalies detected		6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_414

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 414
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: 4/4/12 0855		Date/Time Total Depth Reached: 4/4/12 0859
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60730-900
Geologist: Ian Stone		Checked By / Date: Robbins Goldman		4/6/12
Radiological Background: 2937 / 57	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	83	Silty Sand, Dark Brown (7.5YR 3/3) (Artificial fill)	AF/SM		
			0.0	87	60% fine sand, 40% silt, trace gravel + asphalt, trace rootlets, moist, low dense, no odor or staining			
1.0					TD = 0.5 ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 414
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: 4/4/12 0907		Date/Time Total Depth Reached: 4/4/12 0913
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60731-0940 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: J Robins Yellman 4/6/12		
Radiological Background: 2937 / 57	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2903 (CPM)
			0.0	50	Silty Sand, Dark Brown (3/3 7.5YR) (Artificial fill) 60% fine sand, 40% silt, trace gravel + asphalt,	AF/SM		4523
0.5			0.0	56	0-0.5' trace rootlets, moist, low dense, no odor or staining			5732
					Sandy Silt, Dark Brown (3/3 10YR) (Artificial Fill) 40% fine sand, 60% silt, trace gravel,			
1.0			0.0	48	moist, ~~med d~~ low tough, low strength, low plasticity	AF/ML	1	6171
			0.0	65				6234
2.0			0.0	76	0.5-2.0'		2	6224
					Clayey Silt w/Sand, Dark grayish brown (3/2 10YR) 10% fine sand, 60% silt, 30% clay,			
			0.0	73	moist, low toughness, low strength, med plasticity, no odor or staining	ML		6154
3.0			0.0	64	2.0-3.0'		3	6046
					Sandy Silt w/clay, Dark Yellowish brown (4/6 10YR) 30% fine sand, 60% silt, 10% clay, moist,			
			0.0	67	low tough, low strength, low plasticity, no odor or staining	ML		5961
4.0			0.0	71	3.0-4.0'		4	5831
					Silty Sand, Dark Yellowish Brown (4/6 10YR) ~~60%~~ 60% fine sand, 20% medium sand, 25%			
			0.0	78	silt, moist, Med. dense, no odor or staining,	SM		5641
					4.0-4.75			
5.0			0.0	75	Sand (weathered sandstone), Yellow (7/6 10YR), 70% fine sand, ~~25%~~ 25% medium sand, 5% silt, moist, high dense, no odor or staining 4.75-5'	SP	5	5749
					TD = 5.0 ft bgs, no gw encountered			
					Refusal on sandstone,			
					no anomalies detected			
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_415

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 415
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: 4/4/12 0955		Date/Time Total Depth Reached: 4/4/12 0959
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60732-1000 60752 (NT) (1) 1/2 gallon bag (5 lbs)
Geologist: Ian Stone		Checked By / Date: JKFeldman 4/6/12		

Radiological Background: 3018 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.0			0.0	70	Silty Sand, Dark Brown (3/3 7.5YR)			
					60% fine sand, 10% medium sand, 30% silt,	SM		
0.5			0.0	83	trace rootlets, moist, low density, no odor or staining			
1.0							1	
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 415
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 2.0 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/4/12 1003		Date/Time Total Depth Reached: 4/4/12 1008
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60733 - 1035
Geologist: Ian Stone		Checked By / Date:		

Radiological Background: 3018 / 54

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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 2917 (CPM)
0			0.0	41	Silty Sand, Dark Brown (7/3 7.5YR) 60% fine sand, 10% medium sand, 30% silt, trace rootlets, moist, low dense, no odor or staining	SM		3363
0.5			0.0	57				4682
1.0			0.0	64	- root		1	5167
			0.0	69	0-1.75 Silty Sand, Very dark grayish brown (3/2 10YR), 60% fine sand, 40% silt, wet, low dense, no odor or staining	SM		5342
2.0			0.0	57	1.9-2.0' Sand (weathered sandstone), Very Pale Brown (7/4 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining	SP	2	5367
3.0					TD = 2.0 ft bgs no gw encountered refusal on sandstone		3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_416

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 416
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: 4/4/12 1055		Date/Time Total Depth Reached: 4/4/12 1059
Type of Sampling Device: Shovel/trowel		Samples Collected: 60734 - 1100 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/6/12		
Radiological Background: 2701 / 68	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	64	Clayey Silt, Dark Brown (7/3 10YR) 5% fine sand, 60% silt, 35% clay, dry, trace gravel, trace rootlets, low-med tough, low-med strength, med plasticity, no odor or staining	AF/ML	1	
1.0			0.0	66				
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

TD = 0.5 ft bgs

no gw encountered

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 416
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 8.5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/4/12 1115		Date/Time Total Depth Reached: 4/4/12 1128
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60735 - 1200 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Robbins Goldman		4/6/12
Radiological Background: 2701 / 68	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	Feet bgs.	Borehole Gamma Readings +0.5' = 2734 (CPM)
			0.0	63	~~Silty Clay~~, E3 Dark Brown (3/3 10YR) (artificial fill)	AF/		3516
0.5			0.0	67	Clayey Silt, 5% fine sand, 60% silt, 35% clay, dry, trace gravel, low med tough, low med strength, med plasticity, no odor or staining (artificial fill) 0-1.0'	~~SM~~ E3 ML		4374
1.0			0.0	72			1	4813
			0.0	55	Silty Clay, Brown (4/3 10YR) 5% fine sand, 35% silt, 60% clay, trace gravel, dry, med tough, med strength, med plasticity, no odor or staining (artificial fill) E3	AF/ CL		5074
2.0			0.0	67	~~Sand~~ E3		2	5318
			0.0	63	1.0-2.5'			5480
3.0			0.0	50	Silty Sand, Very pale brown (7/4 10YR) ~~80~~ E3 70% fine sand, 10% medium sand, 20% silt, dry, med dense no odor or staining. 2.5-3.25' (artificial fill)	AF/ SM	3	5574
			0.0	57	Clayey Silt w/sand, Dark Yellowish Brown (3/4 10YR) 10% fine sand, ~~50%~~ 55% E3 silt, ~~40%~~ 35% E3 clay, dry, low tough, low strength, med plasticity, no odor, ~~no staining~~ E3 some mottling (iron oxide) (artificial fill)	AF/ ML		5827
4.0			0.0	56			4	5974
			0.0	53				5948
5.0			0.0	55			5	6090
			0.0	75				5905
6.0			0.0	94			6	5723

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name:	Project Number:	Subarea:	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	5	416

Radiological Background:	Radiological Equipment Used:	PID Used:
2701 / 68	~~Micro R7~~ 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	94	Clayey Silt w/ sand, same as above (artificial fill)	AF/ ML	6	5723
			0.0	85				5842
7.0			0.0	77			7	5675
			0.0	72				5891
8.0			0.0	68	7.25'-8.0' Silty Sand (artificial fill) Brown (5/3 10YR), 60% fine sand, 10% med. sand, 30% silt, trace gravel at base of unit, dry, med dense, no odor or staining; Gravelly	AF/ SM	8	5669
			0.0	65	Sand (weathered sandstone), Very pale brown (7/4 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining 8.4-8.5	8-8.4 SP		5613
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

TD = 8.5 ft bgs

no gw encountered

no anomalies detected

refusal on sandstone

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_417

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 417
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: 4/4/12 1350		Date/Time Total Depth Reached: 4/4/12 1354
Type of Sampling Device: Shovel/trowel		Samples Collected: ~~60736~~ (3) 60736-1355 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4/6/12		
Radiological Background: 3221 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	72	Silty Sand, Dark Brown (7/3 10YR) 60% fine sand, 40% silt, moist, trace rootlets, low dense, no odor or staining	SM		
			0.0	59				
1.0					TD = 0.5ft bgs		1	
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 417
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5.5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/4/12 1358		Date/Time Total Depth Reached: 4/4/12 1409
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60737 - 1430
Geologist: Ian Stone		Checked By / Date: JR Goldman 4/6/12		
Radiological Background: 3221 / 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	Feet bgs.	Borehole Gamma Readings +0.5' = 3139 (CPM)
			0.0	52	Silty Sand, Dark Brown (3/3 10YR)			4245
0.5			0.0	88	60% fine sand, 40% silt, moist, low dense, trace rootlets, no odor or staining	SM		5047
1.0			0.0	73			1	5309
			0.0	71	0-1.5'			5616
					Silty Sand, Dark Yellowish brown (4/4 10YR)			
2.0			0.0	75	50% fine sand, 10% medium sand, 40% silt, dry, med dense, no odor or staining	SM	2	5378
			0.0	68	1.5'-2.75'			5456
3.0			0.0	73	Sandy Silt w/ clay, Dark Yellowish brown (4/6 10YR)		3	5515
			0.0	82	30% fine sand, 60% silt, 10% clay, dry, thaw tough, low strength, low plasticity, no odor or staining	ML		5413
4.0			0.0	87			4	5525
			0.0	82				5519
					2.75-5.3			
5.0			0.0	87	Sand (weathered sandstone), Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry,		5	5618
			0.0	65	5.3-5.5 high dense, no odor or staining	SP		NA (unable to widen hole past 5')
6.0					TD = 5.5 ft bgs, no gr encountered refusal on sandstone, no anomalies detected		6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_418

sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 418
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: 4/4/12 1501		Date/Time Total Depth Reached: 4/4/12 1504
Type of Sampling Device: Shovel/trowel		Samples Collected: 60738-1505 (1) 1/2 Gallon Bag (Approx 6 lbs.)		
Geologist: Ian Stone		Checked By / Date: JK Goldman 4/6/12		

Radiological Background: 3122 / 64

Radiological Equipment Used: ~~Micro R+~~ (RS) 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	73	Silty Sand, Dark Brown (3/3 10YR)			
			0.0	67	60% fine sand, 40% silt, trace rootlets, moist, low dens, no odor or staining	SM		
1.0							1	
					TD = 0.5 ft bgs			
					no gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 2

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 418
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: 4/4/12 1512		Date/Time Total Depth Reached: 4/4/12 1520
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60739 - 1555 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: JK Goldman 4/6/12		
Radiological Background: 3122 / 64	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5' = 3125 (CPM)
			0.0	56	Silty Sand, Dark Brown (3/3 10YR) 60% fine sand, 40% silt, trace rootlets, moist, low dense, no odor or staining	SM		3782
0.5			0.0	55				4598
1.0			0.0	47			1	5246
			0.0	45	0-1.5' Silty Sand, Dark yellowish brown (4/4 10YR) 50% fine sand, 10% medium sand, 40% silt, dry, med dense, no odor or staining			5385
2.0			0.0	65		SM	2	5634
			0.0	61				5651
3.0			0.0	58	1.5-2.75' Sandy Silt w/clay, Brown (4/4 7.5YR) 30% fine sand, 60% silt, 10% clay, dry, low toughness, low strength, low plasticity, no odor or staining	ML	3	5477
			0.0	67				5490
4.0			0.0	55			4	5634
			0.0	43				5691
5.0			0.0	45	2.75-5.0 Sand w/silt, Dark Yellowish brown (3/4 10YR), 60% fine sand, 30% medium sand, 10% silt, moist, med dense, no odor or staining 5-5.25	SP	5	5850
			0.0	65	Silty Clay, light olive brown (5/4 2.5Y), 5% fine sand, 25% silt, 70% clay, moist, med strength, med tough, med plasticity, hard, no odor or staining.	CL		5912
6.0			0.0	71			6	5949

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG (cont'd)

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 418
Radiological Background: 3122 / 64	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	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	71	Silty Clay, same as above	CL	6	5949
			0.0	68				6228
7.0			0.0	45	5.25' - 7.0'		7	5976
			0.0	63	Silty Sand, Strong Brown (5/8 7.5YR) 60% fine sand, 20% medium sand, 20% silt, moist, med dense, no odor or staining	SM		6285
8.0			0.0	67			8	6298
			0.0	72				6173
9.0			0.0	70			9	6452
			0.0	71	Sand (weathered sandstone) Brownish Yellow (6/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining	SP		6580
10.0			0.0	74			10	NA (unable to widen hole past 9.5ft)
					TD = 10ft bgs no gw encountered No anomalies detected			
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_419

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 419
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: 4/5/12 0858		Date/Time Total Depth Reached: 4/5/12 0903
Type of Sampling Device: Shovel/trowel		Samples Collected: 60740 - 0905 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-9-12		
Radiological Background: 2572 / 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 (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)
					AF: Artificial Fill			
0.5			0.0	62	Sand w/ gravel, Yellowish brown (5/4 10YR) (Artificial Fill) 50% fine sand, 20% medium sand, 20% coarse sand, 10% gravel, dry, low dense, no odor or staining	AF/SW		
			0.0	66	Silty Sand	SM		
1.0					Dark Brown (3/3 7.5YR), 60% fine sand, 40% silt trace rootlets, dry, low dense, no odor or staining		1	
					TD = 0.5 ft bgs			
					No gw encountered			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 419
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/5/12 0908		Date/Time Total Depth Reached: 4/5/12 0915
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60741 - 0940 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [signature] 4-9-12		
Radiological Background: 2572 / 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 (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' = 2909 (CPM)
					AF: Artificial Fill			
			0.0	66	Sand w/ gravel, Yellowish Brown (5/4 10YR) (Artificial Fill)	AF/SW		4297
					0-0.2 50% fine sand, 20% medium sand, 20% coarse sand, 10% gravel, dry, low dense, no odor or staining			
0.5			0.0	54	Silty Sand, Dark Brown (3/3 7.5YR), 60% fine sand, 40% silt,	SM		5629
					0.2-0.8 trace rootlets, dry, low dense, no odor or staining		1	5773
1.0			0.0	72	Silty Sand, Brown (4/3 7.5YR),			
			0.0	60	70% fine sand, 30% silt, dry, trace rootlets, med dense, no odor or staining			5815
2.0			0.0	54		SM	2	6028
			0.0	72				5901
3.0			0.0	42			3	5825
			0.0	54	0.8-3.5 Silty Sand, Reddish Yellow (6/6 7.5YR)			5827
4.0			0.0	60	80% fine sand, 20% silt, dry, med dense, no odor or staining	SM	4	5750
			0.0	54				5640
					3.5-4.8	SP		
5.0			0.0	66	Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining		5	NA (unable to widen hole past 4.5')
					4.8-5.0			
6.0					TD: 5.0 ft bgs, no gw encountered refusal on sandstone, no anomalies detected		6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_420

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 420
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: 4/5/12 0955		Date/Time Total Depth Reached: 4/5/12 0959
Type of Sampling Device: Shovel/trowel		Samples Collected: 60742-1000 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Brian 4-9-12		
Radiological Background: 2822 / 67	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	Feet bgs.	Borehole Gamma Readings (CPM)
					AF: Artificial Fill			
0.5			0.0	60	Sand w/ gravel, Yellowish brown (5/4 10YR), 50% fine sand, 20% medium sand, 20% coarse sand, 10% gravel, dry, low dense, no odor or staining, (artificial fill) 0-0.3	AF/SW		
1.0			0.0	66	Silty Sand, Dark Brown (3/3 7.5YR), 60% fine sand, 40% silt, trace rootlets, dry, low dense, no odor or staining	SM	1	
2.0					TD = 0.5 ft bgs No gw encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 420
Drilling Company: Boart Longyear	Driller: D. Hansen	Ground Elevation: NA		Total Depth Drilled: 5.7 ft bgs.
Drilling Equipment: Geoprobe 6600	Borehole Diameter: 1.75"	Date/Time Drilling Started: 4/5/12 1007		Date/Time Total Depth Reached: 4/5/12 1020
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 0743-1045 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date:		
Radiological Background: 2822 / 67	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3094 (CPM)
			0.0	66	~~Sand w/ gravel~~ Sand w/ gravel), Yellowish brown (5/4 10YR) (Artificial Fill) 50% fine sand, 20% medium sand, 20% coarse sand, 10% gravel, dry low dense, no odor or staining 0-0.3	AF/SW		4673
0.5			0.0	60	Silty Sand, Dark Brown (3/3 7.5YR), 60% fine sand, 40% silt, trace rootlets, dry, low dense, no odor or staining	SM		5339
1.0			0.0	66			1	5628
			0.0	72	0.3-1.6			5706
					Silty Sand, Brown (4/3 7.5YR)			
2.0			0.0	69	70% fine sand, 30% silt, dry, trace rootlets, med dense, no odor or staining, slow dilatency		2	6008
			0.0	54				5869
3.0			0.0	67		SM	3	5849
			0.0	52				5835
4.0			0.0	66			4	5838
					1.6-4.25			
			0.0	66	Silty Sand, Reddish Yellow (6/6 7.5YR) 80% fine sand, 20% silt, dry, med dense, no odor or staining	SM		5937
5.0			0.0	78			5	6076
			0.0	72	4.25-5.5 Sand (weathered sandstone), Yellow (7/6 10YR) 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP		NA (unable to widen hole past 5ft)
6.0					TD = 5.7ftbgs, no gw encountered, Tesla Formation sandstone no anomalies detected		6	

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

6_421

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 421
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: 4/5/12 1059		Date/Time Total Depth Reached: 4/5/12 1104
Type of Sampling Device: Shovel/trowel		Samples Collected: 60744-1105 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: [illegible] 4-9-12		
Radiological Background: 2872 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	66	Silty Sand, Dark Brown (3/3 7.5YR) 60% fine sand, 40% silt, moist, low dense, trace rootlets, no staining, slight organic odor	SM		
1.0			2.3	66	TD= 0.5 ft bgs no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 5	Location ID: 421
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: 4/5/12 1115		Date/Time Total Depth Reached: 4/5/12 1125
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60745 - 1150
Geologist: Ian Stone		Checked By / Date: [signature] Brian		4-9-12
Radiological Background: 2872 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5': 3105 (CPM)
			0.4	66	Silty Sand, Dark Brown (3/3 ~~10YR~~ 7.5YR) 60% fine sand, 40% silt, moist, low dense, trace rootlets, ~~no odor~~ no staining, slight organic odor (0-1')	SM		4368
0.5			16.0	60				5378
1.0			0.4	72			1	5803
			0.0	78				6189
2.0			0.0	54	Sandy Silt, Strong Brown (4/6 7.5YR) 40% fine sand, 60% silt, dry, low tough, low strength, low plasticity, no odor or staining	ML	2	6224
			0.0	48				6318
3.0			0.0	66	Silty Sand, light yellowish brown (6/4 10YR) 60% fine sand, 10% medium sand, 30% silt, dry, med dense, no odor or staining	SM	3	6418
			0.0	72				6393
4.0			0.0	54			4	6566
			0.0	66	Silty Clay w/ sand, light olive brown (5/3 ~~10YR~~ 2.5Y), 5% fine sand, 5% medium sand, 35% silt, 55% clay, med tough, med strength, med plasticity, no odor or staining, dry	CL		6538
5.0			0.0	72	Sand, (weathered sandstone), very pale brown (7/4 10YR), 70% fine sand, 25% medium sand, 5% silt, dry, high dense, no odor or staining	SP	5	6429
6.0					TD 5.0 ft bgs, no gw encountered refusal on sandstone, no anomalies detected		6	

6_422

surface & subsurface log

SSFL BORING LOG

Sheet 1 of 2

(5) Group 4

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: (Round 2)	Location ID: 422
Drilling Company: HGL	Driller: Matt Birney	Ground Elevation: NA		Total Depth Drilled: 6'3" ft bgs.
Drilling Equipment: Hand Auger (trowel)-surface / subsurface	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 6/25/12 / 0945		Date/Time Total Depth Reached: 6/25/12 / 1043
Type of Sampling Device: Handauger (subsurface) / ~~bowl~~ trowel (surface)		Samples Collected: surface: 60746 (0950) / subsurface: 60747 (1105) One 1/2 Gallon Bag (Appox 8 lbs.) Field Dup: 60757 (NT) of 60746		
Geologist: Stephanie Lepeyre Montrose		Checked By / Date: SL Cliff Knuttg 6/26/12		
Radiological Background: 3201 / 61	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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5 = 3410 (CPM)
			0.0	72	SW SAND (sediment) (brown 10YR 4/3) 10% gravel (sandstone + granite) subrounded, 5% silt, 85% fine to coarse grained sand, very loose, dry trace pieces of glass and asphalt, micaceous	SW		3429
0.5			0.0	66				3681 4543 (2)
1.0			0.0	66	SW Same as above increase silt to 10%, decrease sandstone and granite subangular + subrounded gravel to 5%, no glass or asphalt. moist	SW	1	4543
			0.0	78				4650
2.0			0.0	78	Same as above		2	4931
			0.0	66				5190
3.0			0.0	102 (2)	SP SAND (light olive brown 2.5Y 5/3) 5% clay, 10% silt, 80% fine to coarse grained sand, 5% subangular to subrounded sandstone gravel, loose-low dense, moist	SP	3	5325
			0.0	60				5345
4.0			0.0	60	SP SAND 5% clay, 10% silt, 80% fine to coarse grained sand, 5% subangular + subrounded gravel sandstone, (light olive brown 2.5Y 5/3) loose-low dense, moist	SP	4	5070
			0.0	54				4850
5.0			0.0	96			5	4881
			0.0	96	Same as above			5109
6.0			0.0	72	SW (see next page)	6 inches	6	5981

* surface & subsurface log

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG (cont'd)

Sheet _2_ of 2

(5) Group 4

Project Name:	Project Number:	Subarea: ~~NBZ~~ (5)	Group:	Location ID:
SSFL Area IV Radiological Study	EP038.01.22.04.03	6	Round 2	422

Radiological Background:	Radiological Equipment Used:	PID Used:
3201 / 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, minerology, bedding, plasticity, density, consistency, etc., as applicable)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
6.0			0.0	72	SW SAND 85% 10% silt, 5% fine-coarse grained sand, 5% subrounded & subangular sandstone gravel, very loose, (dark yellowish brown 10YR 4/4) wet	SW	6	5981
					6'3" SM silty Sand 15-20% silt, 75-80% fine to medium grained sand, loose, moist ~~Sand~~ (2), low plasticity, micaceous (light olive brown 2.5Y 5/4)	SM		
7.0					TD = 6' 3" (75")		7	
					Refusal - weathered Sandstone			
					Encountered perched GW at 6'			
8.0					No odor or staining		8	
9.0							9	
10.0							10	
11.0							11	
12.0							12	
13.0							13	

HGL HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

6_423

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 423
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: 4/10/12 1436		Date/Time Total Depth Reached: 4/10/12 1439
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60760 - 1440 60753 - NT (1) 1/2 gallon bag (5 lbs.)
Geologist: Ian Stone		Checked By / Date: Matt Knight 4-11-12		
Radiological Background: 3057 / 47	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	84	Af: Artificial Fill Clayey Silty / sand, Dark yellowish brown (4/4 10YR) 10% fine sand, 60% silt, 30% clay, dry, trace concrete, trace gravel, low tough, low strength, med plasticity, no odor or staining (artificial fill)	Af/ML		
0.5			0.0	54				
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

HydroGeoLogic, Inc
Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 423
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: 4/10/12 1448		Date/Time Total Depth Reached: 4/10/12 1455
Type of Sampling Device: 1.75" macrocore with acetate liner		Samples Collected: 60780 - 1520 (1) 1/2 Gallon Bag (Approx 5 lbs.)		
Geologist: Ian Stone		Checked By / Date: Cliff Wright 4-11-12		
Radiological Background: 3057 / 47	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	Feet bgs.	Borehole Gamma Readings +0.5' = 3103 (CPM)
			0.0	60	Clayey Silt w/ sand, Dark yellowish brown (4/4 10YR) 10% fine sand, 60% silt, 30% clay, dry, trace concrete, trace gravel, low tough, low strength, med plasticity, no odor or staining, (artificial fill)	AF/ ML		3344
0.5			0.0	66				4278
1.0			0.0	60	0-1.0'		1	5003
			0.0	72	Silty Sand, Yellowish brown (5/6 10YR) 50% fine sand, 20% medium sand, 30% silt, trace gravel, moist, med dense, no odor or staining	AF/ SM		5561
2.0			0.0	60	1.0-2.25' (artificial fill)		2	5729
			0.0	54	Silty Sand, Dark yellowish brown (4/6 10YR) 50% fine sand, 25% medium sand, 25% silt, trace gravel, moist, med dense, no odor or staining, trace concrete	AF/ SM		5504
3.0			0.0	90			3	5384
			0.0	54	2.25-3.5' (artificial fill)			5276
4.0			0.0	60	Sand (weathered sandstone), Yellowish brown (5/6 10YR) 70% fine sand, 25% medium sand, 5% silt, moist, high dense, no odor or staining 3.5-4.0'	SP	4	5461
5.0					TD = 4.0 ft bgs no gw encountered refusal on sandstone no anomalies detected		5	
6.0							6	

6_424

HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 424
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: 4/12/12 1024		Date/Time Total Depth Reached: 4/12/12 1027
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60761-1030
Geologist: Ian Stone		Checked By / Date: Colleen Garcia 4/13/12		
Radiological Background: 3491 / 74	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	Feet bgs.	Borehole Gamma Readings (CPM)
			0.0	72	Silty Sand, Brown (4/3 10YR) 60% fine sand, 20% medium sand, 20% silt, moist, trace rootlets, loose, no odor or staining	SM		
0.5			0.0	84				
1.0					TD = 0.5 ft bgs no gw encountered		1	
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

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HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 425
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: 4/12/12 1052		Date/Time Total Depth Reached: 4/12/12 1054 0.5
Type of Sampling Device: Shovel/trowel		Samples Collected: (1) 1/2 Gallon Bag (Approx 5 lbs.)		60762-1055
Geologist: Ian Stone		Checked By / Date: Vallerie Garcia 4/12/12		
Radiological Background: 3322 / 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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5			0.0	78	Silty Sand, Dark Brown (3/2 10YR) 60% fine sand, 40% silt, trace rootlets, moist, loose, no odor or staining	SM		
			0.0	84				
1.0					TD = 0.5 ft bgs no gw encountered			
2.0								
3.0								
4.0								
5.0								
6.0								

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 426
Drilling Company: HGL	Driller: S. Lapeyre-Montross	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 0900		Date/Time Total Depth Reached: 7/10/12 0905
Type of Sampling Device: Trowel/Shovel		Samples Collected: One 1/2 Gallon Bag (Approx 8 lbs.) (2)		60781 (0905) 60787 (NT) Field Dup
Geologist: L Robbins		Checked By / Date:		7-14-12
Radiological Background: 6 / 3988 / 83	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	Feet bgs.	Borehole Gamma Readings (CPM)
0.5	0-0.5	0.5	0.0	17/18	Silty sand: dark yellowish brown (10YR 4/4), 70% fine to medium sand, 30% silt, dry, loose, trace rootlets, low plasticity, rapid dilantancy, no odor or staining	SM	1	
1.0			0.0	18/138				
2.0					TD = 0.5' bgs no GW encountered		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 426
Drilling Company: HGL	Driller: S. Lepage-Montrose	Ground Elevation: NA		Total Depth Drilled: 2.33' ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 7/10/12 0905		Date/Time Total Depth Reached: 7/10/12 0937
Type of Sampling Device: Handauger		Samples Collected: One 1/2 Gallon Bag (Appox 8 lbs.)		60782 (0940)
Geologist: LRobbins		Checked By / Date:		7-11-12
Radiological Background: 16/3988/83	Radiological Equipment Used: Micro R / Downhole / Pancake Meters	PID Used: Mini Rae ~~2000~~ 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	Feet bgs.	Borehole Gamma Readings +0.5 = 4166 (CPM)
0.0			0.0	78	Silty sand: dark yellowish brown (10YR 4/4) 70% fine to medium sand, 30% silt, dry, loose, trace rootlets, low plasticity, rapid dilantancy, no odor or staining	SM		4301
0.5			0.0	138				4770
1.0			0.0	78			1	5295
			0.0	96				5645
2.0			0.0	72			2	5405
			0.0	78	TD = 2'4" (2.33'). refusal on sandstone no GW encountered			5399
3.0							3	
4.0							4	
5.0							5	
6.0							6	

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HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 427
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: 0855 7-3-12		Date/Time Total Depth Reached: 0905 7-3-12
Type of Sampling Device: Trowel/Shovel		Samples Collected: One 1/2 Gallon Bag (Approx 8 lbs.)		60783 (0905)
Geologist: M Birney		Checked By / Date: mB		7/6/12
Radiological Background: 16/3940/74	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	Feet bgs.	Borehole Gamma Readings (CPM)
					uR/pancake Surface: tall grass			
0.5			0.0	17/40	Silty Sand, brown (7.5yr 4/4), 25 (mB) 20% silt, 75% fine to med sand, dry, loose, trace rootlets, no odor, no staining	SM	1	
1.0			0.0	17/40				
					TD = 0.5' bgs no groundwater			
2.0							2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 1	Location ID: 427
Drilling Company: HGL	Driller: J Le Vangie	Ground Elevation: NA		Total Depth Drilled: 0.9 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 0907 7-3-12		Date/Time Total Depth Reached: 0920 7-3-12
Type of Sampling Device: Hand Auger		Samples Collected: 8 One 1/2 Gallon Bag (5 lbs.)		60784 (NO Sample)
Geologist: M Birney		Checked By / Date: MB		7/6/12
Radiological Background: 16/3940/17	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	Feet bgs.	Borehole Gamma Readings (CPM)
					surface! tall grass			
0.5			0.0	17/40	silty sand, brown (7.5yr 4/4) 25% silt, 75% fine to med sand, dry, loose, trace fine rootlets, no odor, no staining	SM		
0.5			0.0	17/40				
1.0					sandstone bedrock	BR	1	
					TD = 11"			
					no Groundwater			
2.0					NO Sample shallow refusal		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

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HGL HydroGeoLogic, Inc. Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 428
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: 1015 7-3-12		Date/Time Total Depth Reached: 1022-12 7-3-12
Type of Sampling Device: Trowel/Shovel		Samples Collected: One 1/2 Gallon Bag (Approx. 8 lbs.)		8 60785 (1022)
Geologist: M Birney		Checked By / Date: MB		7/6/12
Radiological Background: 16/35/38/65	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)	USCS Symbol	Feet bgs.	Borehole Gamma Readings (CPM)
				μR/pancake	Surface! grasses			
0.5			0.0	13/60	Silty sand, brown (7.5 yr 4/3) 20% silt 80% fine to med sand, dry, loose, leaf litter + fine rootlets, non plasticity, no odor, no staining	SM		
1.0			0.0	17/54	TD = 0.5 ft bgs		1	
2.0					no groundwater		2	
3.0							3	
4.0							4	
5.0							5	
6.0							6	

HGL HydroGeoLogic, Inc Exceeding Expectations

SSFL BORING LOG

Sheet 1 of 1

Project Name: SSFL Area IV Radiological Study	Project Number: EP038.01.22.04.03	Subarea: 6	Group: 4	Location ID: 428
Drilling Company: HGL	Driller: LeVangie	Ground Elevation: NA		Total Depth Drilled: 2.67 ft bgs.
Drilling Equipment: Hand Auger	Borehole Diameter: 3.0 inches	Date/Time Drilling Started: 1025 7-3-12		Date/Time Total Depth Reached: 1043 7-3-12
Type of Sampling Device: Hand Auger		Samples Collected: 3 One 1/2 Gallon Bag (5 lbs.)		60786 (1058)
Geologist: M Birney		Checked By / Date: MB		7/6/12
Radiological Background: 16/3538/65	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)	USCS Symbol	Feet bgs.	Borehole Gamma Readings +0.5 3736 (CPM)
				pancake	surface: tall grass			
			0.0	60	silty sand, brown (7.5yr 4/3) 20% silt 80% sand, dry, loose, leaf litter + fine pastlets, non plasticity, no odor, no staining,	SM		4007
0.5			0.0	54				4838
1.0			0.2	72	sand with silt, 10% silt, ~~20%~~ 15% fine to med sand, light brown, (7.5yr 6/4) dry, loose non plasticity, mica flakes, sub angular ≈1cm sandstone clast, no odor, no staining ≈1.5cm siltstone clast, 5% sub angular sandstone clast	SP	1	5513
			1.1	84				5435
2.0			0.0	84			2	5443
			0.0	60				5423
					TD = 2.67 ft bgs no groundwater	SP/BR		
3.0					Bedrock, mechanically weathered to SP Dry, no odor no staining		3	
4.0							4	
5.0							5	
6.0							6	