

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GP-GM Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq$ 10% FINES	GP-GC Poorly graded GRAVEL with clay
			GM Silty GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	GC Clayey GRAVEL
			SW Well-graded SAND
			SP Poorly graded SAND
			SAND WITH BETWEEN 5% AND 15% FINES
SW-SC Well-graded SAND with clay			
SAND WITH $\geq$ 15% FINES			SP-SM Poorly graded SAND with silt
		SP-SC Poorly graded SAND with clay	
SILT AND CLAY		SM Silty SAND	
		SC Clayey SAND	
		ML Inorganic SILT with low plasticity	
	CL Lean inorganic CLAY with low plasticity		
HIGHLY ORGANIC SOILS	OL Organic SILT with low plasticity		
	MH Elastic inorganic SILT with moderate to high plasticity		
	CH Fat inorganic CLAY with moderate to high plasticity		
	OH Organic SILT or CLAY with moderate to high plasticity		
	PT PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 6/8

**Odor**

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
N/A  Other \_\_\_\_\_

**Moisture Condition (circle one)**  
Dry  Moist  Wet

PG Signature *Walter Johnson*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-525</b>	Subarea: <b>8</b>	Date Started: <b>7-25-13</b>	Date Completed: <b>7-25-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratagem</b>	Total Depth: <b>14.5</b>
GPS collected? <b>Yes</b> or No	Drill Method: <b>DPT</b>	Depth Drilled Into Bedrock: <b>N/A</b>	
Radiological Background: <b>12264</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>DPT</b>	
PID Background: <b>0.0</b>	Depth to GW:	Geologist: <b>J. Fabrice</b>	
Radiological Equipment Used:		PG Review & Notes	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Julie Hoffman #7735</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12293		SL-525		ML	silt, dark brown 10YR 3/3 100% silt, loose, dry, no stain/odor, root hairs
1		0.0	12260		SAB-SB	1305	ML	
		0.0	12290		0.0-0.5		ML	-as above, root hairs absent
2		0.0	12284				ML	
3		0.0	12248				ML	silt, dark brown 10YR 3/3, 100% silt compact, dense, moist - no stain/odor
4		0.0	12266		SL-525		ML	-2.8 color D 10YR 3/3 to 10R 3/6 red brown silt, red brown 10R 3/6 compact, dense, moist - 100% ml
5		0.0	12290		SAB-SB	1338	ML	
		0.0	12290		4.0-5.0		ML	silt, red brown 10R 3/6, compact moist - 100% ml
6		0.0	12278				ML	silt, yellow red 5YR 4/6 dense compact moist - 100% ml
7		0.0	12284				ML	-color D 5YR 4/6 to 10YR 6/8 brown yellow silt, brown yellow 10YR 6/8 dense compact, moist - trace caliche mottling
8		0.0	12278				ML	silt as above - mod caliche mottling & relic root mottles 100% ml
9		0.0	12272				ML	silt, 10YR 6/8 brown yellow - caliche mottling dropping out 100% ml

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 12

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
i: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-525** Subarea: **8** Date Started: **7-25-73** Date Completed: **7-25-73**  
 Project: **SSFL** Geologist: **J. F. Johnson** Total Depth: **14.5**

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	12270				ML	silt, brown yellow 10YR 6/8, dense, moist, 100% silt
11		0.0	12260				CL	clay w/silt, brown yellow 10YR 6/8 moist, mod. plas., 70% clay, 30% silt
12		0.0	12266				CL	clay w/silt, brown yellow 10YR 6/8 moist, soft, mod. plas. 60% clay 40% silt
13		0.6	12278				SM	silty sand, v. fig. p.g. silica sand in silty matrix, brown 10YR 6/3
14		0.0	12272				SP	sand, p.g. sand 100% sa to sr vifg sand light brown 10YR 8/3
			12254				SP	moist, loose - decomposed ss bedrock
	14.5	TD						14.5 T.D (refusal #1) 14.2 (refusal #2) 14.4 refusal #3

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-525-SAB-SB-4.0-5.0 Date/Time 7-25-13 - 1338

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler A. T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 02 jars

2-22 02 jars

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH ≥ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

#### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A  Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Vickie Hoffmann*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *T. Bennett*

Sample ID SL-526-SA8-SB0.0-0.5 Date/Time 7-29-13 1320

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL	
		GRAVEL WITH < 5% FINES		GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM		GW-GM	Well-graded GRAVEL with silt
			GW-GC		GW-GC	Well-graded GRAVEL with clay
			GP-GM		GP-GM	Poorly graded GRAVEL with silt
			GP-GC		GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM		GM	Silty GRAVEL	
		GC		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW		SW	Well-graded SAND
			SP		SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM		SW-SM	Well-graded SAND with silt	
		SW-SC		SW-SC	Well-graded SAND with clay	
		SP-SM		SP-SM	Poorly graded SAND with silt	
		SP-SC		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM		SM	Silty SAND	
	SC		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML		ML	Inorganic SILT with low plasticity	
		CL		CL	Lean inorganic CLAY with low plasticity	
		OL		OL	Organic SILT with low plasticity	
		MH		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>OG-526</b>	Subarea: <b>B</b>	Date Started: <b>7-29-13</b>	Date Completed: <b>7-29-13</b>
Client: DOE		Project Name/ #: <b>Santa Susana Field Lab/99489</b>	Total Depth: <b>17.5'</b>
Company Name: <b>CDM SMITH</b>	Drill Contractor/Driller: <b>Strong F. Rodriguez</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>12266</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
PID Background: <b>6.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake PG Review # <b>7735</b>		

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	12275	13254	SL-526	1320	ML	SILT, 10R 3/6 red brown, dry, loose
			13266	0.0-0.5	SAB-58		ML	SILT, 5YR 4/6 yellow red, moist, compact, 100% ML
2		0.0	13248				ML	SILT, 5YR 4/6, as above, trace caliche mottling
3		0.0	13236				ML	SILT 10YR 3/3 dk brown, moist, compact, 100% ML
4		0.0	13260		SL-526		ML	4.2' transition ML → clay w/silt
5		0.0	12260	4.0-5.0	SAB-58	1345	CL	CLAY w/silt, 10YR 3/3 dk brown, 90% clay 10% ML
6		0.0	12242				CH	CLAY w/silt 10YR 3/3 dk brown - mod. caliche mottling 80% CL 20% ML color Δ 10YR 3/3 → 10R 3/6 red brown
7		6.0	12266				CH	CLAY w/silt, 10R 3/6 red brown - strg. caliche mottling 80% CL 20% ML - plas
8		0.0	12284				CL	CLAY, 10R 3/6, moist, compact - mod. caliche mottling - dropping at - mod. plas
9		0.0	12260				ML	CLAY w/silt, 10R 3/6 red brown - mod. plas
							ML	CLAY SILT, 10R 3/6 red brown moist, plas, cohesive



BORING LOG AND SAMPLING RECORD

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	

Location ID: **DG-526** Subarea: **B** Date Started: **7-29-13** Date Completed: **7-29-13**

Project: **SSFL** Geologist: **J. Fazio** Total Depth: **17.5**

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	112754				ML	SILT w/clay, 10R 3/6, moist non-plas. cohesive, 75% ML 25% CL - color Δ 10 R 3/6 → 10YR 6/8 brown
11	0.0	112766				ML	clayey silt, 10YR 6/8, moist mod. plas, 80% ML 20% CL
12	0.0	112760				CL	CLAY w/silt 10YR 6/8, moist mod. plas, 80% ML 20% CL
13	0.0	112778				CL	CLAY w/silt 10YR 6/8 - as above 80% ML 20% CL
14	0.0	112754				CL	CLAY w/silt 10YR 6/8 - as above, moist 86% ML 20% CL
15	0.0	112766				CL	CLAY w/silt 10YR 6/8, soft plastic, moist 75% CL 25% ML
16	0.0	112760				CL SP	15.8 transition → CL color Δ 10YR 6/8 to 10YR 8/3 light brown P.G. v.f.g. sa to sr silica sand 100%
17	0.0	112766				SP	P.G. v.f.g. sa to sr silica sand - decomp. sandstone 100%
17.5	T.O	112760					- 17.5 refusal #1 - 17.2 refusal #2

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-526 SA8-SB-4.0-5.0

Date/Time 7-29-13 1345

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fambion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?	
VOCs	EPA 8260		
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
		Methyl Mercury	EPA 1630

2-16oz jars  
2-encore

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### Soil Classification (circle one)

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COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
		SAND WITH < 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt	
	SW-SC	Well-graded SAND with clay		
	SP-SM	Poorly graded SAND with silt		
SAND WITH ≥ 15% FINES	SP-SC	Poorly graded SAND with clay		
	SM	Silty SAND		
	SC	Clayey SAND		
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity
CL			Lean inorganic CLAY with low plasticity	
OL			Organic SILT with low plasticity	
LIQUID LIMIT LESS THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10 YR 3/3 dark brown

### Odor

#### 1. Odor Strength (circle one)

None     Slight     Strong

#### 2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-527-SA8-SB-0.0-0.5 Date/Time 7-24-13 0850

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameter	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
 1-402 jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq 15\%$ FINES			SP-SC	Poorly graded SAND with clay	
			SM	Silty SAND	
	SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

**Odor**

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry     Moist    Wet

PG Signature *[Signature]* PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-527</b>	Subarea: <b>8</b>	Date Started: <b>7-24-13</b>	Date Completed: <b>7-24-13</b>
Client: DOE		Project Name/#: <b>031-05205-03370-1203-002-029-02204-05PH-UB</b>	Total Depth: <b>15.3'</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>Strongarm</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <b>(Yes or No)</b>		Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25"</b>
Radiological Background: <b>11280</b>		Depth to GW: <b>N/A</b>	Sampling Method: <b>DPT</b>
PID Background: <b>0.0</b>		Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake	
Geologist: <b>J. Faubion</b>		Handwritten notes: <b>PGR View #7735</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (pR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5	0.0	12284	5L-527	0850		ci	clay w/silt 10R 3/6 red brown compact, moist, dense - mod. caliche mottling
1	0.0	12260	5A8-SB	0.0-0.5		cl	1' clay w/silt 10R 3/6 - strong caliche mottling
2	0.0	12242				cl	2' clay w/silt 10R 3/6 - trace caliche mottling
3	0.0	12254				cl	3' clay w/silt 10R 3/6 - caliche absent
4	0.0	12290	5L-527	0920		cl	4' clay w/silt 10R 3/6 - color Δ 10R 3/6 to 10YR 6/8
5	0.0	12278	5A8-SB	4.0-5.0		ml	5' clayey silt, 10YR 6/8 moist, compact - caliche mottling coming back brown yellow
6	0.0	12260				ml	6' clayey silt, 10YR 6/8 - strong caliche mottling - color Δ 10YR 6/8 to 10YR 8/3
7	0.0	12254				ml	7' clayey silt, 10YR 6/8 to 10YR 8/3 - strong caliche mottling
8	0.0	12266				ml	8' clayey silt w/sand 10YR 8/3 - strong caliche mottling
9	0.0	12266				ml	9' clayey silt w/sand 10YR 8/3 - strong caliche mottling, moist compact

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-527** Subarea: **8** Date Started: **7-24-13** Date Completed: **7-24-13**  
 Project: SSFL Geologist: **J. Fawcrod** Total Depth: **15.3'**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (μR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	12754				ML	sandy silt, 10YR 8/3, moist, compact - strong caliche mottling
11	0.0	12772				ML	sandy silt, 10YR 8/3 - strong caliche mottling - color Δ 10YR 8/3 to 10YR 6/8
12	0.0	12736				ML	sandy silt, 10YR 6/8, moist 0115/25/10 - caliche mottling dropping out
13	0.0	12760				ML	sandy silt, 10YR 6/8, moist 0115/25/10 compact - grading to silty sand 13.3 - caliche absent
14	0.0	12766				SP	S.P. v.f.g. sand 10YR 6/8 - moist, loose, S.P. v.f.g. silica sand
15	0.0	12778 12766				SP	S.P. v.f.g. sand 10YR 6/8 15.3' refusal #1 - 15.4' refusal #2 - 15.3' " #3

### SSFL Phase 3 – Field Sample Data Sheet

EDM Smith

FSDS Checked By T. Bennett 0920

Sample ID SL-527-9A8-SB 4.0-5.0 Date/Time 7-24-13 0850SF

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

#### Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-1602 jars  
 2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW Well-graded GRAVEL	
			GP Poorly graded GRAVEL	
			GW-GM Well-graded GRAVEL with silt	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GC Well-graded GRAVEL with clay
				GP-GM Poorly graded GRAVEL with silt
				GP-GC Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq 10\%$ FINES		GM Silty GRAVEL
				GC Clayey GRAVEL
				SW Well-graded SAND
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH $\leq 5\%$ FINES		SP Poorly graded SAND
			SW-GM Well-graded SAND with silt	
			SW-SC Well-graded SAND with clay	
SAND WITH BETWEEN 5% AND 15% FINES			SP-SM Poorly graded SAND with silt	
			SP-SC Poorly graded SAND with clay	
			SM Silty SAND	
HIGHLY ORGANIC SOILS	SAND WITH $\geq 15\%$ FINES		SC Clayey SAND	
			ML Inorganic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50		CL Lean inorganic CLAY with low plasticity	
			OL Organic SILT with low plasticity	
			MH Elastic inorganic SILT with moderate to high plasticity	
LIQUID LIMIT GREATER THAN 50		CH Fat inorganic CLAY with moderate to high plasticity		
		OH Organic SILT or CLAY with moderate to high plasticity		
		PT PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 6/8 brown yellow

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature [Handwritten Signature]

Additional Comments N/A

PG Registration # 7735

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-528-SA8-SB-00-0.5 <sup>DTSC</sup> ~~split~~ Date/Time 7/24/13 1030  
PH 7/24/13

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist Joe Farbion

Sampler Pam Hartman

Analysis

Parameters	Method	Analyser
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyser
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1-802 jar  
 - no CDM Smith submitted samples JB 7/24/13  
 - 0 containers

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
SP-SC		Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	<input checked="" type="radio"/> ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

#### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) \_\_\_\_\_
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

#### Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

DTSC Split Sample

Location ID: <b>06-528</b>	Subarea: <b>8</b>	Date Started: <b>7-24-13</b>	Date Completed: <b>7-24-13</b>
Client: DOE	Project Name/#: <b>68FL-00200-00976-1203.002.223.02231.39PH3 MB</b>		Total Depth: <b>5</b>
Company Name: <b>CDM SMITH</b>	Drill Contractor/Driller: <b>Stratagem F. Robinson</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>		
Radiological Background: <b>12264</b>	Borehole diameter: <b>2.25"</b>		Sampling Method: <b>DPT</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review # No. <b>N/A</b> <b>Nick Hoffman #7735</b>	
			Geologist: <b>J. Fabian</b>

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
5		0.0	12298	SL-528	1030	ml	silt, 10 R 3/16, dry, loose - root hairs, trace caliche mottling
		0.0	12254	SAB-38			
				0.0-05 DTSC			

<b>CDM Smith</b>	<b>BORING LOG AND SAMPLING RECORD</b>		Page 1 of <u>1</u>
	<b>ABBREVIATIONS:</b>		
amt: amount	gr: grained	pg: poorly graded	t: trace      nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very <b>SH = slides</b>
dk: dark	m: medium	sa: subangular	wg: well graded
f: fine	mod: moderate	sr: subrounded	φ: diameter      bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-528-SAB-SB 4.0-5.0 Date/Time 7-24-13 1355

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabrian

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars

2-encore

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6

- Odor
1. Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
--	---------------------------------	---------------------------------
  2. Odor Description (circle one)
 

<input checked="" type="checkbox"/> Organic	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Chemical
<input checked="" type="checkbox"/> N/A Other _____		

Moisture Condition (circle one)

<input type="checkbox"/> Dry	<input checked="" type="checkbox"/> Moist	<input type="checkbox"/> Wet
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PG Signature Nela Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-528</b>	Subarea: <b>8</b>	Date Started: <b>7-24-13</b>	Date Completed: <b>7-24-13</b>
Client: DOE		Project Name/ID: <b>99PL-66268-03376-1203.002.223.02231-00PH0-3M 12410</b>	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Strongarm F. Rodriguez</b>	
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Drill Method: <b>DPT</b>	
Radiological Background: <b>12266</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review & App: <b>Walter Hoffman #7735</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Foubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	12273			ML	silt, 5YR 4/6 dry, dense
1			0.0	11232			ML	- no stain/odor
1			0.0	12270			ML	1' silt, 10R 3/6 red brown moist, compact
2			0.0	12270			ML	2' silt, 10R 3/6 red brown moist, compact
3			0.0	12278			ML	3' silt, 10R 3/6 red brown moist, compact
4			0.0	12284	SL-528 SA8-SB 1355 4.0-5.0		ML	4' silt, 10R 3/6, moist, dense compact - no caliche mottling 0-4'
5			0.0	12215			ML	- 4.5 color Δ 10R 3/6 to 5R 4/6 yellow-red
5			0.0	12215			ML	5' silt, 10R 3/6, moist compact - caliche mottling moderate 4-5'
6			0.0	12270			ML	6' silt, 10R 3/6 moist dense - mod. caliche mottling
7			0.0	12260			ML	7' silt, 10R 3/6 - as above
7			0.0	12260			ML	- 7.5 color Δ 10R 3/6 to 5YR 4/6
8			0.0	12275			ML	8' silt, 5YR 4/6, strong caliche mottling, moist, dense, cohesive yellow-red
9			0.0	1226			ML	9' clayey silt, 5YR 4/6 - strong caliche mottling - FeOx stain (red)

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: DG-528		Subarea: 8		Date Started: 7-24-13		Date Completed: 7-24-13	
Project: SSFL				Geologist: J. Feibon		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	12766				SM	10' silty sand, 5YR 4/6 moist, loose - no stain/odor
11	0.0	12780				SM	11' silty sand, 5YR 4, 6, moist, loose - caliche absent
12	0.0	12762				SM	12' silty sand, 5YR 4/6 moist, loose - no stain/odor
13	0.0	12749				SP	sand, v.f.g. p.g. sand 10YR 8/3 moist, loose light brown
14	0.0	12766				SP	sand, v.f.g. p.g. sand, 10YR 8/3 moist, loose
15	0.0	12784				SP	sand, as above, decomposed ss bedrock - 15.0 refusal #1 - 15.0 refusal #2 - 13.3' " " #3

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-529-SA8-SB 0.0-0.5 Date/Time 7-29-13 1210

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
1-40 zjar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 5YR 4/6

- ### Odor
- Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	Slight	Strong
--	--------	--------
  - Odor Description (circle one)
 

Organic	Petroleum	Chemical
<input checked="" type="checkbox"/> N/A	Other _____	

Moisture Condition (circle one)

Dry	<input checked="" type="checkbox"/> Moist	Wet
-----	---	-----

PG Signature *Michael Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-529</b>		Subarea: <b>8</b>		Date Started: <b>7-29-13</b>		Date Completed: <b>7-29-13</b>	
Client: DOE				Project Name/ #: Santa Susana Field Lab/99489			
Company Name: CDM SMITH				Drill Contractor/Driller: <i>Streng</i>			
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Drill Method: <b>DPT</b>			
Radiological Background: <b>1284</b>				Borehole diameter: <b>2.25"</b>			
PID Background: <b>0.0</b>				Depth to GW: <b>NA</b>			
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				PG Review & No. <i>Nelli Hoffman #175</i>			
				Sampling Method: <b>DPT</b>			
				Geologist: <b>J. Paulson</b>			

  

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	11254	SL-529	1210	ML	SILT, 5YR 4/6 - yellow red
			12260	SA-8		ML	SILT, 10YR 3/3 dark brown
		0.0	12264	SB 0.0-0.5			
2		0.0	12266			ML	SILT 10YR 3/3, loose, moist 100% silt
3		0.0	12272			ML	SILT 10YR 3/3, as above
4		0.0	12266	SL 529	1240	ML	SILT 10YR 8/3, becoming compact 100% ML
			12260	SA-8		CL	SILT 10YR 3/3, trace clay moist compact 90% ML 10% CL
		0.0	12260	SB 0.0		CL	CLAY w/ SILT, color $\Delta$ to 10R 3/6 red brown 90% clay 10% ML
6		0.0	12272			CL	CLAY w/ SILT, 10R 3/6, 90% CL, 10% ML 10R 3/6 red brown, moist cohesive
7		0.0	12266			CL	CLAY w/ SILT, 10R 3/6 80% CL 20% CL moist, cohesive, mod plas
8		0.0	12260			CL	CLAY w/ SILT, as above, mod plas 10R 3/6 80% CL
9		0.0	12266			CH	CLAY, moist, cohesive, plas, moist - $\pm$ 99% clay - trace silt 20% ML 10R 3/6

  

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

Page 1 of 2

  

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
t: fine	mod: moderate	sr: subrounded	$\phi$ : diameter	bgs: below ground surface

Location ID:

06-529

Subarea:

8

Date Started:

7-29-13

Date Completed:

7-29-13

Project: SSFL

Geologist:

J. Fajardo

Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	12266				CL SP	CL-10R316 - sharp transition CL to SP sand Δ color 10R316 → 10YR8/3 light brown → 100% SP
11	0.0	12272				SP	SP sand, sat to sr v.f.g. silica sand refuse 1 H 11' 10YR8/3
12	0.0	12266				SP	11 H 2 10.5' 11 H 3 10.7'

SSFL Phase 3 – Field Sample Data Sheet

DM Smith

FSDS Checked By *[Signature]*

Sample ID SL-529-SAB-SB-4.0-5.0 Date/Time 7-29-13 1240

Matrix (circle one) Soil Sediment Water Start Depth 4.0 End Depth 5.0 Depth Units (circle one) Inches Feet

Check if Composite  Collection Method (circle one) DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Fabiano  
 Sampler T. Benedict

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	<input checked="" type="checkbox"/>
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	<input checked="" type="checkbox"/>
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	<input checked="" type="checkbox"/>
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	<input checked="" type="checkbox"/>
TPH-EFH	EPA 8015	<input checked="" type="checkbox"/>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

*2-1602 jars*  
*2-92 core*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	GW-GC	Well-graded GRAVEL with silt
		GW-GC	GP-GM	Well-graded GRAVEL with clay
		GP-GM	GP-GC	Poorly graded GRAVEL with silt
		GP-GC	GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	GC	Silty GRAVEL
		GC	GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	SW-SC	Well-graded SAND with silt
		SW-SC	SP-SM	Well-graded SAND with clay
		SP-SM	SP-SC	Poorly graded SAND with silt
SAND WITH $\geq$ 15% FINES		SM	SC	Silty SAND
		SC	SC	Clayey SAND
		SC	SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	CH	Elastic inorganic SILT with moderate to high plasticity
		CH	CH	Fat inorganic CLAY with moderate to high plasticity
		CH	CH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 3/3 dark brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Vincent Hoffmann*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Styffmyer

Sample ID SL-530-SA8-SB 0.0-0.5

Date/Time 8-9-13 0725

Matrix (circle one) <input checked="" type="radio"/> Soil    Sediment    Water	Start Depth <u>0.0</u> End Depth <u>0.5</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	--	--

Check if Composite     Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)    Parent Sample ID

N    FD    FB    RB    N/A

Field Geologist J. Fabian

Sampler S. Mercer

Analysis			
Parameters	Method	Analyzer	
Metals	EPA 6010		X
	EPA 6020		X
	EPA 7471 (Soil)		X
	EPA 7470 (Water)		
Fluoride	EPA 300.0/9056		
SVOCs	EPA 8270		
TIC	EPA 8270		
PAHs	EPA 8270 SIM		X
1,4 Dioxane	EPA 8270 SIM		
Dioxins	EPA 1613		X
PCBs/PCTs	EPA 8082		X
Perchlorate	EPA 314.0/331		
Perchlorate Confirmation	EPA 6850/6860		
pH	EPA 9045 (Soil)		X
	EPA 9040 (Water)		
Hexavalent Chromium	EPA 7196/7199		
Herbicides	EPA 8151		
Pesticides	EPA 8081		

  

Parameters	Method	Analyzer	
VOCs	EPA 8260		
1,4 Dioxane	EPA 8260 SIM		
TPH-GRO	EPA 8015		
TPH-EFH	EPA 8015		X
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
Methyl Mercury	EPA 1630		

2-ss. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

	MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color dk brown 10YR 3/3

### Odor

#### 1. Odor Strength (circle one)

None     Slight     Strong

#### 2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-530</b>	Subarea: <b>8</b>	Date Started: <b>8-9-13</b>	Date Completed: <b>8-9-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	Total Depth: <b>6.1</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratigecor</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <b>(Yes or No)</b>	Drill Method: <b>HA</b>		Borehole diameter: <b>2.25"</b>
Radiological Background: <b>13 284</b>	Depth to GW: <b>N/A</b>		Sampling Method: <b>N/A</b>
PID Background: <b>0.0</b>	PG Review # No: <b>N/A</b>		Geologist: <b>J. Faubion</b>
Radiological Equipment Used:			
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Welded #7735</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	3279	SL-530	0725	ML	SILT, dk brown 10YR 3/3 non plas med stiff, moist - no stain lodur
1		0.0	3278	SAB-SB 0.0-0.5		ML	SILT w/clay, brown 10YR 5/3, low plas, soft moist 90% ML, 10% CL
2		0.0	14266			ML	SILT w/clay - as above
3		0.0	12772			CL	CLAY w/silt, 10YR 6/8 brownish yellow med plas, soft, moist 70% CL, 30% ML
4		0.0	12784	SL-530 SAB-SB 4.0-5.0 ms	0745 0730 0730	SM	Silty SAND, brownish yellow as above clay absent, non plas, soft, moist 80% SP
5		0.0	13272	SL-530 SAB-SB 4.0-5.0	0750	SC	clayey SAND w/silt, brownish yellow 10YR 6/6 low plas, soft, moist 70% SP, 20% CL, 10% ML
6		0.0	13290			SP	SAND - J.Fg. SP SAND, brownish yellow 6.1 refusal soft, moist, loose - some 10YR 6/8

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:			Subarea:			Date Started:			Date Completed:		
Project: SSFL						Geologist:			Total Depth:		
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials				

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-530-SA8-SB 4.0-5.0 MS Date/Time 8-9-13 0745 0730 sm8913

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>4.0</u> End Depth <u>5.0</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	--	--

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)    Parent Sample ID N/A

N     FD     FB     RB

Field Geologist J. Fakhion

Sampler S. Mercer

Analysis			
Parameter	Method	Analyzer	
Metals	EPA 6010	X	
	EPA 6020	X	
	EPA 7471 (Soil)	X	
	EPA 7470 (Water)		
Fluoride	EPA 300.0/9056		
SVOCs	EPA 8270		
TIC	EPA 8270		
PAHs	EPA 8270 SIM	X	
1,4 Dioxane	EPA 8270 SIM		
Dioxins	EPA 1613	X	
PCBs/PCTs	EPA 8082	X	
Perchlorate	EPA 314.0/331		
Perchlorate Confirmation	EPA 6850/6860		
pH	EPA 9045 (Soil)	X	
	EPA 9040 (Water)		
Hexavalent Chromium	EPA 7196/7199		
Herbicides	EPA 8151		
Pesticides	EPA 8081		

  

Parameter	Method	Analyzer	
VOCs	EPA 8260		
1,4 Dioxane	EPA 8260 SIM		
TPH-GRO	EPA 8015	X	
TPH-EFH	EPA 8015	X	
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
Methyl Mercury	EPA 1630		

6# - ENCORE  
 6# - SS. SLEEVES  
 1 - 16 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	Liquid Limit GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color brownish yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)  
None  Slight      Strong

2. Odor Description (circle one)  
Organic      Petroleum      Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry      Moist       Wet

PG Signature Wanda Johnson

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Slyvia Muel

Sample ID SL-830-SAB-SB 4.0-5.0

Date/Time 8-9-13 0750

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID SL-530-SAB-SB 4.0-5.0  
MS

Field Geologist J. Fashion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 2 - ENCORE  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>	GM Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW Well-graded SAND
			SP Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM Well-graded SAND with silt
SW-SC Well-graded SAND with clay			
SP-SM Poorly graded SAND with silt			
SAND WITH <u>≥ 15% FINES</u>		SP-SC Poorly graded SAND with clay	
		SM Silty SAND	
SC Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML Inorganic SILT with low plasticity
			CL Lean inorganic CLAY with low plasticity
			OL Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH Elastic inorganic SILT with moderate to high plasticity	
		CH Fat inorganic CLAY with moderate to high plasticity	
	OH Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color brownish yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By J. G. B.

Sample ID SL-531-SA8-SB 0.0-0.5 Date/Time 7-18-13 1415

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW Well-graded SAND
			SP Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM Well-graded SAND with silt	
		SW-SC Well-graded SAND with clay	
		SP-SM Poorly graded SAND with silt	
		SP-SC Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM Silty SAND	
	SC Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML Inorganic SILT with low plasticity	
		CL Lean inorganic CLAY with low plasticity	
		OL Organic SILT with low plasticity	
		MH Elastic inorganic SILT with moderate to high plasticity	
		CH Fat inorganic CLAY with moderate to high plasticity	
		OH Organic SILT or CLAY with moderate to high plasticity	
		PT PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS			

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

### Odor

1. Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
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2. Odor Description (circle one)
 

<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Organic	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Chemical
Other _____			

### Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-531</b>		Subarea: <b>8</b>		Date Started: <b>7-18-13</b>		Date Completed: <b>7-18-13</b>	
Client: DOE				Project Name/#: <b>SM 1211A</b>		Total Depth: <b>8.8</b>	
Company Name: CDM SMITH				Drill Contractor/Driller: <b>Strong F. Rodriguez</b>		Depth Drilled Into Bedrock:	
GPS collected? <b>(Yes) or No</b>				Drill Method: <b>DPT</b>		Depth Drilled Into Bedrock:	
Radiological Background: <b>127/100</b>				Borehole diameter: <b>2.25"</b>		Sampling Method:	
PID Background: <b>0.0</b>				Depth to GW: <b>N/A</b>		Sampling Method: <b>DPT</b>	
Radiological Equipment Used:				PG Review & No.:		Geologist: <b>J. Faubion</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				Miller Hoffman #7735			

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	12790	SA-531	1415	ML	silt, 10 R 3/6 red brown, moist
1			0.0	13254	SAB-SB			loose - 100% silt
				248	0.0-0.5			
2			0.0	13230			ML	silt, 10R 3/6 red brown, compact moist 100% silt - strong caliche mottling
3			0.0	13254			ML	silt as above - 10R 3/6 red brown moist, compact - pervasive
4			0.0	13272	SL-531	1430	ML	clayey silt, silt 85%, clay 15% - strong caliche mottling 10R 3/6
					SAB-SB			
					4.0-5.0			
5			0.0	13298	SF		ML	clayey silt, as above 10R 3/6 - color Δ to 10YR 6/3 5.5'
					102			
6			0.0	13242	SF		ML	clayey silt, 10YR 6/3 brown - caliche mottling dropping out clay 20% silt 80%
					60			
7			0.0	13260	SF		CL	silty clay, dense, compact, moist clay 20% silt 30% - caliche absent
					42			
8			0.0	13298			SP	7.8 transition silty clay to p.g. sand p.g. sand 10YR 8/3 light brown 100%
8.8			0.0	13266			SP	-10YR. 8/3 P.G. sand - v. Fg. silica 8.8 refusal #1 8.6 #2 100%



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. GA

Sample ID SL-531-SAB-SB 4.0-5.0 Date/Time 7-18-13 1430

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fausbion

Sampler V. Colter

Analysis			
	Parameters	Method	Analyze?
Metals		EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
Fluoride		EPA 300.0/9056	
SVOCs		EPA 8270	
TIC		EPA 8270	
PAHs		EPA 8270 SIM	X
1,4 Dioxane		EPA 8270 SIM	
Dioxins		EPA 1613	X
PCBs/PCTs		EPA 8082	X
Perchlorate		EPA 314.0/331	
Perchlorate Confirmation		EPA 6850/6860	
pH		EPA 9045 (Soil)	X
		EPA 9040 (Water)	
Hexavalent Chromium		EPA 7196/7199	
Herbicides		EPA 8151	
Pesticides		EPA 8081	

  

	Parameters	Method	Analyze?
VOCs	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Semi-VOCs	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2 - 16 oz jars  
2 - 200 mL

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	GW-GC	Well-graded GRAVEL with silt
		GW-GC	GP-GM	Well-graded GRAVEL with clay
		GP-GM	GP-GC	Poorly graded GRAVEL with silt
		GP-GC	GM	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	GC	Silty GRAVEL
		GC	SC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-GM	SW-SC	Well-graded SAND with silt
		SW-SC	SP-GM	Well-graded SAND with clay
		SP-GM	SP-SC	Poorly graded SAND with silt
		SP-SC	SM	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES		SM	SC	Silty SAND
		SC	CL	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity
	CL		Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	MH	Organic SILT with low plasticity
		MH	CH	Elastic inorganic SILT with moderate to high plasticity
		CH	OH	Fat inorganic CLAY with moderate to high plasticity
		OH	PT	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color 10 R 3/6 red brown

- Odor
1. Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
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  2. Odor Description (circle one)
 

<input checked="" type="checkbox"/> Organic	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Chemical
<input checked="" type="checkbox"/> N/A Other _____		

Moisture Condition (circle one)

<input type="checkbox"/> Dry	<input checked="" type="checkbox"/> Moist	<input type="checkbox"/> Wet
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PG Signature Mike Hoffman PG Registration # 7735

Additional Comments N/A

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# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-532-SA8-SB-0.0-0.5 Date/Time 7-19-13 1030

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-s.s. sleeves  
 1-4 oz jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color 10 R 3/6 red/brown

- Odor
- Odor Strength (circle one)
 

<input checked="" type="radio"/> None	Slight	Strong
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  - Odor Description (circle one)
 

Organic	Petroleum	Chemical
<input checked="" type="radio"/> N/A	Other _____	

Moisture Condition (circle one)

<input checked="" type="radio"/> Dry	Moist	Wet
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PG Signature [Signature] PG Registration # 7735

Additional Comments N/A

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Location ID: <b>06-532</b>		Subarea: <b>8</b>		Date Started: <b>7-19-13</b>		Date Completed: <b>7-19-13</b>			
Client: DOE				Project Name/ID: <b>SPF-66258-03376-1200-002-225-02231-93PH-0112</b>		Total Depth: <b>7.3</b>			
Company Name: CDM SMITH				Drill Contractor/Driller: <b>Shogun F. Rodriguez</b>		Depth Drilled into Bedrock: <b>N/A</b>			
GPS collected? <b>Yes</b> or No				Drill Method: <b>DPT</b>		Borehole diameter: <b>2.25"</b>			
Radiological Background: <b>132116</b>				Depth to GW: <b>N/A</b>		Sampling Method: <b>OPT</b>			
PID Background: <b>0.0</b>				RG Review & No.: <b>N/A</b>		Geologist: <b>S. Faubion</b>			
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				Signature: <b>Mike [unclear] #7735</b>					

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1			0.0	13295	SL-532 SA8-SB 0.0-0.5	1030	ML	.5' silt, 100% dry, compact 10R3/6 red brown - no stain/odor
			0.0	13248			ML	1' silt, dry compact
			0.0	13254				- grading to clayey silt 1.5'
2			0.0	14248			ML	2' clayey silt 10R3/6 red brown, moist, compact 0/0/80/20 - caliche mottling 2.5-3.2
3			0.0	14292			ML	3' clayey silt 0/0/90/10% 10R3/6 - 3.3 clay dropping out, becoming sandy silt + color Δ to 10YR 6/3 brown
4			0.0	14272	SL-532 SA8-SB		SM	4' silty sand, moist, compact 10YR 6/3 brown 0/70/30/0
5			0.0	14248			SM SP	4.8 transition silty sand to p.g. sand sharp color Δ 10YR 6/3 to 10YR 8/3 5' light brown 0/100/0/0 v.f.g. sa to br silica sand
6			0.0	14296	SL-532 SA8-SB		SP	6' p.g. v.f.g. silica sand 10YR 8/3 light brown, moist, compact no stain/odor
7			0.0	14202	SL-532 SA8-SB 6.5-7.5	1055	SP	7' p.g. v.f.g. sand as above 10YR 8/3 light brown
	7.3			126				7.3 refusal 7.5 refusal #2 7.0 refusal #3 7.5 " #4

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

x/x/x/x gravel/sand/silt/clay %



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. K.

Sample ID SL-532-SA8-SB 6.5-7.5 Date/Time 7-19-13 1055

Matrix (circle one)  Soil  Sediment  Water

Start Depth 6.5 End Depth 7.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fasbinder

Sampler V. Coltes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars  
2- 8.2 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND		
		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present    Yes    No
2. Percentage Fill (%)    N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No

Color    10 YR 8/3 light brown

### Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature    *Natalie Johnson*

PG Registration #    7735

Additional Comments    N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-536-SAB-SB 0.0-0.5 Date/Time 7-31-13 1145

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. sleeve  
1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINEG	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10YR 3/3 dark brown

### Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments [Signature]

Location ID: <b>DG-536</b>	Subarea: <b>8</b>	Date Started: <b>7-31-13</b>	Date Completed: <b>7-31-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? (Yes or No)		Drill Method: <b>HA</b>	
Radiological Background: <b>12272</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW:	
Radiological Equipment Used:		PG Review & No.: <b>#7735</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Fashion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5				12278		1145	ML	SILT, 10YR 3/3 dk brown, dry, loose
1			0.0	12278 12266			ML	SILT, 10R 3/6 red brown, moist, loose 100% ML
2			0.0	12260			ML	SILT, as above - trace calcic mottling
3			0.0	12260			ML	clayey SILT 5YR 4/6 yellow red moist, mod' plas, mod calcic mottling 20% CL
4			0.0	12266			ML	SILT, 10YR 8/3 light brown stg. calcic mottling 100% ML clay abct
5			0.0	12272			ML	sandy SILT 10YR 8/3 light brown v. fg. sa to sr silica in silty matrix
6			0.0	12266			SM	silty SAND, 10YR 8/3 25% ML, 75% SP 75% ML 25% SP
7			0.0	12266			SP	SAND - P.G. sr to sa sand, moist loose 100% SP 7' refusal #1 7' " = 2

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	Φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:		
Project: SSFL				Geologist:		Total Depth:		
Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bendall

Sample ID SL-536-SA8-SB 0.0-0.5 Date/Time 7-24-13 1140  
*DTX*

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check If Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler P. Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1-16 802 OB Jan 7/24/13  
 (DTSC split sample)

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL
		GRAVEL WITH > 15% FINES	GW-GM	Well-graded GRAVEL with silt
		GRAVEL WITH > 15% FINES	GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH > 15% FINES	GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH > 15% FINES	GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	GM	Silty GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	GC	Clayey GRAVEL
		SAND WITH < 5% FINES	SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SC	Well-graded SAND with clay
		SAND WITH BETWEEN 5% AND 15% FINES	SP-SM	Poorly graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES	SP-SC	Poorly graded SAND with clay
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH > 15% FINES	SM	Silty SAND	
	SAND WITH > 15% FINES	SC	Clayey SAND	
	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT LESS THAN 50	OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
	LIQUID LIMIT GREATER THAN 50	CH	Fat inorganic CLAY with moderate to high plasticity	
	LIQUID LIMIT GREATER THAN 50	OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) ~ 1A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 5YR 4/6 yellow-red

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature Vicki Hoffman

PG Registration # 7735

### Additional Comments

DTSC Split Sample





# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By

T. Bennett

Sample ID

SL-536-SA8-SB-4.0-5.0

Date/Time

7-31-13 1235

Matrix (circle one)

Soil     Sediment     Water

Start Depth

4.0

Depth Units (circle one)

Inches     Feet

End Depth

5.0

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger    Slide Hammer    Trenching    Sediment

QC Type (circle one)

NL     FD     FB     RB

Parent Sample ID

N/A

Field Geologist

J. Fawcett

Sampler

T. Bennett

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	<input checked="" type="checkbox"/>
	EPA 7470 (Water)	<input checked="" type="checkbox"/>
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	<input checked="" type="checkbox"/>
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	<input checked="" type="checkbox"/>
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	<input checked="" type="checkbox"/>
TPH-EFH	EPA 8015	<input checked="" type="checkbox"/>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - S.S. sleeves

2 - encore

1 - 4oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 9/3 light brown

### Odor

- Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
--	---------------------------------	---------------------------------
- Odor Description (circle one)
 

<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Organic	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Chemical
Other _____			

### Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-537-SA8-SB 0.0-0.5 Date/Time 7-31-13 1300

Matrix (circle one)  Soil  Sediment  Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameter	Method	Analyze
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s.s/euvs  
1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10YR 3/3 dk brown

### Odor

#### 1. Odor Strength (circle one)

None      Slight      Strong

#### 2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature Nate Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-537</b>	Subarea: <b>8</b>	Date Started: <b>7-31-13</b>	Date Completed: <b>7-31-13</b>
Client: DOE		Project Name: Santa Susana Field Lab/99489	Total Depth: <b>7'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>12272</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Raubold</b>	
PID Background: <b>0.0</b>	PG Review & No.:	Geologist: <b>J. Raubold</b>	
Radiological Equipment Used:		Geologist: <b>J. Raubold</b>	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	Geologist: <b>J. Raubold</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			12272	SL-537	1300	ML	SILT, 10YR 3/3 dk brown, dry, loose 100% ml
1			12272	SA8-58		ML	SILT, 10YR 3/3, moist - loose 100% ml
			12260	0.0-0.5		ML	SILT, 10YR 3/3, moist - loose 100% ml
2			12260			ML	SILT, 10R 3/6 red brown, moist, loose 100% ml
3			12266			ML	SILT, 10R 3/6 red brown - as above - color Δ 10R 3/6 → 10YR 3/3 dk brown
4			12260			ML	SILT, 10YR 3/3, moist, mod. calc. he mottling
5			12260	SL-537	1346	ML	color Δ 10YR 3/3 → 5YR 4/6 yellow red SILT of SILT w/sand; 5YR 4/6 stg. FeOx stain
6			12278	SA85B		SM	silty SAND, 5YR 4/6, 20% ml, 80% SP
7	7' TD		12266	4.0-5.0		SP	SAND - S.P. sat to sr silica sand 100% 7' refusal #1 u.f.g.

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:				
amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID SL-537-SAB-4.0-5.0 Date/Time 7-31-13 1340

Matrix (circle one)

Soil  Sediment  Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches   Feet

Check If Composite

Collection Method (circle one)

DPT  Slide Hammer   Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)

N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler [Signature]

Analysis

Parameter	Method	Analyte
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyte
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. SVOCs

2 - ENOCs

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
		GW-GM	Well-graded GRAVEL with silt	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS	PT	PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes No

Color 10 YR 3/3 dark brown

**Odor**

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry     Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Steph Muel*

Sample ID

*SL-538-SA8-SB0.0-0.5*

Date/Time

*8-9-13 0910*

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID

*N/A*

Field Geologist

*J. Faubion*

Sampler

*S. Muccio*

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-5.5 sleeves*  
*1-402 jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color Very pale brown 10YR8/3

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature Mike Johnson

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-538</b>	Subarea: <b>8</b>	Date Started: <b>8-9-13</b>	Date Completed: <b>8-9-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	Total Depth: <b>9.3'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <i>Stradgerm</i>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>13293</b>	Depth to GW:	Geologist: <i>J. Fashion</i>	
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <i>J. Fashion</i>
PB Review # No: <i>Mike Johnson #7735</i>			

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	13297	SL-538	0910	ML	SILT, very pale brown, 10YR 8/3, non plas, dry-moist, med. stiff no stain/odor 100%ML
1			0.0	12772	SAB-SB		ML	SILT - as above, scattered organics (root hairs)
2			0.0	12760			ML	2' SILT, pale brown 10YR 6/3, non plas moist, loose, soft
3			0.0	12766			CL	3' CLAY w/silt, brownish yellow 10YR 6/8 mod plas, soft moist 80%CL 20%ML
4			0.0	12766	SL-538 SAB-SB	0920	ML	4' SILT w/cloy, yellowish brown 10YR 5/6 low plas, soft, moist - med. calcic mottling 70%ML 30%CL
5			0.0	13278	4.0-5.0 MS		ML	5' SILT w/cloy, yellow 10YR 7/6, low plas soft, moist - trace calcic mottling 80%ML 20%CL
6			0.0	12760	SL-838 SAB-SB	0930	ML	6' SILT w/cloy - as above
7			0.0	12754			CL	7' CLAY w/silt, yellowish brown 10YR 5/8 soft, moist 80%CL 20%ML mod plas
8			0.0	12766			SP	8' SAND w/silt dark yellowish brown 10YR 4/4 non plas, soft, moist 75%SP, 25%ML
9			0.0	12796			SP	9' SAND, dk yellowish brown 10YR 4/4 100% safe sr silica sand soft, moist
TD								9.3'

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

Page 1 of 1

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	HA = Hand Auger
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-538-SA8 0.0-0.5-DTSC Date/Time 7/24/13 1100 1030 JF

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite      DPT  Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID \_\_\_\_\_

Field Geologist J. Fabbion

Sampler Pam Hartman

Analysis		
Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*1-16 oz jar 7/24/13  
 (DTSC split sample)*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL
		GP	Poorly graded GRAVEL
		GW-GM	Well-graded GRAVEL with silt
		GW-GC	Well-graded GRAVEL with clay
		GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GM	Silty GRAVEL
		GC	Clayey GRAVEL
		SW	Well-graded SAND
		SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH ≥ 5% FINES	SW-SM	Well-graded SAND with silt
		SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt
	SAND WITH ≥ 15% FINES	SP-SC	Poorly graded SAND with clay
		SM	Silty SAND
		SC	Clayey SAND
HIGHLY ORGANIC SOILS	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
		CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
		CH	Fat inorganic CLAY with moderate to high plasticity
		OH	Organic SILT or CLAY with moderate to high plasticity
		PT	PEAT soils with high organic contents

#### Fill Material

1. Is Fill Material Present    Yes     No
2. Percentage Fill (%)    N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present    Yes    No

Color    10 R 3/6 red brown

#### Odor

1. Odor Strength (circle one)  
 None    Slight    Strong

2. Odor Description (circle one)  
 Organic    Petroleum    Chemical  
 N/A    Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature    *Julia Hoffman*

PG Registration #    7735

Additional Comments    N/A

DTSC split sample

Location ID: <b>D6-538</b>	Subarea: <b>B</b>	Date Started: <b>7-24-13</b>	Date Completed: <b>7-24-13</b>
Client: DOE		Project Name/#: <b>66FL-65250-66676-1200-002-223-02231-33P10</b>	Total Depth: <b>.5</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>Strongarm</b>		Depth Drilled Into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Drill Method: <b>SH</b>		
Radiological Background: <b>12260</b>	Borehole diameter: <b>2.25"</b>		Sampling Method: <b>SH</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Fambion</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
<b>.5</b>		<b>0.0</b>	<b>12266</b> <b>12278</b>	<b>SL-538</b> <b>SAB-38</b> <b>0-0-03</b> <b>OTSC</b>	<b>1100</b> <b>1030</b> <b>JF</b>	<b>ML</b>	<b>silt 10 R 3/6 red brown dry compact - slight calciche mottling</b>

**CDM Smith** **BORING LOG AND SAMPLING RECORD** Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>SH = silt &amp; clay</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:		
Project: SSFL				Geologist:		Total Depth:		
Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Muel

Sample ID SL-539-SAB-SB 4.0-5.0MS Date/Time 8-9-13 0920

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

6-5.5 sleeves  
6-2 core  
1-16 oz jar (pH)

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH $\geq$ 15% FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SW-SM			Well-graded SAND with silt	
SW-SC			Well-graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SP-SM	Poorly graded SAND with silt	
	SP-SC	Poorly graded SAND with clay		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	SM	Silty SAND
			SC	Clayey SAND
		LIQUID LIMIT GREATER THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
HIGHLY ORGANIC SOILS		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellow 10YR 7/8

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Mila Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID SL-838-SAB-SB-4.0-5.0 Date/Time 8-9-13 0930

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID SL-538-SAB-SB-4.0-5.0 MS

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-SS. SL2203  
2-2202  
1-402 jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
			GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
		GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color yellow 10YR 7/8

### Odor

1. Odor Strength (circle one)
- None     Slight     Strong
2. Odor Description (circle one)
- Organic    Petroleum    Chemical
- N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-539A-SAB-SB 0.0-0.5 Date/Time 7-26-13 0825

Matrix (circle one)  Soil  Sediment  Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

**Analysis**

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-s.s. sleeve  
1-4oz jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <math>\le 5\%</math> FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
	GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <math>\le 5\%</math> FINES	SW SP	Well-graded SAND Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC		Poorly graded SAND with clay		
SM		Silty SAND		
SC		Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R/3/6 red brown

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-539A</b>	Subarea: <b>8</b>	Date Started: <b>7-26-13</b>	Date Completed: <b>7-26-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH	Drill Contractor/Driller: <b>Straggles</b> <i>F. Rodriguez</i>		Total Depth: <b>.5</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>		Depth Drilled into Bedrock: <b>N/A</b>
Radiological Background: <b>11249</b>	Borehole diameter: <b>2.25"</b>		Sampling Method: <b>DPT</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		Geologist: <b>J. Fabian</b>
Radiological Equipment Used:		PG Review & No.:	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Null Rodriguez #775</b>

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	11280	SL-539A SAB SB 0.0-0.5	0825 0825	ML	silt w/ clay, red brown 10R 3/6 moist, compact 70% silt, 30% clay

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of \_\_\_

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-539B-SA8-SB0.0-0.5 Date/Time 7-26-13 0755

Matrix (circle one)  Soil  Sediment  Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16oz jars  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel <input checked="" type="checkbox"/>		
Other <u>Handwritten signature</u>		

Is Staining Present Yes  No

Color 10 YR 3/3 dark brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A  Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature Handwritten signature

PG Registration # 7735

Additional Comments N/A

Location ID: <b>0G-539B</b>	Subarea: <b>8</b>	Date Started: <b>7-26-13</b>	Date Completed: <b>7-26-13</b>
Client: DOE		Project Name#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH	Drill Contractor/Driller: <b>F. Rodriguez</b>		Total Depth: <b>11.7'</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Depth Drilled into Bedrock: <b>N/A</b>	
Radiological Background: <b>12249</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>DPT</b>	
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Fejbian</b>	
Radiological Equipment Used:		PG Review & Not	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Milk of Magnesium #7735</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0		11787				ML	.5 silt w/clay, dk. brown 10YR 3/3
1		11766		SL-539B			
		10260		SA9-SB	0755		
				0.0-0.5			
2		10248		SL-539B		ML	2 silt w/clay, brown yellow 10YR 6/8 mod. plas, moist, dense
3		10260		SA8-SB	0815	ML	3 silt w/clay, 10YR 6/8, moist, dense - weak coliche mottling, silt 70% clay 30%
4		10254				ML	4 silt w/clay, 10YR 6/8 moist dense, mod. coliche mottles, silt 70% clay 30%
5		11284				ML	5 silt w/clay 10YR 6/8 moist, dense, clay dropping abt, silt 80% clay 20% - stg. coliche mottles
6		11272				ML	6 silt w/clay - 10YR 6/8 silt 80% clay 20%, moist, compact
7		11284				ML	7 silt, yellow red 5YR 4/6 silt 100% stg. coliche mottling, FeOx
8		11266				ML	8 - as above
9		11284				CL	9 - sharp transition to clay w/silt 10YR 8/3 soft, moist high plas 80% clay, 20% silt - 8.2-9.0 as above

<b>CDM Smith</b>		<b>BORING LOG AND SAMPLING RECORD</b>		Page 1 of ___
<b>ABBREVIATIONS:</b>				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-539B**

Subarea: **8**

Date Started: **7-26-13**

Date Completed: **7-26-13**

Project: **SSFL**

Geologist: **J. Faubon**

Total Depth: **11.7**

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10			11748			CH	clay w/silt light brown 10YR 8/3 high plas, soft, moist 90% clay 10% silt
11			11742			CH SP	clay w/silt - as above 10.8 sharp transition to SP silica sand 10YR 6/8 brown yellow - v.f.g. silt to silt SP sand 100%
11.7 T.D.			11754			SP	SAND, 10YR 6/8 moist, compact clean silica sand - decomp bitrock 11.7 refusal #1 11.5 refusal #2 11.8 refusal #3

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-539B-SA8-SB-2.0-3.0 Date/Time 7-26-13 0815

Matrix (circle one)

Soil     Sediment     Water

Start Depth 2.0

End Depth 3.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Brunhoff

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-1602 j-13  
2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≥ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≥ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	Liquid Limit GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10 YR 6/8 brown yellow

**Odor**

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry       Moist      Wet

PG Signature [Signature]

PG Registration # 2735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-539C-SA8-SB0.0-0.5 Date/Time 7-26-13 0830

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check If Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fambion

Sampler T. Bennett

**Analysis**

Parameters	Method	Analyzed?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*1 - S.S. sleeve*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 5YR 4/6 yellow red

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Mula Johnson*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-539C</b>		Subarea: <b>B</b>		Date Started: <b>7-26-13</b>		Date Completed: <b>7-26-13</b>	
Client: DOE				Project Name/#: Santa Susana Field Lab/99489		Total Depth: <b>1.5</b>	
Company Name: CDM SMITH				Drill Contractor/Driller: <i>Strangsin</i>		Depth Drilled into Bedrock: <b>N/A</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No				Drill Method: <b>DPT</b>		Borehole diameter: <b>2.25"</b>	
Radiological Background: <b>11246</b>				Depth to GW: <b>N/A</b>		Sampling Method: <b>DPT</b>	
PID Background: <b>0.0</b>				PG Review & No. <i>Walt Johnson #7735</i>		Geologist:	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake							
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	11213	SL539C SAB-SB 0.6-0.5	0630 ML		silt w/clay red brown 10R 3/6, moist, mod plastic, 80% silt, 20% clay

**CDM  
Smith**

**BORING LOG AND SAMPLING RECORD**

Page 1 of \_\_\_

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-5390-SAB-SB 0.0-0.5 Date/Time 7-26-13 0840

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite      DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Farkis

Sampler T. Bennett

#### Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1-s.s. slt/c

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT SOILS with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 5YR 4/6 yellow red

### Odor

#### 1. Odor Strength (circle one)

None       Slight       Strong

#### 2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature Nick Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-539D</b>	Subarea: <b>8</b>	Date Started: <b>7-26-13</b>	Date Completed: <b>7-26-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <i>Stangorn F. Rob...</i>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>11243</b>		Borehole diameter: <b>2.25</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PS Review # <b>N/A</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<i>John D. Hoffman #7735</i>	
		Geologist: <b>J. Faubio</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	11243	SL-539D SAB-26 0:0-0.5	0840 ml		.5 silt, yellow red 5YR 4/6 moist, dense 100% silt - slight color mottling



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-540-SA8 0.0-0.5 Date/Time 7-26-13 1005

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	Y
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	X
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - s.s. sleeves  
 1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

### Odor

#### 1. Odor Strength (circle one)

None       Slight       Strong

#### 2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-540</b>	Subarea: <b>6</b>	Date Started: <b>7-26-13</b>	Date Completed: <b>7-26-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratigraphic</b>	Total Depth: <b>15.8</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>OPT</b>	Depth Drilled into Bedrock: <b>N/A</b>	
Radiological Background: <b>13260</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>OPT</b>	
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubian</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review # (No.): <b>7735</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1			0.0	13260	SL-540	1005 ML		SILT, brown yellow 10YR 6/8
			0.0	12754	SA-8-58			
				11784	0.0-0.5			
2			0.0	11270			ML	SILT, 10YR 6/8, moist, compact 100% ml 100% silt - mod. root caliche mottling
3			0.0	11260			ML	SILT 10YR 6/8 moist, compact - no plas., moist, 100% silt
4			0.0	11272			ML	SILT 10YR 6/8, 100% silt
5			0.0	11254	SL-540 SA-8-58	1015	ML	- color Δ 10YR 6/8 → 5YR 4/6 red brown SILT, 5YR 4/6, yellow red, 100% ml - mod. caliche mottling
6			0.0	11290			ML	SILT, 5YR 4/6, moist, dense 100% ml - no plas, mod. caliche mottling
7			0.0	11272			ML	SILT, 5YR 4/6, moist, dense - mottling absent 100% ml
8			0.0	11290			ML	SILT, as above - 100% ml 5YR 4/6 - no plas, moist, dense
9			0.0	11254			ML	SILT, color Δ 5YR 4/6 → 10YR 8/3 light brown, no plas, moist dense

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **06540** Subarea: **8** Date Started: **7-26-13** Date Completed: **7-26-13**  
 Project: SSFL Geologist: **J. Fabbion** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	11272				ML	SILT, 10YR 8/3, soft, loose, no plus 100% silt
11	0.0	11260				ML	SILT, as above
12	0.0	11278				ML	SILT w/clay 10 YR 8/3, 90% ML 20% CL soft, loose, moist, low plus
13	0.0	11266				ML	SILT, 10YR 8/3 / soft, loose, no plus
14	0.0	11290				ML SP SM	13.6 sharp transition ML to SP sand SP silica sand 10 YR 8/3 yellow brown 90% sand 10% silt
15	0.0	11272				SP	v.f.g. sa to sr silica SAND, 10YR 8/3 yellow brown to 15.8 T.D
16	15.8 T.D	0.0	11260			SP	15.8 refuse #1 16.0 refuse #2 15.8 11 #3

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *T. Bennett*

Sample ID SL-540-SAB-4.0-5.0 Date/Time 7-26-13 1015

Matrix (circle one)

Soil	Sediment	Water
------	----------	-------

Start Depth 4.0  
End Depth 5.0

Depth Units (circle one)

Inches	Feet
--------	------

Check if Composite  Collection Method (circle one)

DPT	Slide Hammer	Hand Auger/Slide Hammer	Trenching	Sediment
-----	--------------	-------------------------	-----------	----------

QC Type (circle one)

N	FD	FB	RB
---	----	----	----

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

**Analysis**

Parameter	Method	Analysis
Metals	EPA 6010	x
	EPA 6020	x
	EPA 7471 (Soil)	x
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	x
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	x
PCBs/PCTs	EPA 8082	x
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	x
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	x
TPH-EFH	EPA 8015	x
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars  
2-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10 YR 6/8 brown/yellow

**Odor**

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry     Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *Alex M...*

Sample ID SL-541-SA8-SB-0.0-0.5 Date/Time 8-9-13 1335

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-s.s. sleeves*  
*1-4oz jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≥ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≥ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color light brownish grey 10YR6/2

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *[Signature]*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-541</b>	Subarea: <b>8</b>	Date Started: <b>8-9-13</b>	Date Completed: <b>8-9-13</b>
Client: DOE		Project Name#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>12264</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review # <b>7735</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J.F</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	12273	SL-541		ML	SILT light brownish grey 10YR 6/2
1		0.0	12278	SA8-SB	1335	ML	non plas, med stiff moist - no skin/odv
		0.0	12266	0.0-0.5		ML	SILT - as above 100% ML
2		0.0	12260			ML	SILT, brown 10YR 5/3, non plas, moist soft - occasional organics, 100% ML
3		0.0	11272			ML	SILT - as above
4		0.0	12272	SL-541	1335	ML	SILT - as above, trace caliche mottling pale brown 10YR 6/3 100% ML
5		0.0	12266	SA8-SB		ML	SILT, pale brown 10YR 6/3 non plas moist, med. stiff 100% ML
6		0.0	12266	4.0-5.0		ML	SILT - as above 100% ML
7		0.0	11290			ML	SILT - as above - mod. caliche mottling 100% ML
8		0.0	11272			ML	SILT w/ clay, pale brown 10YR 6/3 low plas, med. stiff, moist 95% ML 15% CL
9		0.0	11296			ML	SILT w/ clay - as above

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		<b>HA = Hand Auger</b>
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	

Location ID: **DG-541** Subarea: **8** Date Started: **8-9-13** Date Completed: **8-9-13**

Project: **SSFL** Geologist: **J. Fawcett** Total Depth: **10.5 ft**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	11278				SM	silty SAND, brownish yellow 10YR 6/6, non plas, moist, loose <del>20%</del> 20% ML 80% SP sand
11	0.0	127108				ML	<del>10.5 refusal</del> SILT, yellowish brown 10YR 5/8, non plas med. st. ff, moist 100% ML
12	0.0	11260				ML	SILT, brownish yellow 10YR 6/8, non plas med. stiff, moist 100% ML
13	0.0	11272				SM	silty SAND, very pale brown 10YR 8/3 non plas, loose, moist 15% ML, 85% v. f. g. s. to sr. silica sand
14	0.0	12266				ML	SILT w/ clay 7.5 YR 5/6 strong brown st. ff, moist 85% ML 15% clay low plas
15	0.0	12290				ML	SILT w/ clay - color Δ to yellowish brown <del>5YR</del> 10YR 5/6 85% ML 15% clay low plas, moist
16	0.0	12778				SM	silty SAND, dark yellowish brown 10YR 4/4 non plas, stiff, moist 25% ML, 75% SP
17	0.0	12760				SM	silty SAND - as above 15% ML, 85% SP
18	0.0	11278				SP	SAND, yellow 10YR 8/8, non plas, 18.0 refusal loose, moist 100% SP SAND

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Stu Mason

Sample ID SL-541-SAB-SB 4.0-5.0 Date/Time 8-9-13 1355

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fashion

Sampler S. Meccer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-ss. sleeves  
 2-encore  
 1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color pale brown 10 YR 6/3

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature Vicki Hoffmann

PG Registration # 7735

Additional Comments N/A

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### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortez

Sample ID SL-542-SAB-SB-0.0-0.5 Date/Time 9-26-13/0900

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Vidal Cortes

**Analysis**

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 SS sleeves & 1 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

**Soil Classification (circle one)**

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM GW-GC	Well-graded GRAVEL with silt Well-graded GRAVEL with clay	
			GP-GM GP-GC	Poorly graded GRAVEL with silt Poorly graded GRAVEL with clay	
			GM GC	Silty GRAVEL Clayey GRAVEL	
			SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW SP
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM SW-SC	Well-graded SAND with silt Well-graded SAND with clay
	SP-SM SP-SC			Poorly graded SAND with silt Poorly graded SAND with clay	
	SAND WITH $\geq 15\%$ FINES	SM SC		Silty SAND Clayey SAND	
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML CL OL	Inorganic SILT with low plasticity Lean inorganic CLAY with low plasticity Organic SILT with low plasticity
			LIQUID LIMIT GREATER THAN 50	MH CH OH	Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) < 5%

3. Fill Description (circle all that apply)

<input checked="" type="checkbox"/> Asphalt	<input type="checkbox"/> Metal	<input type="checkbox"/> Plastic
<input type="checkbox"/> Concrete	<input type="checkbox"/> Wood	<input type="checkbox"/> Glass
<input checked="" type="checkbox"/> Igneous/Metamorphic Gravel	<input type="checkbox"/> N/A	
Other <u>Brick material</u>		

Is Staining Present Yes  No

Color (brn 10YR 4/3)

**Odor**

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

**Moisture Condition (circle one)**  
 Dry  Moist  Wet

PG Signature *Miller Hoffman* PG Registration # 7735

Additional Comments NA

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Location ID: DG-542	Subarea: 8	Date Started: 9-26-13	Date Completed: 9-26-13
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	Total Depth: 18.6
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? (Yes) or No		Drill Method: Hand Auger	Depth Drilled into Bedrock: NA
Radiological Background: $\gamma=13$ $\alpha=9$		Borehole diameter: 2.25"	
PID Background: 0.0 ppm		Depth to GW: NA	Sampling Method: Slide Hammer
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review # No Will Hoffman #7735	Geologist: David Rojas

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5	0.5	0.0	13/91	SL-542 SAB-SB 0.0-0.5	0900	SM	SILTY SAND, brown (10YR 4/3) mottled w/ pale tan (10YR 6/3) f. gw w/ few med coarse gw & tr coarse gw, mod poorly sorted, subrounded, quartz, compacted, consolidated, hard, dry tr aut gravel (igneous) 70% SD, 30% SILT, tr aut brick material, some asphalt	
1	HA	0.0	13/60			SM		
2		0.0	13/84			SC	SILTY SAND, tan (7.5YR 4/2) mottled w/ dk tan (5YR 7/2) f. gw w/ tr aut med & coarse gw, mod poorly sorted, subrounded, quartz, mod well compacted, mod hard, some to common rootlets & burrows filled w/ CaCO <sub>3</sub> , dry 80% SD 20% SILT	
3		0.0	13/60				CLAYEY SAND, some colour A.A. SD A.A. Clay is dispersed in sd, mod low plasticity, firm, dry to sli moist, some CaCO <sub>3</sub> filled rootlet molds & burrows 60% SD 30% CLAY 10% SILT	
4	1.0	1.0	13/84	SL-542 SAB-SB 4.0-5.0	0920			
5	HA	0.0	13/60			SC	Gradual Transition CLAYEY SAND, brown (7.5YR 4/4) mottled w/ strong brown (7.5YR 4/6) and reddish yellow (7.5YR 6/6) tr aut mottling w/ red (2.5YR 5/6), 55% SD, 30% CLAY 15% SILT, SD A.A. low plasticity, firm to sli soft, dry to sli moist some CaCO <sub>3</sub> filled rootlet molds & burrows	
6		0.0	13/72					
7		0.0	13/60					
8		0.0	13/72					
9		0.0	13/72	SL-542 SAB-SB 9.0-10.0	0950	SC	CLAYEY SAND yel tan (10YR 5/4) mottled w/ (10YR 5/6) & dk yel tan (10YR 4/4), A.A	
10		0.0	13/78					

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	$\phi$ : diameter	bgs: below ground surface

Location ID: **DG-542** Subarea: **8** Date Started: **9-26-13** Date Completed: **9-26-13**

Project: **SSFL** Geologist: **David Rojas** Total Depth: **18.6**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
11	HA	0.0	13/60				CLAYEY SAND, A.A SEE Pg 1
12		0.0	13/72			SM	SILTY SAND, yel brn (10YR 5/6) mottled w/ lt yel brn (10YR 6/4) and brn yellow (10YR 6/6) F gm w/ fine ant med gw & tr ant coarse gw, mod poorly sorted, graded subrounded, quartz & siltstone, dry to sli moist 65% SD, 25% SILT 10% CLAY, tr ant siltstone gravel, F sized, mod well cemented, sandy, subrounded
13		0.0	13/66				
14	1.0/1.0	0.0	13/84	SL-542 SAB-SB 14.0-15.0	1150	SC	CLAYEY SAND, red brn (5YR 4/4) mottled w/ strong brn (7.5YR 4/6) and yel brn (10YR 5/4) F gm w/ fine to med coarse gw, subrounded, quartz, siltstone, 60% SD 25% CLAY
15		0.0	13/78			SM	SILTY SAND, lt yel brn (10YR 6/4) mottled w/ brn (10YR 5/3) F gm, mod poorly to poorly sorted, quartz, dry to sli moist 70% SD, 20% SILT 10% CLAY, tr ant siltstone gravel F sized, mod well to well cemented subrounded
16	HA	0.0	13/72			SM	SILTY SAND, lt brn (7.5YR 6/3) mottled w/ pale brn (10YR 7/3) F gm to coarse fine gw, subrounded, quartz sdstr & siltstone, dry to sli moist, tr ant gravel sdstr, F sized subrounded to subangular 75% SD 15% SILT 10% CLAY
17		0.0	13/78				
18	1.0/1.0	0.0	3/72	SL-542 SAB-SB 17.5-18.5	1220	SC	CLAYEY SAND, same as 14-14.6
						SM	SILTY SAND, grayish brown (2.5Y 5/2) mottled w/ lt yel brn (2.5Y 6/3) & lt gray (2.5Y 7/2), F gm, well sorted, quartz, dry to sli moist, tr ant Gravel, sdstr, F sized, well cemented, subangular 75% SD 15% SILT 10% CLAY

Refusal @ 18.6' bls

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. C. K.

Sample ID SL-542-SAB-SB-4.0-5.0 Date/Time 9-26-13 0920

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Vidal Cortes

Analysis

Parameters	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 SS Sleeves, 2 Encores, 1 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\approx$ 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL
		GRAVEL WITH $\geq$ 15% FINES	GW-GM	Well-graded GRAVEL with silt
		GRAVEL WITH $\geq$ 15% FINES	GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH $\geq$ 15% FINES	GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq$ 15% FINES	GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\approx$ 5% FINES	GM	Silty GRAVEL
		SAND WITH $\approx$ 5% FINES	GC	Clayey GRAVEL
		SAND WITH $\approx$ 5% FINES	SW	Well-graded SAND
		SAND WITH $\approx$ 5% FINES	SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
SAND WITH BETWEEN 5% AND 15% FINES		SW-SC	Well-graded SAND with clay	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt	
	SAND WITH $\geq$ 15% FINES	SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES	SM	Silty SAND	
	SAND WITH $\geq$ 15% FINES	SC	Clayey SAND	
	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
		LIQUID LIMIT LESS THAN 50	CL	Lean inorganic CLAY with low plasticity
LIQUID LIMIT GREATER THAN 50		OL	Organic SILT with low plasticity	
LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
HIGHLY ORGANIC SOILS		LIQUID LIMIT GREATER THAN 50	CH	Fat inorganic CLAY with moderate to high plasticity
		LIQUID LIMIT GREATER THAN 50	OH	Organic SILT or CLAY with moderate to high plasticity
		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) None

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color brn (7.5YR 4/2)

#### Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *Wala Hoffman*

PG Registration # 7735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. E

Sample ID SL-542-SAB-SB-9.0-10.0 Date/Time 9-26-13 / 0950

Matrix (circle one)  Soil  Sediment  Water

Start Depth 9.0 End Depth 10.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Vidal Cortes

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 SS Sleeves, 2 Encous, 1 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES		GW Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP Poorly graded GRAVEL	
			GW-GM Well-graded GRAVEL with silt	
			GW-GC Well-graded GRAVEL with clay	
			GP-GM Poorly graded GRAVEL with silt	
		GP-GC Poorly graded GRAVEL with clay		
	GM Silty GRAVEL			
	GC Clayey GRAVEL			
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES		SW Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP Poorly graded SAND	
SW-SM Well-graded SAND with silt				
SW-SC Well-graded SAND with clay				
SP-SM Poorly graded SAND with silt				
SP-SC Poorly graded SAND with clay				
SM Silty SAND				
SC Clayey SAND				
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LQUID LIMIT LESS THAN 50	ML Inorganic SILT with low plasticity	
		LQUID LIMIT GREATER THAN 50	CL Lean inorganic CLAY with low plasticity	
			OL Organic SILT with low plasticity	
	HIGHLY ORGANIC SOILS	SILT AND CLAY	LQUID LIMIT GREATER THAN 50	MH Elastic inorganic SILT with moderate to high plasticity
				CH Fat inorganic CLAY with moderate to high plasticity
				OH Organic SILT or CLAY with moderate to high plasticity
			PT PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) NO

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color yellow brown (10YR 5/4)

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature *Walter Hoffman*      PG Registration # 7735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By ✓ GJK

Sample ID SL-542-SAB-SB-~~0.9~~<sup>14.0-15.0</sup> Date/Time 9-26-13/1150

Matrix (circle one)  Soil  Sediment  Water

Start Depth 14.0 End Depth 15.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Vidal Cortes

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 15% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	SM	Silty SAND
			SC	Clayey SAND
			ML	Inorganic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
HIGHLY ORGANIC SOILS		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) None
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color red brn (5YR 4/4) lt yel brn (10YR 6/4)

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature Miller Hoffman

PG Registration # 7735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By J. G. K.

Sample ID SL-542-SA8-SB-17.5-18.5 Date/Time 9-26-13/1220

Matrix (circle one)  Soil  Sediment  Water

Start Depth 17.5 End Depth 18.5

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist David Rojas

Sampler Vidal Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 SS Slaves, 2 Encous, 14oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL
		GRAVEL WITH $\geq$ 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	GM	Silty GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	GC	Clayey GRAVEL
		SAND WITH $\geq$ 15% FINES	SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SAND WITH $\geq$ 15% FINES	SW-SM	Well-graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SC	Well-graded SAND with clay
		SAND WITH BETWEEN 5% AND 15% FINES	SP-SM	Poorly graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES	SP-SC	Poorly graded SAND with clay
		SAND WITH $\geq$ 15% FINES	SM	Silty SAND
		SAND WITH $\geq$ 15% FINES	SC	Clayey SAND
HIGHLY ORGANIC SOILS			ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) None

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color grayish brown 2.5Y5/2

Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

Moisture Condition (circle one)  
 Dry     Moist     Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Merrett

Sample ID SL-543-SAB-SB-0.0-0.5 Date/Time 8-13-13 0745

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Merrett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
		SAND WITH <u>≤ 5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SAND WITH <u>≥ 15% FINES</u>	SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	<input checked="" type="radio"/> ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color Very dark brown 10YR 2/2

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Nicole Hoffmann* PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-543</b>	Subarea: <b>8</b>	Date Started: <b>8-13-13</b>	Date Completed: <b>8-13-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>13281</b>		Borehole diameter: <b>2.25</b>	
PID Background: <b>0.0</b>		Depth to GW:	
Radiological Equipment Used:		PG Review & No.:	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Null Program #7735</b>	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	13275			ML	SILT very dark brown 10YR 2/2 non plas
1			0.0	13266	SL-543	0745	ML	2c3sl, moist, soft, organics (within) 100%ML
1			0.0	13254	SAB-SB		ML	SILT, very dark greyish brown, 10YR 3/3
2			0.0	13266	0.0-0.5		ML	non plas, soft, moist, occ. organics 100%ML
3			0.0	12290			ML	SILT, - as above, organics absent 100%ML
4			0.0	12772	SL-543	0745	CL	SILT w/clay, dark yellowish brown 10YR 4/4
5			0.0	13277	SAB-SB		CL	low plas, soft, moist 20%CL, 80%ML
6			0.0	13277	4.0-5.0	MS	CL	CLAY w/silt, very dark brown 10YR 3/4
7			0.0	13277	MS		CL	med plas, med. stiff, moist 75%CL 25%ML
8			0.0	13277	SL-543	0730	CL	CLAY w/silt - as above, less CL
9			0.0	13277	SAB-SB		CL	CLAY w/silt, dark yellowish brown, 10YR 4/6
10			0.0	13277	4.0-5.0		CL	med. plas, stiff, moist 80%CL 20%ML
11			0.0	13266			CL	CLAY w/silt - as above
12			0.0	14290			CL	CLAY w/silt, dark yellowish brown 10YR 4/6
13			0.0	14242			CL	med. plas, stiff, moist 85%CL 15%ML
14			0.0	14242			CL	CLAY w/silt - as above

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of \_\_\_

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **AG-543** Subarea: **8** Date Started: **8-13-13** Date Completed: **8-13-13**

Project: **SSFL** Geologist: **J. Fabian** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	13266			ML	SILT w/ clay, yellowish brown 10YR 5/8 low plas, med. stiff, moist 70% ML 30% CL
11			13290			ML	SILT w/ clay - as above
12			13202			ML	SILT w/ clay, brownish yellow 10YR 6/6 low plas, med. stiff, moist 80% ML, 20% CL
13			13254			ML	SILT w/ clay, dark yellowish brown 10YR 4/6, low plas, med. stiff, moist 90% ML, 10% CL
14			13284			SM	silty SAND w/ trace clay - calcare mottling, non plas, soft 70% SP and dk. yellowish brown, 30% ML
15			13290			SM	silty SAND, yellowish brown 10YR 5/8 non plas, soft, moist - 15.1 refusal 20% ML 80% SP

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mann

Sample ID SL-543-SA8-SB 4.0-5.0MS Date/Time 8-13-13 0815

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?	
VOCs	EPA 8260		
	EPA 8260 SIM		
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
	Methyl Mercury	EPA 1630	

1-1602 jar  
6-s.s. sleeves  
6-epcorr

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH * 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>GRAVEL WITH ≥ 10% FINES</b>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH * 5% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
<b>SAND WITH ≥ 15% FINES</b>		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>LIQUID LIMIT LESS THAN 50</b>	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	<b>LIQUID LIMIT GREATER THAN 50</b>	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present    Yes    No (No circled)

2. Percentage Fill (%)    N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	(N/A circled)	
Other _____		

Is Staining Present    Yes    No

Color    Very dark brown 10YR 3/4

**Odor**

1. Odor Strength (circle one)

(None circled)    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

(N/A circled)    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry    (Moist circled)    Wet

PG Signature    *Mike Hoffman*

PG Registration #    7735

Additional Comments    N/A

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### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mercer

Sample ID SL-843-SA8-SB-4.0-5.0 Date/Time 8-13-13 0830

<p>Matrix (circle one)</p> <p><input checked="" type="radio"/> Soil    <input type="radio"/> Sediment    <input type="radio"/> Water</p>	<p>Start Depth <u>4.0</u></p> <p>End Depth <u>5.0</u></p>	<p>Depth Units (circle one)</p> <p>Inches    <input checked="" type="radio"/> Feet</p>
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Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)    Parent Sample ID SL-543-SA8-SB 4.0-5.0MS

N     FD     FB     RB

Field Geologist J. Faubion

Sampler S. Mercer

Analysis			
	Parameters	Method	Analyze?
Metals	EPA 6010		✓
	EPA 6020		X
	EPA 7471 (Soil)		X
	EPA 7470 (Water)		
Fluoride	EPA 300.0/9056		
SVOCs	EPA 8270		
TIC	EPA 8270		
PAHs	EPA 8270 SIM		X
1,4 Dioxane	EPA 8270 SIM		
Dioxins	EPA 1613		X
PCBs/PCTs	EPA 8082		X
Perchlorate	EPA 314.0/331		
Perchlorate Confirmation	EPA 6850/6860		
pH	EPA 9045 (Soil)		X
	EPA 9040 (Water)		
Hexavalent Chromium	EPA 7196/7199		
Herbicides	EPA 8151		
Pesticides	EPA 8081		

  

	Parameters	Method	Analyze?
VOCs	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Semi-VOCs	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
Trace Metals	Methyl Mercury	EPA 1630	

2-5.5 sleeves  
 2-encore  
 1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
	GRAVEL WITH $\geq$ 15% FINES	GP-GC	Poorly graded GRAVEL with clay	
		GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	GC	Clayey GRAVEL
			SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
SW-SM			Well-graded SAND with silt	
SW-SC			Well-graded SAND with clay	
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SC	Clayey SAND	
		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			OH	Organic SILT or CLAY with moderate to high plasticity
			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color Very dark brown 10YR 3/4

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature Vicki Hoffman

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-549-5A8-SB 0.0-0.5 Date/Time 7-30-13 0900

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16oz jars  
2-encores

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10 YR 3/3 dk brown

### Odor

#### 1. Odor Strength (circle one)

None      Slight      Strong

#### 2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>AG-549</b>	Subarea: <b>8</b>	Date Started: <b>7-30-13</b>	Date Completed: <b>7-30-13</b>
Client: DOE		Project Name#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <i>Strong F. Rodriguez</i>	
GPS collected? <input checked="" type="checkbox"/> or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>13272</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No: <i>Walter Rodriguez #7735</i>	
		Geologist: <b>S. Fubon</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	11254	SL-549	SA8-SB	0900	ML	SILT, 10YR 3/3 dk. brown, loose, dry
1		0.0	11236	0.0-0.5			ML	SILT, 10YR 3/3, organics, root hairs loose, dry, 100% ML
2		0.0	11254				ML	SILT, 10YR 3/3, 100% ML - color Δ 10YR 3/3 → 10R 3/6 red brown
3		0.0	11248				ML	SILT, 10R 3/6, moist, compact 100% ML
4		0.0	11266	SL-549	SA8-SB	0930	ML	SILT - as above 10R 3/6 - color Δ 10R 3/6 → 10YR 6/8 brown yellow
5		0.0	11284	4.0-5.0			ML	SILT, 10YR 6/8, mod. caliche mottling compact, moist - 100% ML
6		0.0	11275				ML	5.8 becoming clayey clayey SILT, 10YR 6/8, mod. plas, mottling dropping out, 20% ML 80% CL
7		0.0	11284				ML	clayey SILT, 10YR 6/8, moist, mod plas., mod. caliche mottling 20% ML
8		0.0	11290				ML	clayey SILT, 10YR 8/3, moist, 80% ML mod. plas., 35% CL, 65% ML
9		0.0	11284				ML	clayey silt, as above 10YR 8/3 SM - 9.4 silty sand - 9.3. color Δ to 10YR 6/8

**CDM  
Smith**

**BORING LOG AND SAMPLING RECORD**

Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-549** Subarea: **8** Date Started: **7-30-13** Date Completed: **7-30-13**  
 Project: SSFL Geologist: **J. Fabian** Total Depth: **16.2**

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	11260					SM silty SAND, 10 YR 6/8 brown yellow - 10 YR 6/8 color Δ to 10 R 3/6 red brown
11	0.0	11260					SM silty SAND, 10 R 3/6 red brown
12	0.0	11266					SM silty SAND, 10 R 3/6 red brown - color Δ 10 R 3/6 → 10 YR 6/8 brown yellow
13	0.0	11266					SC clayey SAND, 10 YR 6/8, moist, mod plas, 30% clay 70% SP
14	0.0	11260					SC clayey SAND, 10 YR 6/8 - as a souc
15	0.0	11284					SC clayey SAND 10 YR 6/8, high plas, moist, soft, 30% CL, 70% SP sand
16	0.0	11260					SC clayey SAND, 10 YR 6/8, 20% CL, 80% - 16.2 refusal ± 1 SP - 16.0 " ± 2

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By

*[Signature]*  
7-30-13 0930 JF

Sample ID

SL-549-SAB-SB-4.0-5.0

Date/Time

7-30-13 0930

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

Depth Units (circle one)

Inches     Feet

End Depth 5.0

Check if Composite

Collection Method (circle one)

DPT

Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

N/A

Field Geologist

*J. Faubion*

Sampler

*T. Brunett*

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

*2-1602 jars*  
*2-enceres*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	GW-GC	Well-graded GRAVEL with silt
		GP-GM	GP-GC	Well-graded GRAVEL with clay
		GP-GM	GP-GC	Poorly graded GRAVEL with silt
		GP-GC	GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	GC	Silty GRAVEL
		GC	GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	SW-SC	Well-graded SAND with silt
		SW-SC	SW-SC	Well-graded SAND with clay
		SP-SM	SP-SC	Poorly graded SAND with silt
SAND WITH $\geq$ 15% FINES		SM	SC	Silty SAND
		SC	SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	CH	Elastic inorganic SILT with moderate to high plasticity
		CH	CH	Fat inorganic CLAY with moderate to high plasticity
OH	OH	Organic SILT or CLAY with moderate to high plasticity		
PT	PT	PT	PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS				

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature [Signature] PG Registration # 7735

Additional Comments N/A

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SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID 550 ~~SL-550~~ SA8-SB 0.0-0.5 Date/Time 7/22/13 0830

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - s.s. sleeves  
1 - 4 oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
	GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC		Poorly graded SAND with clay		
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10R 3/6 red/brown

**Odor**

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry       Moist      Wet

PG Signature [Signature]

Additional Comments N/A

PG Registration # 7735

Location ID: <b>DG-550</b>	Subarea: <b>8</b>	Date Started: <b>7-22-13</b>	Date Completed: <b>7-22-13</b>
Client: DOE		Project Name/#: <b>CGFL-05200-03370-1205-002-220-02201-658412</b>	
Company Name: CDM SMITH	Drill Contractor/Driller: <b>Strongheim</b>		Total Depth: <b>18'</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>		Depth Drilled Into Bedrock: <b>N/A</b>
Radiological Background: <b>12275</b>	Borehole diameter: <b>2.25"</b>		Sampling Method: <b>DPT</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			Geologist: <b>J. Fabian</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.5	0.0	12292	SL-550 SAB-SB 0.0-0.5	0930	ML	silt, 10R 316 red brown, dry, compact - trace caliche mottling, root hairs no stain locov 010/100/0
2			0.0	9249			ML	silt, 10R 316 as above, stronger caliche mottling 010/190/10
3			0.0	9248			CL	2.8 transition silt to silty clay silty clay SR 416 yellow red moist compact-cohesive - caliche mottling 010/15/85
4			0.0	9260	SL-550 SAB-SB 4.0-5.0	0900	CL	silty clay SR 416 - as above 010/10/90
5			0.0	9286			CL	silty clay, SR 416 010/10/90
6			0.0	9254			CL	silty clay, 10R 1316 010/10/90 - strong caliche mottling
7			0.0	9272			CL	silty clay, 10R 316 010/10/90
8			0.0	9260			CL	silty clay 10R 1316 010/10/90 - caliche mottling dropping out - trace J. fg silt
9			0.0	9272	SL-550 SAB-SB 9.0-10.0	0915	ML	clayey silt 10R 6/8 brown yellow compact, moist 010/70/30

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-550** Subarea: **8** Date Started: **7-22-13** Date Completed: **7-22-13**  
 Project: SSFL Geologist: **J. Fabian** Total Depth: **18'**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	9740				ML	clayey silt, 10YR 8/3 light brown moist, compact 010570130
11	0.0	9730				ML	clayey silt, as above, moist 10YR 8/3 - color Δ to 10R 3/6 red brown
12	0.0	9748				CL	sandy clay, strong calcic mottling 012010170 - 10YR 3/6
13	0.0	10242				CL	sandy clay - as above 10 R 3/6 - pervasive calcic mottling throughout 012010170
14	0.0	10290		SL-550 SAB-38 0930 14.0-15.0		CL	sandy clay - as above - 10 R 3/6 012010170
15	0.0	10272				SM	silty sand trace interstitial clay 016030110 - color Δ to 10YR 6/8 brown yellow
16	0.0	10266				SP SF SM	P.C. sands, minor silt, clay absent 10YR 6/8, moist 01851015
17	0.0	10248		SL-550 SAB-38 0945 17.0-19.0		SP	P.G. sand, v. fg. sa to sn silica sand 10YR 6/8, moist, compact
18	0.0	10254				SP	as above - weathered sandstone - 18.9 refusel - 18.2 " #2 - 17.9 #3

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-550-SAB-SB 4.0-5.0 Date/Time 7-22-13 0900

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars

2-22 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH <u>≥ 15% FINES</u>		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		<u>CL</u>	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%)    N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No

Color    5R Y/6 yellow-red

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-550-SABSB 9.0-10.0 Date/Time 7-22-13-0915

Matrix (circle one)

Soil     Sediment     Water

Start Depth 9.0

End Depth 10.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	x
	EPA 6020	x
	EPA 7471 (Soil)	x
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	x
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	x
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	x
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	x
TPH-EFH	EPA 8015	x
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-1602 jars

2-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
				GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq$ 15% FINE		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
				SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/>	
Other	_____	

Is Staining Present Yes No

Color 10 YR 8/3 light brown

### Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. K.

Sample ID SL-550-SAB-SB 14.0-15.0 Date/Time 7-22-13 0930

Matrix (circle one)

Soil     Sediment     Water

Start Depth 14.0

End Depth 15.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler V. Cortes

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars

2-200 ml

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		<u>SM</u>	Silty SAND	
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		Liquid Limit GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature [Signature] PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 -- Field Sample Data Sheet

CDM Smith

FSDS Checked By V. GA

Sample ID SL-550-SAB-SB 17.0-18.0 Date/Time 7-22-13 0945

Matrix (circle one)

Soil  Sediment  Water

Start Depth 17.0

End Depth 18.0

Depth Units (circle one)

Inches   Feet

Check if Composite

Collection Method (circle one)

DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)

N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-1602 jars  
2-ENC018

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES		GW Well-graded GRAVEL
				GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM Well-graded GRAVEL with silt
				GW-GC Well-graded GRAVEL with clay
				GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 10% FINES		GM Silty GRAVEL
				GC Clayey GRAVEL
		SAND WITH $\geq$ 5% FINES		SW Well-graded SAND
				SP Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM Well-graded SAND with silt	
			SW-SC Well-graded SAND with clay	
		SP-SM Poorly graded SAND with silt		
		SP-SC Poorly graded SAND with clay		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		SM Silty SAND	
			SC Clayey SAND	
	LIQUID LIMIT GREATER THAN 50		ML Inorganic SILT with low plasticity	
			CL Lean inorganic CLAY with low plasticity	
			OL Organic SILT with low plasticity	
		MH Elastic inorganic SILT with moderate to high plasticity		
		CH Fat inorganic CLAY with moderate to high plasticity		
		OH Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 6/5 brown / yellow

### Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. E.

Sample ID SL-557-SAB-SB-0.0-0.5 Date/Time 7-23-13 0730

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

### Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-55 sieves  
1-4 oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC		Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No   
 Color 5YR 4/6 yellow-rose

- Odor
- Odor Strength (circle one)
 

<input checked="" type="radio"/> None	Slight	Strong
---------------------------------------	--------	--------
  - Odor Description (circle one)
 

Organic	Petroleum	Chemical
<input checked="" type="radio"/> N/A	Other _____	
- Moisture Condition (circle one)
- |     |  |     |
|-----|--|-----|
| Dry | <input checked="" type="radio"/> Moist | Wet |
|-----|--|-----|

PG Signature [Signature] PG Registration # 7735  
 Additional Comments N/A

Location ID: <b>DG-551</b>	Subarea: <b>8</b>	Date Started: <b>7-23-13</b>	Date Completed: <b>7-23-13</b>
Client: DOE		Project Name/#: <b>SSFL 68268-03376.4203.002.223.02231.55113 MB</b>	Total Depth: <b>19.8'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratagem</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>10266</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review # <b>7735</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	12780	SL-551 SABSB 0.0-0.5	0730	ML	silt, 5YR 4/6, caliche & root mottling moist, compact - no stain/odor 010/10/80
1			0.0	9248				
2			0.0	9254			ML	clayey silt, 5YR 4/6 red brown; yellow red - strong caliche mottling 010/7/30 - 2.5 color Δ to 10 R 3/6 red brown
3			0.0	9260			CL	silty clay, 10 R 3/6 red brown - compact - moderate caliche mottling 010/30/70 moist
4			0.0	9254	SL-551 SABSB 4.0-5.0 MS	0800	CL	silty clay 10 R 3/6, moist, compact - strong caliche mottling 010/10/80
5			0.0	9230	SL-551 SABSB 4.0-5.0	0815	CL	silty clay 10 R 3/6 - strong caliche mottling 010/20/80
6			0.0	9222			CL	silty clay, as above 10 R 3/6 010/15/85 - color Δ to 10 YR 6/8 brown, yellow
7			0.0	9260			CL	silty clay, 10 YR 6/8 brown yellow moist, compact 010/15/85
8			0.0	9294			CL	silty clay, 10 YR 6/8 brown yellow moist 010/15/85
9			0.0	9230	SL-551 SABSB 9.0-10.0	0930	CL	silty clay, trace sand 10 YR 6/8 moist (to wet) 010/20/80

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-551** Subarea: **8** Date Started: **7-23-13** Date Completed: **7-23-12**

Project: **SSFL** Geologist: **J. Faubion** Total Depth: **19.8'**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	9248				CL	<del>SM 113</del> silty clay, bleached 10 YR 8/3 light brown cohesive clay, v.f.g. silica sand moist to wet 0110/90/0
11	0.0	9266				CL	silty clay, 10 YR 8/3, moist, - strong caliche mottling 010120/80
12	0.0	9266				CL	silty clay 10 YR 8/3, moist, compact - strong caliche mottling color Δ to JF 010120/80
13	0.0	9254				CL	silty clay 10 YR 8/3 light brown - strong caliche mottling 010120/80
14	0.0	9248		SL-551 SA8-2B 14.0-15.0	0915	CL	<del>SM 113</del> silty clay 10 YR 8/3 - v.f.g. silica sand in clay matrix - silt persists 0110/10/80
15	0.0	9278				CL	sandy clay 10 YR 8/3 - as above - grading to silty clay 15.4 - 15.6 coarse gravel subbrand 11 0110/10/80
16	0.0	9272				CL	silty clay w/ trace sand 10 YR 8/3 - color Δ to 5 YR 4/6 yellow red 010115/85
17	0.0	9260				CL	silty clay 5 YR 4/6, moist, cohesive - caliche mottling dropping out 010115/85
18	0.0	9254				CL	silty clay w/ trace interstitial v.f.g. silica sand 5 YR 4/6 0110/10/80
19	0.0	9242		SL-551 SA8-2B 19.200	0900	CL	silty clay w/ sand 5 YR 4/6 0110/10/80
19.8	0.0	9266				SP-SM	19.8 refusal #1 - v.f.g. 5 YR 4/6 sand 19.5 #2 0190/10/0

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. K.

Sample ID SL-551-SA8-SB-4.0-5.0 MS Date/Time 7-23-13 0800

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubio

Sampler V. Cortes

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

68-1602 jcr  
 68-1602 jcr  
 68-1602 jcr

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	 GW	Well-graded GRAVEL
			 GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	 GW-GM	Well-graded GRAVEL with silt
			 GW-GC	Well-graded GRAVEL with clay
			 GP-GM	Poorly graded GRAVEL with silt
			 GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	 GM	Silty GRAVEL	
		 GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	 SW	Well-graded SAND
			 SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		 SW-SM	Well-graded SAND with silt	
		 SW-SC	Well-graded SAND with clay	
		 SP-SM	Poorly graded SAND with silt	
 SP-SC		Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES	 SM	Silty SAND		
	 SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	 ML	Inorganic SILT with low plasticity
			 CL	Lean inorganic CLAY with low plasticity
		 OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	 MH	Elastic inorganic SILT with moderate to high plasticity	
		 CH	Fat inorganic CLAY with moderate to high plasticity	
		 OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		 PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

### Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 2235

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. GK

Sample ID 851  
SL-551-SAB-SB 4.0-5.0 Date/Time 7-23-13 0815  
SMT23B

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID SL-551-SAB-SB 4.0-5.0 MS

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<del>X</del>
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?	
Encore	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Water	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

6-16 oz jars  
 6-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
		SAND WITH <u>≥ 15% FINES</u>		SP-SC	Poorly graded SAND with clay
	SM		Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50		OL	Organic SILT with low plasticity	
			MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			OH	Organic SILT or CLAY with moderate to high plasticity	
			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

#### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other \_\_\_\_\_

Is Staining Present Yes No

Color 10R 3/6 red brown

### Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic       Petroleum       Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist       Wet

PG Signature [Signature]

PG Registration # TBS

Additional Comments N/A

# SSFL Phase 3 – Field Sample Data Sheet

CDM, Smith

FSDS Checked By *[Signature]*

Sample ID SL-551-SAB-SB 9.0-10.0 Date/Time 7-23-13 0830

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 9.0  
 End Depth 10.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis			
	Parameters	Method	Analyze?
Metals		EPA 6010	x
		EPA 6020	x
		EPA 7471 (Soil)	x
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	x
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	x <i>if</i>
	PCBs/PCTs	EPA 8082	x
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	x
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

  

	Parameters	Method	Analyze?
VOCs	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	x
	TPH-EFH	EPA 8015	x
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Semi-VOCs	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2-1602 jars  
2-2200rc

NA - Not Applicable

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\approx$ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\approx$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 6/8 brown yellow

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A  Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *[Signature]*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID SL-551-SAB SB 14.0-15.0 Date/Time 7-23-13 0845

Matrix (circle one)  Soil  Sediment  Water

Start Depth 14.0 End Depth 15.0

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabion

Sampler V. Coltes

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X <i>if</i>
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-1602 jars*  
*2-ESCOR*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH ≥ 15% FINES	GP-GC	Poorly graded GRAVEL with clay
			GM	Silty GRAVEL
		SAND WITH * 5% FINES	GC	Clayey GRAVEL
			SW	Well-graded SAND
			SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
	SAND WITH ≥ 15% FINES	SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
HIGHLY ORGANIC SOILS		SC	Clayey SAND	
	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
		PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes No

Color 10 YR 8/3 light brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By S. J. Myers

Sample ID SL-551-SAB-SB 19.0-20.0 Date/Time 7-25-13 0900

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 19.0  
 End Depth 20.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X <i>if</i>
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?	
EVAPOR	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Sediment	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

*2-1602 jars*  
*2-8000C*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
				GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq$ 10% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes No

Color 5 YR 4/6 yellow red

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7733 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-552-SA8-SB-0.0-0.5 Date/Time 8-2-13 0745

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X <del>IF</del>
Pesticides	EPA 8081	X <del>IF</del>

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
 1-402 jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH * 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>GRAVEL WITH ≥ 15% FINES</b>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH * 5% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
<b>SAND WITH ≥ 15% FINES</b>		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>LIQUID LIMIT LESS THAN 50</b>	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	<b>LIQUID LIMIT GREATER THAN 50</b>	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
<b>HIGHLY ORGANIC SOILS</b>		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 3/3 dark brown

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>AG-552</b>	Subarea: <b>8</b>	Date Started: <b>8-2-13</b>	Date Completed: <b>8-2-13</b>
Client: DOE		Project Name/ #: <b>Santa Susana Field Lab/99489</b>	Total Depth: <b>8.6</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>NIA</b>	Depth Drilled into Bedrock: <b>NIA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>13270</b>	Depth to GW:	Geologist: <b>J. Faubion</b>	
PID Background: <b>0.0</b>	PG Review & No.: <b>Mike Hoffman #7735</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input type="checkbox"/> Pancake			

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	13280 12784 12776	SL-582 SA8-SB 0.0-0.5	0945	ML	SILT, 10YR 3/3 dark brown, 100% ML no plas., loose, dry, scattered root hairs SILT, as above, occasional organics
2		0.0	12784			ML	SILT, yellow red 5YR 4/6, 100% ML non plas, med. stiff, med dense, scott. organics (root hairs)
3			12766			ML	SILT, red brown 10R 3/6, 100% ML non plas, soft, loose, moist, organics about
4			12754	SL-582 SA8-SB 4.0-5.0	0945	ML	SILT - as above
5			12766			ML	SILT, brown yellow, 10YR 6/8, 100% ML non plas, soft, loose
6			12778			ML	SILT, 10YR 6/3 <sup>pale</sup> brown 90% ML, 10% CL mod. plas, soft, med. dense, moist
7			127102	SL-552 SA8-SB 7.5-8.5	0900	CL	CLAY, brown 10YR 6/3 <sup>brown</sup> , 90% CL 10% ML high plas, soft, moist dense
8			12784			SC	CLAYEY SAND, light brown 10YR 8/3 20% CL 80% SP, mod plas, soft, moist
8.6			12784			SC	CLAYEY SAND, <sup>pale</sup> light brown 10YR 8/3 30% CL, 70% SP sand, mod. plas, soft, moist
TD						SC	CLAYEY SAND, light brown 10YR 8/3, 20% CL, 80% v.f.g. sa to sr silica sand mod. plas., soft, moist - 8.6 r/F #1 8.0 r/F #2

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	HA = Hand Auger
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID SL-552-SAB-SB 4.0-5.0

Date/Time 8-2-13 0845

Matrix (circle one) Soil Sediment Water  
 Start Depth 4.0  
 End Depth 5.0  
 Depth Units (circle one) Inches Feet

Check if Composite  Collection Method (circle one) Hand Auger/Slide Hammer DPT Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Fakhion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	<del>X</del> JT
Pesticides	EPA 8081	<del>X</del> FF

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 2 - Encore  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
SW-SC			Well-graded SAND with clay	
SAND WITH ≥ 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SM		Silty SAND		
SC		Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 10YR/6/3 brown yellow

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature [Signature]

PG Registration # 2735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-552-SAB-7.5-8.5 Date/Time 8-2-13 0900

Matrix (circle one) Soil Sediment Water Start Depth 7.5 Depth Units (circle one) Inches Feet  
 End Depth 8.5

Check if Composite  Collection Method (circle one) Hand Auger Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Faubion  
 Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. SLEEVES  
 2-ENCORE  
 1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL
		GRAVEL WITH ≥ 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	GM	Silty GRAVEL
		SAND WITH ≥ 15% FINES	GC	Clayey GRAVEL
			SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM	Poorly graded SAND with silt			
SP-SC	Poorly graded SAND with clay			
SAND WITH ≥ 15% FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10 YR 8/3 light brown

Odor

1. Odor Strength (circle one)  
None  Slight      Strong

2. Odor Description (circle one)  
Organic      Petroleum      Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry      Moist  Wet

PG Signature *Mark Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. CTK

Sample ID SL-553-SAB-SB-0.0-0.5 Date/Time 08-27-13/12:35

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist BKASPZYC

Sampler V. CORTES

Analysis

Parameters	Method	Analysis?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analysis?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - G.S. SLEEVE  
1 - AMBER JAR (4 oz)

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq 15\%$ FINES	GP-GC	Poorly graded GRAVEL with clay
	GM		Silty GRAVEL	
	GC		Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq 15\%$ FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color BROWN 7.5YR 4/4

**Odor**

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry     Moist     Wet

PG Signature *Michelle Hoffmann*      PG Registration # 7735

Additional Comments N/A

Location ID: <b>D6553</b>	Subarea: <b>8</b>	Date Started: <b>08-27-13</b>	Date Completed: <b>08-28-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>STRONG ARM/D. VAZO</b>	
GPS collected? (Yes or No)		Drill Method: <b>DPT</b>	
Radiological Background: <b>Y=11/08=76</b>		Borehole diameter: <b>2-INCH</b>	
PID Background: <b>00</b>		Depth to GW: <b>NA</b>	
Radiological Equipment Used:		Sampling Method: <b>DPT-MACRO CORE</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>BLASPOYK</b>	

PK 8-28-13

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
6.5	0.5	0.0	11/108	SL-553 SAB- SB-0.0 0.5	12:35	CL	CLAY W/ SAND - BROWN (7.5 YR 4/4); CLAY 85%; HARD, NON-PLASTIC, DRY; SAND 15%; FINE, PG, NO ODR
1		0.0	11/66				
2	2.0	0.0	11/48				PK 8-28-13 CLAY W/ SILT - BROWN (7.5 YR 4H) CLAY 85%; HARD, NON-PLASTIC, DRY SILT 15%; NO ODR
3		0.0	11/42				
4		0.0	11/66	SL-553 SAB- SB-4.0 5.0MS	12:50	CL	PK 8-27-13
5	4.6	0.0	11/48	SL-853 SAB-SB 4.0-5.0	13:00	CL	SAME AS ABOVE - W/ COLOR CHANGE TO STRONG BROWN (7.5 YR 5/8) AT 7 FT
6	4.0	0.0	11/42	4.0-5.0			
7		0.0	11/54				
8		0.0	11/60				SAME AS ABOVE PK 8-28-13 STRONG CLAY; STRONG BROWN (7.5 YR 5/8) 70% CLAY; HARD, NON-PLASTIC, DRY 30% SILT, NO ODR
9	4.0	0.0	11/66	SL-553- SAB-SB 9.0-10.0	7:30	CL	
10	4.0	0.0	11/72				

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG553** Subarea: **8** Date Started: **08-27-13** Date Completed: **08-28-13**  
 Project: **SSFL** Geologist: **E. KASPLYC** Total Depth: **19.0**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
11	4.0 / 4.0	0.0	11/78			CL	<b>08-28-13</b> SILTY CLAY - STRONG BROWN (7.5 YR 5/10) 70% CLAY, HARD, NON PLASTIC, DRY, 30% SILT; NO ODOR.
12		0.0	11/60			CL	<b>08-28-13</b> SANDY CLAY W/ SILT - WHITE (10 YR 8/1) <del>70% CLAY, SOFT LOW PLASTIC, DRY;</del>
13	4.0 / 4.0	0.0	11/60			CL	<b>08-27-13</b> CLAY 60%, SOFT, LOW-PLASTIC DRY SAND 30% FINE, PG, LOOSE SILT 10% SOFT LOW PLASTIC NO ODOR
14		0.0	11/78	SL-553- SAB-5B 14.0-15.0	7:40		
15		0.0	11/66				SAME AS ABOVE W/ COLOR CHANGE TO GRAYISH BROWN 10 YR 5/2 AT 15 FT
16		0.0	11/72			CL	CLAY - STRONG BROWN (7.5 YR 5/8)
17	3.0 / 3.0	0.0	11/42			CL	90% CLAY, SOFT, LOW PLASTIC, MOIST 10% SAND; FINE, PG, LOOSE, TRUED SILT, NO ODOR
18		0.0	11/54	SL-553- SAB-5B 18.0-19.0	7:50		
19		0.0	11/48			SP	REFUSAL AT 19.0 FT  SILTY SAND; LT. BROWN (7.5 YR 4/1) 70% SAND, FINE, PG, LOOSE; 30% SILT SOFT, NON-PLASTIC, MOIST, NO ODOR HARD AT CONTACT WITH CL & SP. DRY

**08-28-13**

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-553-SAB-SB-40-5.0MS Date/Time 08-27-13/ 12:50

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 Depth Units (circle one)  Inches  Feet

End Depth 5.0

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

*V. Cortes 8/27/13*

Parent Sample ID ~~SL-553-SAB-SB-40-5.0~~ N/A

Field Geologist E. KASPRZYK

Sampler V. CORTES

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*6- ENCORE SAMPLES  
6-1602 JANS  
8-27/13*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
				GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq 10\%$ FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
				SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
				MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) 0
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes No

Color BROWN (7.5YR 4/4)

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Julia Hoffman*

PG Registration # 7735

Additional Comments NA

# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. [Signature]

Sample ID SL-853-SAB-SB-40-50 Date/Time 8/27/13 13:00

Matrix (circle one)  Soil  Sediment  Water

Start Depth 40 End Depth 50

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID SL-553-SAB-SB-40-50-MS

Field Geologist B. K. [Signature]

Sampler U. Cortes

## Analysis

Parameter	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - ENCORE SAMPLERS  
2-16 02 JAN 4

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH $\geq 10\%$ FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH $\geq 15\%$ FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	OL	Organic SILT with low plasticity
			ML	Inorganic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	OH	Fat inorganic CLAY with moderate to high plasticity
			CH	Organic SILT or CLAY with moderate to high plasticity
	HIGHLY ORGANIC SOILS	PT	PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) 0
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes No

Color BROWN (7.5YR 4/4)

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Nicole Hoffmann*

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortez

Sample ID SL-553-SAB-SB-9.0-10.0 Date/Time 08-28-93/7:30

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 9.0  
 End Depth 10.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist B KASZYK

Sampler V. CORTES

## Analysis

Parameter	Method	Analyte
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analyte
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 16-oz Jars  
 2 envelopes

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 10\%$ FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND		
		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color STRONG BROWN 7.5YR 5/8

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature *Nick DeLeon* PG Registration # 2735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Gt

Sample ID SL-553-SAB-SB-14.0-15.0 Date/Time 08-28-13/07:40

Matrix (circle one)

Soil     Sediment     Water

Start Depth 14.0

End Depth 15.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist B. KASZYK

Sampler S. Mc [initials] V. CORTES

Analysis

Parameter	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 16-08 JARS

2 ENRONOS

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq 15\%$ FINES	GP-GC	Poorly graded GRAVEL with clay
	GM		Silty GRAVEL	
	GC		Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq 15\%$ FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			(CL)	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) 0
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color WHITE 10YR 8/1

- ### Odor
- Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
--	---------------------------------	---------------------------------
  - Odor Description (circle one)
 

<input checked="" type="checkbox"/> Organic	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Chemical
<input checked="" type="checkbox"/> N/A Other _____		

Moisture Condition (circle one)

<input checked="" type="checkbox"/> Dry	<input type="checkbox"/> Moist	<input type="checkbox"/> Wet
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PG Signature *Vicki Johnson* PG Registration # 7735

Additional Comments NA

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# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By J. GTE

Sample ID 4L-553-SAB-SB-18.0-19.0 Date/Time 08-28-13/ 07:50

Matrix (circle one)

Soil     Sediment     Water

Start Depth 18.0

End Depth 19.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist B KASPERK

Sampler V Cortes

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-1602 JAGG  
2-ENCORV

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL
		GP	Poorly graded GRAVEL
		GW-GM	Well-graded GRAVEL with silt
		GW-GC	Well-graded GRAVEL with clay
		GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GM	Silty GRAVEL
		GC	Clayey GRAVEL
		SW	Well-graded SAND
		SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SW-GM	Well-graded SAND with silt
		SW-SC	Well-graded SAND with clay
		SP-GM	Poorly graded SAND with silt
	LIQUID LIMIT GREATER THAN 50	SP-SC	Poorly graded SAND with clay
		SM	Silty SAND
		SC	Clayey SAND
HIGHLY ORGANIC SOILS	SILT AND CLAY	ML	Inorganic SILT with low plasticity
		CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity
		CH	Fat inorganic CLAY with moderate to high plasticity
	OH	Organic SILT or CLAY with moderate to high plasticity	
	PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color STRONG BROWN (7.5YR 5/8) & LT. BROWN (7.5YR 4/4) V. Cont 8/20/13

Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

Moisture Condition (circle one)  
 Dry     Moist\*     Wet

PG Signature *Nicole Hoffmann* PG Registration # 7735

Additional Comments SEE \* BOTTOM 0.2 FT OF SAMPLE WAS DRY  
8/20/13

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. K.

Sample ID SA-554-SA8-SB 0.0-0.5 Date/Time 7-22-13 1330

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sieves  
 1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

#### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel       N/A

Other \_\_\_\_\_

Is Staining Present Yes No

Color 10 YR 3/3 dark brown

#### Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-554</b>	Subarea: <b>8</b>	Date Started: <b>7-22-13</b>	Date Completed: <b>7-22-13</b>
Client: DOE		Project Name/#: <b>SSFL-02250-00070-1203-002-223-02231-SSPM-AB</b>	Total Depth: <b>11.7'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratagem F. Rodriguez</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>11 265</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	Geologist: <b>J. Paulson</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No.: <b>Miller #7735</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	11275	SA-554	1330	ML	0.5 clayey silt, 10 YR 3/3 dark brown, moist, cohesive 0/0/180/20
1			0.0	8260	SA8-SB		CL	1' - caliche mottling pervasive - root hairs silty clay, 10 R 3/6 red brown stiff, cohesive, moist 0/0/20/60
2			0.0	8248			CL	2' silty clay, 10 R 3/6, as above - strong caliche mottling 0/0/20/80
3			0.0	8260			CL	3' silty clay, 10 R 3/6 0/0/20/80 - strong caliche mottling
4			0.0	8272	SL-554 SA8-SB 4.0-5.0	1400	CL	4' silty clay, 10 R 3/6 red brown - strong caliche mottling, stiff cohesive, moist 0/0/20/80
5			0.0	8296			CL	5' silty clay, 10 R 3/6 as above - strong caliche mottling 0/0/20/80
6			0.0	8272			CL	6' silty clay, 10 R 3/6 as above - caliche mottling persisting 0/0/20/80
7			0.0	8260			CL	7' silty clay, 10 R 3/6 as above 0/0/20/80 - caliche mottling dropping out
8			0.0	8254			CL	8' silty clay w/ trace sand - color Δ to 10 YR 8/3 light brown
9			0.0	8296			CL	clayey sand, 10 YR 8/3 - silt % replaced by v.f.g. pig. silica sand

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

x/x/x/x - gravel / sand / silt / clay %

Location ID:

06-554

Subarea:

8

Date Started:

7-22-13

Date Completed:

7-22-13

Project: SSFL

Geologist: J. Faubus

Total Depth: 11.7

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10			8266			SP	pi.g. sand w/interstitial clay 10YR 8/3 9.2-10.2
11			8246			SM	10.2-11.9 T.D. is silty sand 10YR 8/3 yellowish yellow SF - trace interstitial clay light brown
			8254			SM	silty sand, dense, moist, P.G. sand is silt - trace interstitial clay
						SM	11.7 refusal

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SA-554-SA8-SB 4.0-5.0 Date/Time 7/22/13 1400

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars  
 2-ENCORE

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES		GW	Well-graded GRAVEL	
				GP	Poorly graded GRAVEL	
				GW-GM	Well-graded GRAVEL with silt	
				GW-GC	Well-graded GRAVEL with clay	
				GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay		
		GRAVEL WITH $\geq$ 10% FINES		GM	Silty GRAVEL	
				GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES			SW	Well-graded SAND
					SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES				SW-SM	Well-graded SAND with silt	
				SW-SC	Well-graded SAND with clay	
				SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES				SM	Silty SAND	
			SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50			ML	Inorganic SILT with low plasticity	
				CL	Lean inorganic CLAY with low plasticity	
				OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50			MH	Elastic inorganic SILT with moderate to high plasticity	
				CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 316 red brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. T.

Sample ID SL-565-SAB-SB 0.0-0.5 Date/Time 7-23-13 1200

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - 5.5 sleeves  
 1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt		
	SW-SC	Well-graded SAND with clay		
	SP-SM	Poorly graded SAND with silt		
	SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

### Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-555</b>	Subarea: <b>8</b>	Date Started: <b>7-23-13</b>	Date Completed: <b>7-23-13</b>
Client: DOE		Project Name/ID: <b>66FL 65285 63376 4200 002 222 02231 SSPH3 MB</b>	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stranger</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>9254</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review No.:	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Walt Johnson #7735</b>
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	9236	9236	SL-555 SAB-SB 0.0-0.5	1200	ML	silt, 10R 3/6 red brown, moist, compact - no stain lodon - root hairs, caliche mottling
2		0.0	9248	9248			ML	silt, 10R 3/6 red brown, moist compact - no stain lodon - strong caliche mottling - color Δ to 5YR 4/6
3		0.0	9266	9266			ML	silt, 5YR 4/6 - moist compact - strong caliche mottling
4		0.0	9260	9260	SL-555 SAB-SB 4.0-5.0	1230	ML	silt, 5YR 4/6, moist, compact - caliche mottling dropping out
5		0.0	9242	9242			CL	clay w/ silt 5YR 4/6, moist, compact - caliche mottling absent
6		0.0	9266	9266			CL	clay w/ silt 5YR 4/6 moist, compact
7		0.0	92102	92102			ML	clay w/ silt, 5YR 4/6 moist compact
8		0.0	9266	9266			CL	clay w/ silt 5YR 4/6 moist, compact - color Δ to 10R 3/6 red brown
9		0.0	9260	9260			CL	clay - silt absent 10R 3/6 - compact dense, moist - no stain lodon

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **06-555** Subarea: **8** Date Started: **7-23-13** Date Completed: **7-23-13**  
 Project: **SSFL** Geologist: **J. Faubon** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.	9248 0.0	9248			cl	clay, 10R 316 red brown - very elastic, homogeneous moist, compact
11		9260 0.0	9260			cl	clay, 10R 316 red brown - as above - caliche mottling about
12		00	9230			cl	clay - as above
13		0.0	9254			cl	- color Δ 10R 3/6 red brown to 10YR 8/3 sandy clay, 10YR 8/3, v. f.g. light brown SP silica sand in clay matrix
14		0.0	9236			cl	sandy clay, 10YR 8/3 SP silica sand in clay matrix - caliche mottling moderate
15		0.0	9272			cl	sandy clay, 10YR 18/3 (decompose & bedrock?) - sugary v. f.g. s.p. sand in clay matrix - str. caliche mottling
16		0.0	9260			cl	sandy clay, 10YR 8/3, strong caliche mottling, moist, compact
17		0.0	9248			cl	sandy clay, 10YR 8/3, caliche dropping out, moist, elastic, compact
18		0.0	242			cl	sandy clay 10YR 18/3
19			260			cl	sandy clay 10YR 8/3
TD			242			SP	19.6 refusal #1 - p.g. sand w/ clay 19.5 #2

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. [Signature]

Sample ID SL-555-SAB-SB-4.0-5.0 Date/Time 7-23-13 1230

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler V. Cortes

Analysis

Parameters	Method	Analysis?
Metals	EPA 6010	x
	EPA 6020	x
	EPA 7471 (Soil)	x
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	x
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	x
PCBs/PCTs	EPA 8082	x
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	x
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analysis?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	x
TPH-EFH	EPA 8015	x
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16oz jars

2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL
		GP	Poorly graded GRAVEL
		GW-GM	Well-graded GRAVEL with silt
		GW-GC	Well-graded GRAVEL with clay
		GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GM	Silty GRAVEL
		GC	Clayey GRAVEL
		SW	Well-graded SAND
		SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SW-SM	Well-graded SAND with silt
		SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt
	LIQUID LIMIT GREATER THAN 50	SP-SC	Poorly graded SAND with clay
		SM	Silty SAND
		SC	Clayey SAND
HIGHLY ORGANIC SOILS	SILT AND CLAY	ML	Inorganic SILT with low plasticity
		CL-SP	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity
		CH	Fat inorganic CLAY with moderate to high plasticity
	OH	Organic SILT or CLAY with moderate to high plasticity	
	PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other <u>etc</u>		

Is Staining Present Yes  No

Color 5YR 4/6

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A  Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature Mike Hoffman

PG Registration # 2735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID <sup>JF</sup> ~~SA~~ SL-556-SAB-SB 0.0-0.5 Date/Time 7-22-13 1130

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite      DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-5.5 sleeves*  
*1-4oz jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			OH	Organic SILT or CLAY with moderate to high plasticity
			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color SR 4/6 yellow red

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature *Mike Deffen*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-556</b>	Subarea: <b>8</b>	Date Started: <b>7-22-13</b>	Date Completed: <b>7-22-13</b>
Client: DOE		Project Name/ID: <b>001-05250-03370-1203.002.220-02201-03370</b>	Total Depth: <b>11.9</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratagem F. Rodriguez</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.75"</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>11263</b>	Depth to GW: <b>N/A</b>	Geologist: <b>S. Fashian</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		BG Review # <b>7735</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1	.5	0.0	11263	SL-556 SAB-58 0.0-6.5	1130	ML	clayey silt, SR 4/6 yellow red, moist compact, caliche mottling nostin/oder 010/20/20
2		0.0	11260			ML	cl 1' silty clay 10 YR 6/3 brown moist, cohesive silty clay 010/20/80
3		0.0	11290			ML	cl 2' silty clay 10 YR 6/3 brown - strong caliche mottling 010/20/80
4		0.0	11236	SL-556 SAB-58 4.0-5.0	1200	ML	cl 3' silty clay 10 YR 6/3 brown - strong caliche mottling 010/20/80 - color 10 YR 6/3 → 10 YR 8/3 light brown
5		0.0	11230			ML	cl 4' clayey silt, 10 YR 8/3 light brown - caliche mottling, moist, cohesive
6		0.0	9224			ML	cl 5' clayey silt, 10 YR 8/3 as above 5.5' clays dropping out - transition to <sup>Silty Sand</sup> silty sand - caliche mottling absent
7		0.0	9260			ML	cl 6' sandy silt, 10 YR 8/3 light brown moist, cohesive 015/85/0
8		0.0	9278			ML	sandy silt w/ interstratified clay 10 YR 8/3 moist/cohesive 015/80/5
9		0.0	924			ML	sandy silt w/ interstratified clay 10 YR 8/3 moist - increased moisture 8-11.9 T.D 015/80/5 as above, sandy silt w/ clay 015/80/5

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

x/x/x/x = gravel/sand/silt/clay %

SM 72513

Location ID: <b>DG-556</b>		Subarea: <b>8</b>		Date Started: <b>7-22-13</b>		Date Completed: <b>7-22-13</b>	
Project: SSFL				Geologist: <b>J. Fabian</b>		Total Depth: <b>11.9</b>	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	9736				CL	silty clay, 10 R 6/8 brown yellow moist - cohesive 0/0/15/85
11	0.0	9754				CL	silty clay as above, grading SP
	0.0	9766				SP	sand 11.2 - 11.9 (decomposed ss bedrock) 11.2 - 11.9 p.g. v.f.g. silica sand 10 R 6/8
							11.9 refusal #1
							11.8 " #2
							11.9 " #3

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. B.

Sample ID SL-556-SA8-SB 4.0-5.0 Date/Time 7-22-13 1200

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler V. Coites

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars

2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%)    N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No

Color    10 YR 8/3 light brown

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

N/A    Organic    Petroleum    Chemical

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature    *Mike Hoffmann*

PG Registration #    7735

Additional Comments    N/A

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SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID SL-557A-SAB-10.0-0.5

Date/Time 7-23-13 1340

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Coats

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1 - s.s. sieve

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL		
		GP	Poorly graded GRAVEL		
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	GW-GC	Well-graded GRAVEL with silt	
		GP-GM	GP-GC	Well-graded GRAVEL with clay	
		GM	GC	Poorly graded GRAVEL with silt	
		GM	GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES	GM	GC	Silty GRAVEL	
		GM	GC	Clayey GRAVEL	
		SAND WITH $\leq$ 5% FINES	SW	SP	Well-graded SAND
			SW	SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	SW-SC	Well-graded SAND with silt	
		SW-SC	SP-SM	Well-graded SAND with clay	
	SP-SM	SP-SC	Poorly graded SAND with silt		
SAND WITH $\geq$ 15% FINES	SM	SC	Poorly graded SAND with clay		
	SM	SC	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	CL	Inorganic SILT with low plasticity	
		ML	CL	Lean inorganic CLAY with low plasticity	
		OL	OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	CH	Elastic inorganic SILT with moderate to high plasticity	
		MH	CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color 10 YR 3/3 dark brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Vicki Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-557A</b>		Subarea: <b>8</b>		Date Started: <b>7-23-13</b>		Date Completed: <b>7-23-13</b>	
Client: DOE				Project Name/#: <del>68FL-05200-03376.1200.002.220.02201.05716-MB</del>		Total Depth: <b>5'</b>	
Company Name: CDM SMITH				Drill Contractor/Driller: <b>Strongarm</b>		Depth Drilled into Bedrock: <b>N/A</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No				Drill Method: <b>SH</b>		Borehole diameter: <b>2.25"</b>	
Radiological Background: <b>12286</b>				Depth to GW: <b>N/A</b>		Sampling Method: <b>SH</b>	
PID Background: <b>0.0</b>				PG Review & Non		Geologist: <b>J. Fawcett</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				<i>Walt Strongarm #7735</i>			

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
<b>5'</b> TD			<b>12286 9760</b>	<b>DG-557A sf SL-557A SAB-SB 1340 0.0-0.5</b>		<b>ML</b>	<b>silt, 10YR 3/3 - high organic content (roots, grass) dry, cohesive</b>

**CDM Smith** **BORING LOG AND SAMPLING RECORD** Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>SH = slide hammer</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-557B-SA840.0.0.5 Date/Time 7-23-13 1345

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

### Analysis

Parameter	Method	Analysis
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*1-ss sleeve*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 3/3 dark brown

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *Nick Hoffman*

PG Registration # 2735

Additional Comments N/A

Location ID: <b>DG-557B</b>	Subarea: <b>8</b>	Date Started: <b>7-23-13</b>	Date Completed: <b>7-23-13</b>
Client: DOE		Project Name/#: <b>ASFL-00208-03376-1203.002.250.02204-00000 MB</b>	Total Depth: <b>.5</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stroniger</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>SH</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA-JF SH</b>
Radiological Background: <b>12286</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & Note: <i>[Signature]</i> #7735	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
<b>.5</b> <b>TD</b>		<b>0.0</b> <b>9247</b>	<b>12284</b> <b>9248</b>	<b>SL-557B</b> <b>SA-839</b> <b>0.0-0.5</b>	<b>9248</b> <b>1345</b>	<b>ML</b>	<b>silt 10 YR 3/3 dark brown, dry cohesive no stain lodon - roots, grass debris .5. TD</b>

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>SH - slide hammer</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Sly Mupel

Sample ID SL-557E-SA 880.0-0.5 Date/Time 7-23-13 1350

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Coltes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
	NOAA Status and Trends, Krone et al.	
Organotin		
Methyl Mercury	EPA 1630	

1 - S.S. Sleeve

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND		
		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50		OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 3/3 dark brown

**Odor**

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry  Moist  Wet

PG-Signature *Wade Hoffman* PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-557C</b>	Subarea: <b>8</b>	Date Started: <b>7-23-13</b>	Date Completed: <b>7-23-13</b>
Client: DOE		Project Name/#: <del>99FL-55253-23376-1203-003-223-02201-56413-MB</del>	
Company Name: CDM SMITH		Drill Contractor/Driller: <i>Strongman</i>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>SH</b>	
Radiological Background: <b>12286</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review # <b>N/A</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<i>Walt Strongman #725</i>	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	2286 9766	SL-557C SA8-SB 0.0-0.5	1350		silt, 10YR 3/3 dry, loose - high organics - roots, grass, leaves

**CDM Smith** **BORING LOG AND SAMPLING RECORD** Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>SH = slide hammer</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID SL-557D-SA8-SB-0.0-0.5 Date/Time 7-23-13 1355

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Coltes

Analysis

Parameters	Method	Analyze
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1-s.s. sleeve

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
		SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay
			SM	Silty SAND	
	SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 3/3 dark brown

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *[Signature]* PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-557D</b>		Subarea: <b>8</b>		Date Started: <b>7-23-13</b>		Date Completed: <b>7-23-13</b>	
Client: DOE				Project Name/ #: <b>68PL-09269-03376.1203.002.223.02231.35PH3</b> <i>MB</i>		Total Depth: <b>0.5</b>	
Company Name: CDM SMITH				Drill Contractor/Driller: <i>Strong F. Rodriguez</i>		Depth Drilled into Bedrock: <b>NA</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No				Drill Method: <b>SH</b>		Sampling Method: <b>SH</b>	
Radiological Background: <b>12786</b>				Borehole diameter: <b>2.25"</b>		Geologist: <b>J. Faubion</b>	
PID Background: <b>0.0</b>				Depth to GW: <b>N/A</b>		PG Review & No. <i>[Signature]</i>	
Radiological Equipment Used: <input checked="" type="checkbox"/> Micror <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				Geologist: <b>J. Faubion</b>			

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
<b>0.5</b> <i>TD</i>		<b>0.0</b>	<b>9742</b>	<b>SL-557D SAB-SB 0.0-0.5</b>	<b>1355</b>	<b>ML</b>	<b>silt 10YR 3/3 - dry, loose - trace caliche mottling, high organics (leaves, roots)</b>

**CDM  
Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<i>SH = slide hammer</i>
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL DG-558-SAB-SB-0.0-0.5 Date/Time 8-2-13 1220  
JF

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - s.s. sleeves  
 1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color dk brown 10YR 3/3

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-558</b>	Subarea: <b>8</b>	Date Started: <b>8-2-13</b>	Date Completed: <b>8-2-13</b>
Client: DOE	Project Name/ #: Santa Susana Field Lab/99489		Total Depth: <b>13.5'</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>N/A</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>		
Radiological Background:	Borehole diameter: <b>2.25"</b>		Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		
Radiological Equipment Used:	FG Review/No. <b>W. Hoffman #7735</b>		Geologist: <b>J. Foubion</b>
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12772	SL-558	1220	ML	SILT, dk brown 10YR 3/3, 100% ML non-plas, loose, soft, moist - no stain/odor
1		0.0	12778	SA8-SB 0.0-0.5		ML	SILT - as above - occasional organics
2		0.0	12778			ML	SILT, - as above
3		0.0	12754			ML	SILT, yellow-red 5YR 4/6, non-plas 100% ML med dense, med. stiff, moist non-plas
4		0.0	12766			ML	SILT, yellow-red 5YR 4/6, mod. plas, med. dense, soft, 90% ML, 10% CL slight plas
5		0.0	12766	SL-558 SA8-SB 4.0-5.0	1246	ML	SILT, brown yellow, 10YR 6/8, clay content picking up, 75% ML, 25% CL med. dense, soft, mod plas
6		0.0	12772			ML	SILT, light brown 10YR 8/3, 70% ML mod. plas, med. dense, soft, moist, 30% CL - trace indurated sandstone
7		0.0	12766			ML	- SILT - as above - trace harder frags. sandstone
8		0.0	12778			CL	CLAY, brown yellow 10YR 6/8, high plas, dense, soft 80% CL 20% ML - mod. eolitic mottling
9		0.0	12778	SL-558 SA8-SB 9.0-10.0	1300	SC	clay SAND, brown yellow 10YR 6/8, mod plas, dense, soft, moist 15% CL 85% SP

ABBREVIATIONS:

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Harold Anger</b>
ft: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-558** Subarea: **8** Date Started: **8-2-13** Date Completed: **8-2-13**

Project: **SSFL** Geologist: **J. F. ...** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	12780				SC	clayey SAND - identical to 9'
11	0.0	12770				SP	SAND, <sup>v. pale</sup> <del>light</del> brown 10YR 8/3 100% SP <sub>small silts</sub> nonplas, loose, soft, moist sa to st v.f.g. silica sand
12	0.0	12770				SP	SAND - as above
13	0.0	12770		SL-558 SA 8-3B 1340	12.5-13.5	SP	<del>13.5 refusal</del> SAND - as above
	0.0	12770					- 13.5 refusal

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-558-SAB-SB-4.0-5.0 Date/Time 8-2-13 1240

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fawcior

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-ss. s/lees  
2-20 cone  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
		SAND WITH $\geq$ 15% FINES	SP-SC	Poorly graded SAND with clay
SM			Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present    Yes    No
2. Percentage Fill (%)    N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No  
 Color    yellow-red 5YR 4/6

- Odor
1. Odor Strength (circle one)
 

None	Slight	Strong
------	--------	--------
  2. Odor Description (circle one)
 

Organic	Petroleum	Chemical
<u>N/A</u> Other _____		

Moisture Condition (circle one)

Dry	<u>Moist</u>	Wet
-----	--------------	-----

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

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SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-558-SAB-SB 9.0-10.0 Date/Time 9-2-13 1300

Matrix (circle one)  Soil  Sediment  Water

Start Depth 9.0 End Depth 10.0

Depth Units (circle one) Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	✓
	EPA 6020	✗
	EPA 7471 (Soil)	✓
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	✗
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	✗
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	✗
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	✗
TPH-EFH	EPA 8015	✗
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - s.s. sleeves  
 2 - encore  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≥ 5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≥ 5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH <u>≥ 15% FINES</u>		SM	Silty SAND	
		<b>SC</b>	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<b>N/A</b>	
Other _____		

Is Staining Present Yes  No

Color 10 YR 6/8 brown-yellow

Odor

1. Odor Strength (circle one)

**None** Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

**N/A** Other \_\_\_\_\_

Moisture Condition (circle one)

Dry **Moist** Wet

PG Signature *Vicki Hoffmann* PG Registration # 7735

Additional Comments N/A

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SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-558-SAB-SB 12.5-13.5 Date/Time 8-2-13 1340

Matrix (circle one) Soil Sediment Water Start Depth 12.5 Depth Units (circle one) Feet  
 End Depth 13.5

Check if Composite  Collection Method (circle one) Hand Auger Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	x
	EPA 6020	x
	EPA 7471 (Soil)	x
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	x
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	x <i>JF</i>
PCBs/PCTs	EPA 8082	x
Perchlorate	EPA 314.0/331	
Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	x
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	x
TPH-EFH	EPA 8015	x
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - s.s. sleeves  
 2 - encore  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq 15\%$ FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
		SAND WITH $\geq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND		
		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes No

Color light brown 10YR 8/3

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Nick Johnson*      PG Registration # 7735

Additional Comments N/A

\_\_\_\_\_

\_\_\_\_\_

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-559-SA8-SBO.0-0.5 Date/Time 8-2-13 0930

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger     Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faulkner

Sampler T. Bennett

Analysis

Parameter	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES		GW	Well-graded GRAVEL
		GRAVEL WITH $\geq$ 5% FINES		GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES		GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES		SW	Well-graded SAND
		SAND WITH $\geq$ 5% FINES		SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
		SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES		SM	Silty SAND		
	SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 3/3 dark brown

**Odor**

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry  Moist  Wet

PG Signature *Vicki Hoffmann*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-559</b>	Subarea: <b>8</b>	Date Started: <b>8-2-13</b>	Date Completed: <b>8-2-13</b>
Client: DOE		Project Name/ #: <b>Santa Susana Field Lab/99489</b>	Total Depth: <b>13'</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>13275</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
PID Background: <b>0.0</b>	PG Review & Not. #7735		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	13278	SL-559		ML	SILT, dark brown 10YR 3/3, 100% ML
1		0.0	12766	SA8-58 0.0-0.5	0930	ML	SILT, <sup>nonplastic</sup> dark brown 10YR 3/3, 100% ML nonplastic, loose, soft, moist
2		0.0	12760			ML	SILT dark brown, 10YR 3/3 100% ML -as above, scattered organics
3		0.0	12766			ML	SILT, as above - trace clay, trace organics
4		0.0	12754	SL-559 SA8-58 4.0-5.0	0950	CL	CLAY, dk brown 10YR 3/3, 90% CL, 10% ML med. plas, med dense, soft, moist
5		0.0	12766			ML	SILT, <sup>dark</sup> red brown 10R 3/6, 80% ML, 20% CL med. plas, med. dense, soft moist
6		0.0	12766			ML	SILT, as above, color Δ 10R 3/6 red brown to brown yellow 10YR 6/8 6.2'
7		0.0	12772			CL	CLAY, brown yellow 10YR 6/8, 80% CL 20% ML, med. plas, med. dense, soft moist
8		0.0	12772			CL	CLAY - as above
9		0.0	12784			SC	Clayey SAND, brown yellow 10YR 6/8 75% vfg sa to sr silica sand, 25% CL med. plas, loose, soft moist

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

ABBREVIATIONS:					
amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		HA = Hand Auger
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	

Location ID: **06-559** Subarea: **8** Date Started: **8-2-13** Date Completed: **8-2-13**

Project: **SSFL** Geologist: **J. Feubion** Total Depth:

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	12784				SC	Clayey SAND - as 9'
11	0.0	12784				SM	Silty SAND, brown yellow 10YR 6/8 15% omc no plas, soft, loose - moist 85% SP
						SM	Silty SAND - as above
12	0.0	12766				SP	P.G. SAND, brown yellow 10YR 6/8 100% SP, soft, loose, moist - v. Fg. sr to sa silica sand.
13	0.0	12776				SP	P.G. SAND - as above - 13.0 refusal H1

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-559-SA8-SB 4.0-5.0 Date/Time 8-2-13 0950

Matrix (circle one) Soil Sediment Water Start Depth 4.0 End Depth 5.0 Depth Units (circle one) Inches Feet

Check if Composite  Collection Method (circle one) DPT Slide Hammer Hand Auger Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - s.s. sleeves  
1 - 4 oz jar  
2 - 2 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH <u>≥ 15% FINES</u>		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color red brown 10YR 13/3

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature Mike Johnson

PG Registration # 7735

Additional Comments N/A

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-560-SA8-SB 0.0-0.5 Date/Time 7-30-13 0750

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis			
	Parameters	Method	Analyzed?
Metals		EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

  

	Parameters	Method	Analyzed?
VOCs	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
Organotin		NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

*OB*  
 2- s.s. screen sleeves  
 1- 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
				GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq 10\%$ FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50			MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%)    N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No

Color    10 YR 3/3 dark brown

**Odor**

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry    Moist    Wet

PG Signature    [Signature]

PG Registration #    7735

Additional Comments    N/A

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Location ID: <b>AG-560</b>	Subarea: <b>8</b>	Date Started: <b>7-30-13</b>	Date Completed: <b>7-30-13</b>
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: <b>9'</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <i>Strongarm</i>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>OPT</b>	Borehole diameter: <b>2.25"</b>	
Radiological Background: <b>12250</b>	Depth to GW: <b>N/A</b>		Sampling Method: <b>OPT</b>
PID Background: <b>0.0</b>	PC Review # <i>725</i>		Geologist: <b>J. Faubion</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	11766	SL-560 SAB-SB 0.6-0.5	750 ML	ML	SILT, 10 YR 3/3, dark brown, 100% ML
2			11760			ML	SILT, 10 YR 3/3 compact, dry, dense - high organics (wood, leaves, roots) 100% ML
3			11754			ML	SILT, 10 YR 3/3, roots, 100% ML as above - color Δ 10 YR 3/3 → 5 YR 4/6 yellow red
4			11748			ML	SILT, 5 YR 4/6, mod. caliche mottling moist, compact 100% ML
5			11772			ML	SILT, 5 YR 4/6 mod. caliche mottling moist, dense, 100% ML
6			11736	SL-560 SAB-SB 4.0-5.0	0810 ML	ML	SILT, 5 YR 4/6, caliche absent, 100% ML - moist, compact
7			11766			SM	SILT, 5 YR 4/6 - Δ 5 YR 4/6 → 10 YR 8/3
8			11736			SM	SILTY SAND, 10 YR 8/3, moist, loose, 20% ML
9			11736			SP	SILTY SAND - as above 20% ML 80% SP 90%
			11772			SP	SAND - decomp sandstone 100% SP
						SP	SAND - 9' refused Δ 1
							9.5' Δ 2
							9.1' Δ 3

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 - Field Sample Data Sheet

DOM Smith

FSDS Checked By Bennett

Sample ID SL-560-3A9-SB-4.0-5.0 Date/Time 7-30-13 0810

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	Y
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	Y
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars

2-2N core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL		
		GC	Clayey GRAVEL		
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt		
	SW-SC	Well-graded SAND with clay			
	SP-SM	Poorly graded SAND with silt			
SAND WITH $\geq 15\%$ FINES	SP-SC	Poorly graded SAND with clay			
	SM	Silty SAND			
	SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity		
		CL	Lean inorganic CLAY with low plasticity		
		OL	Organic SILT with low plasticity		
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity		
		CH	Fat inorganic CLAY with moderate to high plasticity		
		OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color 5YR 4/6 yellow-red

### Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

N/A     Organic     Petroleum     Chemical

Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *Nick Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID 561 SL-562<sup>nd</sup>-SA8-SB-0.0-0.5 Date/Time 7-9-13 0945

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

- 2 S.S. sleeves  
- 1 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other <u>N/A</u>		

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature Vicki Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-561</b>	Subarea: <b>8</b>	Date Started: <b>7/9/13</b>	Date Completed: <b>7/9/13</b>
Client: DOE		Project Name/#: <b>ESP-66260-03376.7209.002.223.02231-SSPH-AMB</b>	Total Depth: <b>8.2</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	Borehole diameter: <b>NA</b>
Radiological Background: <b>14 &gt; 90</b>		Depth to GW: <b>NA</b>	Sampling Method: <b>Hand Auger</b>
PID Background: <b>0.0</b>		PA Review/No.:	Geologist: <b>J. Fairbro</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Mike Johnson #7135</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5	0.5	0.0	19 > 88	SL-561	0945	ML	silty sand, brown yellow 10YR 6/8 - mod root mottles, root hairs 10% no stain/odor
1	0.0	0.0	13 > 96	SAB-SB 0.0-0.5		SM	1' silty sand, red brown 10R 3/6 - dry, uncohesive silty sand 1-2% root hairs
2	0.0	0.0	13 > 66			SM	2' silty sand, yellow red 5YR 1/4/6 2.6 3/4" diameter root - penetrated - dry, uncohesive silty sand no stain/odor
3	0.0	0.0	48 > 132			SM	3' silty sand, yellow red 5YR 4/6 - moist, slightly cohesive no stain/odor - v.fg. poorly graded silica sand
4	0.0	0.0	12 > 84 14 > 66	SF		SM	4' - silty sand, brown yellow 10YR 6/8 - trace moist, uncohesive, no organics - no stain/odor
5	0.0	0.0	13 > 84	SL-561 SAB-SB 4.0-5.0	1140	SM	5'-6' as above, silty sand brown yellow - drier, uncohesive no organics 10YR 6/8
6	0.0	0.0	13 > 84			SM	6-7.1 as above brown yellow no stain/odor 10YR 6/8 - drier, uncohesive no stain/odor
7	0.0	0.0	13 > 90	SL-561 SAB-SB SF	1140 SF	SM	7-8' as above - decomposed bedrock the brown yellow 10YR 6/8
8							8.2 refusal

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. GA

Sample ID SL-561-SAB-SB 4.0-5.0 Date/Time 7-9-13 1140

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth ~~4.0~~ 4.0  
 End Depth ~~5.0~~ 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler V. Cortes

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

- 2 S.S. sieves  
 - 1 4oz jar  
 - 2 ENCORE

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	 GW	Well-graded GRAVEL
			 GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	 GW-GM	Well-graded GRAVEL with silt
			 GW-GC	Well-graded GRAVEL with clay
			 GP-GM	Poorly graded GRAVEL with silt
		 GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq 10\%$ FINES	 GM	Silty GRAVEL
			 GC	Clayey GRAVEL
		SAND WITH $\geq 5\%$ FINES	 SW	Well-graded SAND
			 SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	 SW-SM	Well-graded SAND with silt		
	 SW-SC	Well-graded SAND with clay		
	 SP-SM	Poorly graded SAND with silt		
	 SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq 15\%$ FINES	 SM	Silty SAND		
	 SC	Clayey SAND		
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	 ML	Inorganic SILT with low plasticity
			 CL	Lean inorganic CLAY with low plasticity
	 OL	Organic SILT with low plasticity		
	 MH	Elastic inorganic SILT with moderate to high plasticity		
	 CH	Fat inorganic CLAY with moderate to high plasticity		
	 OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		 PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-562-SA8-SB-0.0-0.5 Date/Time 7-9-13 0845

Matrix (circle one)  Soil  Sediment  Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler N. Cortes

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 SS SIEVES, 1 4.0µ JAR

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL
		GP	Poorly graded GRAVEL
		GW-GM	Well-graded GRAVEL with silt
		GW-GC	Well-graded GRAVEL with clay
		GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GM	Silty GRAVEL
		GC	Clayey GRAVEL
		SW	Well-graded SAND
		SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH $\geq 5\%$ FINES	SW-SM	Well-graded SAND with silt
		SW-SC	Well-graded SAND with clay
	SAND WITH BETWEEN 5% AND 15% FINES	SP-SM	Poorly graded SAND with silt
		SP-SC	Poorly graded SAND with clay
	SAND WITH $\geq 15\%$ FINES	SC	Silty SAND
		CL	Clayey SAND
SILT AND CLAY	LIQUID LIMIT LESS THAN 50	<b>ML</b>	Inorganic SILT with low plasticity
		CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
		CH	Fat inorganic CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 6/8 brown yellow

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *M. Hoffman*

PG Registration # 9735

Additional Comments N/A

Location ID: <b>DG-562</b>		Subarea: <b>8</b>		Date Started: <b>7-9-13</b>		Date Completed: <b>7-9-13</b>	
Client: DOE				Project Name/#: <b>MB</b>		Total Depth: <b>2.1</b>	
Company Name: CDM SMITH				Drill Contractor/Driller:			
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Drill Method: <b>HA</b>		Depth Drilled into Bedrock:	
Radiological Background: <b>13 X 70</b>				Borehole diameter:			
PID Background: <b>0.0</b>				Depth to GW: <b>NA</b>		Sampling Method: <b>Hand Auger</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				PG Review & Non <i>Muller Hoffman #TBS</i>		Geologist: <b>J. Faubion</b>	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5 0.5	0.0	4	90	SL-562 SAB-5B 0.0-0.5	0845	SM ML	Silty sand, brown yellow 10YR 6/8 - dry, uncohesive, silty fines with 25% poorly graded v.f.g. silica sand
1	0.0	13	60			ML	1' - silty sand, yellow red 5YR 4/6 - dry, uncohesive f.g. so. 1
2	0.0	14	48			ML	2' - silty sand as above, yellow red 5YR 4/6 - trace clasts decomposed ss
2.1 TD							2.1' - Refusal in weathered ss. - Refusal 2.3 2 <sup>nd</sup> try - no subsurface sample collected
3							
4							
5							

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>HA = Hand Auger</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-563-SA 8-SB 0.0-0.5 Date/Time 7-9-13 1350

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

- 2 s.s. sleeves  
- 1 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS				

#### Fill Material

1. Is Fill Material Present    Yes     No

2. Percentage Fill (%)    NA

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present    Yes     No

Color    5YR 4/6 yellow red

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature    *Mike Hoffman*    PG Registration #    7735

Additional Comments    NA

Location ID: <b>DG-563</b>	Subarea: <b>8</b>	Date Started: <b>7-9-13</b>	Date Completed: <b>7-9-13</b>
Client: DOE		Project Name/#: <b>SSEL-05258-03270-1200-002-223-02201-00PH0-10</b>	Total Depth: <b>2.8'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>Hand Auger</b>	
Radiological Background: <b>14780</b>		Borehole diameter:	Sampling Method: <b>Hand Auger</b>
PID Background: <b>0.0</b>		Depth to GW: <b>NA</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No.:	Geologist: <b>J. Fashian</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.5	0.0	14781	SL-563	1350	ML	<del>Silty sand</del> Silty sand, yellow red SYR 416 SM 41113
1		0.5	0.0	14778	SA8-58 0.0-0.5		SM	dry, uncohesive - 20-25% v.f.g. silica sand, poorly graded - no stain/odor 1' - as above, organics dropping out yellow red SYR 416 - dry no stain/odor
2			0.0	14781	SL-563 SA8-58 2.0-3.0	1430	SM	2' silty sand as above - dry yellow red SYR 416 - no stain/odor
3			0.0	14766			SM	2.8 refusal - 2.0-2.8 as above, homogeneous silty sand, yellow red SYR 416 -dry no stain/odor
4								
5								

**CDM Smith** **BORING LOG AND SAMPLING RECORD** Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	HA = Hand Auger
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:

Subarea:

Date Started:

Date Completed:

Project: SSFL

Geologist:

Total Depth:

Depth (feet) logs	Recovery (feet)	PID (ppm)	Radiological ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortez

Sample ID SL-563-SAB-SB 2.0-3.0 Date/Time 7-9-13 1430

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 2.0  
 End Depth 3.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortez

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. SLEEVES  
 1 - 4oz jar  
 2 - ENVELOPES

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SAND WITH $\leq$ 15% FINES	SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
	SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	SM	Silty SAND
			SC	Clayey SAND
			ML	Inorganic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) NA

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color yellow red 5YR 4/6

### Odor

#### 1. Odor Strength (circle one)

None      Slight      Strong

#### 2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature Mike Johnson

PG Registration # 7735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Sly G. Myer

Sample ID SL-564-SA8-SB0.0.0.5 Date/Time 8-6-13 1000

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  DPT  Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID N/A

Field Geologist J. Fabion

Sampler S. Mercer

Analysis		
Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	X Sme 63
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	X Sme 613
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - s.s. sleeves  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SAND WITH BETWEEN 5% AND 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color brown yellow 10IR 6/8

### Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist       Wet

PG Signature Mike Johnson

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-564</b>	Subarea: <b>8</b>	Date Started: <b>8-6-13</b>	Date Completed: <b>8-6-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	
GPS collected? Yes or No		Drill Method: <b>HA</b> "	
Radiological Background: <b>13273</b>		Borehole diameter: <b>2.25</b> "	
PID Background: <b>0.0</b>		Depth to GW:	
Radiological Equipment Used:		PG Review & No.:	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<i>[Signature]</i> #7735	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
			0.0	13276	SL-564		ML	SILT, brown yellow 10YR 6/8, non plas med. stiff, occasional organic, moist - .7 refusal (3x) - .5 refusal (4x)
			0.0	13260	SAB-2A 0.0-0.5	1000		

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>HA = Hard Auger</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
ft: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Myer

Sample ID SL-565-SA8-SB 0.0-0.5 Date/Time 8-8-13 0740

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

### Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW Well-graded SAND
			SP Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM Well-graded SAND with silt	
		SW-SC Well-graded SAND with clay	
		SP-SM Poorly graded SAND with silt	
		SP-SC Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM Silty SAND	
	SC Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML Inorganic SILT with low plasticity	
		CL Lean inorganic CLAY with low plasticity	
		OL Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH Elastic inorganic SILT with moderate to high plasticity	
		CH Fat inorganic CLAY with moderate to high plasticity	
		OH Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 4/4 dk brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-565</b>	Subarea: <b>8</b>	Date Started: <b>8-8-13</b>	Date Completed: <b>8-8-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>and 142A</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review/ # No: <b>Julia Hoffman #7135</b>	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	Geologist:

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	13272	SL-565	0740	ML	SILT, dk brown 10YR 3/3, non plas, 100% ML stiff, dry to moist, scatt. organics (root hairs)
1		0.0	13266	SA8-SB	0.0-0.5	ML	1' SILT - as above
2		0.0	13266			ML	2' SILT, dk yellowish brown 10YR 4/4 non-plas, st. ff, moist 100% ML - organics absent 100% ML
3		0.0	13296			ML	3' SILT, as above - trace cl 2.8-3.0 96% ML 5% ML
4		0.0	13290			CL	4' clay w/silt, grey ish brown 10YR 5/2 mod plas, stiff, moist 85% CL 15% CL
5		0.0	13260	SL-565 SA8-SB	0830	CL	clay w/silt - as above, trace calcite 85% CL 15% CL
6		0.0	13296	4.0-4.50		CL	clay w/silt, - as above ML % picking up - 70% CL, 30% ML
7		0.0	12254			SC	sandy CLAY, w/SAND mt 9/14/13 pale brown 10YR 6/3 mod plas, soft, moist 15% SP, 85% CL
8		0.0	13296			SP	SAND, light yellowish brown 10YR 6/4 non plas, soft, loose, moist 100% SP
9		0.0	12266			SP	SAND - as above 100% sand to silt vfg silica sand

ABBREVIATIONS:				
amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-565** Subarea: **8** Date Started: **8-8-13** Date Completed: **8-8-13**  
 Project: SSFL Geologist: **J. Fabbro** Total Depth: **11**

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	13778			SP	SAND - as above
11		0.0	12772			SP	SAND - light yellowish brown 10YR 6/4 - 11.0 ref soil non plastic, soft, loose, moist
12							

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID SL-565-SA8-SB-4.0-5.0 Date/Time 8-8-13 0830

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabron

Sampler S. Mercer

#### Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCS	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*Handwritten notes:*  
 2 - S.S. Steurs  
 2 - PVC  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		<u>CL</u>	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color greyish brown 10YR 5/2

### Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature Walter Hoffman

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mason

Sample ID 1 SL-566-SAB-SB 0.0-0.5 Date/Time 8-7-13 1200

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fashion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

SM 8/7/13

2-5.5 sleeves  
 1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color dk brown 10YR 3/3

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature Julia Hoffmann

PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-566</b>	Subarea: <b>8</b>	Date Started: <b>8-7-13</b>	Date Completed: <b>8-7-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	Total Depth: <b>11.4</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Drill Method: <b>HA</b>	
Radiological Background: <b>13275</b>		Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PC Review & No. <b>N/A</b>	Geologist: <b>J. Fashion</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	13266	SL-566 SAB-SB 0.0-0.5	1200	ML	SILT dk brown 10YR 3/3, non plas, med. stiff, dry to moist, no str. / odor
1			0.0	13296	66 sf		ML	SILT, as above 100% ML
2			0.0	13296			ML	SILT as above, trace clay w/clay
3			0.0	13266			ML	SILT w/clay, dk brown 10 YR 3/3, med plas, moist, med. stiff 90% ML 10% CL
4			0.0	13254			ML	SILT w/clay, as above color Δ to red brown 10R 3/6
5			0.0	12790	SL-566 SAB-SB 4.0-5.0	1240	SM	silty SAND, yellow red 5YR 4/6, non plas, med. stiff, moist 20% ML 80% SP sand
6			0.0	12796			SM	silty SAND - as above
7			0.0	12796			SM	silty SAND - as above color Δ to brown 10YR 6/3
8			0.0	12790			SM	silty SAND - as above
9			0.0	12772			SC	clayey SAND, light brown 10YR 8/3 low plas, soft, moist 15% CL, 85% SP sand

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:

DG-566

Subarea:

8

Date Started:

8-7-13

Date Completed:

8-7-13

Project: SSFL

Geologist:

J. Faubion

Total Depth:

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	12796				SP SAND, light brown 10YR 8/3, non plus, moist, soft 100% v.fg. PG silica sand
11		0.0	12784				SP SAND, as above
		0.0	12766				SP SAND - as above
12							11.4 refuse

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mace

Sample ID DG-566-SAB-SB 4.0-5.0 Date/Time 8-7-13 1240

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger  Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. MURPHY

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 2 - ENCORE  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt		
	SP-SC	Poorly graded SAND with clay		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	SM	Silty SAND
			SC	Clayey SAND
		LIQUID LIMIT GREATER THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellow red 5YR 4/6

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature Mika Johnson

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*[Signature]*

Sample ID SL-567-SAB-SB-0.0-0.5 Date/Time 8-8-13 1250

Matrix (circle one) Soil Sediment Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one) Inches Feet

Check if Composite  Collection Method (circle one) DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB

Parent Sample ID N/A

Field Geologist J. Fawcett

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color very dk brown 10YR 2/2

#### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-567</b>	Subarea: <b>8</b>	Date Started: <b>8-8-13</b>	Date Completed: <b>8-8-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	Total Depth: <b>12.4'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>12280</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
PID Background: <b>0.0</b>	PG Review & No. <b>Mulle Hoffman #7735</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	12289	SL-567		ML	0.5 SILT, v. dk brown 10YR 2/2, low plas
1			0.0	122120	SA8-SB	1250	ML	w/cloy' soft, moist, scatt organics (rock h. etc)
			0.0	12266	0.0-0.5		CL	1' CLAY w/silt, v. dk brown 10YR 2/2 med. plas, soft, moist 90%ML 10%CL 80%CL 20%ML
2			0.0	12224			CL	2' CLAY w/silt - as above
3			0.0	12266			CL	3' CLAY w/silt - as above
4			0.0	12290			ML	4' SILT w/cloy, dk brown, 10YR 3/4, low plas, soft, moist 60%ML, 40%CL
5			0.0	12284	SL-567 SA8-SB	1325	CL	5' CLAY w/silt, dk. yellowish brown 10YR 4/6 mod. plas, soft, moist 80%CL, 20%ML
			0.0	11272	4.0-5.0		ML	6' SILT w/cloy, brownish yellow 10YR 6/8, low plas, soft, moist 70%ML, 30%CL
7			0.0	11272			ML	7' SILT - as above w/cloy
8			0.0	12260			ML	8' SILT w/cloy - as above, trace calcite trace resistant clasts sandstone matrix
9			0.0	11260	SL-SF		ML	9' SILT w/cloy - as above. 70%ML 30%CL

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-567** Subarea: **8** Date Started: **8-8-13** Date Completed: **8-8-13**

Project: **SSFL** Geologist: **J. Fawcett** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	12760	SL-567 3A8-SB 9.0-10.0	1440	ML	SILT w/ clay - as 6'-9', <sup>CL</sup> dropping out 85% ML 15% CL
11		0.0	12772			SM	silty SAND, brown yellow 10YR 6/8, non plas, loose, moist 80% SP sand 20% ML
12		0.0	12770			SP	SAND, light brown 10YR 8/3, non plas, loose, moist 100% SP silica sand - 12.4' Refusal

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-567-SAB-SB 4.0-5.0 Date/Time 8-8-13 1325

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	x
	EPA 6020	x
	EPA 7471 (Soil)	x
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	x
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	x
PCBs/PCTs	EPA 8082	x
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	x
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	x
TPH-EFH	EPA 8015	x
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-s.s. sleeve*  
*2-encore*  
*1-402 jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color dk yellowish brown 10YR 4/6

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

PH 567 04/09/14 FSDS Checked By [Signature]  
 Sample ID SL-576-SAB-SB-9.0-10.0 Date/Time 8-8-13 1440

Matrix (circle one)  Soil  Sediment  Water  
 Start Depth 9.0  
 End Depth 10.0  
 Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB  
 Parent Sample ID N/A

Field Geologist J. Faubion  
 Sampler S. Mercer

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1-s.s. sieve  
 1-16 oz jar 2-80002  
 1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq 15\%$ FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
PT	PEAT soils with high organic contents			

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 1

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 6/8

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Nick Johnson*

PG Registration # 7735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Stan Merce

Sample ID SL-56A-SAB-SB 0.0-0.5 Date/Time 8-5-13 0810

Matrix (circle one) Soil Sediment Water Start Depth 0.0 Depth Units (circle one) Inches Feet  
 End Depth 0.5

Check if Composite  Collection Method (circle one) Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?	
VOCs	EPA 8260		
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
	Methyl Mercury	EPA 1630	

2-s.s. sieves  
1.4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
		SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt	
	SW-SC	Well-graded SAND with clay		
	SP-SM	Poorly graded SAND with silt		
	SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES	SM	Silty SAND		
	SC	Clayey SAND		
	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
CH		Fat inorganic CLAY with moderate to high plasticity		
OH		Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present  Yes  No
2. Percentage Fill (%) N/A  $\pm$  1%
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present Yes  No   
 Color red brown 10R/3/6

### Odor

1. Odor Strength (circle one)
 

None	Slight	Strong
------	--------	--------
2. Odor Description (circle one)
 

Organic	Petroleum	Chemical
<input checked="" type="radio"/> N/A Other _____		

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature Nick Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-568</b>	Subarea: <b>8</b>	Date Started: <b>8-5-13</b>	Date Completed: <b>8-5-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	Total Depth: <b>51</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>HA</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25</b>	Sampling Method: <b>N/A</b>
Radiological Background: <b>12280</b>	Depth to GW: <b>N/A</b>		PG Review & No.:
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Fawcett</b>

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
							4" asphalt surface
.5		0.0	12289 12266	SL-568 SAB-SB	0810	ML	SILT, <del>red brown</del> <sup>dark red</sup> 10R 3/6, med plas, moist, soft 80% ML, 20% CL - trace asphalt
1		0.0	12260	0.0-65		CL	CLAY, yellow red 5YR 4/6, med plas, moist soft, 70% CL, 30% ML
2		0.0	12266			SC	clayey SAND, brown yellow 10YR 6/8 low plas, soft, loose, moist 20% SP, 20% CL
3		0.0	12248			SP	SAND, brown yellow 10YR 6/8, non plas, soft, loose, moist, 100% s&t of silica sand
4		0.0	12272			SP	SAND - as above
5		0.0	12266	SL-568 SAB-SB 4.0-5.0	830	SP	SAND - as above, trace cemented clasts - 5' refusal #1 - sandstone - 5' " " #2

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mann

Sample ID SL-568-SAB-SB 4.0.5.0 Date/Time 8-5-13 0830

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	<input checked="" type="checkbox"/>
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	<input checked="" type="checkbox"/>
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	<input checked="" type="checkbox"/>
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	<input checked="" type="checkbox"/>
TPH-EFH	EPA 8015	<input checked="" type="checkbox"/>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - s.s. sleeves  
 2 - encore  
 1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM GP-GM	Well-graded GRAVEL with silt Poorly graded GRAVEL with silt	
			GW-GC GP-GC	Well-graded GRAVEL with clay Poorly graded GRAVEL with clay	
		GRAVEL WITH $\geq$ 10% FINES	GM GC	Silty GRAVEL Clayey GRAVEL	
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW <u>SP</u>	Well-graded SAND Poorly graded SAND
			SAND WITH BETWEEN 5% AND 15% FINES	SW-SM SP-SM	Well-graded SAND with silt Poorly graded SAND with silt
	SW-SC SP-SC			Well-graded SAND with clay Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES		SM SC	Silty SAND Clayey SAND	
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	ML CL	Inorganic SILT with low plasticity Lean inorganic CLAY with low plasticity
			Liquid Limit GREATER THAN 50	OL MH CH	Organic SILT with low plasticity Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		OH PT	Organic SILT or CLAY with moderate to high plasticity PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Steve Mear*

Sample ID

*SL-569-SAB-SB-0.0-0.5*

Date/Time

*8-5-13 0950*

Matrix (circle one)

Soil

Sediment

Water

Start Depth

*0.0*

Depth Units (circle one)

Inches

Feet

End Depth

*0.5*

Check if Composite

DPT

Slide Hammer

Collection Method (circle one)

Hand Auger/Slide Hammer

Trenching

Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

*N/A*

Field Geologist

*J. Faubion*

Sampler

*S. Mercer*

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	Y
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2 - s.s. sleeves  
1 - 4 oz jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION REMAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq 10\%$ FINE	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	ML	Inorganic SILT with low plasticity
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present  Yes  No *IF*

2. Percentage Fill (%) *A ± 2%*

3. Fill Description (circle all that apply)

Asphalt       Metal       Plastic

Concrete       Wood       Glass

Igneous/Metamorphic Gravel       N/A *SF*

Other \_\_\_\_\_

Is Staining Present Yes  No

Color *yellow-red 5YR 4/6*

Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic       Petroleum       Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature *[Signature]*

Additional Comments *N/A*

PG Registration # *7735*

Location ID: <b>06-569</b>	Subarea: <b>8</b>	Date Started: <b>8-5-13</b>	Date Completed: <b>8-5-13</b>
Client: DOE		Project Name#: Santa Susana Field Lab/99489	Total Depth: <b>7.9</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Drill Method: <b>Hand Auger</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>12280</b>	Depth to GW: <b>N/A</b>	Geologist: <b>S. Frazier</b>	
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		
PG Review # No. <b>Null</b>		PG Review # <b>775</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	12278	SL-569		ML	SILT, yellow red 5YR 4/6, non plas, dry, dense - trace asphalt fill
1			0.0	12772	SA8-SB 0950		SM	silty SAND, brown yellow 10YR 6/8, non plas, moist, loose, 80% SP, 20% ML
2			0.0	13772	0.0-0.5		SP	SAND, yellow red 5YR 4/6, non plas, moist, loose 100% vfg. sa to sr sand
3			0.0	13790			SP	SAND - as above
4			0.0	12742	SL-569		SP	SAND - as above
5			0.0	12754	SA8-SB 4.0-5.0	1040	SM	silty SAND, <sup>dark matrix</sup> red brown 10R 3/6, med. plas, moist, soft, loose 85% SP, 15% ML
6			0.0	12784	SL-569		SP	SAND, brown yellow 10YR 6/8, non plas, moist, soft, loose, 100% vfg. SP sand
7			0.0	127102	SA8-SB 6.5-7.5	1335	SP	SAND, as above, becoming denser
			0.0	12796	7.0-8.0		SP	7.9 SAND, brown, 10YR 6/3, non plas, moist, med. stiff, some resistant clasts
								- 7.9 refusal # 1
								- 7.8 refusal # 2

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>N/A = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Menn

Sample ID SL-569-SAB-SB-4.0-5.0 Date/Time 8-5-13 1040

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger     Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
 2-core  
 1-402 jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH *5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH *5% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH ≥ 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- Asphalt      Metal      Plastic
- Concrete      Wood      Glass
- Igneous/Metamorphic Gravel  N/A
- Other \_\_\_\_\_

Is Staining Present Yes  No

Color brown yellow 10YR 6/8 JF  
yellow-red 5YR 4/6

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature Nick Hoffman

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve M...

7.0-8.0

Sample ID

SL-569-SAB-SB-6.5-7.5 SF

Date/Time

8-5-12 1335

Matrix (circle one)

Soil Sediment Water

Start Depth

6.5 7.0  
JF

Depth Units (circle one)

Inches Feet

End Depth

7.5 8.0  
JF

Check if Composite

Collection Method (circle one)

DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one)

N FD FB RB

Parent Sample ID

N/A

Field Geologist

J. Faubion

Sampler

S. Mercer

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCS	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-5.5 sleeves  
2-encore  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature Mike Hoffman

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-570-SAB-SB 0.0-0.5 Date/Time 7-11-13 1350

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 10% FINES</u>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH <u>≥ 15% FINES</u>		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		<u>CL</u>	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other <u>decomposed clay fill</u>		

Is Staining Present Yes  No

Color 10GY5/2 grey green

Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
 Dry  Moist  Wet

PG Signature *Walter Hoffman* PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-570</b>	Subarea: <b>8</b>	Date Started: <b>7-11-13</b>	Date Completed: <b>7-11-13</b>
Client: DOE		Project Name/ #: <b>SSFL-5520-0070-1000-002-020-0201-SSP112 NB</b>	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Strongarm / F. Rojas</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>11 &gt; 93</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>NA</b>	
Radiological Equipment Used:		PG Review & No:	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Mula Hoffman #7735</b>	
		Total Depth: <b>10'</b>	
		Depth Drilled into Bedrock: <b>NA</b>	
		Sampling Method: <b>DPT</b>	
		Geologist: <b>J. Fabian</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1	0.5 / 0.5	0.0	9 > 71	SL-570 SA 8-5B 0.0-0.5	1350	CL	10Y 5/2 gray/green clay fill
2		0.0	9 > 36			CL	- as above, clay fill
3		0.0	9 > 36			CL	- as above, clay fill
4		0.0	9 > 48	SL-570 SA 8-5B 4.0-5.0	1415	SM	- 3.8' fill/dative contact silty sand w/ interstitial clay 3.8-4.0 10YR 5/8
5		0.0	9 > 48			SM	- silty sand, moist, dense 10YR 5/8
6		6.0	9 > 84			SM CL	clay lens 5.2-5.5 10YR 5/8 brown yellow brown yellow silty sand below moist, uncohesive
7		0.0	9 > 72			SM	silty sand 10YR 5/8 no stain/odor p.g. sand 55% brown yellow
8		0.0	9 > 84			SM	silty sand 10YR 5/8 no stain/odor poorly graded sand 60% brown yellow
9		0.0	9 > 60			SM	silty sand, color transition to 5YR 4/6 yellow red no stain/odor - decomposed bedrock - FeOx stain
10		0.0	9 > 48				10.0' refusal Fin. gr. sand below

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:	Subarea:	Date Started:	Date Completed:
Project: SSFL		Geologist:	Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials
							#2 10' refuse

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-570-SA8 SB 4.0-5.0

Date/Time 7-11-13 1420 JF <sup>1415</sup>

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

~~1 - 4 oz jar~~ N. Cortes  
7/11/13

2 - EN core  
2 - 16 oz jars

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>COARSE GRAINED SOILS</b> CONTAINS MORE THAN 50% FINES	<b>GRAVEL AND GRAVELLY SOILS</b> MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
	<b>SAND AND SANDY SOILS</b> MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
SW-SC			Well-graded SAND with clay	
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
<b>FINE GRAINED SOILS</b> CONTAINS MORE THAN 50% FINES	<b>SILT AND CLAY</b> LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 5/8 brown yellow

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature Mike Johnson

PG Registration # 7735

Additional Comments NA

# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-571-SA8-SB 0.0-0.5 Date/Time 7-10-13 1415 ~~1420~~ JF

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

### Analysis

Parameters	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2 - S.S. sleeves  
1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100%

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other CLAY

Is Staining Present Yes  No

Color 10 YR 6/8

Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments \_\_\_\_\_

N/A

Location ID: <b>DG-571</b>	Subarea: <b>8</b>	Date Started: <b>7-10-13</b>	Date Completed: <b>7-10-13</b>
Client: DOE		Project Name/#: <b>CDRL-00200-02376 1202.002.223.02234.SSD014 MB</b>	Total Depth: <b>13.5</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Strong arm F. Rodriguez</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25"</b>
Radiological Background: <b>9270</b>		Depth to GW: <b>NA</b>	Sampling Method: <b>DPT</b>
PID Background: <b>0.0</b>		PG Review & No.:	Geologist: <b>J. Faubion</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>John [Signature] #7735</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		<b>.5</b>	<b>0.0</b>	<b>9296</b>	<b>SL-571</b>	<b>1415</b>	<b>CL</b>	
		<b>.5</b>			<b>SA8-58</b>			
					<b>0.0-0.5</b>			
1			<b>0.0</b>	<b>9274</b>			<b>SC</b>	<b>clayey sand - v.f.g p.g. silica sand in clayey matrix - fill no stain/odor</b>
2			<b>0.0</b>	<b>9248</b>			<b>CL</b>	<b>Fill, as above decomp. granitic clay</b>
3			<b>0.0</b>	<b>9260</b>			<b>CL</b>	<b>fill, as above brown yellow 10YR 6/8</b>
4			<b>0.0</b>	<b>9254</b>			<b>CL</b>	<b>ii - caliche mottling throughout 0.0 - 6.5</b>
5			<b>0.0</b>	<b>9248</b>			<b>CL</b>	<b>ii 10 YR 6/8 - fill</b>
6			<b>0.0</b>	<b>9260</b>			<b>CL</b>	<b>ii 10 YR 6/8 - fill</b>
7			<b>0.0</b>	<b>9248</b>	<b>SL-571</b>	<b>1450</b>	<b>CL</b>	<b>Transition fill/native 6.5-7.0</b>
					<b>SA8-58</b>		<b>SM</b>	<b>- homogeneous silty sand 7.5</b>
					<b>6.5-7.5</b>			<b>- color transition to yellow red 5YR 4/6</b>
8			<b>0.0</b>	<b>9254</b>			<b>ML</b>	<b>5YR 4/6 yellow red silty sand</b>
								<b>40% v.f.g, p.g., sr to sa silica sand</b>
9			<b>0.0</b>	<b>9254</b>			<b>ML</b>	<b>5YR 4/6 silty sand, no stain/odor</b>

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-571** Subarea: **8** Date Started: **7-10-13** Date Completed: **7-10-13**  
 Project: **SSFL** Geologist: **J. Fawcett** Total Depth:

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	9248				SM	9-10' 5YR 5/6 silty sand, moist cohesive, plastic no stain/odor
11	0.0	9260				SM	10-11 moist 5YR 5/6 silty sand, moist - trace clayey lenses 10.5-10.9
12	0.0	9284				SM	becoming drier silty sand, v.f.g. poorly graded sa. to s.f. silica sand - clay lens 12.0-12.5 30% - homogeneous texture 12.5-T.O. decomp. ss bedrock 5YR 5/6 no stain/odor
13	0.0	9266		SL-571 SAB-58 12.5-13.5	1505	ML	13.5 - refusal in v.f.g. s.f. to s.a. graded sandstone 12.5-13.5 in homogeneous 5YR 5/6 silty sand - no stain/odor
13.5	Refusal	13.5					

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G [Signature]

Sample ID SL-571-SA8-SB-6.5-7.5 Date/Time 7-10-13 1450

Matrix (circle one)

Soil     Sediment     Water

Start Depth 6.5

End Depth 7.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16oz jars  
2-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 2\%$ FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW Well-graded SAND
			SP Poorly graded SAND
SW-SM Well-graded SAND with silt			
SW-SC Well-graded SAND with clay			
SAND WITH BETWEEN 5% AND 15% FINES		SP-SM Poorly graded SAND with silt	
		SP-SC Poorly graded SAND with clay	
		SM Silty SAND	
		SC Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	MH Inorganic SILT with low plasticity	
		CL Lean inorganic CLAY with low plasticity	
		OL Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH Elastic inorganic SILT with moderate to high plasticity	
		CH Fat inorganic CLAY with moderate to high plasticity	
		OH Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 50%

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other <u>clay</u>		

Is Staining Present Yes  No

Color 10YR 6/8 → 5YR 4/6

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments 6.5-7.5 sample representing fill/native contact - sample replaces 5' interval in fill



## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES	GM GC	Silty GRAVEL Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW SP	Well-graded SAND Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
SP-SC		Poorly graded SAND with clay		
SAND WITH ≥ 15% FINES		SM SC	Silty SAND Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
	CL		Lean inorganic CLAY with low plasticity	
	OL		Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) 0
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 5YR 5/6 yellow-red

#### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *[Signature]*

PG Registration # 7735

Additional Comments NA

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V.G.K

Sample ID SL-572-SAB-SB-0.0-0.5 Date/Time 7-10-13 1045

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 1 - 4oz jars

V.C. 7/10/13

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
		GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt	
	SW-SC	Well-graded SAND with clay		
SAND WITH ≥ 15% FINES	SP-SM	Poorly graded SAND with silt		
	SP-SC	Poorly graded SAND with clay		
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT LESS THAN 50	OL	Organic SILT with low plasticity	
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS	PT	GH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present  Yes  No
2. Percentage Fill (%) 100
3. Fill Description (circle all that apply)
- |                            |       |         |
|----------------------------|-------|---------|
| Asphalt                    | Metal | Plastic |
| Concrete                   | Wood  | Glass   |
| Igneous/Metamorphic Gravel | N/A   |         |
| Other <u>decomp. clay</u>  |       |         |

Is Staining Present Yes  No

Color 10YR 6/8 brown yellow

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Mark Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-572</b>	Subarea: <b>8</b>	Date Started: <b>7-10-13</b>	Date Completed: <b>7-10-13</b>
Client: DOE			Total Depth: <b>19.3'</b>
Project Name/#: <b>66FL-06258-03376-1203-002-220-02201-00PH-1118</b>		Company Name: CDM SMITH	
Drill Contractor/Driller: <b>Stronagam</b>		Drill Method: <b>DPT</b>	
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Borehole diameter: <b>2.25</b>	
Radiological Background: <b>9286</b>		Depth to GW: <b>NA</b>	
PID Background: <b>0.0</b>		Sampling Method: <b>DPT</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Faubion</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	9248	SL-572 SAB-SB 0.0-0.5	1045	CL	- minor road mix rock above clay fill to .5 CL 10YR 6/8 clay fill
2		0.0	10278			CL	- caliche mottling throughout clay fill - moist/plastic 10YR 6/8
3		0.0	10272			ML CL	clayey silt 10YR 6/8 yellow brown clay (granitic) fill
4		0.0	10236			ML	- 3.8 fill / native transition - clay persists color trans. 10YR 6/8 to 10R 3/6 (red brown at 4.2)
5		0.0	10230	SL-572 SAB-SB 4.0-5.0	1110	CL ML	clayey silt, 10YR 6/8 yellow red
6		0.0	10260			ML	5.5 clays dropping out - transition to silty sand
7		0.0	9270			ML	6' silty sand, moist, cohesive plastic dark brown 10YR 3/6
8		0.0	9272			SM	7.5 color transition 10YR 8/1B to olive gray 5Y 4/1 in silty sand v.f.g. sa silica sand 40%
9		0.0	9248	SL-572 SAB-SB 9-10	1130		silty sand, 5Y 4/1 olive gray - homogeneous silty sand - lenses 9-10 grading to sandy silt

ABBREVIATIONS:					
amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
ff: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	

Location ID: **06-572** Subarea: **8** Date Started: **7-10-13** Date Completed: **7-10-13**

Project: **SSFL** Geologist: **J. Faubus** Total Depth: **19.3**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	11260				ML	SY 411 olive gray silty sand v.f.g. silica sand in silty matrix - traces clay stringers 10-10.5
11	0.6	10254				ML	silty sand, olive gray SY 411 v.f.g. sa silica sand in silt
12	0.0	10248				CL ML	picking up lenses (1") clay in silty sands olive gray SY 411 - v.f.g. sr to sa silica sand
13	0.0	11248				ML	13'-13.5 cohesive plastic clay lens, silty sand above/below
14	0.0	10268					olive gray SY 411 sa v.f.g. silica sand - no grain size increase
15	0.0	10254		<del>4115</del> SL-572 SA8-SB 14-15	1145	ML	transition silty sand to sandy silt, sand 55% v.f.g. sa silica sand SY 411 throughout - sand/silt
16	0.0	10260				ML	16 15-16' 2% grains med gr, rd to subrd SY 411
17	0.0	11254				ML	<del>sandy silt</del> silty sand SY 411 - trace med gr. silica sand 17.4
18	0.0	10278				ML	silty sand, moist trace interstitial clay, primarily silty sand SY 411
19	0.0	10272				ML	silty sand w/ traces f.g. sand 18-19' SY 411 - stg. FeOx stain weathered surface bedrock - 19.3 refusal
19.3	Refusal	10266		SL-572 SA8-SB 19.3-19.5	1200		

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. K.

Sample ID SL-572-SA8-SB 4.0-5.0 Date/Time 7-10-13 1110

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID 15/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars

2-2 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color 10YR 6/8 yellow red

### Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V G K

Sample ID SL-572-SAB-SB-9.0-10.0 Date/Time 7-10-13 1130

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>9.0</u> End Depth <u>10.0</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	---	--

Check if Composite  Collection Method (circle one)

Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)    Parent Sample ID N/A

N     FD     FB     RB

Field Geologist J. Faubion

Sampler V. Cortes

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	>
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars  
2-encore



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G Z

Sample ID SL-572-SAB-SB-14.0-15.0 Date/Time 7-10-13 1145

Matrix (circle one)

Soil     Sediment     Water

Start Depth 14.0

End Depth 15.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X <del>5F</del>
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-1602 jars  
2-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
			GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
		GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES			<b>SM</b>	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		<del>ML</del> <b>ML</b>	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50		OL	Organic SILT with low plasticity	
			MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) 0
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<b>N/A</b>	
Other _____		

Is Staining Present Yes  No   
 Color olive gray 5Y 4/1

- Odor
1. Odor Strength (circle one)  
 None    Slight    Strong
  2. Odor Description (circle one)  
 Organic    Petroleum    Chemical  
 N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By VG

Sample ID SL-572-SA8-SB 18.5-19.5 Date/Time 7-10-13 1200

Matrix (circle one)

Soil     Sediment     Water

Start Depth 18.5

End Depth 19.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

## Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

JF

2-16oz jars  
5-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color olive gray SY 4/1

**Odor**

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry    Moist    Wet

PG Signature *Michelle Hoffman* PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. GT

Sample ID SL-573-9AB-SB-0.0-0.5 Date/Time 7-10-13 0910

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 0.0

Depth Units (circle one)  
 Inches     Feet

End Depth 0.5

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID N/A

Field Geologist J. Facion

Sampler V. Cortes

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2- S.S. sleeves  
 1- 4oz jar  
 2/18/13

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\geq</math> 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>GRAVEL WITH <math>\geq</math> 15% FINES</b>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH <math>\geq</math> 5% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
<b>SAND WITH <math>\geq</math> 15% FINES</b>		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>SILT AND CLAY</b>	ML	Inorganic SILT with low plasticity	
		<input checked="" type="radio"/> CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			OH	Organic SILT or CLAY with moderate to high plasticity
			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other <u>road mix, compacted clay</u>		

Is Staining Present Yes  No

Color Brown yellow 10YR 6/8

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Mike Hoffman* PG Registration # 7735

Additional Comments - compacted clay fill to 4.8'

Location ID: <b>DG-573</b>	Subarea: <b>8</b>	Date Started: <b>7-10-13</b>	Date Completed: <b>7-10-13</b>
Client: DOE		Project Name/ID: <b>SOFL-00200-00070-1200-002-223-02201-00710 MB</b>	Total Depth: <b>10.4</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>Strong Arm</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <b>Yes</b> or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>7250</b>	Depth to GW: <b>NA</b>	Geologist: <b>J. Faubion</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & ID: <b>Mike Hoffman #7735</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.0		9280			0910		Fill, angular clasts road mix (granitic) 0.5-1.0 - no stain odor
1		7254					.5-1.0 asphalt base fill to 1.0 as above
2		8266				CL	1-2' clayey silt, moist-plastic, brown yellow 10YR 6/8
3		8260				CL	2-3' clayey silt, as above brown yellow 10YR 6/8 caliche mottling in fill under road base
4		8266		SL 573 SAB-SA 4.0-5.0	0930	ML	3.8' transition from clayey silt to silty sand with interstitial clay brown/yellow 10YR 6/8 to 4' bgs
5		8280				SF SM	4.8' fill/native contact no stain/odor
6		8260				SF SM	5-6' silty sand, moist clays dropping out - yellow red 5YR 4/6
7		8272				SF SM	6-7' silty sand as above, yellow red - no stain/odor v.f.g. sand 5YR 4/6
8		8278				SF SM	7-8' slight color change 7.5 - TD, to brown yellow 10YR 6/8 silty sand v.f.g. poorly graded silica sand 35-40%
9		8254				SF SM	8-9 silty sand as above, moist, nonplastic uncohesive light brown 10YR 8/3
		8260		SL-573 SAB-SA 9.5-10.5	0945	SF	9-10 As above - 10YR 8/3 - no stain/odor
							Refusal 10.4 in 10YR 8/3 v.f.g. sand (stn)

<b>CDM Smith</b>		<b>BORING LOG AND SAMPLING RECORD</b>		Page 1 of <u>    </u>
<b>ABBREVIATIONS:</b>				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	10		8260			SM 71113 10.4 refusal	

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. T.

Sample ID SL-573-SAB-SB-4.0-5.0 Date/Time 7-10-13 0930

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check If Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fambion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16oz jars  
2-encores

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES		GW	Well-graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GP	Poorly graded GRAVEL	
		GRAVEL WITH ≥ 15% FINES	GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
			GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GC	Well-graded GRAVEL with clay
			GRAVEL WITH BETWEEN 5% AND 15% FINES		GP-GM	Poorly graded GRAVEL with silt
			GRAVEL WITH BETWEEN 5% AND 15% FINES		GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL		
	GRAVEL WITH ≥ 15% FINES		GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES		SW	Well-graded SAND	
		SAND WITH * 5% FINES		SP	Poorly graded SAND	
		SAND WITH BETWEEN 5% AND 15% FINES	SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
			SAND WITH BETWEEN 5% AND 15% FINES		SW-SC	Well-graded SAND with clay
			SAND WITH BETWEEN 5% AND 15% FINES		SP-SM	Poorly graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES			SM	Silty SAND		
SAND WITH ≥ 15% FINES		SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
		LIQUID LIMIT LESS THAN 50		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	LIQUID LIMIT GREATER THAN 50		OL	Organic SILT with low plasticity	
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
		LIQUID LIMIT GREATER THAN 50		CH	Fat inorganic CLAY with moderate to high plasticity	
		LIQUID LIMIT GREATER THAN 50		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry

Moist  Wet

PG Signature \_\_\_\_\_

*[Handwritten Signature]*

PG Registration # \_\_\_\_\_

735

Additional Comments \_\_\_\_\_

NA

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. A.

Sample ID SL-573-SA8-SB-9.5-10.5 Date/Time 7-10-13 0945

Matrix (circle one)  Soil  Sediment  Water

Start Depth 9.5 End Depth 10.5

Depth Units (circle one) Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
	NOAA Status and Trends, Krone et al.	
Organotin		
Methyl Mercury	EPA 1630	

2 - 16oz jars  
 3 - ENCORE (VOC's)  
 2 - ENCORE (TPH-GRO)

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH ≥ 15% FINES		SP-SC	Poorly graded SAND with clay	
		<input checked="" type="radio"/> SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	<input checked="" type="radio"/> CL	Inorganic SILT with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
	CH		Fat inorganic CLAY with moderate to high plasticity	
	OH		Organic SILT or CLAY with moderate to high plasticity	
	HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present Yes  No

Color light brown 10YR 8/3

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature *Mike Hoffman* PG Registration # 7735

Additional Comments - refusal 10.4 lithologic boring

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-574-SA8-SB-0.0-0.5 Date/Time 7-11-13 0845

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	X sm 71113
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - 5.5 sleeves  
1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
LIQUID LIMIT GREATER THAN 50	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present  Yes  No *JF*

2. Percentage Fill (%) 100%

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other clay fill

Is Staining Present Yes  No

Color 10 GY 5/2 grey-green

### Odor

#### 1. Odor Strength (circle one)

None      Slight      Strong

#### 2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

#### Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature *Vicki Hoffman*

PG Registration # 7735

Additional Comments NA

Location ID: <b>DG-574</b>	Subarea: <b>8</b>	Date Started: <b>7-11-13</b>	Date Completed: <b>7-11-13</b>
Client: DOE		Project Name/ID: <b>MB</b>	Total Depth: <b>15.2</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Strongarm/F. Kelly</b>	Depth Drilled Into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25</b>	
Radiological Background: <b>9280</b>	Borehole diameter: <b>2.25</b>	Depth to GW: <b>NA</b>	Sampling Method: <b>DPT</b>
PID Background: <b>0.0</b>	PG Review/No. <b>1</b>	Geologist: <b>J. Fabian</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Well Log # <b>7735</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5	0.5	0.0	9279	SL-574	0815		- angular road mix asphalt / clay fill to .5'
1			9260	SA8-SB 0.0-0.5			1' dense, cohesive, moist clay fill gray green, 10 GY 5/2
2			9266			CL	
3			9242			CL	- caliche mottling 3-4.5
4		0.0	9264	SL-574	0930	CL	4' as above, compacted clay fill. gray green 10 GY 5/2
5			9260	SA8-SB 4.0-5.0		CL	
6			9278			CL	
7			9272			CL	6' - homogeneous clay fill, dense compacted color chg. to yellow red 5 YR 5/6
8		0.0	9260			SM	7.4' clay fill / native interface
8.5						SM	7.4-8.0 silty sand, moist, brown yellow 10 YR 6/8
9		0.0	9248	SL-574		SM	8.5-8.7 clay lens silty sand above/below
9.5				SA9-SB	0945	ML	silty sand, moist, uncohesive 10 YR 6/8
10		0.0	9248	9.0-10.0		ML	silty sand, moist 10 YR 6/8

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: SL-574-~~848058~~ Subarea: 8 Date Started: 7-11-13 Date Completed: 7-11-13  
 Project: SSFL Geologist: J. Fabron Total Depth: 15.2

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (μR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
11	0.0	9272				SM	silty sand homogeneous moist brown yellow 10YR 6/8 v.f.g. s.a. silica sand
12	0.0	9278				CL ML	11.6-11.8 clay lens w lesser (57%) clay - caliche mottling in clay lens silt
13	0.0	9230				SM	silty sand, v.f.g. s.a. to s.r. silica sand 60% silt 40% 10YR 6/8
14	0.0	9278				SM ML	silty sand to sandy silt, s.a. to s.r. v.f.g. silica sand brown yellow 10YR 6/8
15	0.0	92102		SL-574 SA 8 14-15.0	1000	SM	- 15' color change to red brown 10R 3/6 15.2 refusal in decomp. ss
16				SL-874 SFB-14-0 15.0 SM7111B	1015		14.5 refusal #2 14.2 refusal #3 14.8 refusal #4 14.2 refusal #5 <del>refusal #6 JF</del> 14.3 refusal #6
17							

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID

SL-574-SAB-SB-4.0-5.0

Date/Time

7-11-13 0930

Matrix (circle one)

Soil

Sediment

Water

Start Depth

4.0

Depth Units (circle one)

Inches

Feet

End Depth

5.0

Check if Composite

Collection Method (circle one)

DPT

Slide Hammer

Hand Auger/Slide Hammer

Trenching

Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

N/A

Field Geologist

J. Faubion

Sampler

V. Cortes

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16oz jars  
2-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100%

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other compacted clay fill

Is Staining Present Yes  No

Color gray green 10GY 5/2

**Odor**

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry       Moist      Wet

PG Signature *Vicki Hoffman*

PG Registration # 7735

Additional Comments \_\_\_\_\_

N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. T.

Sample ID SL-574-SAB-SB-9.0-10.0 Date/Time 7-11-13 0945

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 9.0  
 End Depth 10.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	^
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars  
 2-encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\approx$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\approx$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
		SAND WITH $\geq$ 15% FINES	SP-SC	Poorly graded SAND with clay
SM			Silty SAND	
SC			Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 10YR 6/8 brown yz/low

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

N/A Organic Petroleum Chemical

Moisture Condition (circle one)

Dry Moist Wet

PG Signature *Mike Johnson* PG Registration # 7735

Additional Comments N/A

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SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. E.

Sample ID SL-574-SAB<sup>SB</sup> 14.0-15.0 MS Date/Time 7-11-13 1000

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 14.0  
 End Depth 15.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID ~~SL-874-SAB-SB 14.0-15.0~~ NA 7/11/13

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

6-16 oz jars  
 6-encore (gro)  
 9-encore (VOC)

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
SAND WITH BETWEEN 5% AND 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
N/A  Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature Vicki Hoffmann

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G

Sample ID SL-874-8SA8-SB-14.0-15.0 Date/Time 7-11-13 1015 ~~1000~~ JF

Matrix (circle one)  Soil  Sediment  Water

Start Depth 14.0

End Depth 15.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID SL-574-SA8 14.0-15.0 MS

Field Geologist J. Fabion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	X
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars  
 2-encore (GRO)  
 3-encore (VOC)

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

	MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES		GW	Well-graded GRAVEL	
		GRAVEL WITH < 5% FINES		GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
			GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GC	Well-graded GRAVEL with clay
			GRAVEL WITH BETWEEN 5% AND 15% FINES		GP-GM	Poorly graded GRAVEL with silt
			GRAVEL WITH BETWEEN 5% AND 15% FINES		GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH >= 15% FINES	GRAVEL WITH >= 15% FINES		GM	Silty GRAVEL	
		GRAVEL WITH >= 15% FINES		GC	Clayey GRAVEL	
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES		SW	Well-graded SAND
			SAND WITH < 5% FINES		SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SAND WITH BETWEEN 5% AND 15% FINES		SW-GM	Well-graded SAND with silt		
	SAND WITH BETWEEN 5% AND 15% FINES		SW-SC	Well-graded SAND with clay		
	SAND WITH BETWEEN 5% AND 15% FINES		SP-SM	Poorly graded SAND with silt		
	SAND WITH BETWEEN 5% AND 15% FINES		SP-SC	Poorly graded SAND with clay		
SAND WITH >= 15% FINES	SAND WITH >= 15% FINES		SM	Silty SAND		
	SAND WITH >= 15% FINES		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
		LIQUID LIMIT LESS THAN 50		CL	Lean inorganic CLAY with low plasticity	
		LIQUID LIMIT LESS THAN 50		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
		LIQUID LIMIT GREATER THAN 50		CH	Fat inorganic CLAY with moderate to high plasticity	
		LIQUID LIMIT GREATER THAN 50		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *[Signature]* PG Registration # 7735

Additional Comments 14.0 - 15.0 Field duplicate + MS/MSD location

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID DG-575-SAB-SB 0.0-0.5 Date/Time 8-7-13 0740

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT  Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?	
VOCs	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Methanols	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630		

2-5.5 sleeves  
1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq$ 15% FINES	GM GC	Silty GRAVEL Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM SC	Silty SAND Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
	CL		Lean inorganic CLAY with low plasticity	
	OL		Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color dk brown 10 YR 3/3

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Mike Hoffman* PG Registration # 7735

Additional Comments N/A

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Location ID: <b>06-575</b>	Subarea: <b>8</b>	Date Started: <b>8-7-13</b>	Date Completed: <b>8-17-13</b>
Client: DOE		Project Name/ #: <b>Santa Susana Field Lab/99489</b>	Total Depth: <b>10.7</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? <b>Yes</b> or No	Drill Method: <b>HA</b>		Depth Drilled into Bedrock: <b>N/A</b>
Radiological Background: <b>122100</b>	Borehole diameter: <b>2.25</b>		
PID Background: <b>0.0</b>	Depth to GW:		Sampling Method: <b>HA</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No. <b>Miller #775</b>	Geologist: <b>J. Faubion</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12779	SL-575		CL	5' clay w/silt, dk. brown, 10YR 3/3 high plas, v. soft, moist - trace silt 90% CL 10% ML
1		0.0	12760	SAB-SB	0740	CL	CLAY w/silt - as above
		0.0	12790	0.0-0.5			
2		0.0	12778			CL	CLAY w/silt - as above
3		0.0	12778			CL	CLAY w/silt - as above
4		0.0	12766			SC	- 3.7 Transition CLAY w/silt to clayey SAND sharp color'd dk brown 10YR 3/3 - brown yellow clayey SAND, brown yellow 10YR 6/8 10YR 6/8 med plas, soft, moist 30% CL, 70% of g sps
5		0.0	127102	SL-575 SAB-SB 4.0-5.0	0720	CL	5' - CLAY w/silt, brown yellow 10YR 6/8, high plas, soft, moist, 90% CL, 10% ML - mod. silty mottled
6		0.0	11772			SC	clayey SAND, brown yellow 10YR 6/8 low plas, soft, moist 85% SPswd, 15% CL
7		0.0	11796			SC	clayey SAND - as above
8		0.0	12784			ML	SILT w/clay, v. pale brown 10YR 8/3, low plas, soft, moist 80% ML, 20% CL
9		0.0	11260	SL-575 SAB-SB 9.0-10.0	0915	ML	SILT w/clay, - as above - CL dropping out 85% ML 15% CL

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		HA = Hand Auger
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	

Location ID: **06-575** Subarea: **8** Date Started: **8-7-13** Date Completed: **8-7-13**

Project: **SSFL** Geologist: **J. Fausbion** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	11790	SL-575 SAB-SB 9.0-10.0	0915	SC	clayey SAND, v. pl. brown 10YR 8/3, low plas, soft moist 75% v.f.g. SP - trace resist <sup>ts</sup> + clasts 25% CL S.S.
10.7						SP	- 10.7' refusal loose SP v.f.g. silica sand

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID DG-575-SA8-SB 4.0-5.0 Date/Time 8-7-13 0820

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger     Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
 2-20 core  
 1-40 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
<b>COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	GRAVEL WITH $\geq$ 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	<b>GRAVEL WITH <math>\geq</math> 10% FINES</b>	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH <math>\geq</math> 5% FINES</b>	SW Well-graded SAND
			SP Poorly graded SAND
		<b>SAND WITH BETWEEN 5% AND 15% FINES</b>	SW-SM Well-graded SAND with silt
			SW-SC Well-graded SAND with clay
SP-SM Poorly graded SAND with silt			
<b>SAND WITH <math>\geq</math> 15% FINES</b>		SP-SC Poorly graded SAND with clay	
	SM Silty SAND		
	SC Clayey SAND		
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>SILT AND CLAY</b>	<b>LIQUID LIMIT LESS THAN 50</b>	ML Inorganic SILT with low plasticity
			CL Lean inorganic CLAY with low plasticity
		<b>LIQUID LIMIT GREATER THAN 50</b>	OL Organic SILT with low plasticity
			MH Elastic inorganic SILT with moderate to high plasticity
			CH Fat inorganic CLAY with moderate to high plasticity
			OH Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Nick Hoffman* PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID DG-575-SAB-SB 9.0-10.0 Date/Time 6-7-13 0915

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 9.0  
 End Depth 10.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	<input checked="" type="checkbox"/>
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	<input checked="" type="checkbox"/>
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	<input checked="" type="checkbox"/>
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	<input checked="" type="checkbox"/>
Pesticides	EPA 8081	<input checked="" type="checkbox"/>

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	<input checked="" type="checkbox"/>
TPH-EFH	EPA 8015	<input checked="" type="checkbox"/>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. sleeves  
 2-2" core  
 1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL WITH ≥ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≥ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH ≥ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
<b>SC</b>	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
PT	PEAT soils with high organic contents			

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color v. pale brown 10YR 8/3

Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

Moisture Condition (circle one)  
 Dry     Moist     Wet

PG Signature *Mila Johnson*

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-578-SA8-SB0.0.0.5 Date/Time 7-12-13 0835

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler V. Cortes

### Analysis

Parameters	Method	Analysed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	<del>X</del>
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analysed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	<del>X</del>
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-5.5 sleeves*  
*1-4oz jar*

## SSFL Phase 3 -- Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
	GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC		Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES	SM	Silty SAND		
SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS			PT	PEAT SOILS with high organic contents

### Fill Material

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other clay w/ sand aggregate

Is Staining Present Yes  No

Color 10 R 3/6 red brown

### Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist       Wet

PG Signature Mike Hoffman

PG Registration # 7735

Additional Comments NA

Location ID: <b>06578</b>	Subarea: <b>8</b>	Date Started: <b>7-12-13</b>	Date Completed: <b>7-12-13</b>
Client: DOE			Total Depth: <b>9.4'</b>
Project Name/#: <b>98FL-06250-03376.1203.002.223.02231.96PH0-MB</b>			
Company Name: <b>CDM SMITH</b>	Drill Contractor/Driller: <b>Stromberg F. Rodriguez</b>		Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>		
Radiological Background: <b>9274</b>	Borehole diameter: <b>2.25</b>		
PID Background: <b>0.0</b>	Depth to GW:		Sampling Method: <b>DPT</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			Geologist: <b>J. Fabricio</b>
PG Review & Notes <b>Julia Hoffman #7735</b>			

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1	.5 / .5	0.0	9260	SL-578 SAB-SB 0.0-0.5	0635	cl	- clay fill, caliche mottling STR 416 yellow-red - dry highly compacted clay fill - mixed aggregate present 3-5%
2		0.0	8254			cl	2' clay fill, 10 R 3/6 red brown
3		0.0	8254			cl	
4	4.5 / 100%	0.0	8270	SL-578 SAB-SB 4.0-5.0	0915	cl	<del>3.8' fill / native contact</del> 5F 3.8. lens silty sand
5		0.0	8266			cl	clay fill, caliche mottling - aggregate dropping out
6		0.0	8242			cl	homogeneous clay fill, dry dense 10R 3/6 red brown
7		0.0	8236			cl	- as above 10R 3/6 red brown clay fill
8		0.0	8266			cl	clay fill
A			8260			SM	- 8.2 fill / native contact gravel-sand-silt, angular ss & rncs to 4mm diam. fr to 8.8 - silty sand, 8.8-9.4 10YR 8/3 light brown - 9.4 refusal - 9.5 #2 run - 9.4 #3 run

<b>CDM Smith</b>		<b>BORING LOG AND SAMPLING RECORD</b>	Page 1 of <u>1</u>
<b>ABBREVIATIONS:</b>			
amt: amount	gr: grained	pg: poorly graded	t: trace
c: coarse	lt: light	rnd: rounded	nr: no recovery
dk: dark	m: medium	sa: subangular	v: very
f: fine	mod: moderate	sr: subrounded	wg: well graded
		φ: diameter	bgs: below ground surface



# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. S.

Sample ID SL-578-SAB-SB 4.0-5.0 m<sup>3</sup> Date/Time 7-12-13 0915

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

6-16oz jars  
6-2 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq 10\%$ FINES	GP-GC	Poorly graded GRAVEL with clay
			GM	Silty GRAVEL
	GC		Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
		SAND WITH $\geq 15\%$ FINES	SP-SC	Poorly graded SAND with clay
SM			Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SC	Clayey SAND	
		ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
HIGHLY ORGANIC SOILS	SILT AND CLAY	CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other <u>clay fill</u>		

Is Staining Present Yes  No

Color 10 R 3/6 red brown

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature Mike Hoffman

PG Registration # 7735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. K

Sample ID SL-878-SA8-SB 4.0-5.0 Date/Time 7-12-13 0930

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FB  RB

Parent Sample ID SL-578-SA8-SB 4.0-5.0 MS

Field Geologist J. Faubion

Sampler V. Colts

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - 16 oz jars  
2 - encore

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES		GW	Well-graded GRAVEL	
				GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt	
				GW-GC	Well-graded GRAVEL with clay	
				GP-GM	Poorly graded GRAVEL with silt	
				GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq 10\%$ FINES		GM	Silty GRAVEL		
			GC	Clayey GRAVEL		
		HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
					SP	Poorly graded SAND
			SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
					SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt	
				SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES			SM	Silty SAND		
			SC	Clayey SAND		
SILT AND CLAY		LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
				CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50		OL	Organic SILT with low plasticity		
			MH	Elastic inorganic SILT with moderate to high plasticity		
			CH	Fat inorganic CLAY with moderate to high plasticity		
			OH	Organic SILT or CLAY with moderate to high plasticity		

**Fill Material**

1. Is Fill Material Present  Yes  No *JF*

2. Percentage Fill (%) 100

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other clay Fill

Is Staining Present Yes  No

Color 10R 3/6

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Walter Hoffman*      PG Registration # 7735

Additional Comments \_\_\_\_\_

N/A

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-578-SAB-SB 9.0-10.0 Date/Time 7-12-13 0945

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>9.0</u> End Depth <u>10.0</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	---	--

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)    Parent Sample ID NA

N     FD     FB     RB

Field Geologist Joe Faubion  
 Sampler V. Cortes sm7/12/13

## Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?	
EPA 8260	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
EPA 8315	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury		EPA 1630	

~~6 16oz jars JF~~  
~~6 ENCORL JF~~  
 2-16oz jars  
 2-ENCORL

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 10% FINES	GM GC	Silty GRAVEL Clayey GRAVEL
		SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt		
	SP-SC	Poorly graded SAND with clay		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SM	Silty SAND	
		SC	Clayey SAND	
		ML	Inorganic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
SILT AND CLAY	MH	Elastic inorganic SILT with moderate to high plasticity		
	CH	Fat inorganic CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS	OH	Organic SILT or CLAY with moderate to high plasticity		
	PT	PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10YR 8/3 light brown  
Smyth

Odor

1. Odor Strength (circle one)  
 None    Slight    Strong

2. Odor Description (circle one)  
Organic    Petroleum    Chemical  
 N/A    Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry     Moist    Wet

PG Signature *Julie Johnson*

PG Registration # 735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. GTE

Sample ID SL-580-SAG-SB 0.0-0.5 Date/Time 7-12-13 1030

Matrix (circle one)  Soil  Sediment  Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - 5.5 sleeves  
17 - 4oz. jars  
SM712/3

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 15% FINES</u>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH <u>≥ 15% FINES</u>		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			<u>CL</u>	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other <u>clay fill</u>		

Is Staining Present Yes  No

Color 5 YR 4/6 yellow red

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature Mike Hoffman

Additional Comments NA

PG Registration # 735

Location ID: <b>DG-580</b>	Subarea: <b>8</b>	Date Started: <b>7-12-13</b>	Date Completed: <b>7-12-13</b>
Client: DOE		Project Name/ID: <b>60PL-05250-00070-1203.002-220-0204-SSD13 MB</b>	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Strongarm</b>	Total Depth: <b>11.6</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>		Depth Drilled Into Bedrock: <b>NA</b>
Radiological Background: <b>9260</b>	Borehole diameter: <b>2.25"</b>		
PID Background: <b>0.0</b>	Depth to GW: <b>NA</b>		Sampling Method: <b>DPT</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No.: <b>Muller Hoffman #7735</b>	
			Geologist: <b>J. Faubion</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1		0.0	9266	SL-580 SA9-SB 0.0-0.5	1030	CL	clay fill - dry, loose red mix above
2		0.0	9278			CL	clay fill, dense, moist 5YR 4/6 yellow red
3		0.0	9274			CL	dense clay fill, moist yellow red 5YR 4/6 moist
4		0.0	9266	SL-580 SA8-SB 4.0-5.0	1045	CL	- as above, caliche mottling throughout
5		0.0	9254			CL	dense clay fill, drier, yellow red 5YR 4/6
6		0.0	9266			CL	- as above, becoming drier 5YR 4/6
7		0.0	9272			CL	clay fill, caliche mottling, 5YR 4/6 yellow red
8		0.0	9260			CL	5YR 4/6 - very dry, dense trace silt in clay
9		0.0	9284			CL	clay to silty clay 5YR 4/6
		0.0	9284			SM	- 9.5 fill/native contact silty sand, dry, loose 10YR 8/3 light brown

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

ABBREVIATIONS:

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-580** Subarea: **8** Date Started: **7-12-13** Date Completed: **7-12-13**  
 Project: **SSFL** Geologist: **J. Fausbion** Total Depth: **11.6**

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
11			9290	2-580 SAB-SB 10.5-11.5	1100	SM	- homogeneous loose silty sand 9.5-11.6 T.D. 10 YR 8/3 90% fr. gr. sand silica sand
11.6			9290			SM	- as above, poorly graded silica sand w/ silty - 11.6' refusal - 10.2' refusal #2 run - 10.8' refusal #3 run



## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≥ 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 10% FINES	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH ≥ 5% FINES	SW Well-graded SAND
			SP Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-GM Well-graded SAND with silt	
		SW-GC Well-graded SAND with clay	
		SP-GM Poorly graded SAND with silt	
		SP-GC Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM Silty SAND	
		SC Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML Inorganic SILT with low plasticity	
		OL Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH Elastic inorganic SILT with moderate to high plasticity	
		CH Fat inorganic CLAY with moderate to high plasticity	
		OH Organic SILT or CLAY with moderate to high plasticity	
		PT PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS			

**Fill Material**

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 100

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other <u>clay fill</u>		

Is Staining Present Yes  No

Color 5YR 4/6 yellow red

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature Walter Johnson

PG Registration # 1735

Additional Comments NA

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. [Signature]

Sample ID SL-580-SAB-SB 10.5-11.5 Date/Time 7-12-13 1100

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 10.5  
 End Depth 11.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars  
 2- 8" core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH <u>≥ 10% FINES</u>	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW Well-graded SAND
			SP Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM Well-graded SAND with silt	
		SW-SC Well-graded SAND with clay	
		SP-SM Poorly graded SAND with silt	
		SP-SC Poorly graded SAND with clay	
SAND WITH <u>≥ 15% FINES</u>	SM Silty SAND		
	SC Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML Inorganic SILT with low plasticity
			CL Lean inorganic CLAY with low plasticity
			OL Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH Elastic inorganic SILT with moderate to high plasticity
			CH Fat inorganic CLAY with moderate to high plasticity
			OH Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) 0
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 8/3 light brown

### Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V.G.T

Sample ID SL-581-SA8-SB-0.0-0.5 Date/Time 7-12-13 1240

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0

Depth Units (circle one)  
 Inches     Feet

End Depth 0.5

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	<input checked="" type="checkbox"/>
	EPA 7470 (Water)	<input type="checkbox"/>
Fluoride	EPA 300.0/9056	<input type="checkbox"/>
SVOCs	EPA 8270	<input type="checkbox"/>
TIC	EPA 8270	<input checked="" type="checkbox"/> JF
PAHs	EPA 8270 SIM	<input checked="" type="checkbox"/>
1,4 Dioxane	EPA 8270 SIM	<input type="checkbox"/>
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	<input type="checkbox"/>
Perchlorate Confirmation	EPA 6850/6860	<input type="checkbox"/>
pH	EPA 9045 (Soil)	<input checked="" type="checkbox"/>
	EPA 9040 (Water)	<input type="checkbox"/>
Hexavalent Chromium	EPA 7196/7199	<input type="checkbox"/>
Herbicides	EPA 8151	<input type="checkbox"/>
Pesticides	EPA 8081	<input type="checkbox"/>

Parameters	Method	Analyze?
VOCs	EPA 8260	<input type="checkbox"/>
1,4 Dioxane	EPA 8260 SIM	<input type="checkbox"/>
TPH-GRO	EPA 8015	<input type="checkbox"/>
TPH-EFH	EPA 8015	<input checked="" type="checkbox"/>
Glycols	EPA 8015	<input type="checkbox"/>
Alcohols	EPA 8015	<input type="checkbox"/>
Terphenyls	EPA 8015	<input type="checkbox"/>
Nitrates	EPA 300.0/9056	<input type="checkbox"/>
Energetics	EPA 8330	<input type="checkbox"/>
Cyanide	EPA 9012	<input type="checkbox"/>
Formaldehyde	EPA 8315	<input type="checkbox"/>
NDMA	EPA 1625	<input type="checkbox"/>
Organotin	NOAA Status and Trends, Krone et al.	<input type="checkbox"/>
Methyl Mercury	EPA 1630	<input type="checkbox"/>

2 - S.S. sleeves  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\geq</math> 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>GRAVEL WITH <math>\geq</math> 10% FINES</b>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH <math>\geq</math> 5% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
<b>SAND WITH <math>\geq</math> 15% FINES</b>		SM	Silty SAND	
		SC	Clayey SAND	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>LIQUID LIMIT LESS THAN 50</b>	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	<b>LIQUID LIMIT GREATER THAN 50</b>	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%)

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 5YR 4/6 yellow red

**Odor**

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry Moist Wet

PG Signature Vincent Hoffman

PG Registration # 7735

Additional Comments NA

Location ID: <b>06-581</b>	Subarea: <b>8</b>	Date Started: <b>7-12-13</b>	Date Completed: <b>7-12-13</b>
Client: DOE		Project Name/#: <b>SOPL-05208-03376.1203.002.225.02231.00PH0 MB</b>	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratagem/Endogen</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>122901171</b>		Borehole diameter: <b>2.25</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>NA</b>	
Radiological Equipment Used:		PC Review & No. <b>Walter Hoffman #7735</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Sampling Method: <b>DPT</b>	
		Geologist: <b>J. Fabian</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1	.5 .5	0.0	11774	SL-581 SA 8-58 0.0-0.5	1240	ML	silt, dry 5YR 4/6 yellow red
2		0.0	9254			ML	silt, dry 5YR 4/6 yellow red - caliche mottling
3		0.0	9266			ML SM	Transition to silty sand, 10YR 8/3
4		0.0	9248				No recovery 2.5-4.0
5		0.0	8260	SL-581 SA 8-58		SM	silty sand, 10YR 8/3 light brown
TD	5.8	0.0	8272	4.5-5.8	1250	SM	silty sand, 10YR 8/3 light brown - dry uncohesive silty sand
			8260			SM	- ss. above silty sand, dry 10YR 8/3 5.8 refusal run #1 5.5 refusal run #2 5.2 refusal run #3

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By         V.G.F        

Sample ID SL-581-SA8-SB-4.5-5.5 Date/Time 7-12-13 1250

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.5

Depth Units (circle one)

Inches     Feet

End Depth 5.5

Check if Composite     Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler V. Cortes

**Analysis**

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?	
VOCs	EPA 8260		
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
	Methyl Mercury	EPA 1630	

2-1602 jars  
2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL		
		GC	Clayey GRAVEL		
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt		
	SW-SC		Well-graded SAND with clay		
SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt			
	SP-SC	Poorly graded SAND with clay			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SM	Silty SAND		
		SC	Clayey SAND		
		ML	Inorganic SILT with low plasticity		
		CL	Lean inorganic CLAY with low plasticity		
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity		
		MH	Elastic inorganic SILT with moderate to high plasticity		
		CH	Fat inorganic CLAY with moderate to high plasticity		
		OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%)    0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No

Color    10 YR 8/3 light brown

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature    Vicki Hoffman

PG Registration #    7735

Additional Comments

N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mar

Sample ID SL-582-SAB-SB-0.0-0.5 Date/Time 8-6-13 0745

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. Mercer

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
	GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES	SM	Silty SAND		
SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellow red 5YR 4/6

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature [Signature] PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-582</b>	Subarea: <b>8</b>	Date Started: <b>8-6-13</b>	Date Completed: <b>8-6-13</b>
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: <b>3.5</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>N/A</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	
Radiological Background: <b>14796</b>	Depth to GW: <b>N/A</b>		Sampling Method: <b>HA</b>
PID Background:	PG Review # <b>773</b>		Geologist: <b>S. Paulson</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
								6" gravel fill
.5			0.0	14782			ML	SILT, yellow red 5YR 4/6, non plas med. stiff, dry, scatt. organics (root hairs)
1			0.0	12784	SL-582		ML	
			0.0	12760	SA8-SB	0745	ML	SILT, red brown moist soft, moist, occas. organics
2				112126			ML	SILT, - as above - color Δ <sup>yellow</sup> red 5YR 4/6 → red brown 10R 3/6
3				12796	SL-582	0850	ML	SILT, red brown 10R 3/6 non plas, med. stiff moist, some cemented clasts - 3.5 refusal -

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Sean McLean

Sample ID SL-582-SAB-SB-2.5-3.5

Date/Time 8-6-13 0850

Matrix (circle one)

Soil     Sediment     Water

Start Depth 2.5

Depth Units (circle one)

Inches     Feet

End Depth 3.5

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis *\* deviation: samples obtained from lithologic boring, multiple refusals*

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-16 oz jars

1-4 oz jars

3-EN core (VOC) 2-EN core TPH GRO

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt	
SP-SC		Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	HIGHLY ORGANIC SOILS	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%)

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color red brown 10R 3/6

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *[Signature]*      PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mann

Sample ID SL-583-SAB-SB 0.0-0.5ms Date/Time 8-6-13 1220

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1-16 oz jar  
 6-s.s. sleeves  
~~9-226012~~ SM8013

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\approx$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\approx$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color light brown 10YR 8/3

### Odor

1. Odor Strength (circle one)
- None  Slight  Strong
2. Odor Description (circle one)
- Organic  Petroleum  Chemical
- N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Nick Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-583</b>	Subarea: <b>8</b>	Date Started: <b>8-6-13</b>	Date Completed: <b>8-6-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>15285</b>		Borehole diameter: <b>2.25</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Report & No. <b>N/A</b>	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	1372	SL-583			<p>med. SILT <sup>pele</sup> light brown 10YR 8/3 non plas, med. stiff, moist - no stain odor</p>
1			0.0	1572	SAB-SB	1220		
			0.0	14260	0.0-0.5 MS			<p>med. silty SAND <sup>pele</sup> brown 10YR 6/3 non plas, med. stiff, moist, some resistant clasts</p>
					SL-883 SAB-SB 0.0-0.5	1225		- 1.4' refusal

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials



**BORING LOG AND SAMPLING RECORD**

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mann

Sample ID SL-883-SAB-SB-0.0-0.5 Date/Time 8-6-13 1225

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT  Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID SL-583-SAB-SB-0.0-0.5 MS

Field Geologist J. Faubion

Sampler S. Miller

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-SS sleeves  
 1-4 oz jar  
~~3-EDCOR~~ sm8613

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>5% FINES</u>	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH <u>≥ 10% FINES</u>	GM	Silty GRAVEL
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>5% FINES</u>	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH <u>≥ 15% FINES</u>		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color light brown 10YR 8/3

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *Julia Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Slyvia

Sample ID SL-584-SAB-SB 0.0-0.5 Date/Time 8-6-13 1415

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
		SAND WITH $\geq$ 15% FINES	SP-SC	Poorly graded SAND with clay
SM			Silty SAND	
SC			Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
LIQUID LIMIT GREATER THAN 50	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color red brown 10R 3/6

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Wade Johnson*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-584</b>	Subarea: <b>8</b>	Date Started: <b>8-6-13</b>	Date Completed: <b>8-6-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	Total Depth: <b>1.7'</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>N/A</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>		
Radiological Background: <b>15282</b>	Borehole diameter: <b>2.25"</b>		Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review # <b>7735</b> <i>Paul Hoffman #7735</i>	
			Geologist: <b>J. Faubion</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5			0.0	15295	52-584	1415	ML	SILT, <sup>dark red</sup> red brown 10 R 3/6 no n ples soft, moist - no stain/odor
1			0.0	14772	3A8 5B		ML	SILT, red brown 10 R 3/6 no n ples, soft, moist - no stain/odor
			0.0	142120	0.0-0.5		SM	silty SAND (1.7) brown yellow 10 R 6/8, no n ples soft, moist
			0.0	14272				refusal 1.7

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

*HA = Hand Auger*



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mason

Sample ID SL-585-SA8-SB 0.0-0.5 Date/Time 8-12-13 1335  
~~1330 SF~~

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-5.5 sieves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color very pale brown 10YR 7/3

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-585</b>	Subarea: <b>8</b>	Date Started: <b>8-12-13</b>	Date Completed: <b>8-12-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>15293</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review # No	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Null Log #7735</b>	
		Geologist: <b>J. Faubian</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	14284	SL-585			
1		0.0	15266	SA8-8B	1335	SM	silty SAND very pale brown, 10YR 9/3 no ples, loose, moist 20%mc, 80%SP
1		0.0	14266	0.0-05		SP	SAND yellow 10YR 7/6 100% SP sand no ples, loose moist
2		0.0	14290			SP	SAND yellow 10YR 7/6 - as above, 2.0 refusal 100% SP sand



**BORING LOG AND SAMPLING RECORD**

ABBREVIATIONS:			
gr: grained	pg: poorly graded	t: trace	nr: no recovery
lt: light	rnd: rounded	v: very	
m: medium	sa: subangular	wg: well graded	
mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

*HA 7/13/13*  
*10/13*



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By J. GTR

Sample ID SL-586-SA8-SB-0.0-0.5 Date/Time 7/8/2013 13:10

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite

Collection Method (circle one) <sup>v.c. 7/8/13</sup>  
 DPT     Slide Hammer    ~~Hand Auger/Slide Hammer~~    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed	
VOCs	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015 <sup>B</sup>	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Pesticides	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2 SS. SLEEVES & 1 4-oz JAR

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	Liquid Limit GREATER THAN 50		NH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color dark brown 10YR 3/3

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature *Julia Hoffman*      PG Registration # 7735

Additional Comments NA

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Location ID: <b>06-586</b>		Subarea: <b>8</b>		Date Started: <b>7/8/2013 Mon.</b>		Date Completed: <b>7/8/2013</b>	
Client: DOE				Project Name/#: <b>SSFL-55259-03076-1200-002-220-02201-00PHS-PB</b>		Total Depth: <b>1.7 / 1.7</b>	
Company Name: CDM SMITH				Drill Contractor/Driller: <b>NA</b>		Depth Drilled into Bedrock: <b>NA</b>	
GPS collected? (Yes) or No				Drill Method: <b>HA</b>		Borehole diameter: <b>2.25</b>	
Radiological Background: <b>17mR, 78cpm</b>				Depth to GW: <b>NA</b>		Sampling Method: <b>slidehammer</b>	
PID Background: <b>0.0</b>				PG Review & No.:		Geologist: <b>J. Foubion</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake				<b>Mike Hoffman #7755</b>			

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
		0.5 / 0.5	15	0.0/66	SL-586 SAB-SB 0.0-0.5	13:10	ML	Silt with sand, dark brown 10YR 3/3 dry, uncohesive, roots + mottles, friable clumps, v.f. g silica sand 25% 1' as above, 10% decomp. organics 10YR 5/3 + trace fine gravel
1		0.5 / 1.0	15	0.0/66			ML	1.7 Refusal (bedrock) No GW encountered - second refusal 1.7.
2		1.7	14	0.0/108				
3								
4								
5								



**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>HA = Hand Auger</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. F.

Sample ID SL-587-SAB-SB 0.0-0.5 Date/Time 7-12-13 1330

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>0.0</u>  End Depth <u>0.5</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
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Check if Composite     Collection Method (circle one)

<input checked="" type="radio"/> DPT	<input type="radio"/> Slide Hammer	<input type="radio"/> Hand Auger/Slide Hammer	<input type="radio"/> Trenching	<input type="radio"/> Sediment
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QC Type (circle one)

<input checked="" type="radio"/> N	<input type="radio"/> FD	<input type="radio"/> FB	<input type="radio"/> RB
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Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

### Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sleeves  
 1 - 4oz jar



Location ID: <b>DG-587</b>	Subarea: <b>8</b>	Date Started: <b>7-12-13</b>	Date Completed: <b>7-12-13</b>
Client: DOE		Project Name/#: <b>SSFL-05206-03370.1200.002.225.02231.03PH3-UB</b>	Total Depth: <b>7.7</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Strongarm/Robinson</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>12292</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Faubion</b>
PG Review & No.: <b>N/A</b> <i>Mulla Robinson #7735</i>			

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1			0.0	9266	SL-587 SA-08 0.0-0.5	1330	ML	10R 3/6 silt red brown dry, loose <del>fine</del> - no sand
2			0.0	9266			ML	10R 3/6 silt
3			0.0	9272			ML	10R 3/6 silt
4			0.0	9254			ML	10R 3/6 silt
5			0.0	9266			ML	10R 3/6 silt
6			0.0	9230	SL-587 SA-8-5B 6.5-7.5	1340	ML SM	5.8' transition to silty sand, loose dry, 10YR 8/3
7			0.0	9278			SM	10YR 8/3 silty sand - loose, dry 65% poorly graded sa to sr. silica sand
7.7				9284			SM	7.7 refusal

<b>CDM Smith</b>		<b>BORING LOG AND SAMPLING RECORD</b>	Page 1 of ___
<b>ABBREVIATIONS:</b>			
amt: amount	gr: grained	pg: poorly graded	t: trace
c: coarse	lt: light	rnd: rounded	nr: no recovery
dk: dark	m: medium	sa: subangular	wg: well graded
f: fine	mod: moderate	sr: subrounded	φ: diameter
			bgs: below ground surface



# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-587-SA8-50-6.5-7.5 Date/Time 7-12-13 1340

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>6.5</u> End Depth <u>7.5</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
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Check if Composite     Collection Method (circle one)

<input checked="" type="radio"/> DPT	<input type="radio"/> Slide Hammer	<input type="radio"/> Hand Auger/Slide Hammer	<input type="radio"/> Trenching	<input type="radio"/> Sediment
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QC Type (circle one)    Parent Sample ID N/A

<input checked="" type="radio"/> N	<input type="radio"/> FD	<input type="radio"/> FB	<input type="radio"/> RB
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Field Geologist J. Faubion

Sampler V. Cortes

### Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?	
GRO	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
MERCURY	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
		SAND WITH $\geq$ 15% FINES	SP-SC	Poorly graded SAND with clay
<input checked="" type="radio"/> SM			Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
			MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10 YR 8/3

### Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature Mike Hoffman

PG Registration # 7735

Additional Comments

N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. E

Sample ID SL-588-SAB-SB 0.0-0.5 MS Date/Time 7/8/13 1350

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	X sm 813
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

6 2<sup>50</sup> s.s. sleeves  
1 - 9 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments \_\_\_\_\_

N/A

Location ID: <b>DG-588</b>	Subarea: <b>8</b>	Date Started: <b>7/8/2013</b>	Date Completed: <b>7/8/2013</b>
Client: DOE		Project Name/#: <b>SRP-0528-0376-1200-002-0201-35PH-MB</b>	Total Depth: <b>3.3 / 3.3</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	Depth Drilled into Bedrock: <b>NA</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>14MR/72cpm</b>	Depth to GW: <b>NA</b>	Geologist: <b>J. Fashion</b>	
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		
PG Review & No.:		<b>Mulu Hoffman #735</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		.5	0.0	14199	SL-588	1350	ML	0.0-0.5 <del>silty</del> sandy silt with sand, dry, friable (sandy silt SM 7113) - v.f. gr. silica sand 35%; red brown
1			0.0	14190	SAB-SB 0.0-0.5 MS		ML	10R 316 - small sandstone frags no stain/odor
2			0.0	14184			ML	0.5-1.0 silt with sand dry, friable, brown 10YR 16/3 root mottles, decomp leaves no stain/odor
3			0.0	14178	SL-588		ML	1.0-2.0 silty sand brown 10YR 6/3
3			0.0	15145	SAB-SB 2.0-3.0	1435	ML	v.f.g. poorly graded silica sand 45% no stain/odor
4							SM	2.6 color change to silty sand 10YR 7/6 to Brown yellow 10YR 6/8 - loose dry uncemented silty sand no stain odor
5								3.3 bgs refusal



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. T.

Sample ID SL-888-SAB-SB 0.0-0.5ms SF Date/Time 7/8/13 1400

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD    FB    RB

Parent Sample ID SL-588-SAB SB 0.0-0.5ms

Field Geologist J. Faubion

Sampler N. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCS	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	X <del>sm</del> 7/13
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. sieves  
1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>  <b>COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>GRAVEL WITH * 5% FINES</b>  <b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>  <b>GRAVEL WITH ≥ 15% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
		GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>  <b>COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>SAND WITH * 5% FINES</b>  <b>SAND WITH BETWEEN 5% AND 15% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
		<b>SAND WITH ≥ 15% FINES</b>	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>  <b>SILT AND CLAY</b>	<b>LIQUID LIMIT LESS THAN 50</b>	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	<b>LIQUID LIMIT GREATER THAN 50</b>	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS				

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

### Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments \_\_\_\_\_

\_\_\_\_\_ N/A

\_\_\_\_\_

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. G. [Signature]

Sample ID SL-588 SA 8 SB-2.0-3.0

Date/Time 7/8/2013 1435

Matrix (circle one)

Soil     Sediment     Water

Start Depth 2.0

End Depth 3.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist J. Faubion

Sampler N. Cortes

#### Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	X sm 7813
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - sleeves  
1 - 4oz jar  
2 - End core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES		GW	Well-graded GRAVEL	
		GRAVEL WITH $\geq$ 5% FINES		GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt	
				GW-GC	Well-graded GRAVEL with clay	
				GP-GM	Poorly graded GRAVEL with silt	
				GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES			GM	Silty GRAVEL	
	GRAVEL WITH $\geq$ 15% FINES			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES			SW	Well-graded SAND
		SAND WITH $\geq$ 5% FINES			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt		
			SW-SC	Well-graded SAND with clay		
			SP-SM	Poorly graded SAND with silt		
			SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES			SM	Silty SAND		
SAND WITH $\geq$ 15% FINES			SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY		ML	Inorganic SILT with low plasticity		
			CL	Lean inorganic CLAY with low plasticity		
			OL	Organic SILT with low plasticity		
	LIQUID LIMIT LESS THAN 50			MH	Elastic inorganic SILT with moderate to high plasticity	
	LIQUID LIMIT LESS THAN 50			CH	Fet inorganic CLAY with moderate to high plasticity	
	LIQUID LIMIT GREATER THAN 50			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color brown yellow 10YR 6/8

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *Bend*

Sample ID SL-589-S48-SB 0.0-0.5 Date/Time 7-30-13 1250

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	 GW	Well-graded GRAVEL
			 GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	 GW-GM	Well-graded GRAVEL with silt
			 GW-GC	Well-graded GRAVEL with clay
			 GP-GM	Poorly graded GRAVEL with silt
			 GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	 GM	Silty GRAVEL	
		 GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	 SW	Well-graded SAND
			 SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		 SW-GM	Well-graded SAND with silt	
		 SW-GC	Well-graded SAND with clay	
		 SP-GM	Poorly graded SAND with silt	
		 SP-GC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		 SM	Silty SAND	
	 SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	Liquid Limit LESS THAN 50	 ML	Inorganic SILT with low plasticity
			 CL	Lean inorganic CLAY with low plasticity
			 OL	Organic SILT with low plasticity
	Liquid Limit GREATER THAN 50	 MH	Elastic inorganic SILT with moderate to high plasticity	
		 CH	Fat inorganic CLAY with moderate to high plasticity	
	 OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		 PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/>	
Other _____		

Is Staining Present Yes  No

Color 10 YR 8/3 light brown

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical

Other N/A

### Moisture Condition (circle one)

Dry   Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-589</b>	Subarea: <b>8</b>	Date Started: <b>7-30-13</b>	Date Completed: <b>7-30-13</b>
Client: DOE		Project Name#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <i>Strogan</i>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>12290</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review No. <i>7735</i>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Faubion</b>	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12756	SL-589		SP	SAND, 10 YR 8/3, s.p. sa to sr - dry 100% SP
1		0.0	12766	SAB-SB 0.0-0.5	1250	SP	SAND 10 YR 8/3, s.p. silica sand, v.f.g. sa to sr - moist 100% SP
2		0.0	12778			SP	SAND, 10 YR 8/3, as above - moist 100% SP
3		0.0	12779	SL-589		SP	SAND 10 YR 8/3 . SP silica sand, 100% SP
		3.7		SAB-SB 2.5-3.5	1300		- v.f.s sr to sa silica sand
		0.0	12778				- 3.7' refused #1
							- 3.8 " #2
							- 3.5 " #3

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	



### SSFL Phase 3 – Field Sample Data Sheet

GDM Smith

FSDS Checked By *T. Bennett*

Sample ID SL-589-SAB-SB-4.0<sup>SC</sup> 5.0<sup>SC</sup> Date/Time 7-30-13 1300

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>4.0<sup>SC</sup> 2.5</u> End Depth <u>5.0<sup>SC</sup> 3.5</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	--	--

Check if Composite  Collection Method (circle one)  DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  N     FD     FB     RB    Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis			
	Parameters	Method	Analyzer?
Metals		EPA 6010	X
		EPA 6020	X
		EPA 7471 (Soil)	X
		EPA 7470 (Water)	
	Fluoride	EPA 300.0/9056	
	SVOCs	EPA 8270	
	TIC	EPA 8270	
	PAHs	EPA 8270 SIM	X
	1,4 Dioxane	EPA 8270 SIM	
	Dioxins	EPA 1613	X
	PCBs/PCTs	EPA 8082	X
	Perchlorate	EPA 314.0/331	
	Perchlorate Confirmation	EPA 6850/6860	
	pH	EPA 9045 (Soil)	X
		EPA 9040 (Water)	
	Hexavalent Chromium	EPA 7196/7199	
	Herbicides	EPA 8151	
	Pesticides	EPA 8081	

  

	Parameters	Method	Analyzer?
Organics	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	X
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
Inorganics	Formaldehyde	EPA 8315	
	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2-16 oz jars  
2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\geq</math> 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	GW-GC	Well-graded GRAVEL with silt
		GP-GM	GP-GC	Poorly graded GRAVEL with silt
		GM	GC	Silty GRAVEL
		GC	GM	Clayey GRAVEL
	<b>GRAVEL WITH <math>\geq</math> 15% FINES</b>	SW	SP	Well-graded SAND
		SP	SW-SM	Poorly graded SAND
		SW-SM	SW-SC	Well-graded SAND with silt
		SW-SC	SP-SM	Well-graded SAND with clay
SP-SM		SP-SC	Poorly graded SAND with silt	
SP-SC		SM	Poorly graded SAND with clay	
<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	SM	SC	Silty SAND	
	SC	ML	Clayey SAND	
	<b>SAND WITH <math>\geq</math> 5% FINES</b>	ML	CL	Inorganic SILT with low plasticity
		CL	OL	Lean inorganic CLAY with low plasticity
		OL	MH	Organic SILT with low plasticity
		MH	CH	Elastic inorganic SILT with moderate to high plasticity
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>	CH	OH	Fat inorganic CLAY with moderate to high plasticity	
	OH	PT	Organic SILT or CLAY with moderate to high plasticity	
<b>SAND WITH <math>\geq</math> 15% FINES</b>	PT	PT	PEAT soils with high organic contents	
	HIGHLY ORGANIC SOILS			

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color 10 YR 8/3 light brown

### Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Nicole Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-590-SA8-SB 0.0-0.5 Date/Time 8-12-13 1020

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mirrett

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color very dark brown 10YR 2/2

### Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic       Petroleum       Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist       Wet

PG Signature Mike Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-590</b>	Subarea: <b>8</b>	Date Started: <b>8-12-13</b>	Date Completed: <b>8-12-13</b>
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: <b>8.3</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>NA</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected: <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>HA</b>		Sampling Method: <b>HA</b>
Radiological Background:	Borehole diameter: <b>2.25"</b>		
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		Geologist: <b>J. Faubion</b>
Radiological Equipment Used:	PG Review #, No: <b>NA</b>		
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Walter Johnson # 7735</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	16276	SL-590		ML	SILT, very dark brown 10YR 2/2, non plus
1			0.0	152102	SAB-SB 0.0-0.5	1020	ML	SILT - as above - moist 100% ML - as above - scattered organics
2			0.0	15270			ML	SILT, - as above, v. dark brown 10YR 2/2
3			0.0	15254			ML	SILT, brown 10YR 5/3, non plus, dense, moist 100% ML
4			0.0	15272	SL-590 SAB-SB 4.0-5.0	1045	ML	SILT - as above, grading to silty SAND 3.8-4.0
5			0.0	15260			SM	silty SAND, brown 10YR 5/3, non plus, dense, moist 20% ML, 80% SP
6			0.0	15272			SM	silty SAND - as above
7			0.0	15272	SL-590 SAB-SB 7.0-8.0	110	SP	SAND, yellow 10YR 7/6, non plus, loose, moist 100% SP sand silica sand
8			0.0	15284			SP	SAND, yellow 10YR 7/6, non plus, loose, moist - v.f.g. sand
8.3			0.0	15284				- 8.3 refusal
TD								

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mac

Sample ID SL-590-SAB-SB 4.0-5.0 Date/Time 8-12-13 1045

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameter	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S, S, S / VOCs  
 2 - ENCORE  
 1 - 402 jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH $\geq$ 15% FINES		GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
SAND WITH $\geq$ 15% FINES			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color brown 10YR 5/3

**Odor**

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry       Moist      Wet

PG Signature *Mike Duffman*

Additional Comments N/A

PG Registration # 7735

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mercer

Sample ID SL-590-5A9-8B 7.0-8.0 Date/Time 8-12-13 1110

Matrix (circle one)  Soil  Sediment  Water

Start Depth 7.0 End Depth 8.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

SM  
8/12/13

2-16 oz jars  
2-encore  
1-4 oz jar  
\*Soil in jars b/c soil couldn't stay in sleeves  
SM813

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellow 10 YR 7/6

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 2735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Meier

Sample ID SL-591-SA8-SB 0.0-0.5 Date/Time 8-12-13 0950

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Meier

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sieves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
		GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH ≤ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SAND WITH ≤ 5% FINES	SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
	SAND WITH ≥ 15% FINES	SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SM	Silty SAND	
		SC	Clayey SAND	
		ML	Inorganic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
HIGHLY ORGANIC SOILS		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color brown 10YR 5/3

### Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-591</b>	Subarea: <b>8</b>	Date Started: <b>8-12-13</b>	Date Completed: <b>8-12-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>152105</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review & No. <b>N/A</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Walter #7735</b>	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
5			0.0	15279	SL-591		SM	silty SAND, dark brown 10YR 3/3, no spks soft, moist no stain/odv
			0.0	14278	SAB-SB	0950		
1			0.0	14254	0.0-05		SM	silty SAND, brown 10YR 3/3, loose, moist - 1.5 refusal

**CDM  
Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	<b>HA = Hand Auger</b>
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve M...

Sample ID SL-592-548-5B0.0-0.5 Date/Time 8-12-13 0900

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT  Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. skewers  
1-402jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color yellowish brown 10 YR 5/4

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Justin Johnson*

PG Registration # 7735

Additional Comments N/A

Location ID: DG-592	Subarea: 8	Date Started: 8-12-13	Date Completed: 8-12-13
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: NA	
GPS collected? Yes or No		Drill Method: HA	
Radiological Background: 0.20 17292		Borehole diameter: 2.25"	
PID Background: 0.0		Depth to GW: N/A	
Radiological Equipment Used:		PG Review # No: N/A	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: J. Faubion <i>Mike Hoffman #7735</i>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	172107	SL-592	0900	ML	SILT, dark brown 10YR 3/3, soft, non plastic, moist
1			17290	SA8-B		ML	SILT, dark yellowish brown 10YR 5/4, 100% ML, non plastic, soft, moist
2			16244	0.0-0.5		ML	SILT, yellowish brown 10YR 5/8, non plastic, soft, moist, 100% ML
3			14266			ML	SILT - as above
3			15272	SL-592		SM	Silty SAND - transition 3.6 - light yellowish brown 10YR 6/4, 20% ML 80% SP sand, moist, loose
4			15276	SA8-B	0920	SP	SAND very pale brown 10YR 7/3, 100% v.f.g. sa to sr silica sand, moist, loose - 4.4 refusal

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

Page 1 of 1

ABBREVIATIONS:					
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		HA = Hand Auger
dk: dark	m: medium	sa: subangular	wg: well graded		
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	



# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *Jim Mason*

Sample ID SL-592-SAB-SB-3.5-4.5 Date/Time 8-12-13 0920

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>3.5</u>  End Depth <u>4.5</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	--	--

Check if Composite  Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fashion

Sampler S. Mercer

### Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars \*soil in jars  
 b/c couldn't stay  
 2-20 core in sleeves  
 1-40z jar smg13

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color Very light yellowish brown

Odor light yellowish brown

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Men

Sample ID SL-593-SA8-SB 0.0-0.5 Date/Time 8-12-13 0805

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT  Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID N/A

Field Geologist J. Fawbion

Sampler S. Mercer

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - ss. sleeves  
 1 - 4oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color dark brown 10YR 3/3

**Odor**

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry       Moist      Wet

PG Signature *[Signature]*      PG Registration # 7735

Additional Comments N/A

\_\_\_\_\_

\_\_\_\_\_

Location ID: <b>DG-593</b>	Subarea: <b>8</b>	Date Started: <b>8-12-13</b>	Date Completed: <b>8-12-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>15292</b>		Borehole diameter: <b>2.25</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PB Review # & No: <b>Null #7735</b>	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	15290			ML	SILT, dark brown 10YR 3/3, non pls soft moist
1			0.0	15284	SL-593 SA8-SB 0.0-0.5	0805	ML	SILT, brown 10YR 5/3 non pls, soft, moist 100% mL
2			0.0	15296			ML	SILT - as above
3			0.0	152102			ML	SILT, dark yellowish brown 10YR 4/4 non pls, soft, moist 100% mL
4			0.0	15272	SL-593 SA8-SB	0820	ML	SILT - as above
5			0.0	15290	4.0-5.0		ML	SILT, yellowish brown 10YR 4/4 - as above
6			0.0	15278			SM	silty SAND brownish yellow 10YR 6/6 - non pls, loose, moist
6			0.0	15278			SM	silty SAND light yellowish brown 10YR 6/4 non pls, loose, moist
7			0.0	16272			SP	Silty SAND - as above 7.1 refusal

<b>CDM Smith</b>		<b>BORING LOG AND SAMPLING RECORD</b>		Page 1 of <b>1</b>
<b>ABBREVIATIONS:</b>				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>HA = Hand Auger</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
l: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Stan Merce

Sample ID SL-593-SAB-SB 4.0-5.0 Date/Time 8-12-13 0820

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2- s.s. sleeves  
 1-402 jar  
 2- 22 core

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM GW-GC	Well-graded GRAVEL with silt Well-graded GRAVEL with clay	
			GP-GM GP-GC	Poorly graded GRAVEL with silt Poorly graded GRAVEL with clay	
			GM GC	Silty GRAVEL Clayey GRAVEL	
			SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW SP
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM SW-SC	Well-graded SAND with silt Well-graded SAND with clay
	SP-SM SP-SC			Poorly graded SAND with silt Poorly graded SAND with clay	
	SM SC			Silty SAND Clayey SAND	
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES			LIQUID LIMIT LESS THAN 50	ML CL
		OL			Organic SILT with low plasticity
		MH CH			Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity
		OH		Organic SILT or CLAY with moderate to high plasticity	
		HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellowish brown 10YR 4/4

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Mike Johnson*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mercer

Sample ID SL-594-SAB-SB 0.0-0.5 Date/Time 8-14-13<sup>15 SE</sup> 0800

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT  Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameter	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - S.S. SLEEVES  
 1 - 4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
	MH		Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color very pale brown 10YR 8/3

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-594</b>	Subarea: <b>8</b>	Date Started: <b>8-15-13</b>	Date Completed: <b>8-15-13</b>
Client: DOE		Project Name/#: <del>8091-05250-00070-1200-002-220-02201-000110</del> <b>SM 1249</b>	Total Depth: <b>0.4'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled Into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Drill Method: <b>HA</b>	
Radiological Background: <b>13290</b>		Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review # No: <b>N/A</b>	Geologist: <b>J. Faubion</b>
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	132106				SAND, very pale brown, 10 YR 8/3, non plat, lods, moist - v. fg. sa for sr' sand 0.4 refusal
1			0.0	13290	SL-594 SAB-SB 0.0-05	0800	SP	
2								
3								
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12								
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**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

HA = Hand Auger



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Sam Mer

Sample ID SL-595-SAB-SB-0.0-0.5 Date/Time 8-15-13 0835

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. McRee

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sieves  
 1-4oz jar

~~1395~~  
 13765

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
OH	Organic SILT or CLAY with moderate to high plasticity			
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present  Yes  No *JF*

2. Percentage Fill (%) *N/A 25%*

3. Fill Description (circle all that apply)

Asphalt

Metal

Plastic

Concrete

Wood

Glass

Igneous/Metamorphic Gravel

*N/A* *JF*

Other \_\_\_\_\_

Is Staining Present Yes  No

Color *yellowish brown 10YR 5/6*

Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

*N/A* Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Wade Johnson*

PG Registration # *7735*

Additional Comments *N/A JF - rusty nail encountered at 5'*

Location ID: <b>DG-595</b>	Subarea: <b>8</b>	Date Started: <b>8-15-13</b>	Date Completed: <b>8-15-13</b>
Client: DOE		Project Name/ID: <b>SMITH-05200-03376-1203-002223-02231-03376</b>	Total Depth: <b>1'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <b>Yes</b> or No	Drill Method: <b>HA</b>		
Radiological Background: <b>13293</b>	Borehole diameter: <b>2.25</b>		Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>	Depth to GW:		
Radiological Equipment Used:		PS Review & No	Geologist: <b>J. Paulson</b>
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5				13295	SL-595		SM	silty SAND, yellowish brown 10YR 5/6, nonplas., med. stiff, moist - no stain or odor - trace organics 15% ml 1 refusal in SAND brownish yellow 85% SP yellowish brown 10YR 5/6, loose, moist - decomp ss. bedrock - rusty nail encountered - 5'
1				13254	SAB-SB 0.0-0.5		SP	

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

**HA = Hand Auger**



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-596-SAB-SB0.0-0.5

Date/Time 7-30-13 1340

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite      DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

~~2-5.5 sieves if~~  
 1-4 oz jar  
 4-8 oz jars

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 10% FINEG	GM	Silty GRAVEL		
		GC	Clayey GRAVEL		
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt		
	SW-SC	Well-graded SAND with clay			
SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt			
	SP-SC	Poorly graded SAND with clay			
	SM	Silty SAND			
	SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6 red brown

**Odor**

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry  Moist  Wet

PG Signature *Nick Hoffman*

PG Registration # 7735

Additional Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Location ID: <b>06-596</b>	Subarea: <b>8</b>	Date Started: <b>7-30-13</b>	Date Completed: <b>7-30-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <i>Strawberry</i>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>DPT</b>	
Radiological Background: <b>14242</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review No.: <i>#7735</i>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Facion</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	12714	SL-596	1340	ML	- sandy SILT, 10 R 3/8, red brown, dry, loose
1		0.0	13284	SAB-SB		SP	SAND, 5YR 4/6, dry, loose
2		0.0	13266	0.0-0.5		SP	SAND, 5YR 4/6, moist, compact
		0.0	13284				2.5 refusal #1
		0.0	13282				2.8 " #2
							2.6 " #3



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mann

Sample ID SL-597-SAB-SB0.005 Date/Time 8-15-13 0940

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameter	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH ≥ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
		GRAVEL WITH ≥ 10% FINES	GM GC	Silty GRAVEL Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH BETWEEN 5% AND 15% FINES	SAND WITH ≥ 5% FINES	SW SP	Well-graded SAND Poorly graded SAND
			SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
SP-SC				Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES			SM SC	Silty SAND Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		SILT AND CLAY	LQUID LIMIT LESS THAN 50	ML CL	Inorganic SILT with low plasticity Lean inorganic CLAY with low plasticity
			LQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity
				MH CH	Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity
			HIGHLY ORGANIC SOILS		OH PT

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color dark greyish brown 10YR 4/2

### Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature Walter Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-597</b>	Subarea: <b>8</b>	Date Started: <b>8-15-13</b>	Date Completed: <b>8-15-13</b>
Client: DOE		Project Name/#: <b>SSFL-45248-03270-1200-002-225-02201-SSPH0-3m-1241a</b>	Total Depth: <b>2.7'</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <b>Yes</b> or No		Drill Method: <b>HA</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>14275</b>		Borehole diameter: <b>2.25"</b>	Geologist: <b>J. Faubio</b>
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No. <b>Mike Hoffman #7735</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5				142167	SL-597		ML	SILT, dark grayish brown 10YR 4/2
1				14272	SAB-SB	0940	ML	nonplastic, moist 100%mc
				15296	0.0-05		SM	silty SAND brown 10YR 4/3 nonplastic
								loose, moist 20%mc, 50%sp
2				15266			SP	SAND, brown 10YR 4/3, nonplastic,
								loose, moist
2.7				15266			SP	SAND, - as above
								- 2.7 refusal

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID:		Subarea:		Date Started:		Date Completed:		
Project: SSFL				Geologist:		Total Depth:		
Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological ( $\mu\text{R}/\text{cpm}$ )	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Bennett*

Sample ID

*SL-598-SA8-SB0005*

Date/Time

*7-31-13 0915*

Matrix (circle one)

Soil

Sediment

Water

Start Depth

*0.0*

Depth Units (circle one)

Inches

Feet

End Depth

*0.5*

Check if Composite

Collection Method (circle one)

DPT

Slide Hammer

Hand Auger/Slide Hammer

Trenching

Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

*N/A*

Field Geologist

*J. Faubion*

Sampler

*T. Bennett*

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*1-S.S. / 5/8/03*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10R 3/6.5F 10YR 6/8  
*brown-yellow*

Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical  N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature *Mike Johnson*

Additional Comments N/A

PG Registration # 7735

Location ID: <b>DG-598</b>	Subarea: <b>6</b>	Date Started: <b>7-31-13</b>	Date Completed: <b>7-31-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>JA</b>	
GPS collected? <b>Yes</b> or No		Drill Method: <b>HA</b>	
Radiological Background: <b>12264</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG-Review # & No.:	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input type="checkbox"/> Pancake	<b>N/A</b>
			Geologist: <b>J. Feubion</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12282	SL-598		ML	SILT, 10YR 6/8 brown yellow, dry
1		0.0	12266	SA8-SB 0915		ML	loose - 100% ML
		0.0	12266	0.0-0.5		ML	1' SILT, 10YR 16/8, moist, loose, 100% ML
2		0.0	11266			ML	2' SILT, 5YR 4/6 yellow red, moist, loose, 100% ML
3		0.0	11260			ML	3' SILT - as above
4		0.0	11260	SL-598 SA8-SB 0910 4.5-5.5		SM	4' silty SAND, 10R 3/6 red brown, moist, mod. caliche mottling
5		0.0	11264			SM	5' silty SAND - as above, some cohesive clasts 20% ML 80% SF - 5.1 refusal #1 - 5.5 11 #2

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

Bennett

Sample ID

SL-598-SAB-SB-4.5-5.5

Date/Time

7-31-13 0940

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.5

End Depth 5.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID

N/A

Field Geologist

J. Faubion

Sampler

T. Bennett

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

1-s.s. sleeve

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH $\geq$ 5% FINES	GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL
		GRAVEL WITH $\geq$ 10% FINES	GC	Clayey GRAVEL
		SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
		SAND WITH $\geq$ 5% FINES	SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
SAND WITH BETWEEN 5% AND 15% FINES		SW-SC	Well-graded SAND with clay	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH BETWEEN 5% AND 15% FINES	SP-SM	Poorly graded SAND with silt	
	SAND WITH BETWEEN 5% AND 15% FINES	SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES	SM	Silty SAND	
	SAND WITH $\geq$ 15% FINES	SC	Clayey SAND	
	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	CL	Lean inorganic CLAY with low plasticity	
HIGHLY ORGANIC SOILS		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%)    N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present    Yes    No

Color    10R 5/6 red brown

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature    *Mike Johnson*    PG Registration #    7735

Additional Comments    N/A

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SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-599-SAB-SB 0.0-0.5 Date/Time 7-31-13 0740

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fashion

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. SLEEVES

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
			GP-GC Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM Silty GRAVEL	
		GC Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW Well-graded SAND
			SP Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM Well-graded SAND with silt
			SW-SC Well-graded SAND with clay
SP-SM Poorly graded SAND with silt			
SP-SC Poorly graded SAND with clay			
SAND WITH ≥ 15% FINES		SM Silty SAND	
		SC Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML Inorganic SILT with low plasticity	
		CL Lean inorganic CLAY with low plasticity	
		OL Organic SILT with low plasticity	
		MH Elastic inorganic SILT with moderate to high plasticity	
		CH Fat inorganic CLAY with moderate to high plasticity	
		OH Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) \_\_\_\_\_

#### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10YR 3/3 dk brown

#### Odor

1. Odor Strength (circle one)

None       Slight       Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-599</b>	Subarea: <b>8</b>	Date Started: <b>7-31-13</b>	Date Completed: <b>7-31-13</b>
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: <b>4.1'</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>N/A</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	
Radiological Background: <b>12766</b>	Depth to GW:		Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Faubion</b>
PG Review & No.:		<b>Mike Hoffman #7735</b>	

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5				SL-599		ML	SILT, 5YR 4/6; F 10YR 3/3 dk brown
1			12766	SAB-SB 0.0-0.5	0.0-0.5	ML	SILT 10YR 3/3, 100% ML, roots, organics
2			12772			ML	SILT, 10YR 6/8 brown yellow, loose, moist 100% ML
3			12792	SL-599		ML	SILT, 10YR 6/8 - as above, 100% ML
4	4.1	0.0	12772	SAB-SB 3.0-4.0	0.0-0.5	SM SM	SILT, 10YR 6/8 - trace caliche mottling 3.8' transition to silty sand, color A to silty SAND 10YR 3/6, moist, 10YR 3/6 4.0 refusl #1 20% ML 4.0 refusl #2 80% SP

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	<b>HA = Hand Auger</b>
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: \_\_\_\_\_ Subarea: \_\_\_\_\_ Date Started: \_\_\_\_\_ Date Completed: \_\_\_\_\_

Project: SSFL \_\_\_\_\_ Geologist: \_\_\_\_\_ Total Depth: \_\_\_\_\_

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica l (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
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50							

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-599-SAB-3.0-4.0 Date/Time 7-31-13 0805

Matrix (circle one)

Soil     Sediment     Water

Start Depth 3.0

End Depth 4.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubus

Sampler T. Bennett

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	
	EPA 7471 (Soil)	
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	<input checked="" type="checkbox"/>
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

1 - S.S. sleeve

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		<u>SM</u>	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color 10YR 3/6

**Odor**

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

**Moisture Condition (circle one)**  
 Dry     Moist     Wet

PG Signature *Vicki Hoffman*

PG Registration # 7735

Additional Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Stan Mann

Sample ID SL-600-SAB-SB 0.0-0.5 Date/Time 8-14-13 0825

Matrix (circle one) <input checked="" type="radio"/> Soil <input type="radio"/> Sediment <input type="radio"/> Water	Start Depth <u>0.0</u> End Depth <u>0.5</u>	Depth Units (circle one) Inches <input checked="" type="radio"/> Feet
---	--	--

Check if Composite     Collection Method (circle one)

DPT	<input checked="" type="radio"/> Slide Hammer	<input type="radio"/> Hand Auger/Slide Hammer	<input type="radio"/> Trenching	<input type="radio"/> Sediment
-----	---	---	---------------------------------	--------------------------------

QC Type (circle one)    Parent Sample ID N/A

<input checked="" type="radio"/> N	<input type="radio"/> FD	<input type="radio"/> FB	<input type="radio"/> RB
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Field Geologist J. Faubion

Sampler S. Mercer

### Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	Z
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-S.S. S/EVCS  
1-402 jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL		
		GP	Poorly graded GRAVEL		
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	GW-GC	Well-graded GRAVEL with silt	
		GP-GM	GP-GC	Poorly graded GRAVEL with silt	
		GM	GC	Silty GRAVEL	
		GC	CL	Clayey GRAVEL	
	GRAVEL WITH $\geq$ 15% FINES	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND	
			SP	Poorly graded SAND	
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	SW-SC	Well-graded SAND with silt
			SP-SM	SP-SC	Poorly graded SAND with silt
SAND WITH $\geq$ 15% FINES		SM	SC	Silty SAND	
		SC	CL	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	<u>ML</u>	Inorganic SILT with low plasticity		
		CL	Lean inorganic CLAY with low plasticity		
	LIQUID LIMIT GREATER THAN 50	OL	MH	Organic SILT with low plasticity	
		CH	OH	Elastic inorganic SILT with moderate to high plasticity	
		CH	OH	Fat inorganic CLAY with moderate to high plasticity	
		OH	PT	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color dark brown 10YR 3/3

### Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-600</b>	Subarea: <b>8</b>	Date Started: <b>8-14-13</b>	Date Completed: <b>8-14-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	Total Depth: <b>15.3'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>12273</b>		Borehole diameter: <b>2.25</b>	Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>		Depth to GW:	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No. <b>Mick Hoffman # 7735</b>	Geologist: <b>S. Fackler</b>

Depth (feet)	bgs Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12277	SL-600		ML	SILT, dark brown 10YR 3/3, non plas, stiff
1		0.0	12254 12260	SAB-SB 0.0-0.5	0825	ML	SILT, dark greyish brown 10YR 4/2, non plas, soft, moist - abundant shell frags
2		0.0	12266			ML	SILT, yellowish brown 10YR 6/8, non plas, soft, moist
3		0.0	12264			ML	SILT - as above - scattered shell frags
4		0.0	12276	SL-600		ML	SILT - as above yellowish brown 10YR 6/8
5		0.0	12279	SAB-SB 4.0-5.0	0840	ML SM	SILT - 4.8 transition to silty SAND silty SAND, dark brown 10YR 3/3, non plas, loose, moist
6		0.0	12272			SM	silty SAND, dark yellowish brown 10YR 4/6, non plas, loose, moist
7		0.0	12272			SM	silty SAND, brownish yellow 10YR 6/6, non plas, loose, moist - scattered shell frags
8		0.0	12278			dk SM	silty SAND - as above
9		0.0	12266			SM	silty SAND - as above

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

*HA = Hand Auger*

Location ID: Subarea: Date Started: Date Completed:  
 Project: SSFL Geologist: Total Depth:

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	12770				SM	Silty SAND, brownish yellow 10YR 7/8 non plas, soft, loose, abundant shell frags, CaCO <sub>3</sub> powder 20% ML 80% SP
11		0.0	12772				SM	Silty SAND - as above
12		0.0	12772				SR-SM	w/SILT Mt 9/4/13 <del>Silty SAND</del> , yellowish brown 10YR 5/4 - non plas, soft loose 10% ML 90% SP
13		0.0	12782				SR-SM	w/SILT Mt 9/4/13 Silty SAND light yellowish brown - scatt. shell frags 10% ML 90% SP
14		6.0	12784				SP-SM	w/SILT Mt 9/4/13 Silty SAND, very pale brown 10YR 7/4 non plas, soft, loose, moist 10% ML - scatt. shell frags 90% SP
15		0.0	12784				SP	SAND, very pale brown 10YR 8/4 - 15.3' refusal non plas, soft, loose v. fg. sa to sr silica sand 100% moist fossil frags, decomp s.s. bedrock - NO

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mason

Sample ID SL-600-SAB-SB-4.0-5.0 Date/Time 8-14-13 0840

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger     Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabion

Sampler S. Mercet

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves

2-encore

1-4oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
		GRAVEL WITH <u>≥ 10% FINES</u>	GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
		SAND WITH BETWEEN 5% AND 15% FINES	SW	Well-graded SAND	
			SP	Poorly graded SAND	
SAND WITH <u>≥ 15% FINES</u>	SW-SM	Well-graded SAND with silt			
	SW-SC	Well-graded SAND with clay			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
		LIQUID LIMIT GREATER THAN 50	SM	Silty SAND	
			SC	Clayey SAND	
		HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS	ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS	OL	Organic SILT with low plasticity		
		MH	Elastic inorganic SILT with moderate to high plasticity		
HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS	CH	Fat inorganic CLAY with moderate to high plasticity		
		OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS	PT	PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellowish brown 10YR 6/8

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature [Signature] PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mysel

Sample ID SL-601-SB-0.0-0.5 Date/Time 7-18-13 1600

Matrix (circle one)  Soil  Sediment  Water

Start Depth 0.0 End Depth 0.5

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler V. Cortes

Analysis

Parameter	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzed	
Encores	VOCs	EPA 8260	
	1,4 Dioxane	EPA 8260 SIM	
	TPH-GRO	EPA 8015	
	TPH-EFH	EPA 8015	X
	Glycols	EPA 8015	
	Alcohols	EPA 8015	
	Terphenyls	EPA 8015	
	Nitrates	EPA 300.0/9056	
	Energetics	EPA 8330	
	Cyanide	EPA 9012	
	Formaldehyde	EPA 8315	
Soil/In	NDMA	EPA 1625	
	Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630	

2-5.5 sleeves  
1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH ≥ 15% FINES	GP-GC	Poorly graded GRAVEL with clay
	GM		Silty GRAVEL	
	GC		Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH ≥ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color 10R 3/6 red brown

- ### Odor
- Odor Strength (circle one)  
 None    Slight    Strong
  - Odor Description (circle one)  
 Organic    Petroleum    Chemical  
 N/A    Other \_\_\_\_\_

Moisture Condition (circle one)  
 Dry     Moist    Wet

PG Signature *Miller Hoffman*      PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-601</b>	Subarea: <b>8</b>	Date Started: <b>7-18-13</b>	Date Completed: <b>7-18-13</b>
Client: DOE		Project Name/#: <b>66288-83278-4203-002-223-02224-SAPHE</b>	Total Depth: <b>20'</b>
Company Name: CDM SMITH		Drill Contractor/Driller: <b>Stratagem F. Robinson</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <b>(Yes or No)</b>	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>14283</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No.:	

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	13269			ML	silt, 10 R 316 red brown, dry, loose
1		0.0	12254	SL-601	1000	ML	- trace organics (root hairs)
		0.0	12230	SAB-SB		SM	1' silty gravel, ang. clasts sandstone to 4mm, organics 15% - wood, roots
				0.0-0.5			10R 618
2		0.0	12278			ML	2' silt, 10YR 6/3 brown, dry loose <sup>brown-yellow</sup> - strong caliche mottling
3		0.0	12242			ML	3' silt, 10YR 6/3 brown, dry, loose - strong caliche mottling
4		0.0	12260	SL-601	1030	ML	4' sandy silt, v. fg. sa to sr silica sand 15% in 10YR 6/3 silty matrix
				SAB-SB			- caliche mottling dropping out
				4.0-5.0			4.8 transition ML to silty sand
5		0.0	12242			SM	5' - silty sand, dense, moist 10R 316
6		0.0	12236			SM	silty sand 10 R 1316 red brown - strong caliche mottling dense, moist
7		0.0	12278			SM	silty sand 10R 316 red brown - caliche mottling throughout
8		0.0	12284			SM	silty sand, 10YR 8/3, moist, dense - strong caliche mottling
9		0.0	13260			SM	silty sand, 10YR 8/3 light brown - silt dropping out - caliche mottling persistent

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-601** Subarea: **8** Date Started: **7-18-13** Date Completed: **7-18-13**  
 Project: **SSFL** Geologist: **J. Rubio** Total Depth:

Depth (feet)	Recovery (feet)	PID (ppm)	Radiological (uR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	13284				SM	silty sand, 10YR 8/8 light brown moist, loose - caliche mottling
11	0.0	13272				SM	silty sand as above, 10YR 8/3 - caliche mottling dropping out
12	0.0	13290				SM	silty sand, color Δ to 10R 3/6 red brown - moist, dense - no stain / odor
13	0.0	13294				SM	- silty sand, 10R 3/6 red brown moist, dense - caliche absent
14	0.0	13266				SM	silty sand, 10R 3/6 red brown moist, dense no stain / odor
15	0.0	132102				SM	silty sand, 10R 3/6 red brown
16	0.0	13296				SP	15.2 transition from silty sand to poorly graded sand 10YR 6/8 brown yellow
17	0.0	13260				SP	16' sand, poorly graded, moist 10YR 6/8
18	0.0	13266				SP	- equigranular poorly graded sand, sa to sr silica - v.F.g. 10YR 6/8
19	0.0	132102				SP	sand 10YR 8/3 light brown - moist - dense (decomposed bedrock)
20	0.0	13266				SP	poorly graded sand, v.F.g. silica 10YR 8/3 light brown
						SP	20' refusal 10YR 8/3 sandstone

19.9 refusal #2  
 20.4 refusal #3

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. gk

Sample ID 3L-601-SA8-SB 4.050 Date/Time 7-18-13 1030

Matrix (circle one) Soil Sediment Water Start Depth 4.0 Depth Units (circle one) Inches Feet  
 End Depth 5.0

Check if Composite  Collection Method (circle one) DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID N/A

Field Geologist J. Faubion

Sampler N. Cortes

Analysis

Parameter	Method	Analysis?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analysis?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

~~basal, see jf~~  
 2-16 oz jars  
 1-4 oz jar SM71813  
 2-encore

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\approx$ 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\approx$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 6/3

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry   Moist     Wet

PG Signature *Julie Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mear

Sample ID SL-602-SA8-SB0.0-0.5 Date/Time 8-14-13 1015

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB    Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-5.5 sieves  
 1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL		
		GP	Poorly graded GRAVEL		
		GW-GM	Well-graded GRAVEL with silt		
		GW-GC	Well-graded GRAVEL with clay		
		GP-GM	Poorly graded GRAVEL with silt		
		GP-GC	Poorly graded GRAVEL with clay		
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
			SW	Well-graded SAND	
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SP	Poorly graded SAND
				SW-SM	Well-graded SAND with silt
			SAND WITH BETWEEN 5% AND 15% FINES	SW-SC	Well-graded SAND with clay
SP-SM	Poorly graded SAND with silt				
SAND WITH $\geq$ 15% FINES	SP-SC		Poorly graded SAND with clay		
	SM		Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SC	Clayey SAND		
		ML	Inorganic SILT with low plasticity		
		CL	Lean inorganic CLAY with low plasticity		
		OL	Organic SILT with low plasticity		
		MH	Elastic inorganic SILT with moderate to high plasticity		
		CH	Fat inorganic CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		OH	Organic SILT or CLAY with moderate to high plasticity		
		PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color dark brown 10YR 3/3

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry   Moist     Wet

PG Signature Mike Hoffman

PG Registration # 7735

Additional Comments N/A

Location ID: <b>06-602</b>	Subarea: <b>8</b>	Date Started: <b>8-14-13</b>	Date Completed: <b>8-14-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>HA</b>	
GPS collected? Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>12269</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review & No. <b>N/A</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		Geologist: <b>J. Fashion</b> <i>Mick Hoffman # 7735</i>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	12271	SL-602	1015	ML	SILT, dark brown 10YR 3/3, non plus, med. st. FF, moist
1			0.0	12248	SAB-SB		ML	SILT, dark yellowish brown 10YR 4/4 soft, loose 100% ML
2			0.0	122120	0.0-0.5		ML	SILT, grayish brown 10YR 5/2, non plus, soft, loose, moist 100% ML
3			0.0	12248			SM	silty SAND, light yellowish brown, 30% ML 70% SP
4			0.0	12254			SM	10YR 6/4, non plus, soft, loose, moist
5			0.0	12260	SL-602	1040	SM	silty SAND - as above 20% ML 80% SP
6			0.0	12254	SAB-SB		SM	4.0-5.0
7			0.0	12254			SM	Silty SAND, very pale brown 10YR 7/4 non plus, soft, loose, moist 20% ML 80% SP
8			0.0	12270			SM	Silty SAND - as above
9			0.0	12272			SM	Silty SAND, yellowish brown 10YR 5/4 non plus, soft, loose, moist - trace resistant clasts sandstone 20% ML 80% SP
10			0.0	12284			ML	SILT, dark yellowish brown 10YR 5/6 non plus, med. st. FF, moist 100% ML
11			0.0	12266			ML	SILT w/ clay, color as above, low plus, med st. FF, moist 80% ML, 20% CL

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 2

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **DG-602** Subarea: **8** Date Started: **8-14-13** Date Completed: **8-14-13**  
 Project: SSFL Geologist: **J. Favre** Total Depth:

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	12760		SP-BM			w/SAND, mt 9/4/13 sitty SAND, yellowish brown 10YR 5/6 non plas, med. st. ff, moist - 10% ml 90% sat
11	0.0	12766		SP-SM			w/SAND 9/4/13 sitty SAND - as above
12	0.0	12760		SP			SAND, light yellowish brown 10YR 6/4, non plas, soft, loose, moist 100% sat - 12.6 refuse   v. fg siliceous

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Stan Men

Sample ID SL-602-SA8-SB 4.0-5.0 Date/Time 8-14-13 1040

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. sleeves  
1-4oz jar  
2-ENCORE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color slaty pale brown 10YR 7/4

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature *Mark Hoffman* PG Registration # 7735

Additional Comments N/A

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SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By P. Hartman

Sample ID SL-604-SAB-SB-0.0-0.5MS Date/Time 08/29/2013 0740

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID NA

Field Geologist B. Kaspzyk

Sampler V. Cortes

Analysis			
Parameter	Method	Analysis	
Metals	EPA 6010		X
	EPA 6020		X
	EPA 7471 (Soil)		X
	EPA 7470 (Water)		X
Fluoride *	EPA 300.0/9056		X
SVOCs	EPA 8270		
TIC	EPA 8270		
PAHs	EPA 8270 SIM		
1,4 Dioxane	EPA 8270 SIM		
Dioxins	EPA 1613		
PCBs/PCTs	EPA 8082		
Perchlorate	EPA 314.0/331		
Perchlorate Confirmation	EPA 6850/6860		
pH	EPA 9045 (Soil)		X
	EPA 9040 (Water)		
Hexavalent Chromium	EPA 7196/7199		
Herbicides	EPA 8151		
Pesticides	EPA 8081		
VOCs	EPA 8260		
1,4 Dioxane	EPA 8260 SIM		
TPH-GRO	EPA 8015		
TPH-EFH	EPA 8015		
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
Methyl Mercury	EPA 1630		

\* Inorganic sample EPA meth 300.0 collected for Nitrite as NO<sub>3</sub>, Fluoride, Sulfate, Sulfite.

3 - 16oz jars

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH < 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH < 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color White 10YR 8/1

**Odor**

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

**Moisture Condition (circle one)**

Dry      Moist      Wet

PG Signature *Mike Hoffman*      PG Registration # 7735

Additional Comments Boring was advanced using hand auger. Sample was grab (CaCO<sub>3</sub> fragments collected from surface).

Location ID: DG-604	Subarea: 8	Date Started: 08-29-13	Date Completed: 08-29-13
Client: DOE		Project Name/#: Santa Susana Field Laboratory/94489	Total Depth: 3.3, 3.4
Company Name: CDM SMITH		Drill Contractor/Driller: Strongarm	Depth Drilled into Bedrock: 0
GPS collected? (Yes) or No		Drill Method: HAND AUGER	
Radiological Background: A=12 YB=48		Borehole diameter: 2.5 inch	
PID Background: 0.0		Depth to GW: NA	Sampling Method: HAND AUGER
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review & No: <i>[Signature]</i> #7735	Geologist: B. KASPERIC

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
1	1 1/2	00	00	12/91	SL-604 SAB - SB-0.0	7:40	ML	SANDY SILT - WHITE (DYK 8/1) 70% SAB, SOFT NON-PLASTIC, DRY; 30% SAND, FINE, PG, LOOSE TRACE LIMESTONE FRAGMENTS (MAX DIA = 1.5 INCHES), VISIBAL REACTION TO HCL.
2	1 1/2	00	00	12/70	0.5MS			
3	1 1/2	00	00	12/94	SL-904 SAB - SB-0.0 0.5	7:45		
								REFUSAL AT 3.4 FT

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace
c: coarse	lt: light	rnd: rounded	v: very
dk: dark	m: medium	sa: subangular	wg: well graded
f: fine	mod: moderate	sr: subrounded	φ: diameter

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By P. Hardman

Sample ID SL-904-SAB-SB-0.0-0.5 Date/Time 08/29/2013 0745

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer     Hand Auger    Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD    FB    RB

Parent Sample ID SL-904-SAB-SB-0.0-0.5M

Field Geologist B. Kaspzyk

Sampler V. Cortes

Analysis

Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride <del>de</del>	EPA 300.0/9056	X
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

\* Inorganic sample EPA method 300.0 collected for Nitrate (NO3), fluoride, Sulfate, Sulfite.

1-1602-jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
	CH	Fat inorganic CLAY with moderate to high plasticity		
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%)

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color White 10YR 8/1

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature *Vivian Hoffman*

PG Registration # 7735

Additional Comments Boring was advanced using hand auger. Sample was grab (CaCO<sub>3</sub> fragments collected from surface).

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By P. Hartman

Sample ID SL-005-SAB-SB-0.0-0.5 Date/Time 08/29/2013 0730

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID NA

Field Geologist B. Kaspzyk

Sampler V. Cortes

Analysis																																												
Metals	EPA 6010	X																																										
	EPA 6020	X																																										
	EPA 7471 (Soil)	X																																										
	EPA 7470 (Water)																																											
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<p>*Inorganic sample EPA meth 300.0 collected for Nitrite, NO<sub>3</sub>, fluoride, Sulfate, Sulfite.</p>																																												

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
		SAND WITH $\geq 15\%$ FINES	SM	Silty SAND
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color 10YR 8/1 white

Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature Julie Hoffman

PG Registration # 7735

Additional Comments Boring was advanced w/ hand auger. Sample was grab (CaCO<sub>3</sub> fragments collected from surface).

Location ID: <b>DC-605</b>	Subarea: <b>8</b>	Date Started: <b>08-29-13</b>	Date Completed: <b>08-29-13</b>
Client: DOE		Project Name/#: Santa Susana Field Laboratory/84489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>STRONGARM</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HAND AUGER</b>	
Radiological Background: $\gamma = 12/25 = 46$		Borehole diameter: <b>2-5 INCH</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PO Review & Non	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Mike Stoffman #7735</b> <b>HAND AUGER</b> Geologist: <b>B KAPCYK</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I ( $\mu$ R/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0		1.0	0.0	12/86	SL-605	7:30 AM		<b>SANDY SILT - WHITE (10% ST) 60% SILT, SOFT, NON-PLASTIC, DRY, 30% SAND, FINE, PG, 100GR</b> <b>10% LIMESTONE FRAGMENTS, MAX DIA 2-INCH</b> <b>VISCERAL REACTION TO HCL. REMOVAL AT 1 FT.</b>
1		1.0	0.0	12/72	SA 8 - SB-00-05			
2								
3								
4								
5								

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace
c: coarse	lt: light	rnd: rounded	v: very
dk: dark	m: medium	sa: subangular	wg: well graded
f: fine	mod: moderate	sr: subrounded	$\phi$ : diameter

Location ID:		Subarea:		Date Started:		Date Completed:	
Project: SSFL				Geologist:		Total Depth:	
Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-606-SA8-SB 0.0-0.5 Date/Time 7-19-13 1300

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 - s.s. sleeves  
 1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\geq</math> 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>GRAVEL WITH <math>\geq</math> 15% FINES</b>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	<b>COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>SAND WITH <math>\geq</math> 5% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
<b>SAND WITH <math>\geq</math> 15% FINES</b>		SM	Silty SAND	
		SC	Clayey SAND	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>LIQUID LIMIT LESS THAN 50</b>	<input checked="" type="radio"/> ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	<b>LIQUID LIMIT GREATER THAN 50</b>	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10 YR 3/3 dark brown

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist    Wet

PG Signature *Mark Hoffman*

PG Registration # 7735

Additional Comments N/A



Location ID: **DG-206** Subarea: **8** Date Started: **7-19-13** Date Completed: **7-19-13**

Project: **SSFL** Geologist: **J. Feubian** Total Depth: **10.5**

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10		0.0	122102			SM	9.0 transition to silty sand, 10YR6/8 brown yellow - strong calcic mottling
10.5		0.0	12296			SP	sharp transition to SP sand 10YR8/3 light brown - p.g. v. fg. sa to st silica conc
						SP	10.5 refusal - sandstone bedrock
							10.5 #1 refusal
							10.4 #2

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By V. Cortes

Sample ID SL-606-3A8-SB 4.0-5.0 Date/Time 7-19-13 1320

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler V. Cortes

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-16 oz jars  
2-200 ml

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\geq</math> 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	<b>GRAVEL WITH <math>\geq</math> 15% FINES</b>	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH <math>\geq</math> 5% FINES</b>	SW	Well-graded SAND
			SP	Poorly graded SAND
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
<b>SAND WITH <math>\geq</math> 15% FINES</b>		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>SILT AND CLAY</b>	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
<b>HIGHLY ORGANIC SOILS</b>		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 3/3 dark brown

Odor

1. Odor Strength (circle one)  
 None  Slight  Strong

2. Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
 Dry  Moist  Wet

PG Signature *Mike Hoffman*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Sam Mear

Sample ID SL-607-SAB-SB0.0-0.5 Date/Time 8-9-13 1215

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. Mercer

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color Very dark brown 10YR 2/2

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature

*Mike Hoffman*

PG Registration #

7735

Additional Comments

N/A

Location ID: <b>AG-607</b>	Subarea: <b>8</b>	Date Started: <b>8-9-13</b>	Date Completed: <b>8-9-13</b>
Client: DOE	Project Name/#: Santa Susana Field Lab/99489		Total Depth: <b>6.3'</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>Stranger/m</b>		Depth Drilled into Bedrock: <b>NA</b>
GPS collected? Yes or No	Drill Method: <b>HA</b>	Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
Radiological Background: <b>12262</b>	Depth to GW: <b>NA</b>		Geologist: <b>J. Paulson</b>
PID Background: <b>0.0</b>	Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		
PG Review & No.:			

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5		0.0	12279	SL-607		ML	SILT, very dark brown, 10 YR 2/2 non pls
		0.0	12272	SAB-SB	1215		soft, moist no stain/odor 100% ML
1		0.0	12266	0.0-0.5		ML	SILT - as above, occasional organics (creat hairs)
2		0.0	12266			ML	2' SILT dark grayish brown 10 YR 4/2 non pls, soft, moist, occ. organics
3		0.0	12260			ML	3' SILT - as above
4		0.0	12290	SL-607		ML	4' SILT brownish yellow 10 YR 6/6 non pls, med. stiff, moist 100% ML
		0.0	12260	SAB-SB		SM	5' silty SAND yellow 10 YR 7/6 non pls, soft, moist 20% ML, 80% SP
5		0.0	12260	4.0-5.0			
		0.0	12266	SL-607			
6		0.0	12266	SAB-SB			
				5.0-6.0	1300		6' SAND, very pale brown, 10 YR 7/3 non pls, soft, moist 100% SP - 6.3 refusal

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	HA = Hard Aggregate
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Moran

Sample ID SL-607-SAB-SB40-50 <sup>5.0-6.0</sup> Date/Time 8-9-13 1300

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 <sup>3'</sup> 5.0

End Depth 5.0 <sup>3'</sup> 6.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Morcor

**Analysis**

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
	EPA 300.0/9056	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X <sup>SM</sup>
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

  

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. sleeves  
2-ENCORE  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM GW-GC	Well-graded GRAVEL with silt Well-graded GRAVEL with clay	
			GP-GM GP-GC	Poorly graded GRAVEL with silt Poorly graded GRAVEL with clay	
			GM GC	Silty GRAVEL Clayey GRAVEL	
			SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW SP
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM SW-SC	Well-graded SAND with silt Well-graded SAND with clay
	SP-SM SP-SC			Poorly graded SAND with silt Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES	SM SC		Silty SAND Clayey SAND	
	FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML CL OL	Inorganic SILT with low plasticity Lean inorganic CLAY with low plasticity Organic SILT with low plasticity
			LIQUID LIMIT GREATER THAN 50	MH CH	Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity
OH				Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT		PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellow 10YR 7/6

#### Odor

1. Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
--	---------------------------------	---------------------------------
2. Odor Description (circle one)
 

<input checked="" type="checkbox"/> Organic	<input type="checkbox"/> Petroleum	<input type="checkbox"/> Chemical
<input checked="" type="checkbox"/> N/A Other _____		

#### Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature *Nick Johnson*

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-608-SAB-SB-0.0-0.5 Date/Time 8-1-13 1210

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

	EPA 6010	X
Metals	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
	EPA 300.0/9056	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X <i>sf</i>
Pesticides	EPA 8081	X <i>sf</i>

VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-5.5 sleeves*  
*1-4 oz jar*

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL		
		GC	Clayey GRAVEL		
		SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt		
	SW-SC	Well-graded SAND with clay			
SAND WITH $\geq$ 15% FINES	SP-SM	Poorly graded SAND with silt			
	SP-SC	Poorly graded SAND with clay			
	SM	Silty SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity		
		CH	Fat inorganic CLAY with moderate to high plasticity		
		OH	Organic SILT or CLAY with moderate to high plasticity		
		HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color 5YR 4/6 yellow red if 10 YR 8/3 brown

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-608</b>	Subarea: <b>8</b>	Date Started: <b>8-1-13</b>	Date Completed: <b>8-1-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HA</b>	
Radiological Background: <b>10286</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		PG Review # No. <b>N/A</b>	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Walter Hoffman #7735</b>	
		Geologist: <b>J. Faubion</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
.5			0.0	10287	SL-608	1210	ML	.5 SILT, brown, 10 YR 8/3, 100% ML, no plas, soft, loose, dry - no stain/odor
1			0.0	10286	SAB-SB 0.0-0.5		ML	1' SILT, brown, 10 YR 8/3, 100% ML, no plas, soft, loose, dry - no stain/odor
2			0.0	11254			ML	2' SILT brown 10 YR 8/3, 100% ML, no plas, soft, loose, moist - trace organics
3			0.0	11296			ML	3' SILT - as above organics (the root hairs wood)
4			0.0	10272			ML	4' SILT, 5 YR 4/6 yellow red, 100% ML, no plas, soft, loose moist
5			0.0	12272	SL-608 SAB-SB 4.0-5.0	1300	ML	5' SILT - as above
6			0.0	10248			ML	6' SILT 10 YR 6/8 brown yellow, 100% ML, no plas, soft, loose moist
7			0.0	12260	SL-608 SAB-SB	1315	SP	6.5' transition to SP SAND, 10 YR 8/3 light brown, 100% SP, v. fg. sat to sr, soft, loose, moist
8			0.0	12260	7.0-8.0	1345	SP	8.0 SAND, as above
								8.0 refusal #1
								8.0 " #2

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

*HA = Hand Auger*



# SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Bennett

Sample ID SL-608-SAB-SB 4.0-5.0 Date/Time 8-1-13 1300

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0 End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger  Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fawcett

Sampler T. Bennett

Analysis			
Parameter	Method	Analysis	Analysis
Metals	EPA 6010	X	
	EPA 6020	X	
	EPA 7471 (Soil)	X	
	EPA 7470 (Water)		
Fluoride	EPA 300.0/9056		
SVOCs	EPA 8270		
TIC	EPA 8270		
PAHs	EPA 8270 SIM	X	
1,4 Dioxane	EPA 8270 SIM		
Dioxins	EPA 1613	X	
PCBs/PCTs	EPA 8082	X	
Perchlorate	EPA 314.0/331		
Perchlorate Confirmation	EPA 6850/6860		
pH	EPA 9045 (Soil)	X	
	EPA 9040 (Water)		
Hexavalent Chromium	EPA 7196/7199		
Herbicides	EPA 8151	X	
Pesticides	EPA 8081	X	
VOCs	EPA 8260		
1,4 Dioxane	EPA 8260 SIM		
TPH-GRO	EPA 8015	X	
TPH-EFH	EPA 8015	X	
Glycols	EPA 8015		
Alcohols	EPA 8015		
Terphenyls	EPA 8015		
Nitrates	EPA 300.0/9056		
Energetics	EPA 8330		
Cyanide	EPA 9012		
Formaldehyde	EPA 8315		
NDMA	EPA 1625		
Organotin	NOAA Status and Trends, Krone et al.		
Methyl Mercury	EPA 1630		

2 - S.S. sleeves  
2 - envelope  
1 - 4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL
		GP	Poorly graded GRAVEL
		GW-GM	Well-graded GRAVEL with silt
		GW-GC	Well-graded GRAVEL with clay
		GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GM	Silty GRAVEL
		GC	Clayey GRAVEL
		SW	Well-graded SAND
		SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SW-SM	Well-graded SAND with silt
		SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt
	LIQUID LIMIT GREATER THAN 50	SP-SC	Poorly graded SAND with clay
		SM	Silty SAND
		SC	Clayey SAND
HIGHLY ORGANIC SOILS	SILT AND CLAY	<input checked="" type="radio"/> ML	Inorganic SILT with low plasticity
		CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity
		CH	Fat inorganic CLAY with moderate to high plasticity
		OH	Organic SILT or CLAY with moderate to high plasticity
		PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 8/3 brown if red  
5YR 4/6 yellow brown  
sm 8/5i3

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature Mula Delfino

PG Registration # 7735

Additional Comments N/A

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SL-608-SAB-7.0-8.0 Date/Time 8-1-13 1345

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 7.0  
 End Depth 8.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger     Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

**Analysis**

Parameters	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-S.S. sleeves  
 2-20 core  
 1-40z jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 10YR 8/3 light brown

#### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

Organic  Petroleum  Chemical

N/A  Other \_\_\_\_\_

Moisture Condition (circle one)

Dry  Moist  Wet

PG Signature *Vicki Offman*

PG Registration # 7735

Additional Comments \_\_\_\_\_

SSFL Phase 3 -- Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Men

Sample ID SL-609-SAB-SB-0.0-0.5 Date/Time 8-13-13 1215

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Fabion

Sampler S. Mercer

Analysis

Parameter	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sieves  
 1-4 oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION PASSED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH $\geq$ 10% FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSED ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH BETWEEN 5% AND 15% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH $\geq$ 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SM	Silty SAND	
		SC	Clayey SAND	
	LIQUID LIMIT GREATER THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No  10YR 4/6  
 Color dark yellowish brown

### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DC-609</b>	Subarea: <b>8</b>	Date Started: <b>8-13-13</b>	Date Completed: <b>8-13-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? (Yes or No)		Drill Method: <b>HA</b>	
Radiological Background: <b>12285</b>		Borehole diameter: <b>2.25'</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used:		BG Review # No.:	
<input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		<b>Milk #7735</b>	
		Geologist: <b>J. Foubion</b>	

Depth (feet)	bgs Recovery (feet)	PID (ppm)	Radiological (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	12260	SL-609		ML	SILT, dark yellowish brown 10YR 4/6 nonplastic
1		0.0	12270	SAB-SB 0.0-95	1215	SM	Silty SAND nonplastic, stiff, moist 100% ML
2		0.0	11754			SM	Silty SAND - as above dark yellowish brown 10YR 4/4 - nonplastic, loose, moist - soft organic
3		0.0	12114			SM	Silty SAND - yellowish brown 10YR 5/4 - nonplastic, loose - moist 80% SP 20% ML
4		0.0	12284	SL-609		SM	Silty SAND - as above
5		0.0	11796	SAB-SB 4.0-5.0	1245	SP	SAND, very pale brown 10YR 8/3 nonplastic, loose, moist 100% SP
6		0.0	13242			SP	SAND - as above, v. fg. soft SP sand
7		0.0	12260			SP	SAND - as above - 100% SP
TD							7.0 refusal

**CDM Smith**

**BORING LOG AND SAMPLING RECORD**

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

*HA - Hand Auger*



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Men

Sample ID SL-609-SA8-SB-4.0-5.0 Date/Time 8-13-13 1245

Matrix (circle one)  Soil  Sediment  Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger  Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. McCar

Analysis

Parameter	Method	Result
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
Fluoride	EPA 7470 (Water)	
SVOCs	EPA 300.0/9056	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Result
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-5.5 steps 100z jars  
1-40z jar  
2-22 cov 2

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\approx$ 5% FINES	GW	Well-graded GRAVEL		
		GP	Poorly graded GRAVEL		
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	GW-GC	Well-graded GRAVEL with silt	
		GW-GC	GP-GM	Well-graded GRAVEL with clay	
		GP-GM	GP-GC	Poorly graded GRAVEL with silt	
		GP-GC	GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 10% FINES	GM	GC	Silty GRAVEL	
		GC	GC	Clayey GRAVEL	
	COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH $\approx$ 5% FINES	SW	SP	Well-graded SAND
			SP	SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	SW-SC	Well-graded SAND with silt	
		SW-SC	SP-SM	Well-graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SP-SM	SP-SC	Poorly graded SAND with silt	
		SP-SC	SP-SC	Poorly graded SAND with clay	
SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE		SM	SC	Silty SAND	
		SC	SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	CL	Inorganic SILT with low plasticity	
		CL	OL	Lean inorganic CLAY with low plasticity	
		OL	OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	CH	Elastic inorganic SILT with moderate to high plasticity	
		CH	OH	Fat inorganic CLAY with moderate to high plasticity	
		OH	OH	Organic SILT or CLAY with moderate to high plasticity	
LIQUID LIMIT GREATER THAN 50		PT	PT	PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS					

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellowish brown 10 YR 5/4

Odor

1. Odor Strength (circle one)

None     Slight     Strong

2. Odor Description (circle one)

Organic     Petroleum     Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature *Mike Johnson* PG Registration # 7735

Additional Comments N/A

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SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Bennett*

Sample ID

*SL-610-SA8-SB-0.0-0.5*

Date/Time

*8-1-13 0800*

Matrix (circle one)

Soil     Sediment     Water

Start Depth 0.0

End Depth 0.5

Depth Units (circle one)

Inches     Feet

Check if Composite

DPT

Slide Hammer

Collection Method (circle one)

Hand Auger/Slide Hammer

Trenching

Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

*N/A*

Field Geologist

*J. Foubion*

Sampler

*T. Bennett*

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

*2-S.S. sieve*

*1-4 oz jar*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq 10\%$ FINES	GP-GC	Poorly graded GRAVEL with clay
			GM	Silty GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	GC	Clayey GRAVEL
			SW	Well-graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
SW-SC			Well-graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SP-SM	Poorly graded SAND with silt	
	SP-SC	Poorly graded SAND with clay		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SM	Silty SAND	
		SC	Clayey SAND	
		ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes No Very  
 Color 10 YR 8/3 light brown

- Odor
- Odor Strength (circle one)  
 None  Slight  Strong
  - Odor Description (circle one)  
 Organic  Petroleum  Chemical  
 N/A Other \_\_\_\_\_
- Moisture Condition (circle one)  
 Dry  Moist  Wet

PG Signature [Signature] PG Registration # 7735

Additional Comments N/A

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Location ID: <b>DG-610</b>	Subarea: <b>8</b>	Date Started: <b>8-1-13</b>	Date Completed: <b>8-1-13</b>
Client: DOE		Project Name/#: <b>Santa Susana Field Lab/99489</b>	Total Depth: <b>7.8'</b>
Company Name: <b>CDM SMITH</b>		Drill Contractor/Driller: <b>N/A</b>	Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <b>Yes</b> or No		Drill Method: <b>HA</b>	
Radiological Background: <b>10270</b>		Borehole diameter: <b>2.25"</b>	Sampling Method: <b>HA</b>
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PS Review & No: <b>N/A</b> <i>Will [Signature] #7735</i>	Geologist: <b>J. Faubion</b>

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			0.0	10272				SILT, 10YR 8/3, dry, loose - root hairs, waxy organics, 100% ML
1			0.0	10248	SL-610	0800	ML	
			0.0	10248	SA8-SB		ML	SILT, 10YR 6/8, moist, loose, trace organics 100% ML
			0.0	10248	0.0-0.5		ML	
2			0.0	10254			ML	SILT - as above
3			0.0	10254			ML	SILT, color 10YR 6/8 → 5YR 4/6 yellow-moist, loose - no stain/odor
4			0.0	11246			ML	clayey SILT, 5YR 4/6, moist, 10% CL, 90% ML
5			0.0	11260	SL-610	0820	ML	clayey SILT, as above, higher clay content, trace caliche mottling 15% CL
			0.0	10254	SA8-SB		SM	sandy w/ SILT, 10YR 8/3, v. Fg. sa to sr silica sand 15% ML 85% v. pale
			0.0	10260	SL-610	0900	SP	SAND, 10YR 8/3 tight brown, moist, sugary silica sand 100% SP
			0.0	10260	SA8-SB		SP	
			0.0	10266	6.5-7.5		SP	SAND, as above
7.8			0.0	10266				7.8 refusal #1
								7.2 refusal #2

ABBREVIATIONS:					
amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery	
c: coarse	lt: light	rnd: rounded	v: very		
dk: dark	m: medium	sa: subangular	wg: well graded		<i>HA = Hand Auger</i>
t: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface	



# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-610-SAB-SB 4.0-5.0 Date/Time 8-1-13 0820

Matrix (circle one)

Soil     Sediment     Water

Start Depth 4.0

End Depth 5.0

Depth Units (circle one)

Inches     Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

## Analysis

Parameter	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2 - S.S. sieves*  
*2 - PVC*  
*1 - 402 jar*

*m m u*

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay		
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL		
		GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt		
		SW-SC	Well-graded SAND with clay		
		SP-SM	Poorly graded SAND with silt		
		SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq 15\%$ FINES			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity		
		CH	Fat inorganic CLAY with moderate to high plasticity		
		OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 5YR 4/6 yellow-red

### Odor

1. Odor Strength (circle one)  
 None     Slight     Strong

2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A    Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry     Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By *[Signature]*

Sample ID SL-610-SAB-SB-6.8-7.8 Date/Time 8-1-13 0900

Matrix (circle one)

Soil  Sediment  Water

Start Depth 6.8  
End Depth 7.8

Depth Units (circle one)

Inches   Feet

Check if Composite

Collection Method (circle one)

DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)

N  FD  FB  RB

Parent Sample ID N/A

Field Geologist J. Fabios

Sampler T. Bennett

Analysis

Parameter	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCS	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sieves, 2-5g encases  
1-4oz jar

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LICUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No  Very pale brown

Color 10YR 8/3 light brown

Odor sm81S13

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature Mike Hoffman PG Registration # \_\_\_\_\_

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*T. Bennett*

Sample ID SA-612-SAB-SB0.0-0.5 Date/Time 7-30-13 1040

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0

Depth Units (circle one)

Inches     Feet

End Depth 0.5

Check if Composite

Collection Method (circle one)

DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)

N     FD     FB     RB

Parent Sample ID

N/A

Field Geologist J. Fabian

Sampler T. Bennett

Analysis

Parameter	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-s.s. sleeves  
1-4oz jar*

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt		
	SW-SC	Well-graded SAND with clay		
	SP-SM	Poorly graded SAND with silt		
SP-SC	Poorly graded SAND with clay			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	SM	Silty SAND	
		SC	Clayey SAND	
	LIQUID LIMIT GREATER THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
HIGHLY ORGANIC SOILS	SILT AND CLAY	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
	OH	Organic SILT or CLAY with moderate to high plasticity		
		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No
2. Percentage Fill (%) N/A
3. Fill Description (circle all that apply)
- |                            |   |         |
|----------------------------|---|---------|
| Asphalt                    | Metal                                   | Plastic |
| Concrete                   | Wood                                    | Glass   |
| Igneous/Metamorphic Gravel | <input checked="" type="checkbox"/> N/A |         |
| Other _____                |   |         |

Is Staining Present Yes  No

Color 10 YR 8/3 light brown

- Odor
1. Odor Strength (circle one)  
 None     Slight     Strong
2. Odor Description (circle one)  
 Organic     Petroleum     Chemical  
 N/A Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry   Moist     Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-612</b>	Subarea: <b>8</b>	Date Started: <b>7-30-13</b>	Date Completed: <b>7-30-13</b>
Client: DOE		Project Name#: Santa Susana Field Lab/99489	Total Depth: <b>5.8</b>
Company Name: CDM SMITH	Drill Contractor/Driller: <b>Strongarm</b>		Depth Drilled into Bedrock: <b>N/A</b>
GPS collected? <input checked="" type="checkbox"/> Yes or No	Drill Method: <b>DPT</b>	Borehole diameter: <b>2.25</b>	Sampling Method: <b>DPT</b>
Radiological Background: <b>8254</b>	Depth to GW: <b>N/A</b>	Geologist: <b>J. Faubion</b>	
PID Background: <b>0.0</b>	PG Review & No. <b>Mulla Hoffman #7735</b>		
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake			

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	8255	SL-612	1040 ML		SILT, 10YR 8/3 light brown, loose
1		0.0	8254	SA8-SB 0.0-0.5			dry - 100% ML SILT, 10YR 8/3 light brown
2		0.0	8242			GM	gravelly silt silty gravel w/ sand 10YR 8/3 moist loose sr. gravel (2-3mm) 20/30/50% ML
3		0.0	8266			GM	gravelly silt silty gravel w/ sand 10YR 8/3 - as above - gravels dropping out 10/30/60% silty sand
4		0.0	8260	SL-612-1100 SA8-SB 4.0-5.0		SM	silty sand 10YR 8/3, moist, loose, 10% ML, 90% SP
5		0.0	8266			SM	silty sand 10YR 8/3, moist loose, 10% ML, 90% SP
6		0.0	8130			SP	P.G. sand or silica sand 5.8' refuse

JF  
JF

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

**ABBREVIATIONS:**

amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bg: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By T. Bennett

Sample ID SA-612-SAB-SB-4.0-5.0 Date/Time 7-30-13 1100

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite

Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler T. Bennett

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-1602 Jarvis  
 2-820012

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION PASSED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GM	Silty GRAVEL		
	GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSED ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SM	Silty SAND			
SC	Clayey SAND			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS				

#### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color 1.0 YR 8/3 light brown

#### Odor

1. Odor Strength (circle one)

None  Slight  Strong

2. Odor Description (circle one)

N/A  Organic  Petroleum  Chemical

Other \_\_\_\_\_

Moisture Condition (circle one)

Dry   Moist  Wet

PG Signature [Signature]

PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mer

Sample ID SL 613-SAB-SB 0.0-0.5

Date/Time 8-14-13 1330

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite

Collection Method (circle one)  
 DPT     Slide Hammer     Hand Auger/Slide Hammer     Trenching     Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Faubion

Sampler S. Mercer

Analysis

PARAMETER	METHOD	ANALYZED
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

PARAMETER	METHOD	ANALYZED
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-S.S. sleeves  
 1-402 jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <math>\le 5\%</math> FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <math>\ge 15\%</math> FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <math>\le 5\%</math> FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH <math>\ge 15\%</math> FINES		SM	Silty SAND		
		SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="checkbox"/> N/A	
Other _____		

Is Staining Present Yes  No   
 Color dark brown 10YR 3/3

- Odor
- Odor Strength (circle one)
 

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Strong
--	---------------------------------	---------------------------------
  - Odor Description (circle one)
 

Organic	Petroleum	Chemical
<input checked="" type="checkbox"/> N/A Other _____		
  - Moisture Condition (circle one)
 

<input type="checkbox"/> Dry	<input checked="" type="checkbox"/> Moist	<input type="checkbox"/> Wet
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PG Signature *Mike Hoffman* PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-613</b>	Subarea: <b>8</b>	Date Started: <b>8-14-13</b>	Date Completed: <b>8-14-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	Total Depth: <b>16'</b>
GPS collected? <b>Yes or No</b>		Drill Method: <b>HA</b>	Depth Drilled into Bedrock: <b>N/A</b>
Radiological Background: <b>11273</b>		Borehole diameter: <b>2.25"</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>N/A</b>	Sampling Method: <b>HA</b>
Radiological Equipment Used: <input checked="" type="checkbox"/> MicroR <input checked="" type="checkbox"/> Alpha/Beta <input checked="" type="checkbox"/> Pancake		PG Review: <b>No</b>	Geologist: <b>J. Fambien</b>

Depth (feet) bgs	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5			11275	SL-613		ML	SILT, dark brown 10YR 3/3, non plas
1			11284	SA8-SB 0.0-25	1330	ML	SILT med. stiff. 100% ML, moist - as above - root hairs
2			11266			ML	SILT, light yellowish brown 10YR 6/4 non plas, soft moist 100% ML
3			11266			ML	SILT - as above
4			11260	SL-613		ML	SILT, yellowish brown 10YR 5/6 non plas, soft, loose moist 100% ML
5			11266	SA8-SB 4.0-50		ML	SILT w/ clay, dark grayish brown 10YR 5/2 low plas, soft moist 80% ML 20% CL
6			11254			ML	SILT w/ clay, dark yellowish brown low plas, soft, moist 80% ML 20% CL
7			11272			ML	SILT w/ clay - as above
8			11284			ML	SILT w/ clay - as above
9			11294			ML	SILT w/ clay strong brown 7.5YR 5/6 ML 75% CL 25%

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of \_\_\_

**ABBREVIATIONS:**

amt: amount	gr: graded	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface

Location ID: **06613** Subarea: **8** Date Started: **8-14-13** Date Completed: **8-14-13**  
 Project: **SSFL** Geologist: **J. Fakhion** Total Depth: **16'**

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (μR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
10	0.0	11290				ML	SILT w/clay brownish yellow 10YR 6/8 mod. plas, soft, moist 75%ML 25%CL
11	0.0	11284				ML	- as above
12	0.0	11296				ML	SILT w/clay, brown 10YR 4/4 mod plas, soft, moist 70%ML 30%CL
13	0.0	11284				SM	s. lty SAND, brown 10YR 4/4 non plas, soft, moist
14	0.0	11272				SM	- as above
15	0.0	11272				SM	- as above
16	0.0	11266				SP	SAND, very pale brown 10YR 7/3 - 16.0 refusal non plast, loose, moist

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By S. Mercer

4.0-5.0

Sample ID

SL-613-SA8-SB000JF

Date/Time

8-14-13 1350

Matrix (circle one)

Soil

Sediment

Water

Start Depth

4.0

End Depth

5.0

Depth Units (circle one)

Inches

Feet

Check if Composite

Collection Method (circle one)

DPT

Slide Hammer

Hand Auger/Slide Hammer

Trenching

Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

N/A

Field Geologist

J. Fabion

Sampler

S. Mercer

Analysis

Parameter	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2-s.s. sleeves

2-encore

1-4oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
			SP-SM	Poorly graded SAND with silt
			SP-SC	Poorly graded SAND with clay
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<input checked="" type="radio"/> N/A	
Other _____		

Is Staining Present Yes  No

Color yellowish brown 10YR 5/6

Odor

1. Odor Strength (circle one)  
None  Slight  Strong

2. Odor Description (circle one)  
Organic  Petroleum  Chemical   
 N/A Other \_\_\_\_\_

Moisture Condition (circle one)  
Dry  Moist  Wet

PG Signature *Wick Hoffman* PG Registration # 7735

Additional Comments N/A

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mee

Sample ID SL-614-SAB-SB-0.0-0.5 Date/Time 8-13-13 1345

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite  Collection Method (circle one)  
 DPT  Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID N/A

Field Geologist J. Foubion

Sampler S. Mercer

Analysis		
Parameter	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

2-s.s. sleeves  
 1-4oz jar

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) N/A

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel

Other \_\_\_\_\_

Is Staining Present Yes  No

Color yellow ish brown 10YR 4/6

### Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

### Moisture Condition (circle one)

Dry       Moist      Wet

PG Signature *Walter Hoffman*

PG Registration # 7735

Additional Comments N/A

Location ID: <b>DG-614</b>	Subarea: <b>8</b>	Date Started: <b>8-13-13</b>	Date Completed: <b>8-13-13</b>
Client: DOE		Project Name/ #: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>N/A</b>	
GPS collected? (Yes or No)	Drill Method: <b>HA</b>		Total Depth: <b>6</b>
Radiological Background:	Borehole diameter: <b>2.25"</b>		Depth Drilled into Bedrock: <b>N/A</b>
PID Background: <b>0.0</b>	Depth to GW: <b>N/A</b>		Sampling Method: <b>HA</b>
Radiological Equipment Used:		PG Review: <b>N/A</b>	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	Geologist: <b>J. Faubion</b>

Depth (feet)	Recovery (feet)	PID (ppm)	Radiologica I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.0	11754	SL6H	1345	ML	SILT, yellowish brown 10YR 4/6, nonplastic, stiff, moist
1		0.0	11754	SAB-SB 0.0-0.5		SM	silty SAND - yellowish brown 10YR 4/4, nonplastic loose, moist 20% ML 80% SP
2		0.0	11796			SP	SAND, very pale brown 10YR 8/3, nonplastic loose-moist 100% sato s.r.v.f.g. SP sand
3		0.0	117102			SP	SAND - as above - 10% resistant clasts (weathered sandstone) to 10 mm
4		0.0	11778	SL6H 78	1410	SP	SAND - as above
5		0.0	11778	SAB-SB 4.0-5.0		SP	SAND, very pale brown 10YR 8/2, nonplastic, loose, moist 100% SP sand
6		0.0	11760			SP	SAND - as above
TD							- 6.0 refusal

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	<b>HA = Hand Auger</b>
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By *Steve Mason*

Sample ID SL-614-SAB-SB-4.0-5.0 Date/Time 8-8-13 1410

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 4.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer     Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB    Parent Sample ID N/A

Field Geologist J. Fabian

Sampler S. Mercer

**Analysis**

Parameter	Method	Analysis
Metals	EPA 6010	✓
	EPA 6020	✓
	EPA 7471 (Soil)	✓
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	✓
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	✓
PCBs/PCTs	EPA 8082	✓
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	✓
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	✓
TPH-EFH	EPA 8015	✓
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*2-1602 jars  
 1-402 jar  
 2-encore*

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

## Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH $\geq 15\%$ FINES	GP-GC	Poorly graded GRAVEL with clay
	GM		Silty GRAVEL	
	GC		Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE		SAND WITH $\geq 5\%$ FINES	SW
		SP		Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq 15\%$ FINES		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

### Fill Material

- Is Fill Material Present Yes  No
- Percentage Fill (%) N/A
- Fill Description (circle all that apply)
 

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	<u>N/A</u>	
Other _____		

Is Staining Present Yes  No

Color very pale brown 10YR 8/3

- Odor
- Odor Strength (circle one)
 

<u>None</u>	Slight	Strong
-------------	--------	--------
  - Odor Description (circle one)
 

<u>N/A</u>	Organic	Petroleum	Chemical
Other _____			

Moisture Condition (circle one)

Dry	<u>Moist</u>	Wet
-----	--------------	-----

PG Signature Walter Hoffman

PG Registration # 7735

Additional Comments N/A

# SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By ✓ V. Cortes

Sample ID SL-615-SAB SB-0.0-0.5 Date/Time 08-27-13 / 10:00

Matrix (circle one)  
 Soil     Sediment     Water

Start Depth 0.0  
 End Depth 0.5

Depth Units (circle one)  
 Inches     Feet

Check if Composite     Collection Method (circle one)  
 DPT  Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N     FD     FB     RB

Parent Sample ID NA

Field Geologist B. KASZYK

Sampler V. CORTES

Analysis		
Parameters	Method	Analysis
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	X
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

  

Parameters	Method	Analysis
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

2 SS SLEEVES ; 14-02 JAE

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES		GW Well-graded GRAVEL
		GRAVEL WITH $\geq$ 5% FINES		GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM Well-graded GRAVEL with silt
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GC Well-graded GRAVEL with clay
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GP-GM Poorly graded GRAVEL with silt
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GP-GC Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 15% FINES		GM Silty GRAVEL
		GRAVEL WITH $\geq$ 15% FINES		GC Clayey GRAVEL
		SAND WITH $\geq$ 5% FINES		SW Well-graded SAND
		SAND WITH $\geq$ 5% FINES		SP Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM Well-graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SC Well-graded SAND with clay
		SAND WITH BETWEEN 5% AND 15% FINES		SP-SM Poorly graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES		SP-SC Poorly graded SAND with clay
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SAND WITH $\geq$ 15% FINES		SM Silty SAND
		SAND WITH $\geq$ 15% FINES		SC Clayey SAND
		LIQUID LIMIT LESS THAN 50		ML Inorganic SILT with low plasticity
		LIQUID LIMIT LESS THAN 50		CL Lean inorganic CLAY with low plasticity
		LIQUID LIMIT LESS THAN 50		OL Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH Elastic inorganic SILT with moderate to high plasticity
			CH Fat inorganic CLAY with moderate to high plasticity	
			OH Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes  No

2. Percentage Fill (%) 0

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel  N/A

Other \_\_\_\_\_

Is Staining Present Yes  No

Color BROWN 7.5 YR 5/3

Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature *Nita Offgren*

PG Registration # 7735

Additional Comments NA

Location ID: <b>06-615</b>	Subarea: <b>8</b>	Date Started: <b>08-27-13</b>	Date Completed: <b>08-27-13</b>
Client: DOE		Project Name/#: Santa Susana Field Lab/99489	
Company Name: CDM SMITH		Drill Contractor/Driller: <b>NA</b>	
GPS collected? <input checked="" type="checkbox"/> Yes or No		Drill Method: <b>HAND AUGER</b>	
Radiological Background: <b>X: 12 / AB = 89</b>		Borehole diameter: <b>2.5-INCH</b>	
PID Background: <b>0.0</b>		Depth to GW: <b>NA</b>	
Radiological Equipment Used:		PG Review # ND:	
<input checked="" type="checkbox"/> MicroR	<input checked="" type="checkbox"/> Alpha/Beta	<input checked="" type="checkbox"/> Pancake	<b>Walter Hoffman #7735</b>
		SLIDE HANDLING	
		Geologist: <b>B KASZYK</b>	

Depth (feet)	bgs	Recovery (feet)	PID (ppm)	Radiological I (µR/cpm)	Sample Name	Sample Time	USCS	Description of Materials
0.5		0.5	0	12/84	SL-615-SAB-0.0-0.5	10:00	CL	CLAY WITH SAND - BROWN (7.5YR 5/3), 75% CLAY; HARD, NON PLASTIC, DRY, 25% SAND; FINE, PG, LOOSE, NO ODOR  REFUSAL AT 1.2 & 1.0 FT
1		0.5	0.0	1260	0.5			
2								
3								
4								
5								
6								
7								
8								
9								
10								

**CDM Smith** BORING LOG AND SAMPLING RECORD Page 1 of 1

ABBREVIATIONS:				
amt: amount	gr: grained	pg: poorly graded	t: trace	nr: no recovery
c: coarse	lt: light	rnd: rounded	v: very	
dk: dark	m: medium	sa: subangular	wg: well graded	
f: fine	mod: moderate	sr: subrounded	φ: diameter	bgs: below ground surface



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID EBI-071013

Date/Time 07/10/2013 1530

Matrix (circle one)  
 Soil Sediment Water

Start Depth Surface  
 End Depth \_\_\_\_\_

Depth Units (circle one)  
 Inches Feet

Check if Composite  DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<del>X</del>
	EPA 6020	<del>X</del>
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<del>X</del>
PCBs/PCTs	EPA 8082	<del>X</del>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	<del>X</del>
Pesticides	EPA 8081	<del>X</del>

Parameters	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	<del>X</del>
TPH-EFH	EPA 8015	<del>X</del>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
SAND WITH $\geq$ 15% FINES		SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		SILT AND CLAY	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
	HIGHLY ORGANIC SOILS	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
	PT	PEAT soils with high organic contents		

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Myse

Sample ID EBD-071013

Date/Time 07/10/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 3.00  
 End Depth 3.00

Depth Units (circle one)  
 Inches    Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 15\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq 15\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
			CH	Fat inorganic CLAY with moderate to high plasticity
	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Slygmyesl

Sample ID EB1-071713

Date/Time 07/17/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 5.0  
 End Depth 5.0

Depth Units (circle one)  
 Inches    Feet

Check if Composite  DPT Collection Method (circle one)  
 Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	X
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzed?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES		GW	Well-graded GRAVEL
		GRAVEL WITH $\leq$ 5% FINES		GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 10% FINES		GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
		SAND WITH $\leq$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
	SAND WITH $\geq$ 10% FINES		SP-SC	Poorly graded SAND with clay	
			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
LIQUID LIMIT GREATER THAN 50		OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

### 3. Fill Description (circle all that apply)

Asphalt                      Metal                      Plastic

Concrete                      Wood                      Glass

Igneous/Metamorphic Gravel                      N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

### Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Myers

Sample ID EB2-071713 Date/Time 07/17/2013/1530

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth SM113  
 End Depth \_\_\_\_\_

Depth Units (circle one)  
 Inches SM113    Feet

Check if Composite  Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)    Parent Sample ID NA  
 N    FD    FB    RB

Field Geologist NA

Sampler Pam Hartman

#### Analysis

Parameter	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	X
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\leq</math> 5% FINES</b>		GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
			GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>		GP-GC	Poorly graded GRAVEL with clay	
			GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
		<b>GRAVEL WITH <math>\geq</math> 15% FINES</b>		SW	Well-graded SAND
				SP	Poorly graded SAND
<b>SAND WITH <math>\leq</math> 5% FINES</b>			SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay		
		SP-SM	Poorly graded SAND with silt		
<b>SAND WITH BETWEEN 5% AND 15% FINES</b>		SP-SC	Poorly graded SAND with clay		
		SM	Silty SAND		
		SC	Clayey SAND		
	<b>SAND WITH <math>\geq</math> 15% FINES</b>		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity		
<b>LIQUID LIMIT LESS THAN 50</b>		MH	Elastic inorganic SILT with moderate to high plasticity		
		CH	Fat inorganic CLAY with moderate to high plasticity		
		OH	Organic SILT or CLAY with moderate to high plasticity		
<b>LIQUID LIMIT GREATER THAN 50</b>		PT	PEAT soils with high organic contents		
	HIGHLY ORGANIC SOILS				

#### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt                  Metal                  Plastic

Concrete                Wood                  Glass

Igneous/Metamorphic Gravel    N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID EBI-072513

Date/Time 07/25/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 1513  
 End Depth \_\_\_\_\_

Depth units (circle one)  
 Inches 1513    Feet

Check if Composite  DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB    Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	X
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
			GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
		GM	Silty GRAVEL		
		GC	Clayey GRAVEL		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt                  Metal                  Plastic

Concrete                Wood                  Glass

Igneous/Metamorphic Gravel    N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Steph M... [Signature]*

Sample ID

EB2-072513

Date/Time

07/25/2013 1530

Matrix (circle one)

Soil Sediment **Water**

Start Depth

*Surface*

Depth Units (circle one)

Inches **Feet**

End Depth

Check if Composite

Collection Method (circle one)

DPT Slide Hammer **Hand Auger/Slide Hammer** Trenching Sediment

QC Type (circle one)

N FD FB **RB**

Parent Sample ID

*NA*

Field Geologist

*NA*

Sampler

*Pam Hartman*

Analysis

Parameters	Method	Analyzed
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	
	EPA 7470 (Water)	<input checked="" type="checkbox"/>
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	<input checked="" type="checkbox"/>
Pesticides	EPA 8081	<input checked="" type="checkbox"/>

Parameters	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	



SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID EBI-080113 Date/Time 08/01/2013 1500

Matrix (circle one)  Soil  Sediment  Water  
 Start Depth 500/113 End Depth \_\_\_\_\_  
 Depth Units (circle one)  Inches  Feet

Check if Composite   DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment  
 Collection Method (circle one)

QC Type (circle one)  N  FD  FB  RB Parent Sample ID NA

Field Geologist NA  
 Sampler Pam Hartman

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
			GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
			GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq$ 15% FINES			SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
			OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present Yes No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other \_\_\_\_\_

Is Staining Present Yes No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52098

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steve Mysel

Sample ID EBA-080113

Date/Time 08/01/2013 1530

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 3113  
 End Depth \_\_\_\_\_

Depth Units (circle one)  
 Inches    Feet

Check if Composite

Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By [Signature]

Sample ID EB-080713 Date/Time 08/07/2013 1500

Matrix (circle one)  
 Soil Sediment Water

Start Depth 3.0  
 End Depth 3.5

Depth Units (circle one)  
 Inches Feet

Check if Composite  Collection Method (circle one)  
 DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one)  
 N FD FB RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq 5\%$ FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
		SAND WITH $\geq 5\%$ FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES	SW-SM		Well-graded SAND with silt	
	SW-SC	Well-graded SAND with clay		
	SP-SM	Poorly graded SAND with silt		
	SP-SC	Poorly graded SAND with clay		
SAND WITH $\geq 75\%$ FINES	SM	Silty SAND		
	SC	Clayey SAND		
	ML	Inorganic SILT with low plasticity		
	CL	Lean inorganic CLAY with low plasticity		
	OL	Organic SILT with low plasticity		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	
HIGHLY ORGANIC SOILS				

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 50298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Slym Mysel

Sample ID EB-081413 Date/Time 08/14/2013 1500

Matrix (circle one)  Soil  Sediment  Water

Start Depth 3.0 FT End Depth 3.0 FT

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

**Analysis**

Parameter	EPA Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	X

Parameter	EPA Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
<b>GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE</b>	<b>GRAVEL WITH <math>\leq</math> 5% FINES</b>	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	<b>GRAVEL WITH BETWEEN 5% AND 15% FINES</b>	GW-GM	GW-GC	Well-graded GRAVEL with silt
		GP-GM	GP-GC	Poorly graded GRAVEL with silt
		GM	GC	Silty GRAVEL
		GC	GC	Clayey GRAVEL
	<b>GRAVEL WITH <math>\geq</math> 10% FINES</b>	SW	SP	Well-graded SAND
		SP	SP	Poorly graded SAND
		SW-SM	SW-SC	Well-graded SAND with silt
		SP-SM	SP-SC	Poorly graded SAND with silt
SM		SC	Silty SAND	
SC		SC	Clayey SAND	
<b>SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE</b>	<b>SAND WITH <math>\leq</math> 5% FINES</b>	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	<b>SAND WITH BETWEEN 5% AND 10% FINES</b>	OL	OL	Organic SILT with low plasticity
		MH	MH	Elastic inorganic SILT with moderate to high plasticity
		CH	CH	Fat inorganic CLAY with moderate to high plasticity
		OH	OH	Organic SILT or CLAY with moderate to high plasticity
<b>SAND WITH <math>\geq</math> 15% FINES</b>	ML	ML	Inorganic SILT with low plasticity	
	CL	CL	Lean inorganic CLAY with low plasticity	
<b>FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES</b>	<b>LIQUID LIMIT LESS THAN 50</b>	OL	Organic SILT with low plasticity	
		MH	MH	Elastic inorganic SILT with moderate to high plasticity
	<b>LIQUID LIMIT GREATER THAN 50</b>	CH	CH	Fat inorganic CLAY with moderate to high plasticity
		OH	OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS		PT	PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT #: 52298

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Sleggy Mysel

Sample ID EB3-082813 Date/Time 08/28/2013 1500

Matrix (circle one)  Soil  Sediment  Water  
 Start Depth 100 End Depth 100  
 Depth Unit (circle one)  Inches  Feet

Check if Composite  Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
	NOAA Status and Trends, Krone et al.	
Organotin		
Methyl Mercury	EPA 1630	

SAB



SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Slyg Myer

Sample ID FBH-082813 Date/Time 08/28/2013 1530

Matrix (circle one)  
 Soil  Sediment  **Water**

Start Depth 1000  
 End Depth 1000

Depth Units (circle one)  
 Inches  Feet

Check if Composite

Collection Method (circle one)  
 DPT  Slide Hammer  **Hand Auger/Slide Hammer**  Trenching  Sediment

QC Type (circle one)  
 N  FD  FB  **RB**

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameter	Method	Analyzed
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	X
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyzed
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

SA8

\* Marked for inorganics + includes Nitrite as NO<sub>3</sub>, fluoride, Sulfate Sulfite.

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW GP	Well-graded GRAVEL Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH $\geq$ 15% FINES	GM GC	Silty GRAVEL Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
			SW-SM	Well-graded SAND with silt
			SW-SC	Well-graded SAND with clay
SAND WITH BETWEEN 5% AND 15% FINES		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML CL OL	Inorganic SILT with low plasticity Lean inorganic CLAY with low plasticity Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50	MH CH	Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity
			OH	Organic SILT or CLAY with moderate to high plasticity
	HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents

#### Fill Material

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) 30

3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic  
 Concrete      Wood      Glass  
 Igneous/Metamorphic Gravel      N/A  
 Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_

PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Muel

Sample ID EB2-092513 Date/Time 09/25/2013 1530

Matrix (circle one)  Soil  Sediment  Water

Start Depth 300 End Depth 303

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

SA8

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH *5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH ≥ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH *5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH ≥ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

- |                            |       |         |
|----------------------------|-------|---------|
| Asphalt                    | Metal | Plastic |
| Concrete                   | Wood  | Glass   |
| Igneous/Metamorphic Gravel | N/A   |         |
| Other _____                |       |         |

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 530.38

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By S. M. [Signature]

Sample ID EB1-071013 Date/Time 07/10/2013 1530

Matrix (circle one)  Soil  Sediment  Water

Start Depth Surface End Depth Surface

Depth Units (circle one)  Inches  Feet

Check if Composite   DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<del>X</del>
	EPA 6020	<del>X</del>
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	X
Dioxins	EPA 1613	<del>X</del>
PCBs/PCTs	EPA 8082	<del>X</del>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	<del>X</del>

Parameters	Method	Analyze?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	<del>X</del>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
		GRAVEL WITH $\leq$ 5% FINES	GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 40% FINES	GM	Silty GRAVEL
		GRAVEL WITH $\geq$ 40% FINES	GC	Clayey GRAVEL
		SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
		SAND WITH $\leq$ 5% FINES	SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SC	Well-graded SAND with clay
	SAND WITH BETWEEN 5% AND 15% FINES	SP-SM	Poorly graded SAND with silt	
	SAND WITH BETWEEN 5% AND 15% FINES	SP-SC	Poorly graded SAND with clay	
	SAND WITH $\geq$ 15% FINES	SM	Silty SAND	
	SAND WITH $\geq$ 15% FINES	SC	Clayey SAND	
HIGHLY ORGANIC SOILS	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT LESS THAN 50	OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
	LIQUID LIMIT GREATER THAN 50	CH	Fat inorganic CLAY with moderate to high plasticity	
LIQUID LIMIT GREATER THAN 50	OH	Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS	PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Stefan Myse

Sample ID EBD-071013

Date/Time 07/10/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 3.00  
 End Depth 3.00

Depth Units (circle one)  
 Inches    Feet

Check if Composite

Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzed?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

# SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

**Soil Classification (circle one)**

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
			GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
		GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
			OL	Organic SILT with low plasticity
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Shig Miyoshi

Sample ID EBI-071713

Date/Time 07/17/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth SP1113  
 End Depth SP1113

Depth Units (circle one)  
 Inches    Feet

Check if Composite  DPT Collection Method (circle one)  
 Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	X
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	X
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	X
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	X
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	X
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzed?
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
	Methyl Mercury	EPA 1630

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 10% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			PT	PEAT soils with high organic contents

#### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt                  Metal                  Plastic

Concrete                Wood                  Glass

Igneous/Metamorphic Gravel    N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID EB2-071713 Date/Time 07/17/2013 1530

Matrix (circle one)  
Soil Sediment Water

Start Depth SM1113  
End Depth \_\_\_\_\_

Depth Units (circle one)  
Inches SM1113 Feet

Check if Composite  Collection Method (circle one)  
DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one)  
N FD FB RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	X
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
		GP	Poorly graded GRAVEL
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
		GW-GC	Well-graded GRAVEL with clay
		GP-GM	Poorly graded GRAVEL with silt
		GP-GC	Poorly graded GRAVEL with clay
GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
	GC	Clayey GRAVEL	
SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
		SP	Poorly graded SAND
	SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
		SW-SC	Well-graded SAND with clay
		SP-SM	Poorly graded SAND with silt
		SP-SC	Poorly graded SAND with clay
SAND WITH $\geq$ 15% FINES	SM	Silty SAND	
	SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
		CL	Lean inorganic CLAY with low plasticity
		OL	Organic SILT with low plasticity
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity
		CH	Fat inorganic CLAY with moderate to high plasticity
		OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS	PT	PT	PEAT soils with high organic contents

**Fill Material**

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Steph Mysel*

Sample ID

EBI-072513

Date/Time

07/25/2013 1500

Matrix (circle one)

Soil    Sediment

Water

Start Depth

*512513*

End Depth

Depth Units (circle one)

Inches

Feet

*512513*

Check if Composite

Collection Method (circle one)

DPT

Slide Hammer

Hand Auger/Slide Hammer

Trenching

Sediment

QC Type (circle one)

N

FD

FB

RB

Parent Sample ID

NA

Field Geologist

NA

Sampler

Pam Hartman

Analysis

Parameter	Method	Analyze?
Metals	EPA 6010	<del>X</del>
	EPA 6020	<del>X</del>
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCS	EPA 8270	X
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

Parameter	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	X
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW Well-graded GRAVEL
			GP Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM Well-graded GRAVEL with silt
			GW-GC Well-graded GRAVEL with clay
			GP-GM Poorly graded GRAVEL with silt
	GP-GC Poorly graded GRAVEL with clay		
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 10% FINES	GM Silty GRAVEL
			GC Clayey GRAVEL
		SAND WITH $\leq$ 5% FINES	SW Well-graded SAND
			SP Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM Well-graded SAND with silt	
		SW-SC Well-graded SAND with clay	
SP-SM Poorly graded SAND with silt			
SP-SC Poorly graded SAND with clay			
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SAND WITH $\geq$ 15% FINES	SM Silty SAND
			SC Clayey SAND
	LIQUID LIMIT LESS THAN 50	ML Inorganic SILT with low plasticity	
		CL Lean inorganic CLAY with low plasticity	
		OL Organic SILT with low plasticity	
LIQUID LIMIT GREATER THAN 50	MH Elastic inorganic SILT with moderate to high plasticity		
	CH Fat inorganic CLAY with moderate to high plasticity		
	OH Organic SILT or CLAY with moderate to high plasticity		
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents

### Fill Material

1. Is Fill Material Present  Yes  No

2. Percentage Fill (%) \_\_\_\_\_

### 3. Fill Description (circle all that apply)

Asphalt      Metal      Plastic

Concrete      Wood      Glass

Igneous/Metamorphic Gravel      N/A

Other \_\_\_\_\_

Is Staining Present  Yes  No

Color \_\_\_\_\_

### Odor

1. Odor Strength (circle one)

None      Slight      Strong

2. Odor Description (circle one)

Organic      Petroleum      Chemical

N/A      Other \_\_\_\_\_

Moisture Condition (circle one)

Dry      Moist      Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 - Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Muehl

Sample ID EB2-072513

Date/Time 07/25/2013 1530

Matrix (circle one)  Soil  Sediment  Water

Start Depth Surface End Depth Surface

Depth Units (circle one)  Inches  Feet

Check if Composite

Collection Method (circle one)  DPT  Slide Hammer  Hand Auger/Slide Hammer  Trenching  Sediment

QC Type (circle one)  N  FD  FB  RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyze?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
		GRAVEL WITH $\geq$ 10% FINES	GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
			SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 10% FINES	SM	Silty SAND		
	SC	Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
		OL	Organic SILT with low plasticity	
	LIQUID LIMIT LESS THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present Yes No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present Yes No

Color \_\_\_\_\_

#### Odor

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID EBI-080113

Date/Time 08/01/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth SM0113  
 End Depth \_\_\_\_\_

Depth Units (circle one)  
 Inches    Feet

Check if Composite   DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one) N FD FB RB Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyze?
Metals	EPA 6010	<input checked="" type="checkbox"/>
	EPA 6020	<input checked="" type="checkbox"/>
	EPA 7471 (Soil)	<input checked="" type="checkbox"/>
	EPA 7470 (Water)	<input checked="" type="checkbox"/>
Fluoride	EPA 300.0/9056	<input checked="" type="checkbox"/>
SVOCs	EPA 8270	<input checked="" type="checkbox"/>
TIC	EPA 8270	<input checked="" type="checkbox"/>
PAHs	EPA 8270 SIM	<input checked="" type="checkbox"/>
1,4 Dioxane	EPA 8270 SIM	<input checked="" type="checkbox"/>
Dioxins	EPA 1613	<input checked="" type="checkbox"/>
PCBs/PCTs	EPA 8082	<input checked="" type="checkbox"/>
Perchlorate	EPA 314.0/331	<input checked="" type="checkbox"/>
Perchlorate Confirmation	EPA 6850/6860	<input checked="" type="checkbox"/>
pH	EPA 9045 (Soil)	<input checked="" type="checkbox"/>
	EPA 9040 (Water)	<input checked="" type="checkbox"/>
Hexavalent Chromium	EPA 7196/7199	<input checked="" type="checkbox"/>
Herbicides	EPA 8151	<input checked="" type="checkbox"/>
Pesticides	EPA 8081	<input checked="" type="checkbox"/>

Parameters	Method	Analyze?
VOCs	EPA 8260	<input checked="" type="checkbox"/>
	EPA 8260 SIM	<input checked="" type="checkbox"/>
TPH-GRO	EPA 8015	<input checked="" type="checkbox"/>
TPH-EFH	EPA 8015	<input checked="" type="checkbox"/>
Glycols	EPA 8015	<input checked="" type="checkbox"/>
Alcohols	EPA 8015	<input checked="" type="checkbox"/>
Terphenyls	EPA 8015	<input checked="" type="checkbox"/>
Nitrates	EPA 300.0/9056	<input checked="" type="checkbox"/>
Energetics	EPA 8330	<input checked="" type="checkbox"/>
Cyanide	EPA 9012	<input checked="" type="checkbox"/>
Formaldehyde	EPA 8315	<input checked="" type="checkbox"/>
NDMA	EPA 1625	<input checked="" type="checkbox"/>
Organotin	NOAA Status and Trends, Krone et al.	<input checked="" type="checkbox"/>
	Methyl Mercury	EPA 1630

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\geq$ 5% FINES	GW	Well-graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP	Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GC	Well-graded GRAVEL with clay	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GP-GM	Poorly graded GRAVEL with silt	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\geq$ 5% FINES	GRAVEL WITH $\geq$ 10% FINES	GP-GC	Poorly graded GRAVEL with clay
			GRAVEL WITH $\geq$ 10% FINES	GM	Silty GRAVEL
			GRAVEL WITH $\geq$ 10% FINES	GC	Clayey GRAVEL
			SAND WITH $\geq$ 5% FINES	SW	Well-graded SAND
			SAND WITH $\geq$ 5% FINES	SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt	
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SC	Well-graded SAND with clay	
		SAND WITH BETWEEN 5% AND 15% FINES	SP-SM	Poorly graded SAND with silt	
		SAND WITH BETWEEN 5% AND 15% FINES	SP-SC	Poorly graded SAND with clay	
		SAND WITH $\geq$ 15% FINES	SM	Silty SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	SAND WITH $\geq$ 15% FINES	SC	Clayey SAND	
		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		LIQUID LIMIT LESS THAN 50	CL	Lean inorganic CLAY with low plasticity	
		LIQUID LIMIT LESS THAN 50	OL	Organic SILT with low plasticity	
		LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
HIGHLY ORGANIC SOILS	SILT AND CLAY	LIQUID LIMIT GREATER THAN 50	CH	Fat inorganic CLAY with moderate to high plasticity	
		LIQUID LIMIT GREATER THAN 50	OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents		

### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt                      Metal                      Plastic

Concrete                      Wood                      Glass

Igneous/Metamorphic Gravel                      N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52098

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Shy Mupel

Sample ID EBA-080113

Date/Time 08/01/2013 1530

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth 3113  
 End Depth \_\_\_\_\_

Depth Units (circle one)  
 Inches    Feet

Check if Composite

Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
	OL		Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

**Fill Material**

1. Is Fill Material Present Yes No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present Yes No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None Slight Strong

2. Odor Description (circle one)

Organic Petroleum Chemical

N/A Other \_\_\_\_\_

Moisture Condition (circle one)

Dry Moist Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 5229B

### SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*[Handwritten Signature]*

Sample ID

EB-080713

Date/Time

08/07/2013/1500

Matrix (circle one)

Soil    Sediment    Water

Start Depth \_\_\_\_\_

End Depth \_\_\_\_\_

*[Handwritten: 080713]*

Depth Units (circle one)

Inches    Feet

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N    FD    FB    RB

Parent Sample ID

NA

Field Geologist

NA

Sampler

Pam Hartman

#### Analysis

Parameter	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	X
TIC	EPA 8270	X
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analyzer
VOCs	EPA 8260	X
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and	
	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
		GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	GRAVEL WITH ≥ 10% FINES	GM	Silty GRAVEL
			GC	Clayey GRAVEL
		SAND WITH ≥ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
	SAND WITH ≥ 75% FINES	SP-SC	Poorly graded SAND with clay	
		SM	Silty SAND	
		SC	Clayey SAND	
SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity	
		CL	Lean inorganic CLAY with low plasticity	
	LIQUID LIMIT GREATER THAN 50	OL	Organic SILT with low plasticity	
		MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		OH	Organic SILT or CLAY with moderate to high plasticity	
		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt                      Metal                      Plastic

Concrete                      Wood                      Glass

Igneous/Metamorphic Gravel                      N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)  
None    Slight    Strong

2. Odor Description (circle one)  
Organic    Petroleum    Chemical  
N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Myers

Sample ID EB-081413

Date/Time 08/14/2013 1500

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth SSFLH13  
 End Depth \_\_\_\_\_

Depth units (circle one)  
 Inches    Feet

Check if Composite     Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameter	Method	Analyzed?
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameter	Method	Analyzed?
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq$ 5% FINES	GW	Well-graded GRAVEL	
		GP	Poorly graded GRAVEL	
	GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
		GW-GC	Well-graded GRAVEL with clay	
		GP-GM	Poorly graded GRAVEL with silt	
		GP-GC	Poorly graded GRAVEL with clay	
	GRAVEL WITH $\geq$ 15% FINES	GM	Silty GRAVEL	
		GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq$ 5% FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt	
		SW-SC	Well-graded SAND with clay	
		SP-SM	Poorly graded SAND with silt	
		SP-SC	Poorly graded SAND with clay	
SAND WITH $\geq$ 15% FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
	OL		Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
PT	PEAT soils with high organic contents			

### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

### Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT #: 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Mysel

Sample ID EB3-082813

Date/Time 08/28/2013 1500

Matrix (circle one)  
Soil Sediment Water

Start Depth 3000

End Depth 3000

Depth Units (circle one)  
Inches Feet

Check if Composite  Collection Method (circle one)  
DPT Slide Hammer Hand Auger/Slide Hammer Trenching Sediment

QC Type (circle one)  
N FD FB RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameter	Method	Analyte
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

SAB

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION REMAINED ON NO. 4 SIEVE	GRAVEL WITH <math>\leq 5\%</math> FINES	GW	Well-graded GRAVEL
			GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt
			GW-GC	Well-graded GRAVEL with clay
			GP-GM	Poorly graded GRAVEL with silt
			GP-GC	Poorly graded GRAVEL with clay
	GRAVEL WITH <math>\geq 15\%</math> FINES	GM	Silty GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <math>\leq 5\%</math> FINES	SW	Well-graded SAND
			SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt
SW-SC			Well-graded SAND with clay	
SP-SM			Poorly graded SAND with silt	
SP-SC			Poorly graded SAND with clay	
SAND WITH <math>\geq 15\%</math> FINES		SM	Silty SAND	
		SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES		LIQUID LIMIT LESS THAN 50	ML	Inorganic SILT with low plasticity
			CL	Lean inorganic CLAY with low plasticity
	OL		Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50	MH	Elastic inorganic SILT with moderate to high plasticity	
		CH	Fat inorganic CLAY with moderate to high plasticity	
		OH	Organic SILT or CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS		PT	PEAT soils with high organic contents	

### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt            Metal            Plastic

Concrete           Wood            Glass

Igneous/Metamorphic Gravel    N/A

Other \_\_\_\_\_

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor \_\_\_\_\_

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_

PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By

*Slyg Myer*

Sample ID

*FB4-082813*

Date/Time

*08/28/2013 1530*

Matrix (circle one)

Soil    Sediment    Water

Start Depth \_\_\_\_\_

End Depth \_\_\_\_\_

*300.0/9056*

Depth Units (circle one)

Inches    Feet

*300.0/9056*

Check if Composite

Collection Method (circle one)

DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)

N    FD    FB    RB

Parent Sample ID

*NA*

Field Geologist

*NA*

Sampler

*Pam Hartman*

Analysis

Metals	EPA 6010	<i>X</i>
	EPA 6020	<i>X</i>
	EPA 7471 (Soil)	
	EPA 7470 (Water)	<i>X</i>
Fluoride *	EPA 300.0/9056	<i>X</i>
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	<i>X</i>
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	<i>X</i>
PCBs/PCTs	EPA 8082	<i>X</i>
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	<i>X</i>
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	
Pesticides	EPA 8081	

VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	
TPH-EFH	EPA 8015	<i>X</i>
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
	NOAA Status and	
Organotin	Trends, Krone et al.	
Methyl Mercury	EPA 1630	

*SA8*

*\* Marked for inorganics + includes Nitrite as NO<sub>3</sub>, fluoride, Sulfate Sulfite.*

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION	GROUP SYMBOL	LETTER SYMBOL	GROUP NAME		
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH <u>≤ 5% FINES</u>	GW GP	Well-graded GRAVEL Poorly graded GRAVEL	
		GRAVEL WITH BETWEEN 5% AND 15% FINES	GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
		GRAVEL WITH <u>≥ 15% FINES</u>	GM GC	Silty GRAVEL Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH <u>≤ 5% FINES</u>	SW SP	Well-graded SAND Poorly graded SAND	
		SAND WITH BETWEEN 5% AND 15% FINES	SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
SAND WITH <u>≥ 15% FINES</u>		SP-SC	Poorly graded SAND with clay		
		SM SC	Silty SAND Clayey SAND		
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LICUID LIMIT LESS THAN 50	ML CL OL	Inorganic SILT with low plasticity Lean inorganic CLAY with low plasticity Organic SILT with low plasticity	
		LICUID LIMIT GREATER THAN 50	MH CH OH	Elastic inorganic SILT with moderate to high plasticity Fat inorganic CLAY with moderate to high plasticity Organic SILT or CLAY with moderate to high plasticity	
			HIGHLY ORGANIC SOILS		PT

**Fill Material**

1. Is Fill Material Present Yes

2. Percentage Fill (%) 30/13

3. Fill Description (circle all that apply)

- |                            |       |         |
|----------------------------|-------|---------|
| Asphalt                    | Metal | Plastic |
| Concrete                   | Wood  | Glass   |
| Igneous/Metamorphic Gravel | N/A   |         |
| Other _____                |       |         |

Is Staining Present Yes No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_

PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 52298

SSFL Phase 3 – Field Sample Data Sheet

CDM Smith

FSDS Checked By Steph Muel

Sample ID EB2-092513

Date/Time 09/25/2013 1530

Matrix (circle one)  
 Soil    Sediment    Water

Start Depth \_\_\_\_\_  
 End Depth \_\_\_\_\_

Depth Units (circle one)  
 Inches    Feet

30003

30003

Check if Composite

Collection Method (circle one)  
 DPT    Slide Hammer    Hand Auger/Slide Hammer    Trenching    Sediment

QC Type (circle one)  
 N    FD    FB    RB

Parent Sample ID NA

Field Geologist NA

Sampler Pam Hartman

Analysis

Parameters	Method	Analyzer
Metals	EPA 6010	X
	EPA 6020	X
	EPA 7471 (Soil)	
	EPA 7470 (Water)	X
Fluoride	EPA 300.0/9056	
SVOCs	EPA 8270	
TIC	EPA 8270	
PAHs	EPA 8270 SIM	X
1,4 Dioxane	EPA 8270 SIM	
Dioxins	EPA 1613	X
PCBs/PCTs	EPA 8082	X
Perchlorate	EPA 314.0/331	
Perchlorate Confirmation	EPA 6850/6860	
pH	EPA 9045 (Soil)	
	EPA 9040 (Water)	X
Hexavalent Chromium	EPA 7196/7199	
Herbicides	EPA 8151	X
Pesticides	EPA 8081	X

Parameters	Method	Analyzer
VOCs	EPA 8260	
1,4 Dioxane	EPA 8260 SIM	
TPH-GRO	EPA 8015	X
TPH-EFH	EPA 8015	X
Glycols	EPA 8015	
Alcohols	EPA 8015	
Terphenyls	EPA 8015	
Nitrates	EPA 300.0/9056	
Energetics	EPA 8330	
Cyanide	EPA 9012	
Formaldehyde	EPA 8315	
NDMA	EPA 1625	
Organotin	NOAA Status and Trends, Krone et al.	
Methyl Mercury	EPA 1630	

SAB

## SSFL Phase 3 – Field Data Sample Sheet (Sample Descriptions)

### Soil Classification (circle one)

MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME	
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH $\leq 5\%$ FINES	GW	Well-graded GRAVEL	
			GP	Poorly graded GRAVEL	
			GW-GM	Well-graded GRAVEL with silt	
			GW-GC	Well-graded GRAVEL with clay	
			GP-GM	Poorly graded GRAVEL with silt	
			GP-GC	Poorly graded GRAVEL with clay	
		GRAVEL WITH $\geq 10\%$ FINES	GM	Silty GRAVEL	
			GC	Clayey GRAVEL	
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH $\leq 5\%$ FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
SAND WITH BETWEEN 5% AND 15% FINES			SW-SM	Well-graded SAND with silt	
			SW-SC	Well-graded SAND with clay	
			SP-SM	Poorly graded SAND with silt	
			SP-SC	Poorly graded SAND with clay	
		SAND WITH $\geq 15\%$ FINES	SM	Silty SAND	
			SC	Clayey SAND	
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity	
			CL	Lean inorganic CLAY with low plasticity	
			OL	Organic SILT with low plasticity	
	LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity	
			CH	Fat inorganic CLAY with moderate to high plasticity	
HIGHLY ORGANIC SOILS			OH	Organic SILT or CLAY with moderate to high plasticity	
			PT	PEAT soils with high organic contents	

#### Fill Material

1. Is Fill Material Present    Yes    No

2. Percentage Fill (%) \_\_\_\_\_

3. Fill Description (circle all that apply)

Asphalt	Metal	Plastic
Concrete	Wood	Glass
Igneous/Metamorphic Gravel	N/A	
Other _____		

Is Staining Present    Yes    No

Color \_\_\_\_\_

Odor

1. Odor Strength (circle one)

None    Slight    Strong

2. Odor Description (circle one)

Organic    Petroleum    Chemical

N/A    Other \_\_\_\_\_

Moisture Condition (circle one)

Dry    Moist    Wet

PG Signature \_\_\_\_\_ PG Registration # \_\_\_\_\_

Additional Comments \_\_\_\_\_

ASTM WATER LOT # 53038

# Appendix F

## Chain of Custodies

**SAMPLE DELIVERY GROUP**

**PH093**



# **SAMPLE DELIVERY GROUP**

**PH095**

# SSFL Phase 3 Chain of Custody

13013 1415078 7179316-24  
 COC No: 20130828-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

CDM Smith  
 Date Shipped: 8/28/2013  
 Carrier Name: FedEx  
 Airbill No: 796569341835  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB1-082813	8/28/13 14:00	WQ	HCl	2 - 1 L Amber	10 day	Methyl Mercury 1630 Organotin
EB1-082813	8/28/13 14:00	WQ	None	4 - 1 L Amber	10 day	NDMA 1625 Formaldehyde 8315 Cyanide 9012 Energetics 8330 Nitrates 300.0/9056 Terphenyls 8015 Alcohols 8015 Glycols 8015 TPH-EFH 8015 TPH-GRO 8015
EB2-082813	8/28/13 14:30	WQ	HCl	2 - 1 L Amber	10 day	1,4 Dioxane 8260 SIM VOCs 8260 Pesticides 8081 Herbicides 8151 Hex Cr 7196/7199 pH 9040 (Water) pH 9045 (Soil) Perchlorate Confirm 6850/6860 Perchlorate 314.0/331 PCBs/PCTs 8082 Dioxins 1613 1,4 Dioxane 8270 SIM PAHs 8270 SIM TIC 8270 SVOC 8270 Fluoride 300.0/9056 Mercury 7470 (Water) Mercury 7471 (Soil) Metals 6010 and 6020

Special Instructions: *P. Hartman*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	8/28/13	14:00	<i>[Signature]</i>	8/29/13	09:15

PH095 Page 73 of 3364  
 Page 60 of 65







# **SAMPLE DELIVERY GROUP**

**PH098**

13013 1415400 7180878-86

# SSFL Phase 3 Chain of Custody

CDM Smith

Date Shipped: 8/29/2013

Carrier Name: FedEx

Airbill No: 796579709926

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130829-02

Cooler #: 2

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-082913	8/29/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-539-SASD-SB-0.0-0.5	8/29/13 09:10	SO	None	2 - 55-Slene	10 day	
SL-539-SASD-SB-0.0-0.5	8/29/13 09:10	SO	None	1 - 4 oz glass	10 day	
SL-539-SASD-SB-3.0-4.0	8/29/13 09:20	SO	None	2 - 16 oz glass	10 day	
SL-539-SASD-SB-3.0-4.0	8/29/13 09:20	SO	None	2 - Encore	10 day	
SL-526-SASD-SB-0.0-0.5	8/29/13 14:00	SO	None	2 - 55-Slene	10 day	
SL-526-SASD-SB-0.0-0.5	8/29/13 14:00	SO	None	1 - 4 oz glass	10 day	
SL-526-SASD-SB-3.0-4.0	8/29/13 14:10	SO	None	2 - 16 oz glass	10 day	
SL-526-SASD-SB-3.0-4.0	8/29/13 14:10	SO	None	2 - Encore	10 day	
SL-542-SASD-SB-0.0-0.5	8/29/13 13:25	SO	None	2 - 55-Slene	10 day	
SL-542-SASD-SB-0.0-0.5	8/29/13 13:25	SO	None	1 - 4 oz glass	10 day	
SL-542-SASD-SB-4.0-5.0	8/29/13 13:35	SO	None	2 - 16 oz glass	10 day	
SL-542-SASD-SB-4.0-5.0	8/29/13 13:35	SO	None	2 - Encore	10 day	
SL-543-SASD-SB-0.0-0.5	8/29/13 12:00	SO	None	2 - 55-Slene	10 day	
SL-543-SASD-SB-0.0-0.5	8/29/13 12:00	SO	None	1 - 4 oz glass	10 day	
SL-543-SASD-SB-4.0-5.0	8/29/13 12:30	SO	None	2 - 16 oz glass	10 day	
SL-543-SASD-SB-4.0-5.0	8/29/13 12:30	SO	None	2 - Encore	10 day	

COC Rev 2

COC: 20130829-02, Page 10 of 2



# **SAMPLE DELIVERY GROUP**

**PH099**

Acct# 13013 Cup# 1415626 Sample# 7182115-30

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 8/30/2013  
 Carrier Name: FedEx  
 Airbill No: 796590040023  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130830-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-083013	8/30/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-534-SASD-SB-0.0-0.5	8/30/13 09:00	SO	None	2 - SS-Sleeve	10 day	
SL-534-SASD-SB-0.0-0.5	8/30/13 09:00	SO	None	1 - 4 oz glass	10 day	
SL-534-SASD-SB-6.5-7.5	8/30/13 09:20	SO	None	2 - 16 oz glass	10 day	
SL-534-SASD-SB-6.5-7.5	8/30/13 09:20	SO	None	2 - Encore	10 day	
SL-535-SASD-SB-0.0-0.5MS	8/30/13 08:10	SO	None	6 - SS-Sleeve	10 day	
SL-535-SASD-SB-0.0-0.5MS	8/30/13 08:20	SO	None	1 - 8 oz glass	10 day	
SL-835-SASD-SB-0.0-0.5	8/30/13 08:20	SO	None	2 - SS-Sleeve	10 day	
SL-835-SASD-SB-0.0-0.5	8/30/13 08:20	SO	None	1 - 4 oz glass	10 day	
SL-535-SASD-SB-2.0-3.0	8/30/13 08:30	SO	None	2 - 16 oz glass	10 day	
SL-535-SASD-SB-2.0-3.0	8/30/13 08:30	SO	None	2 - Encore	10 day	
SL-533-SASD-SB-0.0-0.5	8/30/13 10:15	SO	None	2 - SS-Sleeve	10 day	
SL-533-SASD-SB-0.0-0.5	8/30/13 10:15	SO	None	1 - 4 oz glass	10 day	
SL-533-SASD-SB-2.5-3.5	8/30/13 10:30	SO	None	2 - 16 oz glass	10 day	
SL-533-SASD-SB-2.5-3.5	8/30/13 10:30	SO	None	2 - Encore	10 day	
SL-530-SASD-SB-2.5-3.5	8/30/13 13:30	SO	None	2 - Encore	10 day	
SL-532-SASD-SB-2.5-3.5	8/30/13 12:30	SO	None	2 - Encore	10 day	



acct # 13013 Cp # 1415626 Sample # 7182115-30

### SSFL Phase 3 Chain of Custody

**CDM Smith**      **COC No:** 20130830-02  
**Date Shipped:** 8/30/2013      **Cooler #:** 2  
**Carrier Name:** FedEx      **Lab:** Lancaster  
**Airbill No:** 796590040023      **Lab Phone:** 717-556-7259  
**Contact Name:** Pam Hartman      **Lab Address:** 2425 New Holland Pike  
**Contact Phone:** (818)466-8007      **Lancaster, PA 17601**

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Metals 6010 and 6020	Mercury 7471 (Soil)	Mercury 7470 (Water)	Fluoride 300.0/9056	SVOC 8270	TIC 8270	PAHs 8270 SIM	1,4 Dioxane 8270 SIM	Dioxins 1613	PCBs/PCTs 8082	Perchlorate Confirm 6850/6860	pH 9045 (Soil)	pH 9040 (Water)	Hex Cr 7196/7199	Herbicides 8151	Pesticides 8081	VOCs 8260	1,4 Dioxane 8260 SIM	TPH-GRO 8015	TPH-EFH 8015	Glycols 8015	Alcohols 8015	Terphenyls 8015	Nitrates 300.0/9056	Energetics 8330	Cyanide 9012	Formaldehyde 8315	NDMA 1625	Organotin	Methyl Mercury 1630	Other Analysis/Notes		
SL-530-SASD-SB-0.0-0.5	8/30/13 13:15	SO	None	2 - 55-Sleeve	10 day	X	X					X									X																	
SL-530-SASD-SB-0.0-0.5	8/30/13 13:15	SO	None	1 - 4 oz glass	10 day							X									X																	
SL-530-SASD-SB-2.5-3.5	8/30/13 13:30	SO	None	2 - 16 oz glass	10 day	X	X					X									X																	
SL-531-SASD-SB-0.0-0.5	8/30/13 12:50	SO	None	2 - 55-Sleeve	10 day	X	X					X									X																	
SL-531-SASD-SB-0.0-0.5	8/30/13 12:50	SO	None	1 - 4 oz glass	10 day							X									X																	
SL-532-SASD-SB-0.0-0.5	8/30/13 12:20	SO	None	2 - 55-Sleeve	10 day	X	X					X									X																	
SL-532-SASD-SB-0.0-0.5	8/30/13 12:20	SO	None	1 - 4 oz glass	10 day							X									X																	
SL-532-SASD-SB-2.5-3.5	8/30/13 12:30	SO	None	2 - 16 oz glass	10 day	X	X					X									X																	

Special Instructions: *V. Carter*

Relinquished by	Date	Time	Received by	Date	Time
<i>Self</i>	8/30/2013	11:00	<i>ASA</i>	8/31/13	0930

# **SAMPLE DELIVERY GROUP**

**PH100**

# SSFL Phase 3 Chain of Custody

13013 1416159 7184683-95

**CDM Smith**  
 Date Shipped: 9/3/2013  
 Carrier Name: FedEx  
 Airbill No: 796603352029  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130903-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-525-SA5D-SB-0.0-0.5	9/3/13 08:00	WQ	None	3 - 40 mL Vial	10 day	
SL-525-SA5D-SB-0.0-0.5	9/3/13 09:15	SO	None	2 - SS-Sleeve	10 day	
SL-525-SA5D-SB-2.5-3.5	9/3/13 09:25	SO	None	1 - 4 oz glass	10 day	
SL-525-SA5D-SB-2.5-3.5	9/3/13 09:25	SO	None	2 - 16 oz glass	10 day	
SL-527-SA5D-SB-0.0-0.5	9/3/13 08:20	SO	None	2 - Encore	10 day	
SL-527-SA5D-SB-0.0-0.5	9/3/13 08:20	SO	None	2 - SS-Sleeve	10 day	
SL-527-SA5D-SB-4.0-5.0	9/3/13 08:35	SO	None	1 - 4 oz glass	10 day	
SL-527-SA5D-SB-4.0-5.0	9/3/13 08:35	SO	None	2 - 16 oz glass	10 day	
SL-528-SA5D-SB-0.0-0.5	9/3/13 09:55	SO	None	2 - Encore	10 day	
SL-528-SA5D-SB-0.0-0.5	9/3/13 09:55	SO	None	2 - SS-Sleeve	10 day	
SL-528-SA5D-SB-2.5-3.5	9/3/13 10:05	SO	None	1 - 4 oz glass	10 day	
SL-528-SA5D-SB-2.5-3.5	9/3/13 10:05	SO	None	2 - 16 oz glass	10 day	

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
<i>Steph M...</i>	9/3/13	10:00	<i>V. G...</i>	9-4-13	0956

Sampler: *V. G...*

*Steph M...* 9-4-13 0956





# **SAMPLE DELIVERY GROUP**

**PH101**



13013 1416493 7186218-31

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 9/4/2013  
 Carrier Name: FedEx  
 Airbill No: 796613664514  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130904-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-090413	9/4/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-524-SASD-SB-0.0-0.5	9/4/13 08:20	SO	None	2 - SS-Sleeve	10 day	
SL-524-SASD-SB-0.0-0.5	9/4/13 08:20	SO	None	1 - 4 oz glass	10 day	
SL-524-SASD-SB-5.5-6.5IMS	9/4/13 08:35	SO	None	6 - 16 oz glass	10 day	
SL-524-SASD-SB-5.5-6.5IMS	9/4/13 08:35	SO	None	6 - Encore	10 day	
SL-824-SASD-SB-5.5-6.5	9/4/13 08:45	SO	None	2 - 16 oz glass	10 day	
SL-824-SASD-SB-5.5-6.5	9/4/13 08:45	SO	None	2 - Encore	10 day	
SL-544-SASD-SB-0.0-0.5	9/4/13 09:40	SO	None	2 - SS-Sleeve	10 day	
SL-544-SASD-SB-0.0-0.5	9/4/13 09:40	SO	None	1 - 4 oz glass	10 day	
SL-544-SASD-SB-6.5-7.5	9/4/13 09:50	SO	None	2 - 16 oz glass	10 day	
SL-544-SASD-SB-6.5-7.5	9/4/13 09:50	SO	None	2 - Encore	10 day	
SL-546-SASD-SB-0.0-0.5	9/4/13 13:25	SO	None	2 - SS-Sleeve	10 day	
SL-546-SASD-SB-0.0-0.5	9/4/13 13:25	SO	None	1 - 4 oz glass	10 day	
SL-546-SASD-SB-4.0-5.0	9/4/13 13:45	SO	None	2 - 16 oz glass	10 day	
SL-546-SASD-SB-4.0-5.0	9/4/13 13:45	SO	None	2 - Encore	10 day	
SL-547-SASD-SB-0.0-0.5	9/4/13 12:00	SO	None	2 - SS-Sleeve	10 day	
SL-547-SASD-SB-0.0-0.5	9/4/13 12:00	SO	None	1 - 4 oz glass	10 day	
SL-547-SASD-SB-4.0-5.0	9/4/13 12:15	SO	None	2 - 16 oz glass	10 day	
SL-547-SASD-SB-4.0-5.0	9/4/13 12:15	SO	None	2 - Encore	10 day	

Rec by Brandy Barclay 9-5-13 915



# **SAMPLE DELIVERY GROUP**

**PH102**

# SSFL Phase 3 Chain of Custody

13013 1416870 7187850-61

**CDM Smith**  
 Date Shipped: 9/5/2013  
 Carrier Name: FedEx  
 Airbill No: 796624710146  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130905-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-090513	9/5/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-555-SASD-SB-0.0-0.5	9/5/13 08:55	SO	None	2 - 55-Sieve	10 day	
SL-555-SASD-SB-0.0-0.5	9/5/13 08:55	SO	None	1 - 4 oz glass	10 day	
SL-555-SASD-SB-4.0-5.0	9/5/13 09:15	SO	None	2 - 16 oz glass	10 day	
SL-555-SASD-SB-4.0-5.0	9/5/13 09:15	SO	None	2 - Encore	10 day	
SL-555-SASD-SB-10.5-11.5	9/5/13 09:30	SO	None	2 - 16 oz glass	10 day	
SL-555-SASD-SB-10.5-11.5	9/5/13 09:30	SO	None	2 - Encore	10 day	
SL-556-SASD-SB-0.0-0.5	9/5/13 10:20	SO	None	2 - 55-Sieve	10 day	
SL-556-SASD-SB-0.0-0.5	9/5/13 10:20	SO	None	2 - 4 oz glass	10 day	
SL-559-SASD-SB-0.0-0.5	9/5/13 07:40	SO	None	2 - 55-Sieve	10 day	
SL-559-SASD-SB-0.0-0.5	9/5/13 07:40	SO	None	1 - 4 oz glass	10 day	
SL-559-SASD-SB-6.0-7.0	9/5/13 07:55	SO	None	2 - 16 oz Glass	10 day	
SL-559-SASD-SB-6.0-7.0	9/5/13 07:55	SO	None	2 - Encore	10 day	
SL-554-SASD-SB-4.0-5.0	9/5/13 13:30	SO	None	2 - Encore	10 day	
SL-554-SASD-SB-7.0-8.0	9/5/13 13:40	SO	None	2 - Encore	10 day	
SL-556-SASD-SB-4.0-5.0	9/5/13 12:20	SO	None	2 - Encore	10 day	
SL-556-SASD-SB-11.0-12.0	9/5/13 12:40	SO	None	2 - 16 oz glass	10 day	
SL-556-SASD-SB-11.0-12.0	9/5/13 12:40	SO	None	1 - 4 oz glass	10 day	
SL-556-SASD-SB-11.0-12.0	9/5/13 12:40	SO	None	2 - Encore	10 day	
SL-556-SASD-SB-4.0-5.0	9/5/13 12:20	SO	None	2 - 16 oz glass	10 day	
SL-556-SASD-SB-4.0-5.0	9/5/13 12:20	SO	None	1 - 4 oz glass	10 day	

*Burnaby Barely 9-6-13 900*





# **SAMPLE DELIVERY GROUP**

**PH103**



# **SAMPLE DELIVERY GROUP**

**PH104**

dy

# SSFL Phase 3 Chain of Custody

13013 1417506 7191081-100

CDM Smith

Date Shipped: 9/9/2013

Carrier Name: FedEx

Airbill No: 796646381657

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130909-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

VOCs 8260  
Pesticides 8081  
Herbicides 8151

Sat

Dat

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
1B-090913	9/9/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-515-SASD-SB-0.0-0.5MS	9/9/13 09:30	SO	None	6 - 55-Sieve	10 day	
SL-515-SASD-SB-0.0-0.5MS	9/9/13 09:30	SO	None	1 - 8 oz glass	10 day	
SL-815-SASD-SB-0.0-0.5	9/9/13 09:40	SO	None	2 - 55-Sieve	10 day	
SL-815-SASD-SB-0.0-0.5	9/9/13 09:40	SO	None	1 - 4 oz glass	10 day	
SL-515-SASD-SB-4.0-5.0	9/9/13 09:50	SO	None	2 - 16 oz glass	10 day	
SL-515-SASD-SB-4.0-5.0	9/9/13 09:50	SO	None	2 - Encore	10 day	
SL-515-SASD-SB-9.0-10.0	9/9/13 10:00	SO	None	2 - 16 oz glass	10 day	
SL-515-SASD-SB-9.0-10.0	9/9/13 10:00	SO	None	2 - Encore	10 day	
SL-515-SASD-SB-22.0-23.0	9/9/13 10:30	SO	None	2 - 16 oz glass	10 day	
SL-515-SASD-SB-22.0-23.0	9/9/13 10:30	SO	None	2 - Encore	10 day	
SL-599-SASD-SB-0.0-0.5	9/9/13 07:45	SO	None	1 - 55-Sieve	10 day	
SL-599-SASD-SB-0.0-0.5	9/9/13 07:45	SO	None	1 - 4 oz glass	10 day	
SL-599-SASD-SB-4.0-5.0	9/9/13 07:55	SO	None	1 - 16 oz glass	10 day	
SL-599-SASD-SB-4.0-5.0	9/9/13 07:55	SO	None	1 - 16 oz glass	10 day	
SL-599-SASD-SB-9.0-10.0	9/9/13 08:05	SO	None	1 - 16 oz glass	10 day	
SL-599-SASD-SB-9.0-10.0	9/9/13 08:15	SO	None	1 - 16 oz glass	10 day	
SL-599-SASD-SB-14.0-15.0	9/9/13 08:25	SO	None	1 - 16 oz glass	10 day	
SL-599-SASD-SB-19.0-20.0	9/9/13 08:25	SO	None	1 - 16 oz glass	10 day	

Rec by *Sweeney Barry* ELLE 9-10-13 915

COC Rev 2



# **SAMPLE DELIVERY GROUP**

**PH105**

# SSFL Phase 3 Chain of Custody

13013 1417898 7192780-803

CDM Smith

Date Shipped: 9/10/2013

Carrier Name: FedEx

Airbill No: 796656512929

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130910-01

Cooler #: 1

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-091013	9/10/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-603-SASD-SB-0.0-0.5	9/10/13 10:10	SO	None	1 - 55-Sieve	10 day	
SL-603-SASD-SB-0.0-0.5	9/10/13 10:10	SO	None	1 - 4 oz glass	10 day	
SL-603-SASD-SB-4.0-5.0	9/10/13 10:20	SO	None	1 - 8 oz glass	10 day	
SL-603-SASD-SB-9.0-10.0	9/10/13 10:30	SO	None	1 - 8 oz glass	10 day	
SL-603-SASD-SB-13.0-14.0	9/10/13 10:40	SO	None	1 - 8 oz glass	10 day	
SL-604-SASD-SB-0.0-0.5	9/10/13 08:55	SO	None	1 - 55-Sieve	10 day	
SL-604-SASD-SB-4.0-5.0	9/10/13 09:05	SO	None	1 - 8 oz glass	10 day	
SL-604-SASD-SB-9.0-10.0	9/10/13 09:15	SO	None	1 - 8 oz glass	10 day	
SL-604-SASD-SB-16.5-17.5	9/10/13 09:25	SO	None	1 - 8 oz glass	10 day	
SL-605-SASD-SB-0.0-0.5	9/10/13 07:45	SO	None	1 - 55-Sieve	10 day	
SL-605-SASD-SB-4.0-5.0MS	9/10/13 07:55	SO	None	1 - 8 oz glass	10 day	
SL-605-SASD-SB-4.0-5.0MS	9/10/13 07:55	SO	None	1 - 16 oz glass	10 day	
SL-905-SASD-SB-4.0-5.0	9/10/13 08:00	SO	None	1 - 8 oz glass	10 day	
SL-605-SASD-SB-14.5-15.5	9/10/13 08:15	SO	None	1 - 8 oz glass	10 day	
SL-518-SASD-SB-0.0-0.5	9/10/13 13:20	SO	None	2 - 55-Sieve	10 day	
SL-518-SASD-SB-0.0-0.5	9/10/13 13:20	SO	None	1 - 4 oz glass	10 day	
SL-518-SASD-SB-4.0-5.0	9/10/13 13:30	SO	None	2 - 16 oz glass	10 day	
SL-518-SASD-SB-4.0-5.0	9/10/13 13:30	SO	None	2 - Encore	10 day	
SL-518-SASD-SB-9.0-10.0	9/10/13 13:40	SO	None	2 - 16 oz glass	10 day	
SL-518-SASD-SB-9.0-10.0	9/10/13 13:40	SO	None	2 - Encore	10 day	
SL-518-SASD-SB-15.0-16.0	9/10/13 13:50	SO	None	2 - 16 oz glass	10 day	
SL-518-SASD-SB-15.0-16.0	9/10/13 13:50	SO	None	2 - Encore	10 day	
SL-606-SASD-SB-0.0-0.5	9/10/13 12:20	SO	None	1 - 55-Sieve	10 day	
SL-606-SASD-SB-0.0-0.5	9/10/13 12:20	SO	None	1 - 4 oz glass	10 day	
SL-606-SASD-SB-4.0-5.0	9/10/13 12:30	SO	None	1 - 8 oz glass	10 day	
SL-606-SASD-SB-9.0-10.0	9/10/13 12:40	SO	None	1 - 8 oz glass	10 day	
SL-606-SASD-SB-13.0-14.0	9/10/13 12:50	SO	None	1 - 8 oz glass	10 day	

COC Rev 2

PH105

Page 65 of 88 of SSFL Chain of Custody Batch 9-11-13 925

COC: 20130910-01, Page 1 of 2



# **SAMPLE DELIVERY GROUP**

**PH106**



13013 1418268 7194439-54

# SSFL Phase 3 Chain of Custody

**COM Smith**  
 Date Shipped: 9/11/2013  
 Carrier Name: FedEx  
 Airbill No: 796665999076

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130911-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-519-SASD-SB-0.0-0.5	9/11/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-519-SASD-SB-0.0-0.5	9/11/13 07:40	SO	None	2 - SS-Sleeve	10 day	
SL-519-SASD-SB-0.0-0.5	9/11/13 07:40	SO	None	1 - 4 oz glass	10 day	
SL-519-SASD-SB-4.0-5.0	9/11/13 08:00	SO	None	2 - 16 oz glass	10 day	
SL-519-SASD-SB-4.0-5.0	9/11/13 08:00	SO	None	2 - Encore	10 day	
SL-520-SASD-SB-0.0-0.5	9/11/13 08:50	SO	None	2 - SS-Sleeve	10 day	
SL-520-SASD-SB-0.0-0.5	9/11/13 08:50	SO	None	1 - 4 oz glass	10 day	
SL-520-SASD-SB-4.0-5.0	9/11/13 09:00	SO	None	2 - 16 oz glass	10 day	
SL-520-SASD-SB-4.0-5.0	9/11/13 09:00	SO	None	2 - Encore	10 day	
SL-520-SASD-SB-8.0-9.0	9/11/13 09:10	SO	None	2 - 16 oz glass	10 day	
SL-520-SASD-SB-8.0-9.0	9/11/13 09:10	SO	None	2 - Encore	10 day	
SL-521-SASD-SB-0.0-0.5	9/11/13 09:45	SO	None	2 - SS-Sleeve	10 day	
SL-521-SASD-SB-0.0-0.5	9/11/13 09:45	SO	None	1 - 4 oz glass	10 day	
SL-521-SASD-SB-5.5-6.5	9/11/13 09:55	SO	None	2 - 16 oz glass	10 day	
SL-521-SASD-SB-5.5-6.5	9/11/13 09:55	SO	None	2 - Encore	10 day	
SL-522-SASD-SB-0.0-0.5	9/11/13 10:15	SO	None	2 - SS-Sleeve	10 day	
SL-522-SASD-SB-0.0-0.5	9/11/13 10:15	SO	None	1 - 4 oz glass	10 day	
SL-522-SASD-SB-6.0-7.0	9/11/13 10:25	SO	None	2 - 16 oz glass	10 day	
SL-522-SASD-SB-6.0-7.0	9/11/13 10:25	SO	None	2 - Encore	10 day	
SL-506-SASD-SB-4.0-5.0	9/11/13 13:50	SO	None	2 - Encore	10 day	
SL-529-SASD-SB-3.0-4.0	9/11/13 13:15	SO	None	2 - Encore	10 day	

Rec by Bunnely Boney 9.12.13 910

COC: 20130911-02, Page: 1 of 2





# **SAMPLE DELIVERY GROUP**

**PH107**

13013 1418633 7196425-45

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 9/12/2013  
 Carrier Name: FedEx  
 Airbill No: 796675063303  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130912-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-091213	9/12/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-553-SASD-SB-0.0-0.5MS	9/12/13 07:30	SO	None	6 - SS-Sleeve	10 day	MS/MSD
SL-553-SASD-SB-0.0-0.5MS	9/12/13 07:30	SO	None	2 - 8 oz glass	10 day	MS/MSD
SL-853-SASD-SB-0.0-0.5	9/12/13 07:35	SO	None	2 - SS-Sleeve	10 day	
SL-853-SASD-SB-0.0-0.5	9/12/13 07:35	SO	None	2 - 4 oz glass	10 day	
SL-553-SASD-SB-4.5-5.5	9/12/13 07:45	SO	None	2 - 16 oz glass	10 day	
SL-553-SASD-SB-4.5-5.5	9/12/13 07:45	SO	None	1 - 4 oz glass	10 day	
SL-553-SASD-SB-4.5-5.5	9/12/13 07:45	SO	None	2 - Encore	10 day	
SL-551-SASD-SB-0.0-0.5	9/12/13 08:05	SO	None	2 - SS-Sleeve	10 day	
SL-551-SASD-SB-0.0-0.5	9/12/13 08:05	SO	None	1 - 4 oz glass	10 day	
SL-551-SASD-SB-4.0-5.0	9/12/13 08:15	SO	None	2 - 16 oz glass	10 day	
SL-551-SASD-SB-4.0-5.0	9/12/13 08:15	SO	None	2 - Encore	10 day	
SL-551-SASD-SB-9.0-10.0	9/12/13 08:25	SO	None	2 - 16 oz glass	10 day	
SL-551-SASD-SB-9.0-10.0	9/12/13 08:25	SO	None	2 - Encore	10 day	
SL-551-SASD-SB-14.0-15.0	9/12/13 08:35	SO	None	2 - 16 oz glass	10 day	
SL-551-SASD-SB-14.0-15.0	9/12/13 08:35	SO	None	2 - Encore	10 day	
SL-551-SASD-SB-17.5-18.5	9/12/13 08:45	SO	None	2 - 16 oz glass	10 day	
SL-551-SASD-SB-17.5-18.5	9/12/13 08:45	SO	None	2 - Encore	10 day	

COC Rev. 2







# **SAMPLE DELIVERY GROUP**

**PH108**

13013 1419298 7200145-50

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 9/16/2013  
 Carrier Name: FedEx  
 Airbill No: 796698239794  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130916-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-091613	9/16/13 08:00	WQ	HQ	3-40 ml Vial	10 day	
SL-505-SASD-SB-0.0-0.5	9/16/13 08:05	SO	None	2-SS-Sleeve	10 day	
SL-505-SASD-SB-0.0-0.5	9/16/13 08:05	SO	None	1-4 oz glass	10 day	
SL-505-SASD-SB-4.0-5.0	9/16/13 08:35	SO	None	2-SS-Sleeve	10 day	
SL-505-SASD-SB-4.0-5.0	9/16/13 08:35	SO	None	1-4 oz glass	10 day	
SL-505-SASD-SB-4.0-5.0	9/16/13 08:35	SO	None	2-Encore	10 day	
SL-505-SASD-SB-9.0-10.0	9/16/13 09:15	SO	None	2-SS-Sleeve	10 day	
SL-505-SASD-SB-9.0-10.0	9/16/13 09:15	SO	None	1-4 oz glass	10 day	
SL-505-SASD-SB-9.0-10.0	9/16/13 09:15	SO	None	2-Encore	10 day	
SL-505-SASD-SB-14.0-15.0	9/16/13 10:05	SO	None	2-SS-Sleeve	10 day	
SL-505-SASD-SB-14.0-15.0	9/16/13 10:05	SO	None	1-4 oz glass	10 day	
SL-505-SASD-SB-14.0-15.0	9/16/13 10:05	SO	None	2-Encore	10 day	
SL-505-SASD-SB-19.0-20.0	9/16/13 11:00	SO	None	2-SS-Sleeve	10 day	
SL-505-SASD-SB-19.0-20.0	9/16/13 11:00	SO	None	1-4 oz glass	10 day	
SL-505-SASD-SB-19.0-20.0	9/16/13 11:00	SO	None	2-Encore	10 day	

Special Instructions: **Sampler: V. Carter**

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	9/16/13	11:00	<i>[Signature]</i>	9/16/13	10:05
<del>_____</del>					



# **SAMPLE DELIVERY GROUP**

**PH109**









13013 1419618 72010704-21

# SSFL Phase 3 Chain of Custody

CDM Smith

Date Shipped: 9/17/2013

Carrier Name: FedEx

Airbill No: 796707791952

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130917-02

Cooler #: 2

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-501-SASD-SB-0.0-0.5	9/17/13 12:15	SO	None	2 - SS-Sleeve	10 day	
SL-501-SASD-SB-0.0-0.5	9/17/13 12:15	SO	None	1 - 4 oz glass	10 day	
SL-501-SASD-SB-4.0-5.0	9/17/13 12:25	SO	None	2 - 16 oz glass	10 day	
SL-501-SASD-SB-9.0-10.0	9/17/13 12:35	SO	None	2 - 16 oz glass	10 day	
SL-501-SASD-SB-14.0-15.0	9/17/13 12:45	SO	None	2 - 16 oz glass	10 day	
SL-501-SASD-SB-19.0-20.0	9/17/13 12:55	SO	None	2 - 16 oz glass	10 day	
SL-501-SASD-SB-24.0-25.0	9/17/13 13:05	SO	None	2 - 16 oz glass	10 day	
SL-501-SASD-SB-28.0-29.0	9/17/13 13:15	SO	None	2 - 16 oz glass	10 day	

Special Instructions: **Sampler: V. Cortes**

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	9/17/13	12:00	<i>[Signature]</i>	9-16-13	0910

# **SAMPLE DELIVERY GROUP**

**PH110**





Acc# 13013 Cp# 1419965 Sample# 720384656

# SSFL Phase 3 Chain of Custody

**CDM Smith**      **20130918-03**  
 Dateshipped: 9/18/2013      **3**  
 CarrierName: FedEx      **Lancaster**  
 AirbillNo: 796718874011      **717-556-7259**  
 Contact Name: Pam Hartman      **2425 New Holland Pike**  
 Contact Phone: (818)466-8007      **Lancaster, PA 17601**

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TL-091813	9/18/13 08:00	WQ	HG	3 - 40 ml Vial	10 day	
SL-510-SASD-SB-0.0-0.5	9/18/13 10:00	SO	None	2 - SS-Sieve	10 day	
SL-510-SASD-SB-0.0-0.5	9/18/13 10:00	SO	None	1 - 4 oz glass	10 day	
SL-510-SASD-SB-4.0-5.0	9/18/13 10:10	SO	None	2 - 16 oz glass	10 day	
SL-510-SASD-SB-4.0-5.0	9/18/13 10:10	SO	None	2 - Encore	10 day	
SL-513-SASD-SB-0.0-0.5	9/18/13 07:30	SO	None	2 - SS-Sieve	10 day	
SL-513-SASD-SB-0.0-0.5	9/18/13 07:30	SO	None	1 - 4 oz glass	10 day	
SL-513-SASD-SB-4.0-5.0	9/18/13 07:40	SO	None	2 - 16 oz glass	10 day	
SL-513-SASD-SB-4.0-5.0	9/18/13 07:40	SO	None	2 - Encore	10 day	
SL-513-SASD-SB-9.0-10.0	9/18/13 07:50	SO	None	2 - 16 oz glass	10 day	
SL-513-SASD-SB-9.0-10.0	9/18/13 07:50	SO	None	2 - Encore	10 day	
SL-513-SASD-SB-16.0-17.0	9/18/13 08:00	SO	None	2 - 16 oz glass	10 day	
SL-513-SASD-SB-16.0-17.0	9/18/13 08:00	SO	None	2 - Encore	10 day	
SL-514-SASD-SB-0.0-0.5	9/18/13 08:50	SO	None	2 - SS-Sieve	10 day	
SL-514-SASD-SB-0.0-0.5	9/18/13 08:50	SO	None	1 - 4 oz glass	10 day	
SL-514-SASD-SB-4.0-5.0	9/18/13 09:00	SO	None	2 - 16 oz glass	10 day	
SL-514-SASD-SB-4.0-5.0	9/18/13 09:00	SO	None	2 - Encore	10 day	
SL-509-SASD-SB-0.0-0.5	9/18/13 13:00	SO	None	2 - SS-Sieve	10 day	
SL-509-SASD-SB-0.0-0.5	9/18/13 13:00	SO	None	1 - 4 oz glass	10 day	
SL-509-SASD-SB-4.0-5.0	9/18/13 13:15	SO	None	2 - 16 oz glass	10 day	
SL-509-SASD-SB-4.0-5.0	9/18/13 13:15	SO	None	2 - Encore	10 day	

Free by Beverly Barry ELLE 9-19-13 910



# **SAMPLE DELIVERY GROUP**

**PH111**



# **SAMPLE DELIVERY GROUP**

**PH112**



# **SAMPLE DELIVERY GROUP**

**PH113**





# **SAMPLE DELIVERY GROUP**

**PH114**



13013 1421713 7213403-16

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 9/25/2013  
 Carrier Name: FedEx  
 Airbill No: 796770904674  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130925-03  
 Cooler #: 3  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-092513	9/25/13 08:00	WQ	HQ	3 - 40 ml. Vial	10 day	
SL-569-SASD-SB-0.0-0.5	9/25/13 10:00	SO	None	2 - SS-Sieve	10 day	
SL-569-SASD-SB-0.0-0.5	9/25/13 10:00	SO	None	1 - 4 oz glass	10 day	
SL-573-SASD-SB-0.0-0.5	9/25/13 07:45	SO	None	1 - SS-Sieve	10 day	
SL-573-SASD-SB-4.0-5.0	9/25/13 08:00	SO	None	1 - SS-Sieve	10 day	
SL-562-SASD-SB-0.0-0.5	9/25/13 13:35	SO	None	2 - SS-Sieve	10 day	
SL-562-SASD-SB-0.0-0.5	9/25/13 13:35	SO	None	1 - 4 oz glass	10 day	
SL-562-SASD-SB-4.0-5.0	9/25/13 13:50	SO	None	2 - SS-Sieve	10 day	
SL-562-SASD-SB-4.0-5.0	9/25/13 13:50	SO	None	1 - 4 oz glass	10 day	
SL-563-SASD-SB-0.0-0.5	9/25/13 12:15	SO	None	2 - Encore	10 day	
SL-563-SASD-SB-0.0-0.5	9/25/13 12:15	SO	None	2 - SS-Sieve	10 day	
SL-563-SASD-SB-0.0-0.5	9/25/13 12:15	SO	None	1 - 4 oz glass	10 day	
SL-563-SASD-SB-4.0-5.0MS	9/25/13 12:45	SO	None	6 - SS-Sieve	10 day	
SL-563-SASD-SB-4.0-5.0MS	9/25/13 12:45	SO	None	1 - 8 oz glass	10 day	
SL-563-SASD-SB-4.0-5.0MS	9/25/13 12:45	SO	None	6 - Encore	10 day	
SL-863-SASD-SB-4.0-5.0MS	9/25/13 13:00	SO	None	2 - SS-Sieve	10 day	
SL-863-SASD-SB-4.0-5.0	9/25/13 13:00	SO	None	1 - 4 oz glass	10 day	
SL-863-SASD-SB-4.0-5.0	9/25/13 13:00	SO	None	2 - Encore	10 day	

NDM 101613 - "MS" was removed per SM.





# **SAMPLE DELIVERY GROUP**

**PH116**



# **SAMPLE DELIVERY GROUP**

**PH118**



13013 1422668 7218893-13

# SSFL Phase 3 Chain of Custody

CDM Smith  
 Date Shipped: 9/30/2013  
 Carrier Name: FedEx  
 Airbill No: 796803920665

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130930-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-596-SASD-SB-0.0-0.5	9/30/13 12:35	SO	None	1 - SS-Sieve	10 day	
SL-596-SASD-SB-4.0-5.0	9/30/13 12:45	SO	None	1 - 4 oz glass	10 day	
SL-596-SASD-SB-11.5-12.5	9/30/13 12:55	SO	None	1 - 4 oz glass	10 day	
SL-597-SASD-SB-0.0-0.5	9/30/13 13:40	SO	None	1 - SS-Sieve	10 day	
SL-597-SASD-SB-0.0-0.5	9/30/13 13:40	SO	None	1 - 4 oz glass	10 day	
SL-597-SASD-SB-4.0-5.0	9/30/13 13:50	SO	None	1 - 8 oz glass	10 day	
SL-597-SASD-SB-9.0-10.0	9/30/13 14:00	SO	None	1 - 8 oz glass	10 day	
SL-597-SASD-SB-14.0-15.0	9/30/13 14:10	SO	None	1 - 8 oz glass	10 day	
SL-597-SASD-SB-17.0-18.0	9/30/13 14:15	SO	None	1 - 8 oz glass	10 day	

Special Instructions:	Relinquished by	Date	Time	Received by	Date	Time
	<i>[Signature]</i>	9/30/2013	1000	<i>[Signature]</i>	10-1-13	0816

Sampler: *V. Godee*

**SAMPLE DELIVERY GROUP**

**PH119**

# SSFL Phase 3 Chain of Custody

13013 1423103 7220650-63

COC No: 20131001-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

CDM Smith  
 Date Shipped: 10/1/2013  
 Carrier Name: FedEx  
 Airbill No: 796815199086

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-100113	10/1/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-570-SASD-SB-0.0-0.5	10/1/13 10:10	SO	None	2 - SS-Sleeve	10 day	
SL-570-SASD-SB-0.0-0.5	10/1/13 10:10	SO	None	1 - 4 oz glass	10 day	
SL-570-SASD-SB-4.0-5.0	10/1/13 10:20	SO	None	2 - 16 oz glass	10 day	
SL-570-SASD-SB-4.0-5.0	10/1/13 10:20	SO	None	2 - Encore	10 day	
SL-598-SASD-SB-0.0-0.5	10/1/13 08:35	SO	None	1 - SS-Sleeve	10 day	
SL-598-SASD-SB-4.0-5.0	10/1/13 08:45	SO	None	1 - 4 oz glass	10 day	
SL-598-SASD-SB-9.0-10.0	10/1/13 08:55	SO	None	1 - 4 oz glass	10 day	
SL-598-SASD-SB-14.0-15.0	10/1/13 09:05	SO	None	1 - 4 oz glass	10 day	
SL-598-SASD-SB-18.0-19.0	10/1/13 09:15	SO	None	1 - 4 oz glass	10 day	
SL-564-SASD-SB-0.0-0.5	10/1/13 12:50	SO	None	2 - SS-Sleeve	10 day	
SL-564-SASD-SB-0.0-0.5	10/1/13 12:50	SO	None	1 - 4 oz glass	10 day	
SL-564-SASD-SB-4.0-5.0	10/1/13 13:00	SO	None	2 - 16 oz glass	10 day	
SL-564-SASD-SB-4.0-5.0	10/1/13 13:00	SO	None	2 - Encore	10 day	
SL-607-SASD-SB-0.0-0.5	10/1/13 13:55	SO	None	2 - SS-Sleeve	10 day	
SL-607-SASD-SB-0.0-0.5	10/1/13 13:55	SO	None	1 - 4 oz glass	10 day	
SL-607-SASD-SB-4.0-5.0	10/1/13 14:05	SO	None	2 - 16 oz glass	10 day	
SL-607-SASD-SB-4.0-5.0	10/1/13 14:05	SO	None	2 - Encore	10 day	



# **SAMPLE DELIVERY GROUP**

**PH120**



**SAMPLE DELIVERY GROUP**

**PH122**

acct# 13013 Cp # 1423924 Sample # 7024840-53  
**SSFL Phase 3 Chain of Custody**

CDM Smith  
 Date Shipped: 10/3/2013  
 Carrier Name: FedEx  
 Airbill No: 796835323652  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20131003-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-502-SASD-SB-0.0-0.5	10/3/13 08:40	SO	None	2 - 55-Skew	10 day	
SL-502-SASD-SB-0.0-0.5	10/3/13 08:40	SO	None	1 - 4 oz glass	10 day	
SL-502-SASD-SB-6.5-7.5	10/3/13 08:50	SO	None	2 - 16 oz glass	10 day	
SL-502-SASD-SB-6.5-7.5	10/3/13 08:50	SO	None	2 - Encore	10 day	
TB-100313	10/3/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-508-SASD-SB-0.0-0.5	10/3/13 09:25	SO	None	2 - 55-Skew	10 day	
SL-508-SASD-SB-0.0-0.5	10/3/13 09:25	SO	None	1 - 4 oz glass	10 day	
SL-508-SASD-SB-4.0-5.0	10/3/13 09:35	SO	None	2 - 16 oz glass	10 day	
SL-508-SASD-SB-4.0-5.0	10/3/13 09:35	SO	None	2 - Encore	10 day	
SL-508-SASD-SB-9.0-10.0	10/3/13 09:45	SO	None	2 - 16 oz glass	10 day	
SL-508-SASD-SB-9.0-10.0	10/3/13 09:45	SO	None	2 - Encore	10 day	
SL-508-SASD-SB-14.0-15.0	10/3/13 09:55	SO	None	2 - 16 oz glass	10 day	
SL-508-SASD-SB-14.0-15.0	10/3/13 09:55	SO	None	2 - Encore	10 day	
SL-508-SASD-SB-19.0-20.0	10/3/13 10:05	SO	None	2 - 16 oz glass	10 day	
SL-508-SASD-SB-19.0-20.0	10/3/13 10:05	SO	None	2 - Encore	10 day	
SL-508-SASD-SB-23.0-24.0	10/3/13 10:15	SO	None	2 - 16 oz glass	10 day	
SL-508-SASD-SB-23.0-24.0	10/3/13 10:15	SO	None	2 - Encore	10 day	
SL-507-SASD-SB-4.0-5.0	10/3/13 12:40	SO	None	2 - Encore	10 day	
SL-507-SASD-SB-10.5-11.5	10/3/13 12:50	SO	None	2 - Encore	10 day	
SL-608-SASD-SB-4.0-5.0	10/3/13 13:50	SO	None	2 - Encore	10 day	

Rec by Beverly Bandy ELLE 10.4.13 9/10  
 Jofa



**SAMPLE DELIVERY GROUP**

**PH123**

13013 1424500 7228020-26

# SSFL Phase 3 Chain of Custody

CDM Smith  
 Date Shipped: 10/17/2013  
 Carrier Name: FedEx  
 Airbill No: 796855827002

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20131007-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-100713	10/17/13 06:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-567-SASD-SB-0.0-0.5	10/17/13 09:50	SO	None	2 - SS-Sleeve	10 day	
SL-567-SASD-SB-0.0-0.5	10/17/13 09:50	SO	None	1 - 4 oz glass	10 day	
SL-567-SASD-SB-3.5-4.5	10/17/13 10:20	SO	None	2 - SS-Sleeve	10 day	
SL-567-SASD-SB-3.5-4.5	10/17/13 10:20	SO	None	1 - 4 oz glass	10 day	
SL-567-SASD-SB-3.5-4.5	10/17/13 10:20	SO	None	2 - Encto	10 day	
SL-575-SASD-SB-0.0-0.5	10/17/13 06:30	SO	None	1 - SS-Sleeve	10 day	
SL-575-SASD-SB-3.0-4.0	10/17/13 09:00	SO	None	1 - SS-Sleeve	10 day	
SL-593-SASD-SB-0.0-0.5	10/17/13 12:40	SO	None	1 - SS-Sleeve	10 day	
SL-593-SASD-SB-0.0-0.5	10/17/13 12:40	SO	None	1 - 4 oz glass	10 day	
SL-593-SASD-SB-3.5-4.5	10/17/13 13:00	SO	None	1 - SS-Sleeve	10 day	
SL-593-SASD-SB-3.5-4.5	10/17/13 13:00	SO	None	1 - 4 oz glass	10 day	

Special Instructions: Relinquished by [Signature] Date 10/17/2013 Time 1000

Relinquished by	Date	Time	Received by	Date	Time
[Signature]	10/17/2013	1000	[Signature]	10/16/13	0910

# **SAMPLE DELIVERY GROUP**

**PH124**



**SAMPLE DELIVERY GROUP**

**PH127**

Acc# 13013 Cp# 1433661 Sample# 7075661-75

# SSFL Phase 3 Chain of Custody

**CDM Smith** COC No: 20131112-01  
 Date Shipped: 11/12/2013 Cooler #: 1  
 Carrier Name: FedEx Lab: Lancaster  
 Airbill No: Lab Phone: 717-556-7259  
 Contact Name: Pam Hartman Lab Address: 2425 New Holland Pike  
 Contact Phone: (818)466-8007 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB1-111213	11/12/13 15:00	WQ	HNO3 pH<2	1 - 250 ml. Poly	10 day	
EB1-111213	11/12/13 15:00	WQ	None	1 - 250 ml. Amber	10 day	
EB1-111213	11/12/13 15:00	WQ	None	2 - 1 L Amber	10 day	
EB1-111213	11/12/13 15:00	WQ	None	1 - 250 ml. Amber	10 day	
EB1-111213	11/12/13 15:00	WQ	None	1 - 250 ml. Poly	10 day	
EB1-111213	11/12/13 15:00	WQ	None	1 - 250 ml. Poly	10 day	
EB1-111213	11/12/13 15:00	WQ	None	2 - 1 L Amber	10 day	
EB1-111213	11/12/13 15:00	WQ	None	1 - 250 ml. Amber	10 day	
EB1-111213	11/12/13 15:00	WQ	HCl	3 - 40 ml. Vial	10 day	
EB1-111213	11/12/13 15:00	WQ	HCl	2 - 1 L Amber	10 day	
EB1-111213	11/12/13 15:00	WQ	None	1 - 250 ml. Amber	10 day	

Special Instructions: *Pam Hartman*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	11/12/13	1600							<i>[Signature]</i>	11/13/13	0940



# **SAMPLE DELIVERY GROUP**

**PH130**

Acc# 13013 Cp# 1434493 Sample # 7280196-308

**SSFL Phase 3 Chain of Custody**

**CDM Smith**      **COC No:** 20131115-01  
**Date Shipped:** 11/15/2013      **Cooler #:** 1 of 2  
**Carrier Name:** FedEx      **Lab:** Lancaster  
**Airbill No:** 797173822496      **Lab Phone:** 717-556-7259  
**Contact Name:** Pam Hartman      **Lab Address:** 2425 New Holland Pike  
**Contact Phone:** (818)466-8007      **Lancaster, PA 17601**

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-111513	11/15/13 08:00	WQ	HCl	1 - 40 ml. Vial	10 day	
SL-516-SASD-SB-0.0-0.5	11/15/13 08:35	SO	None	2 - SS-Sieve	10 day	X
SL-516-SASD-SB-0.0-0.5	11/15/13 08:35	SO	None	2 - 4 oz glass	10 day	X
SL-516-SASD-SB-4.0-5.0MS	11/15/13 08:45	SO	None	6 - 16 oz glass	10 day	X
SL-516-SASD-SB-4.0-5.0MS	11/15/13 08:45	SO	None	6 - Encore	10 day	X
SL-816-SASD-SB-4.0-5.0	11/15/13 08:40	SO	None	2 - 16 oz glass	10 day	X
SL-516-SASD-SB-4.0-5.0	11/15/13 08:45	SO	None	2 - Encore	10 day	X
SL-516-SASD-SB-9.0-10.0	11/15/13 08:56	SO	None	2 - 16 oz glass	10 day	X
SL-516-SASD-SB-9.0-10.0	11/15/13 08:56	SO	None	2 - Encore	10 day	X
SL-516-SASD-SB-13.0-14.0	11/15/13 09:08	SO	None	2 - 16 oz glass	10 day	X
SL-516-SASD-SB-13.0-14.0	11/15/13 09:08	SO	None	2 - Encore	10 day	X
SL-609-SASD-SB-0.0-0.5	11/15/13 12:50	SO	None	2 - SS-Sieve	10 day	X
SL-609-SASD-SB-0.0-0.5	11/15/13 12:50	SO	None	1 - 4 oz glass	10 day	X

Special Instructions: *[Signature]*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	11/15/13	1430	<i>[Signature]</i>	11/16/13	0725

**SAMPLE DELIVERY GROUP**

**PH062**



# **SAMPLE DELIVERY GROUP**

**PH063**



**SAMPLE DELIVERY GROUP**

**PH064**

13013 1403202 7123467-80

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 7/10/2013  
 Carrier Name: FedEx  
 Airbill No: 796201570730  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130710-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB1-071013	7/10/13 15:00	WQ	None	4 - 1 L Amber	10 day	
EB1-071013	7/10/13 15:00	WQ	HCl	2 - 1 L Amber	10 day	
EB1-071013	7/10/13 15:00	WQ	HCl	6 - 40 mL Vial	10 day	
EB2-071013	7/10/13 15:30	WQ	None	1 - 40 mL Vial	10 day	
EB2-071013	7/10/13 15:30	WQ	HCl	2 - 1 L Amber	10 day	
EB2-071013	7/10/13 15:30	WQ	None	1 - 40 mL Vial	10 day	
EB2-071013	7/10/13 15:30	WQ	HCl	6 - 40 mL Vial	10 day	

Special Instructions: *Sample: Root*

Relinquished by	Date	Time	Received by	Date	Time
<i>Steph Jumper</i>	<i>07/10/2013</i>	<i>1600</i>			
			<i>Grandy Barclay</i>	<i>7-11-13</i>	<i>920</i>

13013 1403202 7123467-80

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 7/10/2013  
 Carrier Name: FedEx  
 Airbill No: 796201570730  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130710-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB2-071013	7/10/13 15:30	WQ	None	4 - 1 L Amber	10 day	
EB2-071013	7/10/13 15:30	WQ	None	3 - 250 mL Amber	10 day	
EB2-071013	7/10/13 15:30	WQ	HNO3 pH-2	1 - 250 mL Poly	10 day	
EB2-071013	7/10/13 15:30	WQ	None	1 - 250 mL Poly	10 day	
EB1-071013	7/10/13 15:00	WQ	None	3 - 250 mL Amber	10 day	
EB1-071013	7/10/13 15:00	WQ	HNO3 pH-2	1 - 250 mL Poly	10 day	
EB2-071013	7/10/13 15:30	WQ	None	1 - 250 mL Poly	10 day	

Special Instructions: *Part of*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>Steph...</i>	7/10/13	16:00									

*Barney 9-11-13 920*  
*Barney*



13013 1403202 7123467-80

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 7/10/2013  
 Carrier Name: FedEx  
 Airbill No: 796201570730  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130710-04  
 Cooler #: 4  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-071012	7/10/12 08:00	WQ	HCl	6 - 40 ml Vial	10 day	
SL-572-SAB-SB-4.0-5.0	7/10/13 11:10	SO	None	2 - Encore	10 day	
SL-572-SAB-SB-9.0-10.0	7/10/13 11:30	SO	None	2 - Encore	10 day	
SL-572-SAB-SB-14.0-15.0	7/10/13 11:45	SO	None	2 - Encore	10 day	
SL-572-SAB-SB-18.5-19.5	7/10/13 12:00	SO	None	5 - Encore	10 day	
SL-573-SAB-SB-4.0-5.0	7/10/13 09:30	SO	None	2 - Encore	10 day	
SL-573-SAB-SB-9.5-10.5	7/10/13 09:45	SO	None	2 - Encore	10 day	
SL-571-SAB-SB-0.0-0.5	7/10/13 14:15	SO	None	2 - SS-Sleeve	10 day	
SL-571-SAB-SB-0.0-0.5	7/10/13 14:15	SO	None	1 - 4 oz glass	10 day	
SL-571-SAB-SB-6.5-7.5	7/10/13 14:50	SO	None	2 - 16 oz glass	10 day	
SL-571-SAB-SB-12.5-13.5	7/10/13 15:05	SO	None	2 - 16 oz glass	10 day	
SL-571-SAB-SB-6.5-7.5	7/10/13 14:50	SO	None	2 - Encore	10 day	
SL-571-SAB-SB-12.5-13.5	7/10/13 15:05	SO	None	2 - Encore	10 day	

Special Instructions:  
 Relinquished by: *[Signature]* Date: 7/10/2013 Time: 1600  
 Received by: *[Signature]* Date: 9-11-13 Time: 920  
 Other Analysis/Notes: *[Signature]*

# **SAMPLE DELIVERY GROUP**

**PH065**





# **SAMPLE DELIVERY GROUP**

**PH066**





**SAMPLE DELIVERY GROUP**

**PH067**



13013 140472 7128144-59

# SSFL Phase 3 Chain of Custody

CDM Smith  
 Date Shipped: 7/15/2013  
 Carrier Name: FedEx  
 Airbill No: 796234301173

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130715-02  
 Cooler #: 2

Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-071513	7/15/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-501-SAB-SB-4.0-5.0	7/15/13 11:30	SO	None	2 - Encore	10 day	
SL-501-SAB-SB-9.0-10.0	7/15/13 11:45	SO	None	2 - Encore	10 day	
SL-501-SAB-SB-12.0-13.0	7/15/13 12:00	SO	None	2 - Encore	10 day	
SL-502-SAB-SB-4.0-5.0	7/15/13 09:30	SO	None	2 - Encore	10 day	
SL-502-SAB-SB-7.5-8.5	7/15/13 10:15	SO	None	2 - Encore	10 day	
SL-503-SAB-SB-0.0-0.5	7/15/13 14:55	SO	None	2 - SS-Sieve	10 day	
SL-503-SAB-SB-0.0-0.5	7/15/13 14:55	SO	None	1 - 4 oz glass	10 day	
SL-503-SAB-SB-3.0-4.0	7/15/13 15:05	SO	None	2 - 16 oz glass	10 day	
SL-511-SAB-SB-0.0-0.5	7/15/13 14:15	SO	None	2 - SS-Sieve	10 day	
SL-511-SAB-SB-0.0-0.5	7/15/13 14:15	SO	None	1 - 4 oz glass	10 day	
SL-511-SAB-SB-6.0-7.0	7/15/13 14:30	SO	None	2 - 16 oz glass	10 day	
SL-503-SAB-SB-3.0-4.0	7/15/13 15:05	SO	None	2 - Encore	10 day	
SL-511-SAB-SB-6.0-7.0	7/15/13 14:30	SO	None	2 - Encore	10 day	

Special Instructions: *None*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/15/13	10:00	<i>[Signature]</i>	7/16/13	09:20						

# **SAMPLE DELIVERY GROUP**

**PH068**



acct# 13013 Grp# 1404641 Sample# 7129591-606  
**SSFL Phase 3 Chain of Custody**

CDM Smith  
 Date Shipped: 7/16/2013  
 Carrier Name: FedEx  
 Airbill No: 796244297112

COC No: 20130716-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-507-SAB-SB-0.0-0.5	7/16/13 12:55	SO	None	2 - 55-Sleeve	10 day	
SL-507-SAB-SB-0.0-0.5	7/16/13 12:55	SO	None	2 - 4 oz glass	10 day	
SL-507-SAB-SB-3.0-4.0	7/16/13 13:10	SO	None	2 - 16 oz glass	10 day	
SL-507-SAB-SB-3.0-4.0	7/16/13 13:10	SO	None	1 - 4 oz glass	10 day	
SL-508-SAB-SB-0.0-0.5	7/16/13 13:30	SO	None	2 - 55-Sleeve	10 day	
SL-508-SAB-SB-0.0-0.5	7/16/13 13:30	SO	None	2 - 4 oz glass	10 day	

Special Instructions: *Samples for 11/13/1000*

Sampler: *V. Cortes*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/16/13	1600									
									<i>[Signature]</i>	7/17/13	0920

# **SAMPLE DELIVERY GROUP**

**PH069**

Cocct # 13013 Cup # 1405000 sample # 7130895-908

### SSFL Phase 3 Chain of Custody

**CDM Smith**      **COC No:** 20130717-01  
**Date Shipped:** 7/17/2013      **Cooler #:** 1  
**Carrier Name:** FedEx      **Lab:** Lancaster  
**Airbill No:** 796254894934      **Lab Phone:** 717-556-7259  
**Contact Name:** Pam Hartman      **Lab Address:** 2425 New Holland Pike  
**Contact Phone:** (818)466-8007      Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB1-071713	7/17/13 15:00	WQ	HCl	2 - 1 L Amber	10 day	
EB1-071713	7/17/13 15:00	WQ	None	4 - 1 L Amber	10 day	
EB2-071713	7/17/13 15:30	WQ	HCl	2 - 1 L Amber	10 day	
EB1-071713	7/17/13 15:00	WQ	HCl	6 - 40 mL Vial	10 day	
EB1-071713	7/17/13 15:00	WQ	None	1 - 40 mL Vial	10 day	
EB2-071713	7/17/13 15:30	WQ	HCl	3 - 40 mL Vial	10 day	

**Special Instructions:** *P. Hartman*  
**Sampler:** *P. Hartman*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/17/2013	14:00	<i>Burandy</i>	7-18-13	9:25







**SAMPLE DELIVERY GROUP**

**PH070**





# **SAMPLE DELIVERY GROUP**

**PH071**

**Coast # 13013 Cp # 1405502 Sample # 7133304-14  
SSFL Phase 3 Chain of Custody**

**CDM Smith**  
 Date Shipped: 7/19/2013  
 Carrier Name: FedEx  
 Airbill No: 796274675913  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130719-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/ Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-516-SAB-SB-0.0-0.5	7/19/13 08:00	SO	None	2 - SS-Sleeve	10 day	
SL-516-SAB-SB-0.0-0.5	7/19/13 08:00	SO	None	1 - 4 oz glass	10 day	
SL-521-SAB-SB-0.0-0.5	7/19/13 07:30	SO	None	2 - SS-Sleeve	10 day	
SL-521-SAB-SB-0.0-0.5	7/19/13 07:30	SO	None	1 - 4 oz glass	10 day	
SL-517-SAB-SB-0.0-0.5	7/19/13 09:30	SO	None	2 - SS-Sleeve	10 day	
SL-517-SAB-SB-0.0-0.5	7/19/13 09:30	SO	None	2 - 4 oz glass	10 day	
SL-517-SAB-SB-3.0-4.0	7/19/13 09:40	SO	None	2 - 16 oz glass	10 day	
SL-517-SAB-SB-3.0-4.0	7/19/13 09:40	SO	None	1 - 4 oz glass	10 day	
SL-517-SAB-SB-3.0-4.0	7/19/13 09:40	SO	None	2 - Encore	10 day	
SL-518-SAB-SB-0.0-0.5	7/19/13 08:20	SO	None	2 - SS-Sleeve	10 day	
SL-518-SAB-SB-4.0-5.0	7/19/13 09:00	SO	None	2 - 4 oz glass	10 day	
SL-518-SAB-SB-4.0-5.0	7/19/13 09:00	SO	None	2 - 16 oz glass	10 day	
SL-518-SAB-SB-4.0-5.0	7/19/13 09:00	SO	None	1 - 4 oz glass	10 day	
SL-518-SAB-SB-4.0-5.0	7/19/13 09:00	SO	None	2 - Encore	10 day	
SL-532-SAB-SB-0.0-0.5	7/19/13 10:30	SO	None	2 - SS-Sleeve	10 day	
SL-532-SAB-SB-0.0-0.5	7/19/13 10:30	SO	None	1 - 4 oz glass	10 day	
SL-532-SAB-SB-6.5-7.5	7/19/13 10:55	SO	None	2 - 16 oz glass	10 day	
SL-532-SAB-SB-6.5-7.5	7/19/13 10:55	SO	None	2 - Encore	10 day	
TB-071913	7/19/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-606-SAB-SB-4.0-5.0	7/19/13 13:20	SO	None	2 - Encore	10 day	

COC # 20130719-01, Page 1 of 2  
 PH001 Page 89 of 217 Part 3  
 Page 19 of 83 of SSFL  
 7/20/13 0915  
 10/2





**SAMPLE DELIVERY GROUP**

**PH072**

13013 1405909 7135364-73

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 7/22/2013  
 Carrier Name: FedEx  
 Airbill No: 796287040463  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130722-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-550-SA8-SB-0.0-0.5	7/22/13 08:30	SO	None	2 - 55-Sieve	10 day	
SL-550-SA8-SB-0.0-0.5	7/22/13 08:30	SO	None	1 - 4 oz glass	10 day	
SL-550-SA8-SB-4.0-5.0	7/22/13 09:00	SO	None	2 - 16 oz glass	10 day	
SL-550-SA8-SB-9.0-10.0	7/22/13 09:15	SO	None	2 - 16 oz glass	10 day	
SL-550-SA8-SB-14.0-15.0	7/22/13 09:30	SO	None	2 - 16 oz glass	10 day	
SL-550-SA8-SB-17.0-18.0	7/22/13 09:45	SO	None	2 - 16 oz glass	10 day	

Special Instructions: *V. Carter*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/22/2013	10:00	<i>[Signature]</i>	7/23/13	9:20

13013 1405909 7135364-73

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 7/22/2013  
 Carrier Name: FedEx  
 Airbill No: 796287040463  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130722-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-550-SAB-SB-4.0-5.0	7/22/13 09:00	SO	None	2 - Encore	10 day	
SL-550-SAB-SB-9.0-10.0	7/22/13 09:15	SO	None	2 - Encore	10 day	
SL-550-SAB-SB-14.0-15.0	7/22/13 09:30	SO	None	2 - Encore	10 day	
SL-550-SAB-SB-17.0-18.0	7/22/13 09:45	SO	None	2 - Encore	10 day	
TB-072213	7/22/13 08:00	WQ	HCl	3 - 60 ml Vial	10 day	
SL-554-SAB-SB-0.0-0.5	7/22/13 13:30	SO	None	2 - SS-Sleeve	10 day	
SL-554-SAB-SB-0.0-0.5	7/22/13 13:30	SO	None	1 - 4 oz glass	10 day	
SL-554-SAB-SB-4.0-5.0	7/22/13 14:00	SO	None	2 - 16 oz glass	10 day	
SL-554-SAB-SB-4.0-5.0	7/22/13 14:00	SO	None	2 - Encore	10 day	
SL-556-SAB-SB-0.0-0.5	7/22/13 11:30	SO	None	2 - SS-Sleeve	10 day	
SL-556-SAB-SB-0.0-0.5	7/22/13 11:30	SO	None	1 - 4 oz glass	10 day	
SL-556-SAB-SB-4.0-5.0	7/22/13 12:00	SO	None	2 - 16 oz glass	10 day	
SL-556-SAB-SB-4.0-5.0	7/22/13 12:00	SO	None	2 - Encore	10 day	

Special Instructions: *V. Costello*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/22/13	16:00	<i>[Signature]</i>	7/23/13	9:20

Relinquished by: *[Signature]*  
 Received by: *[Signature]*  
 Date: 7/23/13 9:20  
 Time:

# **SAMPLE DELIVERY GROUP**

**PH073**





# **SAMPLE DELIVERY GROUP**

**PH074**

acct # 13013 Cp # 1406760 sample # 7139498-505

### SSFL Phase 3 Chain of Custody

**CDM Smith** COC No: 20130724-01  
 Date Shipped: 7/24/2013 Cooler #: 1  
 Carrier Name: FedEx Lab: Lancaster  
 Airbill No: 796309414454 Lab Phone: 717-556-7259  
Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-527-SAB-SB-0-0-0.5	7/24/13 08:50	SO	None	2 - SS-Sleeve	10 day	
SL-527-SAB-SB-0-0-0.5	7/24/13 08:50	SO	None	1 - 4 oz glass	10 day	
SL-527-SAB-SB-4-0-5.0	7/24/13 09:20	SO	None	2 - 16 oz glass	10 day	
SL-528-SAB-SB-4-0-5.0	7/24/13 13:55	SO	None	2 - 16 oz glass	10 day	

Special Instructions: **Sampler: Bennett**

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/24/13	1600	<i>[Signature]</i>	7/25/13	0915						





# **SAMPLE DELIVERY GROUP**

**PH075**



Acc # 13013 Cp # 1407089

Sample # 714111-21

# SSFL Phase 3 Chain of Custody

CDM Smith

Date Shipped: 7/25/2013

Carrier Name: FedEx

Airbill No: 796320134625

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130725-02

Cooler #: 2

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-523-SAB-SB-4-0-5-0MS	7/25/13 08:20	SO	None	6 - 16 oz glass	10 day	
SL-823-SAB-SB-4-0-5-0	7/25/13 08:50	SO	None	2 - 16 oz glass	10 day	
SL-524-SAB-SB-4-0-5-0	7/25/13 10:00	SO	None	2 - 16 oz glass	10 day	
SL-525-SAB-SB-0-0-0-5	7/25/13 13:05	SO	None	2 - 55-Sieve	10 day	
SL-525-SAB-SB-0-0-0-5	7/25/13 13:05	SO	None	1 - 4 oz glass	10 day	
SL-525-SAB-SB-4-0-5-0	7/25/13 13:38	SO	None	2 - 16 oz glass	10 day	

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/25/2013	16:00	<i>[Signature]</i>	7/26/13	9:15

Sampler: *Bennett*

*Branche*  
*Bauchy*

101  
Page 87 of 90

CC# 13013 Cup# 1407089

Sample# 7171111-21

# SSFL Phase 3 Chain of Custody

CDM Smith

Date Shipped: 7/25/2013

Carrier Name: FedEx

Airbill No: 796320134625

COC No: 20130725-03

Cooler #: 2

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around	Other Analysis/Notes
SL-523-SAB-SB-4.0-5.0MS	7/25/13 08:20	SO	None	6 - Encore	10 day	
SL-823-SAB-SB-4.0-5.0	7/25/13 08:50	SO	None	2 - Encore	10 day	
TB-072513	7/25/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-524-SAB-SB-4.0-5.0	7/25/13 10:00	SO	None	2 - Encore	10 day	
SL-525-SAB-SB-4.0-5.0	7/25/13 13:38	SO	None	2 - Encore	10 day	

Special Instructions:

*See Memo for 2013/07/06*

Sampler: *J. Barnett*

Relinquished by	Date	Time	Received by	Date	Time
<i>See Memo for 2013/07/06</i>					

*Kennedy Bandy 0.2615  
915*

# **SAMPLE DELIVERY GROUP**

**PH076**



Acc# 13013 Cp# 1407316 Sample# 714 2200-09

### SSFL Phase 3 Chain of Custody

**CDM Smith**      **COC No:** 20130726-02  
**Date Shipped:** 7/26/2013      **Cooler #:** 1  
**Carrier Name:** FedEx      **Lab:** Lancaster  
**Airbill No:**      **Lab Phone:** 717-556-7259  
**Contact Name:** Pam Hartman      **Lab Address:** 2425 New Holland Pike  
**Contact Phone:** (818)466-8007      Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-539B-SAB-SB-2.0-3.0	7/26/13 08:15	SO	None	2 - Encore	10 day	
SL-540-SAB-SB-4.0-5.0	7/26/13 10:15	SO	None	2 - Encore	10 day	
TB-072613	7/26/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-522-SAB-SB-4.0-5.0	7/26/13 13:20	SO	None	2 - Encore	10 day	

**Special Instructions:**

**Sampler:** *Orbenette*

Relinquished by	Date	Time	Received by	Date	Time
<i>Samuel Lopez</i>	7/26/2013	10:00	<i>Don Heath</i>	7/26/13	09:35

# **SAMPLE DELIVERY GROUP**

**PH078**

13013 1407079 7143810-16

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 7/29/2013  
 Carrier Name: FedEx  
 Airbill No: 796342615190  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130729-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB1-072913	7/29/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-529-SAB-SB-0.0-0.5	7/29/13 12:10	SO	None	2 - 55-Sleeve	10 day	X
SL-529-SAB-SB-4.0-5.0	7/29/13 12:10	SO	None	1 - 4 oz glass	10 day	X
SL-529-SAB-SB-4.0-5.0	7/29/13 12:40	SO	None	2 - 16 oz glass	10 day	X
SL-529-SAB-SB-4.0-5.0	7/29/13 12:40	SO	None	2 - Encore	10 day	X
SL-526-SAB-SB-0.0-0.5	7/29/13 13:20	SO	None	2 - 55-Sleeve	10 day	X
SL-526-SAB-SB-0.0-0.5	7/29/13 13:20	SO	None	1 - 4 oz glass	10 day	X
SL-526-SAB-SB-4.0-5.0	7/29/13 13:45	SO	None	2 - 16 oz glass	10 day	X
SL-526-SAB-SB-4.0-5.0	7/29/13 13:45	SO	None	2 - Encore	10 day	X

Special Instructions: **MBemento**

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	7/29/13	16:00	<i>[Signature]</i>	7/30/13	09:25

PH078 Page 45 of 2167  
Page 36 of 38

# **SAMPLE DELIVERY GROUP**

**PH080**

13013 1408030 7145266-75

# SSFL Phase 3 Chain of Custody

CDM Smith

Date Shipped: 7/30/2013

Carrier Name: FedEx

Airbill No: 796353135781

Contact Name: Pam Hartman

Contact Phone: (818)466-8007

COC No: 20130730-02

Cooler #: 2

Lab: Lancaster

Lab Phone: 717-556-7259

Lab Address: 2425 New Holland Pike  
Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-073013	7/30/13 08:00	WQ	None	3 - 40 ml Vial	10 day	
SL-560-SAB-SB-0.0-0.5	7/30/13 07:50	SO	None	2 - SS-Sieve	10 day	
SL-560-SAB-SB-0.0-0.5	7/30/13 07:50	SO	None	1 - 4 oz glass	10 day	
SL-560-SAB-SB-4.0-5.0	7/30/13 08:10	SO	None	2 - 16 oz glass	10 day	
SL-560-SAB-SB-4.0-5.0	7/30/13 08:10	SO	None	2 - Encore	10 day	
SL-549-SAB-SB-0.0-0.5	7/30/13 09:00	SO	None	2 - SS-Sieve	10 day	
SL-549-SAB-SB-0.0-0.5	7/30/13 09:00	SO	None	1 - 4 oz glass	10 day	
SL-549-SAB-SB-4.0-5.0	7/30/13 09:30	SO	None	2 - 16 oz glass	10 day	
SL-549-SAB-SB-4.0-5.0	7/30/13 09:30	SO	None	2 - Encore	10 day	
SL-612-SAB-SB-0.0-0.5	7/30/13 10:40	SO	None	2 - SS-Sieve	10 day	
SL-612-SAB-SB-0.0-0.5	7/30/13 10:40	SO	None	1 - 4 oz glass	10 day	
SL-612-SAB-SB-4.0-5.0	7/30/13 11:00	SO	None	2 - 16 oz glass	10 day	
SL-612-SAB-SB-4.0-5.0	7/30/13 11:00	SO	None	2 - Encore	10 day	
SL-596-SAB-SB-0.0-0.5	7/30/13 13:40	SO	None	4 - 8 oz glass	10 day	
SL-596-SAB-SB-0.0-0.5	7/30/13 13:40	SO	None	1 - 4 oz glass	10 day	
SL-589-SAB-SB-0.0-0.5	7/30/13 12:50	SO	None	2 - SS-Sieve	10 day	
SL-589-SAB-SB-0.0-0.5	7/30/13 12:50	SO	None	1 - 4 oz glass	10 day	
SL-589-SAB-SB-2.5-3.5	7/30/13 13:00	SO	None	2 - 16 oz glass	10 day	
SL-589-SAB-SB-2.5-3.5	7/30/13 13:00	SO	None	2 - Encore	10 day	

COC Rev 2

Rec'd By: Pat Ga  
PH080 Page 79 of 2691  
ELL Page 79 of 78 0910

COC: 20130730-02, Page 1 of 2



# **SAMPLE DELIVERY GROUP**

**PH081**



# **SAMPLE DELIVERY GROUP**

**PH082**

# SSFL Phase 3 Chain of Custody

13013 1408723 7148140-48

CDM Smith  
 Date Shipped: 8/1/2013  
 Carrier Name: FedEx  
 Airbill No: 796373064397

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130801-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB1-080113	8/1/13 15:00	WQ	HCl	2 - 1 L Amber	10 day	
EB1-080113	8/1/13 15:00	WQ	None	2 - 1 L Amber	10 day	
EB2-080113	8/1/13 15:30	WQ	HCl	2 - 1 L Amber	10 day	
EB2-080113	8/1/13 15:30	WQ	None	2 - 1 L Amber	10 day	

**Special Instructions:**

Sampler: *P. Hartman*

Relinquished by	Date	Time	Received by	Date	Time
<i>Steph Myer</i>	08/01/2013	1600			
			<i>CS</i>	8/2/13	0915

13013 1408723- 7148140-48

# SSFL Phase 3 Chain of Custody

COC No: 20130801-02  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

CDM Smith  
 Date Shipped: 8/1/2013  
 Carrier Name: FedEx  
 Airbill No: 796373064397

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB1-080113	8/1/13 15:00	WQ	HNO3 pH<2	1 - 250 ml Poly	10 day	
EB1-080113	8/1/13 15:00	WQ	None	2 - 250 ml Amber	10 day	
EB1-080113	8/1/13 15:00	WQ	None	1 - 250 ml Poly	10 day	
EB1-080113	8/1/13 15:00	WQ	HCl	3 - 40 ml Vial	10 day	
EB2-080113	8/1/13 15:30	WQ	None	3 - 250 ml Amber	10 day	
EB2-080113	8/1/13 15:30	WQ	HNO3 pH<2	1 - 250 ml Poly	10 day	
EB2-080113	8/1/13 15:30	WQ	None	1 - 250 ml Poly	10 day	
EB2-080113	8/1/13 15:30	WQ	HCl	3 - 40 ml Vial	10 day	
EB2-080113	8/1/13 15:30	WQ	None	2 - 1 L Amber	10 day	

Special Instructions: *Pam Hartman*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>Sgt Myles</i>	8/8/13	16:00									
									<i>C. Smith</i>	8/13/13	0915



# SSFL Phase 3 Chain of Custody

COC No: 20130801-03  
 Cooler #: 3  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

CDM Smith  
 Date Shipped: 8/1/2013  
 Carrier Name: FedEx  
 Airbill No: 796373064397

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-610-SAB-SB-0.0-0.5	8/1/13 08:00	SO	None	2 - 55-Sieve	30 day	
SL-610-SAB-SB-0.0-0.5	8/1/13 08:00	SO	None	1 - 4 oz glass	30 day	
SL-610-SAB-SB-4.0-5.0	8/1/13 08:20	SO	None	2 - 55-Sieve	30 day	
SL-610-SAB-SB-4.0-5.0	8/1/13 08:20	SO	None	1 - 4 oz glass	30 day	
SL-610-SAB-SB-6.8-7.8	8/1/13 09:00	SO	None	2 - 55-Sieve	30 day	
SL-610-SAB-SB-6.8-7.8	8/1/13 09:00	SO	None	1 - 4 oz glass	30 day	
SL-610-SAB-SB-4.0-5.0	8/1/13 08:20	SO	None	2 - Encone	10 day	
SL-610-SAB-SB-6.8-7.8	8/1/13 09:00	SO	None	2 - 55-Sieve	30 day	
SL-608-SAB-SB-0.0-0.5	8/1/13 12:30	SO	None	1 - 4 oz glass	30 day	
SL-608-SAB-SB-0.0-0.5	8/1/13 12:30	SO	None	2 - Encone	30 day	
SL-608-SAB-SB-4.0-5.0	8/1/13 13:00	SO	None	2 - 55-Sieve	30 day	
SL-608-SAB-SB-4.0-5.0	8/1/13 13:00	SO	None	1 - 4 oz glass	30 day	
SL-608-SAB-SB-7.0-8.0	8/1/13 13:45	SO	None	2 - Encone	30 day	
SL-608-SAB-SB-7.0-8.0	8/1/13 13:45	SO	None	2 - 55-Sieve	30 day	
SL-608-SAB-SB-7.0-8.0	8/1/13 13:45	SO	None	1 - 4 oz glass	30 day	
SL-608-SAB-SB-7.0-8.0	8/1/13 13:45	SO	None	2 - Encone	30 day	
7B-080113	8/1/13 08:00	WQ	HC	3 - 40 ml Vial	30 day	

Revised COC received 8/5/13  
 MKG 8/5/13

COC: 20130801-03 Page 1 of 2

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 8/1/2013  
 Carrier Name: FedEx  
 Airbill No: 796373064397  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601  
 COC No: 20130801-03  
 Cooler #: 3  
 Lab: Lancaster

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
						Methyl Mercury 1630
						Oranotin
						NDMA 1625
						Formaldehyde 8315
						Cyanide 9012
						Energetics 8330
						Nitrates 300.0/9056
						Terphenyls 8015
						Alcohols 8015
						Glycols 8015
						TPH-EFH 8015
						TPH-GRO 8015
						1,4 Dioxane 8260 SIM
						VOCs 8260
						Pesticides 8081
						Herbicides 8151
						Hex Cr 7196/7199
						pH 9040 (Water)
						pH 9045 (Soil)
						Perchlorate Confirm 6850/6860
						Perchlorate 314.0/331
						PCBs/PCT; 8082
						Dioxins 1613
						1,4 Dioxane 8270 SIM
						PAHs 8270 SIM
						TK 8270
						SVOC 8270
						Fluoride 300.0/9056
						Mercury 7470 (Water)
						Mercury 7471 (Soil)
						Metals 6010 and 6020

Special Instructions: *Sample*

Sampler: *OBennett*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time	Received by	Date	Time
<i>SSFL</i>	<i>08/01/2013</i>	<i>1600</i>									

Revised COC received 8/5/13 *mvz 8/5/13*

# **SAMPLE DELIVERY GROUP**

**PH083**

acc # 13013 Cp# 1409048 Sample # 7149850-59

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 8/2/2013  
 Carrier Name: FedEx  
 Airbill No: 796384004859  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130802-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TL-080213	8/2/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-552-SAB-SB-0.0-0.5	8/2/13 07:45	SO	None	2 - SS-Sleeve	10 day	
SL-552-SAB-SB-0.0-0.5	8/2/13 07:45	SO	None	1 - 4 oz glass	10 day	
SL-552-SAB-SB-4.0-5.0	8/2/13 08:45	SO	None	2 - SS-Sleeve	10 day	
SL-552-SAB-SB-4.0-5.0	8/2/13 08:45	SO	None	1 - 4 oz glass	10 day	
SL-552-SAB-SB-7.5-8.5	8/2/13 09:00	SO	None	2 - SS-Sleeve	10 day	
SL-552-SAB-SB-7.5-8.5	8/2/13 09:00	SO	None	1 - 4 oz glass	10 day	
SL-552-SAB-SB-4.0-5.0	8/2/13 08:45	SO	None	2 - Encore	10 day	
SL-552-SAB-SB-7.5-8.5	8/2/13 09:00	SO	None	2 - Encore	10 day	
SL-559-SAB-SB-0.0-0.5	8/2/13 09:30	SO	None	2 - SS-Sleeve	10 day	
SL-559-SAB-SB-0.0-0.5	8/2/13 09:30	SO	None	1 - 4 oz glass	10 day	
SL-559-SAB-SB-4.0-5.0	8/2/13 09:50	SO	None	2 - SS-Sleeve	10 day	
SL-559-SAB-SB-4.0-5.0	8/2/13 09:50	SO	None	1 - 4 oz glass	10 day	
SL-558-SAB-SB-0.0-0.5	8/2/13 12:20	SO	None	2 - SS-Sleeve	10 day	
SL-558-SAB-SB-0.0-0.5	8/2/13 12:20	SO	None	1 - 4 oz glass	10 day	
SL-558-SAB-SB-4.0-5.0	8/2/13 12:40	SO	None	2 - SS-Sleeve	10 day	
SL-558-SAB-SB-4.0-5.0	8/2/13 12:40	SO	None	1 - 4 oz glass	10 day	
SL-558-SAB-SB-9.0-10.0	8/2/13 13:00	SO	None	2 - SS-Sleeve	10 day	
SL-558-SAB-SB-9.0-10.0	8/2/13 13:00	SO	None	1 - 4 oz glass	10 day	
SL-558-SAB-SB-9.0-10.0	8/2/13 13:00	SO	None	2 - Encore	10 day	
SL-558-SAB-SB-12.5-13.5	8/2/13 13:40	SO	None	2 - SS-Sleeve	10 day	
SL-558-SAB-SB-12.5-13.5	8/2/13 13:40	SO	None	1 - 4 oz glass	10 day	
SL-558-SAB-SB-12.5-13.5	8/2/13 13:40	SO	None	2 - Encore	10 day	



# **SAMPLE DELIVERY GROUP**

**PH084**



**SAMPLE DELIVERY GROUP**

**PH085**



# **SAMPLE DELIVERY GROUP**

**PH086**





# **SAMPLE DELIVERY GROUP**

**PH087**

13013 1410304 7155504-09

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 8/8/2013  
 Carrier Name: FedEx  
 Airbill No: 796424999600  
 Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007  
 COC No: 20130808-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TL-080813	8/8/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-565-SAB-SB-0-0-0.5	8/8/13 07:40	SO	None	2 - SS-Sleeve	10 day	
SL-565-SAB-SB-0-0-0.5	8/8/13 07:40	SO	None	1 - 4 oz glass	10 day	
SL-565-SAB-SB-4-0-5.0	8/8/13 08:30	SO	None	2 - SS-Sleeve	10 day	
SL-565-SAB-SB-4-0-5.0	8/8/13 08:30	SO	None	1 - 4 oz glass	10 day	
SL-565-SAB-SB-4-0-5.0	8/8/13 08:30	SO	None	2 - Encore	10 day	
SL-567-SAB-SB-0-0-0.5	8/8/13 12:50	SO	None	2 - SS-Sleeve	10 day	
SL-567-SAB-SB-0-0-0.5	8/8/13 12:50	SO	None	1 - 4 oz glass	10 day	
SL-567-SAB-SB-4-0-5.0	8/8/13 13:25	SO	None	2 - SS-Sleeve	10 day	
SL-567-SAB-SB-4-0-5.0	8/8/13 13:25	SO	None	1 - 4 oz glass	10 day	
SL-567-SAB-SB-4-0-5.0	8/8/13 13:25	SO	None	2 - Encore	10 day	
SL-567-SAB-SB-9-0-10.0	8/8/13 14:40	SO	None	1 - SS-Sleeve	10 day	
SL-567-SAB-SB-9-0-10.0	8/8/13 14:40	SO	None	1 - 4 oz glass	10 day	
SL-567-SAB-SB-9-0-10.0	8/8/13 14:40	SO	None	2 - Encore	10 day	
SL-567-SAB-SB-9-0-10.0	8/8/13 14:40	SO	None	1 - 16 oz glass	10 day	

Special Instructions:  
 Relinquished by: *[Signature]* Date: 8/9/13  
 Received by: *[Signature]* Date: 8/9/13  
 Relinquished by: *[Signature]* Date: 8/9/13  
 Received by: *[Signature]* Date: 8/9/13

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	8/9/13	10:00	<i>[Signature]</i>	8/9/13	09:05

# **SAMPLE DELIVERY GROUP**

**PH088**



acct# 13013 Cp# 1410581 sample # 7156752-68  
**SSFL Phase 3 Chain of Custody**

CDM Smith  
 Date Shipped: 8/9/2013  
 Carrier Name: FedEx  
 Airbill No: 796435595690

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130809-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
						Methyl Mercury 1630
						Organotin
						NDMA 1625
						Formaldehyde 8315
						Cyanide 9012
						Energetics 8330
						Nitrates 300.0/9056
						Terphenyls 8015
						Alcohols 8015
						Glycols 8015
						TPH-EFH 8015
						TPH-GRO 8015
						1,4 Dioxane 8260 SIM
						VOCs 8260
						Pesticides 8081
						Herbicides 8151
						Hex Cr 7196/7199
						pH 9040 (Water)
						pH 9045 (Soil)
						Perchlorate Confirm 6850/6860
						Perchlorate 314.0/331
						PCBs/PCTs 8082
						Dioxins 1613
						1,4 Dioxane 8270 SIM
						PAHs 8270 SIM
						TIC 8270
						SVOC 8270
						Fluoride 300.0/9056
						Mercury 7470 (Water)
						Mercury 7471 (Soil)
						Metals 6010 and 6020

Special Instructions:

Sampler: *John Muro*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	8/9/2013	1600			
				8/10/13	945

# **SAMPLE DELIVERY GROUP**

**PH089**

# SSFL Phase 3 Chain of Custody

13013 1410969 7158598-607

CDM Smith  
 Date Shipped: 8/12/2013  
 Carrier Name: FedEx  
 Airbill No: 796446899679

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130812-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-081213	8/12/13 08:00	WQ	HQ	3 - 40 ml Vial	10 day	
SL-590-SAB-SB-0-0-0.5	8/12/13 10:20	SO	None	2 - SS-Sleeve	10 day	
SL-590-SAB-SB-4-0-0.5	8/12/13 10:45	SO	None	2 - SS-Sleeve	10 day	
SL-590-SAB-SB-4-0-5.0	8/12/13 10:45	SO	None	1 - 40 ml Vial	10 day	
SL-590-SAB-SB-4-0-5.0	8/12/13 10:45	SO	None	2 - Encore	10 day	
SL-590-SAB-SB-7-0-8.0	8/12/13 11:10	SO	None	2 - 16 oz glass	10 day	
SL-590-SAB-SB-7-0-8.0	8/12/13 11:10	SO	None	1 - 40 ml Vial	10 day	
SL-590-SAB-SB-7-0-8.0	8/12/13 11:10	SO	None	2 - Encore	10 day	
SL-591-SAB-SB-0-0-0.5	8/12/13 09:50	SO	None	2 - SS-Sleeve	10 day	
SL-591-SAB-SB-0-0-0.5	8/12/13 09:50	SO	None	1 - 4 oz glass	10 day	
SL-592-SAB-SB-0-0-0.5	8/12/13 09:00	SO	None	2 - SS-Sleeve	10 day	
SL-592-SAB-SB-0-0-0.5	8/12/13 09:00	SO	None	1 - 4 oz glass	10 day	
SL-592-SAB-SB-3-5-4.5	8/12/13 09:20	SO	None	2 - 16 oz glass	10 day	
SL-592-SAB-SB-3-5-4.5	8/12/13 09:20	SO	None	1 - 4 oz glass	10 day	
SL-592-SAB-SB-3-5-4.5	8/12/13 09:20	SO	None	2 - Encore	10 day	
SL-593-SAB-SB-0-0-0.5	8/12/13 08:05	SO	None	2 - SS-Sleeve	10 day	
SL-593-SAB-SB-0-0-0.5	8/12/13 08:05	SO	None	1 - 4 oz glass	10 day	
SL-593-SAB-SB-4-0-0.5	8/12/13 08:20	SO	None	2 - SS-Sleeve	10 day	
SL-593-SAB-SB-4-0-5.0	8/12/13 08:20	SO	None	1 - 4 oz glass	10 day	
SL-593-SAB-SB-4-0-5.0	8/12/13 08:20	SO	None	2 - Encore	10 day	
SL-585-SAB-SB-0-0-0.5	8/12/13 13:35	SO	None	2 - SS-Sleeve	10 day	
SL-585-SAB-SB-0-0-0.5	8/12/13 13:35	SO	None	1 - 4 oz glass	10 day	

- Methyl Mercury 1630
- Organotin
- NDMA 1625
- Formaldehyde 8315
- Cyanide 9012
- Energetics 8330
- Nitrates 300.0/9056
- Terphenyls 8015
- Alcohols 8015
- Glycols 8015
- TPH-EFH 8015
- TPH-GRO 8015
- 1,4 Dioxane 8260 SIM
- VOCs 8260
- Pesticides 8081
- Herbicides 8151
- Hex Cr 7196/7199
- pH 9040 (Water)
- pH 9045 (Soil)
- Perchlorate Confirm 6850/6860
- Perchlorate 314.0/331
- PCBs/PCTs 8082
- Dioxins 1613
- 1,4 Dioxane 8270 SIM
- PAHs 8270 SIM
- TIC 8270
- SVOC 8270
- Fluoride 300.0/9056
- Mercury 7470 (Water)
- Mercury 7471 (Soil)
- Metals 6010 and 6020



12013/1410909/715 8598-667

# SSFL Phase 3 Chain of Custody

COC No: 20130812-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

CDM Smith  
 Date Shipped: 8/12/2013  
 Carrier Name: FedEx  
 Airbill No: 796446899679

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-081213	8/12/13 08:00	WQ	HCl	3 - 40 mL Vial	10 day	
SL-590-SAB-SB-0-0-0.5	8/12/13 10:20	SO	None	2 - 55-Sieve	10 day	
SL-590-SAB-SB-4-0-5.0	8/12/13 10:45	SO	None	2 - 55-Sieve	10 day	
SL-590-SAB-SB-4-0-5.0	8/12/13 10:45	SO	None	1 - 40 mL Vial	10 day	
SL-590-SAB-SB-4-0-5.0	8/12/13 10:45	SO	None	2 - Encore	10 day	
SL-590-SAB-SB-7-0-8.0	8/12/13 11:10	SO	None	2 - 16 oz glass	10 day	
SL-590-SAB-SB-7-0-8.0	8/12/13 11:10	SO	None	1 - 40 mL Vial	10 day	
SL-590-SAB-SB-7-0-8.0	8/12/13 11:10	SO	None	2 - Encore	10 day	
SL-591-SAB-SB-0-0-0.5	8/12/13 09:50	SO	None	2 - 55-Sieve	10 day	
SL-591-SAB-SB-0-0-0.5	8/12/13 09:50	SO	None	1 - 4 oz glass	10 day	
SL-592-SAB-SB-0-0-0.5	8/12/13 09:50	SO	None	2 - 55-Sieve	10 day	
SL-592-SAB-SB-3.5-4.5	8/12/13 09:20	SO	None	1 - 4 oz glass	10 day	
SL-592-SAB-SB-3.5-4.5	8/12/13 09:20	SO	None	2 - 16 oz glass	10 day	
SL-592-SAB-SB-3.5-4.5	8/12/13 09:20	SO	None	1 - 4 oz glass	10 day	
SL-592-SAB-SB-3.5-4.5	8/12/13 09:20	SO	None	2 - Encore	10 day	
SL-593-SAB-SB-0-0-0.5	8/12/13 08:05	SO	None	2 - 55-Sieve	10 day	
SL-593-SAB-SB-0-0-0.5	8/12/13 08:05	SO	None	1 - 4 oz glass	10 day	
SL-593-SAB-SB-4-0-5.0	8/12/13 08:20	SO	None	2 - 55-Sieve	10 day	
SL-593-SAB-SB-4-0-5.0	8/12/13 08:20	SO	None	1 - 4 oz glass	10 day	
SL-593-SAB-SB-4-0-5.0	8/12/13 08:20	SO	None	2 - Encore	10 day	
SL-585-SAB-SB-0-0-0.5	8/12/13 13:35	SO	None	2 - 55-Sieve	10 day	
SL-585-SAB-SB-0-0-0.5	8/12/13 13:35	SO	None	1 - 4 oz glass	10 day	

Amended Amended COC received 8/13/13  
 On 8/13/13  
 MK2 8/13/13



# **SAMPLE DELIVERY GROUP**

**PH090**





**SAMPLE DELIVERY GROUP**

**PH091**





# **SAMPLE DELIVERY GROUP**

**PH092**



# **SAMPLE DELIVERY GROUP**

**PH094**

Acc# 13013 Cp# 1414780 Sample # 7177747-54

# SSFL Phase 3 Chain of Custody

**CDM Smith**      **COC No:** 20130827-01  
**Date Shipped:** 8/27/2013      **Cooler #:** 1  
**Carrier Name:** FedEx      **Lab:** Lancaster  
**Airbill No:** 796559389195      **Lab Phone:** 717-556-7259  
**Contact Name:** Pam Hartman      **Lab Address:** 2425 New Holland Pike  
**Contact Phone:** (818)466-8007      **Lancaster, PA 17601**

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
TB-082713	8/27/13 08:00	WQ	HCl	3 - 40 ml Vial	10 day	
SL-615-SAB-SB-0.0-0.5	8/27/13 10:00	SO	None	2 - 55-Sleeve	10 day	
SL-615-SAB-SB-0.0-0.5	8/27/13 10:00	SO	None	1 - 4 oz glass	10 day	
SL-553-SAB-SB-0.0-0.5	8/27/13 12:35	SO	None	2 - 55-Sleeve	10 day	
SL-553-SAB-SB-0.0-0.5	8/27/13 12:35	SO	None	1 - 4 oz glass	10 day	
SL-553-SAB-SB-4.0-5.0MS	8/27/13 12:50	SO	None	6 - 16 oz glass	10 day	MS/MSD
SL-553-SAB-SB-4.0-5.0MS	8/27/13 12:50	SO	None	6 - Encore	10 day	MS/MSD
SL-853-SAB-SB-4.0-5.0	8/27/13 13:00	SO	None	2 - 16 oz glass	10 day	
SL-853-SAB-SB-4.0-5.0	8/27/13 13:00	SO	None	2 - Encore	10 day	

Special Instructions: *V. Carter*

Relinquished by	Date	Time	Received by	Date	Time
<i>Sally Myers</i>	8/27/13	10:00	<i>Bruny</i>	8/28/13	9:20

# **SAMPLE DELIVERY GROUP**

**PH096**



13013 1415082 7179334-39

# SSFL Phase 3 Chain of Custody

**CDM Smith**  
 Date Shipped: 8/28/2013  
 Carrier Name: FedEx  
 Airbill No: 796569341835

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130828-04  
 Cooler #: 3  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB4-082813	8/28/13 15:30	WQ	HCl	2 - 1 L Amber	10 day	Subarea 8
EB4-082813	8/28/13 15:30	WQ	None	2 - 1 L Amber	10 day	Subarea 8
EB3-082813	8/28/13 15:00	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	Subarea 8
EB3-082813	8/28/13 15:00	WQ	None	3 - 250 mL Amber	10 day	Subarea 8
EB3-082813	8/28/13 15:00	WQ	None	1 - 250 mL Poly	10 day	Subarea 8
EB3-082813	8/28/13 15:00	WQ	HCl	3 - 40 mL Vial	10 day	Subarea 8
EB4-082813	8/28/13 15:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	Subarea 8
EB4-082813	8/28/13 15:30	WQ	None	2 - 250 mL Amber	10 day	Subarea 8
EB4-082813	8/28/13 15:30	WQ	None	1 - 250 mL Poly	10 day	Subarea 8
EB4-082813	8/28/13 15:30	WQ	None	2 - 250 mL Poly	10 day	Subarea 8
EB4-082813	8/28/13 15:30	WQ	None	2 - 40 mL Vial	10 day	Inorganics method EPA 300.0 for Nitrite as NO3, fluoride, sulfate, sulfite. (Subarea 8)

Special Instructions: *Patrol*

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time
<i>[Signature]</i>	08/28/2013	1400						
			<i>[Signature]</i>	8-29-13	0915			



# **SAMPLE DELIVERY GROUP**

**PH097**

# SSFL Phase 3 Chain of Custody

13013 145397 7180868-73

CDM Smith  
 Date Shipped: 8/29/2013  
 Carrier Name: FedEx  
 Airbill No: 796579709926

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

COC No: 20130829-01  
 Cooler #: 1  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
SL-604-SAB-SB-0.0-0.5MS	8/29/13 07:40	SO	None	3 - 16 oz glass	10 day	MS/MSD. Fluoride represents
SL-904-SAB-SB-0.0-0.5	8/29/13 07:45	SO	None	1 - 16 oz glass	10 day	Inorganic analysis EPA method 300.0 for Nitrite as NO3, fluoride, sulfate, sulfite.
SL-605-SAB-SB-0.0-0.5	8/29/13 07:30	SO	None	1 - 16 oz glass	10 day	
Methyl Mercury 1630						
Organotin						
NDMA 1625						
Formaldehyde 8315						
Cyanide 9012						
Energetics 8330						
Nitrates 300.0/9056						
Terphenyls 8015						
Alcohols 8015						
Glycols 8015						
TPH-EFH 8015						
TPH-GRO 8015						
1,4 Dioxane 8260 SIM						
VOCs 8260						
Pesticides 8081						
Herbicides 8151						
Hex Cr 7196/7199						
pH 9040 (Water)						
pH 9045 (Soil)			X		X	X
Perchlorate Confirm 6850/6860						
Perchlorate 314.0/331						
PCBs/PCTs 8082						
Dioxins 1613						
1,4 Dioxane 8270 SIM						
PAHs 8270 SIM						
TIC 8270						
SVOC 8270						
Fluoride 300.0/9056			X		X	X
Mercury 7470 (Water)						
Mercury 7471 (Soil)			X		X	X
Metals 6010 and 6020			X		X	X

Special Instructions:

Sampler: V. Cortez

Relinquished by	Date	Time	Received by	Date	Time
Subarea 8	8/29/13	1600	Subarea 8	8-29-13	0745

Subarea 8

# **SAMPLE DELIVERY GROUP**

**PH115**



13013 1421812 7213953

# SSFL Phase 3 Chain of Custody

COC No: 20130925-05  
 Cooler #: 2  
 Lab: Lancaster  
 Lab Phone: 717-556-7259  
 Lab Address: 2425 New Holland Pike  
 Lancaster, PA 17601

Contact Name: Pam Hartman  
 Contact Phone: (818)466-8007

CDM Smith  
 Date Shipped: 9/25/2013  
 Carrier Name: FedEx  
 Airbill No: 796770904674

Sample	Date/Time	Matrix	Preserv.	Type/No of Containers	Turn Around Time	Other Analysis/Notes
EB2-092513	9/25/13 15:30	WQ	HNO3 pH<2	1 - 250 mL Poly	10 day	
EB2-092513	9/25/13 15:30	WQ	None	3 - 250 mL Amber	10 day	
EB2-092513	9/25/13 15:30	WQ	None	4 - 1 L Amber	10 day	
EB2-092513	9/25/13 15:30	WQ	None	1 - 250 mL Poly	10 day	
EB2-092513	9/25/13 15:30	WQ	HCl	3 - 40 mL Vial	10 day	

Special Instructions: *P. Hartman*

Relinquished by	Date	Time	Received by	Date	Time
<i>[Signature]</i>	9/25/13	15:30	<i>[Signature]</i>	9/26/13	09:05

# **SAMPLE DELIVERY GROUP**

**PH117**

