1450
1555

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SD004 | BORING NUMBER 01

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6	Bl-DkGr clayey SILT w/ tr. f SAND leaf & wood frags & shell frags - WET		ML			1		0-6"	35.5"	MR-34"
10	DkGr/Gr - poorly graded f-m SAND w/ tr OM f-c shell frags. MOIST WET		SP			2		6-16"		
16	DkGr/Bl clayey SILT w/ tr f shell frags/f sand tr. OM leaf frag & wood frag. less clay. moist ~~WET~~		ML			3		16-24		
21	less OM. SAA less clay "even SILT w/ some tr. clay" moist/~~WET~~		ML							
27	SAA - more leaf frags & wood less clay moist/~~WET~~		ML			4		24-34"	DUP.	
30										
40	EOB - 34									
50										

US EPA RECORDS CENTER REGION 5
560002

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 8/27/01 | PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SD004	BORING NUMBER 02

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	black silt w/ trace clay, wet, strong organic odor, trace sand					1		0-6"		0-34.5" recovery
6"										
	s.a.a.					2		6-10"		
10"										
	dk gray sand, med grade, shells, organic odor, wet					3		10-17"		
17"										
	black silt w/ trace clay					4		17-24"		
24"										
	s.a.a.					5		24-36"		
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1431
1523

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 03

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- clayey SILT w/ tr fm SAND OM. shells leaf & wood frags - WET.					1		0-6"	37.5"	MR-37.5"
	SAA					2		6-11"		
10 11	DKGr/Bl- poorly graded f-m SAND - coarser near top & bottom					3		11-21		
20 21	WET									
	Bl- clayey SILT w/ tr. OM. - leaf & wood frags. less clay -					4		21-30	DOP	
30						5		30-38"		
	MOIST WET									
40	EOB-38'									
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED: 8/27/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1641

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SD004	BORING NUMBER 04

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- clayey SILT - SILT w/ clay, OM- leaf & wood frag shell sh frag f. sand	tr-	some			1		0-6	P-34.5"	MR-34"
10	MOIST/WET					2		6-12		
	SAA (less clay w/depth)									
20						3		12-24		
30						4		24-34		
	MOIST									
40	EOB-34"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/27/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE / JOSE / CHAD
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1632

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004-05

BORING NUMBER: 05

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/well graded f-c SAND w/ tr silt, OM leaf-shell frags ~~wet~~					1		0-3"	34"	
	BL-OLGr. clayey SILT w/ tr. f sand, OM leaf, wood shell frags					2		3-12	DUP	
10	MOIST									
	SAA									
20	thin lense w/ f SAND OM, leaf frags. shell @ 19"					3		12-24		
23 24	~~DKBr~~ - poorly graded f-m SAND tr OM, shell frag									
	SAA									
30						4		24-34"		
	EOB - 34"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/27/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1535

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 06

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/DkGr well graded f-c. SAND w/ tr. silt f-m gravel OM-leaf & shell frags WET					1		0-6	42"	penetration 42" MR-34
10	SAA					2		6-17"		
17										
20	Bl-DkGr-clayey SILT-SILT w/some clay w/tr. OM leaf/wood frags f-shell frags & shells. less clay					3		17-26		
30	SAA - less clay - SILT w/some clay MOIST					4		26-34"	DUP.	
40	EOB-34"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/27/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT. AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1550

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 07

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- clayey SILT w/ tr OM leaf, wood shell frags. WET					1		0-3"	36"	penetration MR-36" GAP-3-6"
	GAP-water 3-6"									
10	Gr/DkGr well graded f-c SAND w/ tr. silt f-m gravel OM- shells, & shell & wood frags. WET					2		3-12"		
	SAA					3		12-20"	DUP	
20	more silt f-m sand @ btm									
	DkGr/Bl clayey SILT - SILT w/ tr-some clay - f. shell frags, OM-leaf frags. MOIST					4		20-28		
30	SAA. MOIST					5		28-36		
40	EOB-36"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/27/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 8

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- Clayey SILT w/ tr. f. SAND OM leaf, shell frags WET					1		0-10"		39" recovery
10	Dk Gr/Bl well graded f-c. SAND. w/ tr. silt f-m gravel, OM shell & wood frags. WET					2		10-20		
20	Bl-Dk Gr clayey SILT-SILT w/ tr-some clay tr. OM leaf, shell, & wood frags. tr f-sand @ 20" MOIST					3		20-30		
	SAA					4		30-39		
	EOB-39"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1700

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SD004	09

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	mottled Gr/Br. Bl-clayey SILT w/tr. OM leaf frags, shell frags & wood frags					1		0-5"	P-31.5"	MR-29" SAT
	SAA					2		5-11"		
10	moist/wet									
11	Dk Gr/Gr well graded f-c. SAND w/tr-OM shell frag					3		11-14"		
14	moist wet									
20	Dk Gr/Bl- clayey SILT-SILT w/tr-some clay-OM leaf & wood frags, shells & shell frag (less clayey)					4		14-29	DUP	
	moist/wet									
30	EOB-29"									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/27/01
PAGE: 1 of 1
DRILLING METHOD: CORE
DRILLED BY:
LOGGED BY: MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. gray silt w/clay, trace sand, very moist, o.m., strong organic odor									recovery of 38"
	gray silt w/clay, very moist, o.m., strong organic odor					1		0-6"		
6"	s.a.a.					2		6-12"		
12"	gray silty sand w/shells, moist, well graded					3		12-19"		
	gray silt w/clay, very moist, o.m., strong organic odor									
17"	silty sand w/gravel + shells, poorly sorted, gray									
19"	gray silt w/clay, very moist, o.m., strong organic odor					4		19-30"		dup
30"	s.a.a.							30-38"		
35"	gray silt w/sand, o.m. slightly moist									
38"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk gray sand, med. grade, wet, strong organic odor + shells black silt w/ trace clay, wet, strong organic odor					1		0-6"		
6"	dk gray sand, med. grade, wet, organic odor					2		6-14"		
14"	black silt, slightly moist, strong organic odor					3		14-21"		
21"	S.a.a.					4		21-29.5"		
29.5										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1"	gray, poorly sorted sand, wet, shells, o.m.									recovery of 32" water partially in interval of 8-11"
	clayey silt, dk. gray, o.m., organic odor, wet,					1		0-7"		
7"	gray, well graded, med., sand, wet, shells, o.m.					2		7-12"		
12"	s.d.a.					3		12-21"		
21"	black silt w/trace clay, strong organic odor, slightly moist, shells, o.m., wood pieces					4		21-32"		
32"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	sand & gravel & rocks, lt. brown, wet, trace silt					1		0-7"		35" recovery 54" penetration standing water on sample
7"	black silt, very moist, o.m., organic odor					2		7-12"		
12"	S.a.a.					3		12-19"		
19"	med., gray, well graded sand, shells, o.m., wet					4		19-27"		dup
27"	S.a.a.					5		27-35"		
35"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 14

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1"	gravel & poorly sorted sand, gray, shells, wet, strong organic odor									recovery of 41"
6"	black silt w/trace clay, wet, strong organic odor					1		0-6"		standing water on sample
11.5"	s.a.a.					2		6-11.5"		
20"	dk. gray med. grade sand wood pieces, shells, very moist					3		11.5-20"		
41"	black silt, slight moisture, slight odor, few shells, few roots, few wood pieces					4		20-30"		
	s.a.a.					5		30-41"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1"	H. brown, poorly sorted sand, wet, shells									31" of recovery
	dk. gray silt w/clay, strong organic ~~mother~~ odor, o.m., very moist					1		0-6"		
6	S.a.a.					2		6-12"		
12	dk. gray silt, trace clay, trace sand, wood pieces, o.m., shells, strong organic odor, moist					3		12-20"		
20	gray, well graded sand, very moist					4		20-23"		
23"	clayey silt. dk. gray, strong organic odor, o.m., leaves, wood pieces, moist					~~4~~		~~20-31"~~		~~dup~~
31						5		23-31"		dup

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLI FOR FINE-GRAINED AND PARTLY ORGANIC S

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very Hig
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SD004	6

LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
Br/Gr. well graded f-c SAND and f-c. gravel w/ shell frag					1		0-8"	P-48"	MR-36" SAT
10 Bl- clayey SILT w/ tr. OM leaf frags/wood frags MOIST/WET					2		8		
Fr. f-m gravel & shell frags. SAA					3		12-24		
20 MOIST/WET									
SAA					4		24-36"	DUP	
30 thin <1/8" f-m sand w/ shell frags. SAA									
MOIST/WET									
40 EOB-36"									
50									
60									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	8/28/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE/JOSE
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECK FOR FINE-GRAINED AND PARTLY ORGANIC

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	black silt w/ trace clay, wet, strong organic odor, wood pieces					1		0-6"		recovery of 29" 0-3", 6" of water, then rest of ~~pe~~ sample
6"	s.a.a.					2		6-12"		
12"	dk. gray poorly sorted sand, shells, wet, organic odor					3		12-24"		
24"	black silt w/ sand & trace clay, wet, organic odor, shells					4		24-29"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/27/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

880

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SD004 | BORING NUMBER 18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br- well graded f-c SAND w/ f-m gravel-shell & wood frags tr. silt -WET					1		0-6"	42"	MK-33" STRAT Δ ≈5-
10	Bl-clayey SILT-SILT w/ tr-some clay OM-leaf, shell, wood frag tr f. SAND MOIST/WET					2		6-12"		5-16" 16-20"
	SAA ↑lense f. SAND & OM @ 12"					3		12-20"		20-23" 23-26"
20	Gr-poorly graded-f-m SAND tr silt f-m gravel tr OM-f. shell frags -moist-WET					4		20-23"		AT
23	Bl-clayey SILT → silt w/ tr. clay, OM shell frags, leaf frags					3 5		23-33"		
30	moist/WET									
	EOB-33"									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 8/28/01

PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1540

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	1" @ Top Br f-c SAND & f-c gravel shell frags. WET								P-42"	MR-28"
	Bl-clayey SILT w/tr OM-leaf frags MOIST/WET					1		0-6"		SAT
6										
10	Gr/Lt. poorly graded f-m SAND w/ f. shell frags. MOIST/WET					2		6-15"		
15										
	Bl clayey SILT w/tr. f. SAND shell frags & wood frags.									
20						3		15-28"		
26	MOIST/WET									
28	Bl-organic SILT-wood/shell frags-tr-clay(co)									
30	EOB-28"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE/JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION: SD004

BORING NUMBER: 20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1"	gray, poorly sorted sand w/ gravel + shells									32" of recovery
	silty sand, gray, poorly sorted, o.m.					1		0-4"		water standing on sample
3"	gray poorly sorted sand w/ gravel + shells									
4	gray silt w/ clay, moist, strong organic odor, roots, o.m.					2		4-12"		
12	s.a.a.					3		12-18"		~~drop~~ 1ft
18	gray + fine grade sand									
18.5	silt w/ clay + sand, gray, moist, shells, o.m.	wood pieces								
21"	gray sand w/ trace silt, poorly sorted, gravel, shells, o.m.					4		18-26"		drop
26	gray silt w/ clay, moist, organic odor, roots, o.m., trace shell fragments					5		26-32"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1045

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	1/ DkGr/Bl f-c SAND w/fc-gravel-shells-Bl-clayey SILT w/ tr OM leaf frags-detritus moist/WET		WET			1		1-7"	P-36"	MR = 25"
10	SAA moist/WET					2		7-14		
	DkGr-Bl- f-m SAND w/ tr-OM- shell frags									
	Bl- clayey SILT w/tr. OM					3		14-18		
20	DkGr/Bl- f-m SAND w/fgravel shell frags									
	Bl- clayey w/tr. OM detritus shell frags					4		18-25		
30	EOB-25"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE/JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0920

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
<4"	@ the top f-c. gravel tr-silt/f sand shell-WET									
	Bl-DkGr-clayey SILT w/tr OM leaf/wood frags. MOIST/WET					1		0-6	42"	MR-20"
	SAA.									
10						2		6-14"		
	MOIST/WET									
	Bl-DkGr. sandy SILT w/lense of f-m SAND 16-18" @ OM leaf/wood/shell frags.					3		14-20"		
20	MOIST/WET									
	⊠ 6-20"									
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY L ANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1"	poorly graded sand + gravel, gray, wet black silt w/clay, very moist, organic odor, O.M.,					1		0-6		penetration 48" recovery 29" standing water on sample
6"	S.a.a.					2		6-12		dup
12"	S.a.a.					3		12-20		
20"	fine lt. gray sand, wet					4		20-22		
22"						5		22-27		
27"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT. AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty, poorly sorted sand w/ gravel, wet					1		0-4"		29" of recovery standing water on sample
4	black clayey silt, strong organic odor, o.m., very moist					2		4-12"		
12	s.a.a.					3		12-21"		
21	dk. gray fine grade sand									
	black silt w/trace clay, o.m., moist, organic odor, leaves, wood pieces					4		21-28"		
28										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	poorly graded sand & gravel, gray w/ shells									27" recovery
2	black silt w/ trace clay, O.M., moist, strong organic odor					1		0-6"		42" penetration
6										standing water on sample
	s.a.a.					2		6-12"		
12										
	s.a.a.					3		12-21"		dup
21	~~fine grade, gray sand, wet~~									
21.5	Same as 2-6"					4		21-27"		
27										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
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HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1440

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	SAND & GRAVEL (f-c) <1" TOP. tr Bi-clayey SILT w/ tr. OM leaf/wood frags. WET					1		0-6"	P-42"	MR-26"
10	SAA MOIST/WET					2		6-12"		
20	SAA thin <1" lense of OM-leaf/wood/shell frags SAA					3		12-26"		
30	EOB-26"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE/JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1445

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 27

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Top 2" WET-Bl-clayey SILT w/ tr. OM leaf/wood frags MOIST/WET					1		0-6"	P-42"	MR-24"
	SAA									
10	f-m SAND w/ OM leaf/wood/shell frags.					2		6-12"		
	SAA									
	SAA					3		12-24"	DUP	
20	MOIST/WET									
30	EOB-24"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE/JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1442

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD002

BORING NUMBER: 28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	2" Br/Gr f-c SANDY f-c gravel tr. sil Shell frags WET								P-42"	MR-26"
	Bl clayey SILT w/tr. OM leaf/wood frags					1		2-6"		
	SAA					2		6-12"		
10	moist/WET									
	SAA					3		12-22		
20	moist/WET									
	Dk Gr/Bl f-m poorly graded SAND w/ tr. shells, shell & wood frags		WET			4		22-26"		
30	EOB-26"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE / JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1345

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	B1								P-48"	MR-33"
						1		0-6"		
	WET B1-DKGr-clayey SILT-SILT w/tr-some clay (less w/depth) tr. OM leaf frags/wood frags.					2		6-12"		
10										
						3		12-24"		
	MOIST/WET lense of shell frags (f-c) & wood frags									
20										
	SAA					4		24-33"		
30										
	EOB-33"									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE/JOSE

LOGGED BY: MARY LANNN

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1000

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	2" - Br - f-c SAND w/ f-c gravel shell frags WET								P 26"	MR-26"
	Bl-clayey SILT w/ tr OM leaf/wood/shell frags + gravel moist/WET					1		10" 2-8"	DUP	GAP- 18-23"
10	SAA					2		10 18" 8-16"		
20	GAP									
	Dk Br/Bl poorly graded f-m SAND w/lense of clayey silt + shells & frags WET					3		23-26"		
30	EOB-26"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE / JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0930

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SD004	31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/DK Gr - well graded f-c SAND w/ f-c gravel - tr. silt shell & wood/glass frags - WET					1		0-6	P-48	MR - 30" SAT GAP - between 19-25"
10	Bl - clayey SILT w/ tr OM - leaf/wood frags, f. gravel. MOIST/WET					2		6-12		
19	f-m SAND & shell frags @ btm. MOIST/WET					3		12-19		
20	GAP - water WATER									
25	DK Gr - poorly graded f-m SAND w/ c. shell frags & shell tr. silt & wood frags. MOIST/WET					4		25-30"		
30	EOB - 30"									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/28/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE / JOSE
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 32

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr-well graded f-c SAND w/tr. f-c gravel, shells & shell frag-		WET			1		0-4"		MR-30" SAT-
10	Bl- clayey-SILT w/tr. OM shell & leaf frags. tr. f. SAND MOIST/WET					2		4-12"		4-5" STRAT Δ 12-16" " 2 23" "
20	Lt/Gr-Br. poorly graded f-m SAND tr/ shells & frags & f. gravel WET					3		12-22"		
30	Bl- clayey SILT w/tr OM leaf & wood & shell frags. → SILT w/tr- stone clay MOIST/WET					4		22-30"		
40	EOB-30"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 33

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	poorly graded sand w/ gravel & rocks, gray, wet, o.m., shells, roots					1		0-4"		recovery of 31"
4"	black silt w/ trace clay & trace gravel & sand, o.m., shells, moist, organic odor					2		4-12"		water standing on sample penetration 48"
12"	s.a.a.					3		12-20"		dup
20"	poorly graded silty sand, gray, shells, o.m., organic odor, wet					4		20-27		
27"	black silt w/ trace clay, organic odor, o.m., slightly moist					5		27-31		
31"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 34

DEPTH (FEET)	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	black silt w/trace clay, moist, o.m., organic odor					1		0-6"		28" recovery 42" penetration
6"	s.a.a.					2		6-12"		
12"	gray poorly sorted sand, shells, wet					3		12-20"		
20"	black silt w/trace clay, o.m., wood pieces, leaves, roots, organic odor slight moisture					4		20-28		dup
28"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: Texan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECK FOR FINE-GRAINED AND PARTLY ORGANIC

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION SD004-

BORING NUMBER 35

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2"	Gravel w/ sand, brown, wet									recovery of 32" p.d. of 42"
	black silt, moist, organic odor, O.M.					1		0-7"		
7"	gray, med-coarse gray sand, wet, O.M., organic odor					2		7-11"		
11"	black silt, wet, roots, leaves, O.M., shell fragments, organic odor.					3		11-14"		
14"	gray, med-coarse sand, wet, O.M., organic odor, shell fragments					4		14-22"		
22"	black silty clayey silt, O.M., roots, strong organic odor					5		22-32"		
32"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0940

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 36

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- well graded f-c sand w/ f-c gravel w/tr. silt & clay shell frags - finer w/ depth. WET					1		0-6"	P-48"	MR-35"
10	Bl- clayey SILT w/tr OM leaf/wood frags, f. gravel MOIST/WET					2		6-12		
	SAA w/ tr. f. shell frags MOIST/WET					3		12-18		
20	DCGr poorly graded f-m SAND w/tr. silt, f-c. shell frags & wood frags. - coarser w/ depth f shells - c. shell frags f-c SAND w/ f. gravel - WET					4		18-29		
29 30	Bl- clayey SILT ~~w/~~ SILT w/tr-s. clay shell frags. OM-detrus MOIST/WET					5		29-35		
40	EOB - 35"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/28/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE / JOSE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD004

BORING NUMBER: 37

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	black clayey silt, moist, organic odor, o.m., shell fragments					1		0-6"		penetration 42" recovery 32" water standing on sample
6"	s.a.					2		6-12"		
12"	dk. gray, lg. grade, well sorted sand, shells, o.m., wet, organic odor					3		12-24"		
24"	black silt w/ trace clay, moist, o.m., organic odor					4		24-32"		dup
32"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: S0004

BORING NUMBER: 38

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	coarse, poorly sorted sand & gravel, brown, wet, O.M., shells					1		0-7"		31" recovery 42" p.d.
7"	black silt w/ trace clay, O.M.; roots, leaves, shell fragments, moist					2		7-12"		
12"	S.a.a.					3		12-24"		
24"	S.a.a.					4		24-31"		
31"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- ____
- ____

DATE DRILLED: 8/28/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1646

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: SL012

BORING NUMBER: 01

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brownish grey silt. some clay and roots. moist slight odor					1		0"-6"		
6"	Grey coarse sand. well sorted. trace silt + shell fragments. wet - faint odor					2		6"-12"		
12"	As above. decrease in grain size with depth.					3		12"-18"		
18"										18"-46" 1655 was pushed with a 3" Geoprobe tube. refusal encountered at 46"

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01

PAGE: 1 of 1

DRILLING METHOD: HA / Geoprobe

DRILLED BY: Joe / Sarah

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(14)

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 1

1655
1740

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
10	HA - 0-18"									MR-28" ? 46 18 28
20	Gr-f-c poorly graded SAND tr. silt, OM, shell frags, roots - WET					4		18-22"	28"	18 9 27 18 10
	Gr f-m poorly graded SAND SAA <1" Bl clayey silt lense @ 27 WET					5		22-27		
27 / 28	DkGr/Bl silty SAND w/ tr. clay shell frags. moist/WET					6		27-37		
32	Bl- clayey SILT w/tr OM leaf frag detrius. moist/WET									
37 / 40	DkGr/Bl silty SAND tr/ clay									
	Bl- clayey SILT w/tr OM leaf & shell frags, moist/WET					7		37 40-46		
50	EOB - 46"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01

PAGE: 2 of 2

DRILLING METHOD: HA / CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

10.49

(7)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 2

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br. SILT w/ tr. clay & OM root MOIST/WET					1		0-6		
	TI SAA									
	Gr/Br-silty f-c SAND tr OM shell WET					2		6-12		
10										
	Gr/Br-SAA					3		12-18		
20	CORE 18-54"									
30										
40										
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: of

DRILLING METHOD: HA/CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1050

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SL012

BORING NUMBER: 02

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										Penetration 18-54" 8/22/01 First 18" hand augered
10										
18										
20	Brown to dark brown coarse sand - rounded to subangular. Trace roots, shells, fine to medium gravel, slag. wet. Grain size decreasing with depth. trace silt.					4		18-30"		18"-54" pushed w/ Lexan 3" to 54" where resistance was encountered
30	Dark brown sand. as above					5 &		30"-37"		
37 ~~35~~										* recovery of 38" actual
40	Black organic silt. trace roots. moist - slight odor. Trace shell fragments increasing with depth					6		37"-49"		
50 49	Dark tan fine sand. trace shell fragments. moist - slight odor									
	Black silt. trace fine sand + organics moist - slight odor. trace					7		49-55		
55	medium gravel increasing w/depth									
60										
70										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger / Lexan

DRILLED BY: Joe / Sara L

LOGGED BY: Joe

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1103

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL012

BORING NUMBER: 03

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Br/Gr mottled P/B layer SILT w/ tr. f gravel OM-roots shell frags - moist/wet					1		0-6		
	SAA									
10	Br. silty f-c SAND w/ tr. OM - roots & shell frgs WET					2		6-12		
	CORE 12-24									
20										
30										
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/22/01

PAGE: of

DRILLING METHOD: HA/CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SL012	03

1115

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										First 12" augered by hand w/ 4" bucket
10										
	Dark brown - poorly sorted sand. rounded to subangular. trace shells, sticks, roots, fine gravel, silt. grain size decreasing w/ depth					3		12-24	12	SL012-03 P 12-5f 1115 8/22/01
20										
	As above. Dark tan. no roots observed					4		24-28		
28										
30	Black organic silt. trace roots and organic matter. trace wood moist. slight odor					5		28"-40"		
40	Black fine sand - ~~trace~~ some silt									
	Black organic silt as 28"-40"					6		40"-44		
44	Black fine sand, ~~trace~~ some silt & shells									
	Black organic silt. trace shells moist slight odor									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	PAGE
8/22/01	1 of 1

DRILLING METHOD: hand

DRILLED BY: Joe/Sarah

LOGGED BY: Jose

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1029

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SLO-12 | BORING NUMBER 4

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	LtGr- clayey SILT w/ tr OM-roots leaf frags MOIST/WET					1		0-7"	33'	MR-35"-36 GAP1"-between 9-10"
7										
10 9	Gr well graded f-c SAND tr OM w/ thin < 1/2" silt clayey flow Gr- poorly graded f-m SAND tr/silt. f-gravel-shell frags	Shell root	f-gravel from above			2		7-23"		0-33"
20										
23	WET									
30	D/C Gr/Bl clayey SILT w/ tr OM leaf frags w/ lenses. of f-c SAND w/ shells @ 25" and f-m-silty SAND @ 31-33" @ btm clayey SILT w/ f-m gravel		shell frags.					23-35-36"		DUP
33										
40	EOB - ~~33~~ "35-36"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 8/22/01

PAGE 2 of 2

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0932

(2)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Br/Gr clayey SILT tr OM roots moist/wet					1		0-6		
	SAA- less moist/wet					2		6-12		
10	CORE 12-42"									
20										
30										
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, DEBRIS FILL, SILT, HIGHLY ORGANIC (PEAT), SAND, SANDY CLAY, GRAVEL, CLAYEY SAND, SILTY CLAY, CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: of

DRILLING METHOD: HA/CORE

DRILLED BY: JOE/SARAH

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0938

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SL012

BORING NUMBER: 05

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									28"	Augered by hand w/ 3" auger head. Penetration w/ tube 12"-42"
10	~~Dark tan organic silt, trace roots, very moist, slight odor~~ SM									
	Dark tan to black poorly graded sand. trace shells and fine gravel. subrounded to subangular. wet - fecal odor					3		12"-20"		
20	Dark tan silt (some clay) moist									
21	Dark tan poorly graded sand. trace shells, slags fine gravel					4		20"-26"		
	Black clayey silt. trace sand									
26	Dark tan poorly graded sand, trace organics, shell fragments & fine gravel. wet - slight odor									
30	Black clayey silt. trace roots. very moist - slight odor					5		26"-32		
	Dark tan fine sand - trace shell fragments wet									
	Dark tan fine to medium gravel, rounded to subrounded. trace shells & poorly graded sand					6		32"-36"		
	Black silty sand. trace shell fragments. very moist					7		36"-40"		
40	Black clayey silt. trace shell fragments ~~trace rounded SM poorly sorted gravel~~									
	Black silty sand trace poorly sorted gravel (rounded). trace shell fragments - wet									
	Black clayey silt. trace poorly sorted gravel (rounded). moist - slight odor.									
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: 1 of 1

DRILLING METHOD: hexan

DRILLED BY: Joe / Sarah

LOGGED BY: Joe

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

(4)

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-	6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DK Br- SILT w/ tr OM roots DRY					1		0-6		
6	SAA									
10 9	Br-sf-c SAND w/ some silt tr OM DRY					2		6-12		
	SAA					3		12-24		
20	WET									
	CORE 24-54"									
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/22/01
PAGE	of
DRILLING METHOD	HA CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLI[illegible] FOR FINE-GRAINED AND PARTLY ORGANIC S[illegible]

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very Hig[illegible]
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

STIC 4035

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SCO-12	BORING NUMBER 6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									30"	54-24-30" MR-38" 24 62
10										
20	HA 0-24"									
30	Br-grading to Gr-well graded f-c. SAND w/ tr. f-m gravel, shell frags. tr. silt. OM-detrius					1		24-42		
40	WET									
	Bl-Dk Gr clayey SILT w/ tr. OM leaf frags. & shell frags.					2		42-48	~~DU~~	
50	Bl/Dk Gr silty f-SAND tr OM shell frags					3		48-~~52~~		
60	Bl/Dk Gr clayey SILT w/ tr. OM leaf frags w/ lenses of f-m silty SAND w/shells @ 55-56" near btm					~~4~~		~~52~~-62"	DUP.	

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/22/01
PAGE	2 of 2
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SL012	07

1043

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Grey to dark grey clayey silt, trace roots. very moist. faint odor					1		0"-8"	25"	Penetration 0"-36" 8/21/01
10	Dark grey poorly graded sand. subrounded to subangular, trace fine gravel, shells and silt. wet. Grain size becomming finer between 12"-18" interval. Then becomming coarse to 22"					2		8"-~~28~~ 22"		
20	including trace rounde to well rounded gravel.									
	Dark grey clayey silt. trace medium grained sand. very moist. slight odor.					3		22"-25		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/22/01
PAGE: 1 of 1
DRILLING METHOD: Texan 3"
DRILLED BY: Joe / Sarah
LOGGED BY: Jose
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

~~1043~~

SOIL BORING LOG

(6)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 7

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	CORE-									
10										
20										
	0-36"									
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/22/01
PAGE	of
DRILLING METHOD	HA/CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

(11)

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION: SLO-12

BORING NUMBER: 8

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/DkBr silt w/ tr clay OM-roots				1	1		0-6		
	Br/Gr silty f-c SAND tr OM shell DRY					2		6-12		
10										
	Br-silty f-SAND tr. OM shell fm gravel					3		12-24"		
20										
	WET									
30										
40										
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: of

DRILLING METHOD: HAND CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SL012-08	08

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									36"	24"-60" 1130 8/22/01
10										
20										
30	Brown to dark brown poorly sorted sand. trace shells, roots and fine gravel (well rounded to rounded), ~~bel~~ becomming finer with depth to 36". Increase in shells from 36"-38". wet-faint odor.					4		24"-38"		
38										
40	Black clayey silt. trace roots. very moist - slight odor									
	Dark grey silty sand. trace shell fragments. wet - sligh odor					5		38"-49"		
49	Black clayey silt. trace organics. very moist - slight odor									
	Dark tan silty sand. trace shell fragments very moist.							49-60"		
	Black clayey silt. some organic matter - decreasing with depth.					6				
60	Black silt. trace shells and wood & organics wet.		57-58							
	Black clayey silt. some shells and fine gravel, moist - slight odor		58-60"							

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/22/01	1 of 1

DRILLING METHOD: Lexan

DRILLED BY: Joe/Sarah

LOGGED BY: Jose

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(10)

Files

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		9

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bt SILT tr									
	OM roots Shells DRY					1		0-6		
	SAA									
10	Br- silty w/ tr. OM shell frags fc SAND gravel DRY					2		6-12		
	SAA w/ tr. f-m gravel					3		12-18"		
	WET									
20										
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE of

DRILLING METHOD: HA/CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1123

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 9

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									36	18-54 (4, 18, 36)
10	HA 0-18									MR - 33" (18, 51)
WET 20	Br/ well graded f-c SAND w/ tr. f-m gravel OM shell frags					1		18-32'		
30	Btm 2" Gr color WET									
	Bl/DkBr clayey SILT					2		32-40	DUP.	
37" 35 40	Dk Gr silty f. SAND tr shell frag. (SAND tr/silt)									
	Bl- clayey SILT w/ tr OM leaf/shell frag									
	1" f silty SAND @ 24-25" and 1" f. silty SAND @ 31-32"					3		40-51		
50	EOB - 51"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0925

SOIL BORING LOG

①

WESTON	SUBSIDIARY	LOCATION SCO-12	BORING NUMBER 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									42	Core 24-60"-3'
										24 24 11 GAP 16-17" 30-31"
10	HA - 0-24"									11 ② GAP 24 24 33 34 57-58
20										66 24 42 MR- 24 38" 62
WET								24-		
	Gr- poorly graded silty f-c. SAND w/ tr. OM. shell f-m gravel					4		24-35'		24 9 33 2 35 24 16 40
30	GAP 1" SAA Gr- poorly graded f-m SAND w/ tr. silt OM-shell SAA									24 25 49 24 21 45
	Gr/Bl- clayey SILT w/ tr. OM					5		35-40'	DUP	24 33 57
40										
42 44	Silty SAND Gr Silty SAND f-c. sand tr. f-m gravel shell frags.					6		40-49		
44	Gr- f-m SAND tr/silt shell frags									
50	Bl- clayey SILT w/ tr. OM leaf frags, shells.					7		49-57		
	GAP 2" Gr/Bl- silty f-m SAND tr. clay- to clayey SILT @ btm shell frags					8		57-62		
60	EOB-62"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/22/01
PAGE	2 of 2
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

START 923

SOIL BORING LOG

(1)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DKBr/Br Silt fr Oil-roots DRY					1		0-6"		
10	Br-f-c.SAND tr.silt shellfrags DRY					2		6-12		
	Br-f.-cSAND-									
20	Br-f-c. SAND WET					3		12-24"		
	CORE 24-60"									
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/22/01
PAGE	of
DRILLING METHOD	HA/CORE
DRILLED BY	
LOGGED BY	MARY/JOSE
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-12	11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/DkBr clayey SILT w/ OM-roots - moist-WET					1		0-6"		
10	DkBr/Gr clayey SILT w/ f-c-SAND gravel & shell @ btm - moist-WET					2		6-12"		
20	Gr/mottled Br-SILT w/ tr. clay, OM, leaf frags, shell tr. f. gravel & f-c sand @ btm - WET					3		12-24		
WET										
	EOB-24									
30	CORE ≥ 1"									
	refusal									
	-retry CORE									
40	retrieval < Previous.									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; ____; CLAYEY SILT; ____

DATE DRILLED	PAGE
8/20/01	1 of 1

DRILLING METHOD: HA/CORE

DRILLED BY:

LOGGED BY: MARY LANDOLD

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

~~1~~ 25
0737

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-12	11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									12"	MR-14" 24 38"
10	HA									SAT 24 10 34
20										
30	Gr/DkGr well graded gravelly SAND (f-c SAND) (f-m gravel) tr. silt OM-shellfrags/woodfrags. WET					4		24-34 ~~DUP~~	DUP	
	DK/Gr-Bl- Clayey SILT w/ tr woodfrags/cobbles-slight odor WET					5		34-38		
40	EOB - 38"									
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample In Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 8/20/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1015

SOIL BORING LOG

(3)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DkBr/Gr clay SILT tr OM - root - granular tex. moist/WET					1		0-6		
	DkBr/Gr SILT w/some clay tr OM. granular tex moist/WET					2		6-12		
10										
	CORE 12-48'									
20										
30										
40										
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 8/22/01
PAGE of
DRILLING METHOD HA/CORE
DRILLED BY
LOGGED BY MARY
EXISTING GRADE ELEVATION (FT AMSL)
LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1023

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									35"	MR-30" 12 42
10	HA 0-12"									12 16 28
WET	Gr/well graded f-c SAND w/ tr. silt OM shell frags					3		12-28"		
20	WET									
30	DkGr/Bl clayey SILT w/ tr. OM - shell fra					4		28-38"	DUP.	
38	DkGr Bl - f-m silty SAND									
40	lt Bl - clayey silt (shell frags)					5		38-42"		
	EOB - 42"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/22/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1635

SOIL BORING LOG

WESTON	SUBSIDIARY: USEPA	LOCATION: SL012	BORING NUMBER: 13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt. Some roots. trace clay and gravel. moist - slight odor					1		0"-6"		
6"										
8"	As above. ~~decrease in wood~~ gravel + roots - no gravel									
	Grey silt. trace clay, roots. moist - slight odor					2		6"-12"		
12"										
	As above. Decrease in clay content with depth.					3		12"-18"		
18"										
	Dark grey silt. trace organics very moist - sligh odor					4		18"-24"		Duplicate sample
24										
	Dark grey medium grained sand. some silt - trace gravel (poorly sorted) and shells.					5		24"-~~30"~~ 42"		
30"										
	~~Recovery was done~~ JM w									Recovery was done with a 3" lexan tube between the 24"-42" interval. refusal was encountered at 42".
42										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/21/01
PAGE	1 of 1
DRILLING METHOD	HA / Lexan
DRILLED BY	Joe / Sarah
LOGGED BY	Jose
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SL012	14

1540

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown sandy silt, trace roots and poorly sorted gravel. moist - slight odor					1		0"-6"		
6	Brown fine sand, well sorted, trace silt, roots and poorly sorted gravel, moist - slight odor.					2		6"-12"		
12"	As above. decrease in silt with depth. Trace cobble - subrounded.					3		12"-24"		
24"										refusal at 24" due to heavy gravel + cobble

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED	PAGE
8/21/01	1 of 1

DRILLING METHOD: HA

DRILLED BY: Joe / Sarah

LOGGED BY: Joe

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(8)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr Clayey SILT w/ to OH-root WET					1		0-6		
	CORE 6-36"					~~2~~		~~6-12~~		
10										
20										
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/22/01
PAGE: of
DRILLING METHOD: HA/CORE
DRILLED BY:
LOGGED BY: MARY
EXISTING GRADE ELEVATION (FT. AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1100.

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HA - 6-36"								30"	Penetration 48 36 ~~12~~ 16 27 33
WET	Gr/LtGr. clayey SILT w/ tr. OM root, leaf frags.					2		6-18'	~~6-18~~ DUP.	36 6 30
10	WET									MR - 27"
20	Gr/well graded f-m SAND w/ tr. silt shell frags.					↑		18-25"		
	Gr/well-graded f-m SAND w/ tr. shell frags c. SAND					↑		25-33'		
30	~~Bl/DK~~ Gr Silty CLAY w/ tr OM. shells					↓				
	EOB - 33"									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/22/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: mary

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1118

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA.

LOCATION: SL012

BORING NUMBER: 16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Grey silt. some roots, trace clay. slight moisture + odor					1		0"-6"		
6	As above trace medium grained sands rounded to subrounded.					2		6"-12"		
12	Dark brown coarse sand (well rounded to rounded). trace roots + silt. wet - slight odor, trace shells and slag fragments					3		12"-24"		
										24"-54" cored w/ lexan tube. refusal at 54"

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01

PAGE: 1 of 1

DRILLING METHOD: HA / lexan

DRILLED BY: Joe / Sarah

LOGGED BY: Joe

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1120
1440

SOIL BORING LOG

(9) (10)

WESTON | SUBSIDIARY | LOCATION SLO-12 | BORING NUMBER ~~22~~ 16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									30"	54 24 30
10										MR- 36" 36 -12 -17 18 13
20	HAD- 24"									GAP- Between ~~(43-48")~~ ~~43 48"~~ (37-42")
24	Gr/~~well~~ poorly graded f-c SAND w/ f gravel tr/OM shell frags WET					4		24-29		
29 30	DkGr/Bl clayey SILT w/tr shell frags/OM leaf frags WET					5		29-37		24 12 36 24 SAT
37" 43	DkGr/Bl silty SAND w/tr shell frags. WET					6		37-42		
42"	DkGrAbl- clayey silt GAP 37-42" w/lenses of f-m SAND w/ tr. shell frags @ 23" & 26-27" leafwood frags.					7		42-54		
50										
	EOB- 54"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01
PAGE: 2 of 2
DRILLING METHOD: CORE
DRILLED BY:
LOGGED BY: MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
US EPA	SL012	17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt. trace roots and organics. moist. ~~trace clay~~ some clay					1		0"-6"		
6	As above. increase in moisture w/ depth. slight odor					2		6"-12"		
12	Dark grey to brown silt. trace clay, organics. moist. slight odor					3		12-24		
	As above. Increase in organics, Sand layer at 23". fine sand, grey trace shells. wet.									
24	Grey silty sand. trace gravel/slag. trace shells. wet. no odor					4		24"-30"		
36										Jerran sample/core after 30"
48										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01
PAGE: 1 of 1
DRILLING METHOD: Hand Auger/Jerran
DRILLED BY: Joe/Sarah
LOGGED BY: J. Doremus
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SO

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

120

SOIL BORING LOG

(8)

WESTON | SUBSIDIARY | LOCATION SLO-12 | BORING NUMBER 17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
								24"		HA-30"
										MR-23" 30 53"
10										54 30 24
20	HA 0-30"									30 11 41 3
30	Dk Gr/ well graded gravelly SAND w/ trace shell frags, wood frags, silt (f-c SAND) (f-c gravel) WET		A			5		30-35		
35"	Dk Gr/ poorly graded fm SAND tr. silt									
40	coarser SAND (f-c) & shell frags @ 41-44" Dk Gr/ poorly graded f-m SAND tr. silt. WET					6		35-50		
50	Br organic SILT-PEAT wood frags					7		50-53		
	EOB-53"									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED 8/21/01

PAGE 2 of 2

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1648

(4)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br-clayey SILT w/ tr. f-c SAND & f. gravel - OM-roots moist/WET					1		0-6		
10	Gr/mottled Br clayey SILT w/ tr. f-c SAND & f. gravel - OM roots moist/WET					2		6-12"		
WET ▽	Gr/silty SAND f-c SAND well graded w/ f. gravel tr. shell frags OM- WET					3		12-24"	DUP	
20	EOB ~~EO~~ 24" CORE									
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/20/01

PAGE: 1 of 1

DRILLING METHOD: HA/CORE

DRILLED BY: SARAH/JOE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1700
0855

SOIL BORING LOG

(4)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									24"	24 / 23 / 47
10	HA									24 / 14 / 38
20										24 / 20 / 44
3	Gr- well graded gravelly SAND (f-c SAND w/ f. gravel) tr OM silt shell frags WET							4	27-38	
6" 30	DkGr/Bl - clayey SILT w/tr OM shell frags WET					8				24 / 21 / 45
	DkGr/f-c well graded SAND w/tr. silt shell frags WET					4		27-38		27 / 14 / 41
38" 40	Bl-Gr- Clayey SILT w/OM leaf frags MOIST/WET					5		38-43		
43 47"	Gr/Dk- f-c well graded SAND w/tr. OM shell frags, leaf frags, w/ lenses ≈ 1/2"					6		43-47		
50	of f-m SAND @ 95" EOB-47									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 8/22/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON.

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
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			SC	Clayey Sands, Sand-Clay Mixtures
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			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1555

SOIL BORING LOG

(2)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-12	SL012-19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DK-Br-Gr-SILT tr clay OM-roots -DRY silty SAND - well ~~poorly~~ graded					1		0-6"		
10	Br/DK-Br ~~Sandy SILT~~, f-c SAND, f gravel -DRY					2		6-12	DUP	
WET ▽ 20	Br-f-c. SAND w/ little f. gravel -well graded -moist/wet tr. silt, shells.					3		12-24		
	EOB 24 CORE=3-3.5'									
30										
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/20/01
PAGE	1 of 1
DRILLING METHOD	HA/CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1603
0756

SOIL BORING LOG

(2)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									36"	MR-36" SAT
18										
	HA									
20										
	Gr- poorly graded gravelly SAND (f-c SAND w/ f-m gravel) tr. silt, OM-shell & wood frags					4		24-34"		
30										
	WET									
34	Dk/Gr-Bl-clayey SILT w/ lenses < 2" f-m SAND tr. OM- leaf & shell frags									
40						5		34-48"		
	WET									
50	SAA					6		48-60"		
60										
	EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED 8/20/01

PAGE 2 of 2

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1432

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SL012

BORING NUMBER: 20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt. trace fine sand, roots clay + shell fragments. moist - slight odor					1		0"-6"		
6	Light brown medium grained sand (subrounded to angular) trace roots and shell fragments trace silt. moist - faint odor.					2		6"-12"		
12"	As above. Increase in grain size with depth. Trace shell and silt.					3		12"-20"		
20"	Black silt. trace fine sand, organics and shells, moist. slight odor					4		20"-24"		
24"	As above Increase in moisture with depth. trace wood					5		24"-36"		
36										36"-54" used 3" Geoprobe w/ PVC apparatus. Refusal at 54"

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01

PAGE: 1 of 1

DRILLING METHOD: HA / PVC Geoprobe

DRILLED BY: Joe / Sarah

LOGGED BY: Joe

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1440

SOIL BORING LOG

(13)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									18"	4 54 36 18 MR-16" 1 36 16 52
10										
20										
30	HA - 0-36"									1 36 8 4 36 12
36-37"	DE Gr/Bl - f-m silty SAND to OM/shell&leaf frags									
40	Bl - clayey SILT lenses @ tr f-m SAND, shell frags, OM-leaf frags.		41" @ 44 & 48"			6		36-44		
50	WET					7		44-52"		
60	EOB - 52"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/21/01

PAGE: 2 of 2

DRILLING METHOD: HA/CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SL012	21

1520

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
3"	Dark brown silty sand trace fine gravel (rounded to subrounded), trace roots, slight moisture & odor.									
6"	tan fine sand - well sorted trace roots and poorly sorted gravel (rounded to subrounded					1		0"-6"		
						2		6"-12"		Duplicate sample
12	As above									
18						3		12"-18"		
										impenetrable sand & gravel below 18"

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01
PAGE: 1 of 1
DRILLING METHOD: Hand auger
DRILLED BY: Joe / Sarah
LOGGED BY: Joe
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
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HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1030

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SL012

BORING NUMBER: 22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt. some roots.									
6"	slight moisture & odor					1		0"-6"		
	As above to 11". increase in clay w/depth.									
12"	Below 11" is a coarse tan sand, rounded to subrounded. trace silt. moist					2		6"-12"		
	Coarse tan sand, rounded to subrounded. trace silt, organics/roots. moist (very) slight odor					3		12"-24"		
24"										
										24"-48" sample/core gathered w/ lexan.

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/21/01

PAGE: 1 of 1

DRILLING METHOD: HA / Lexan

DRILLED BY: Joe / Sarah

LOGGED BY: Close

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1033

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
10										
20	AA 0-24"									
	Gr/poorly graded gravelly sand f-m SAND w/f gravel shell & shell frags - WET					4		24-28	24"	MR-~~26~~" 24" 24 0 1 24 24 24 4 4 9 16 28 33 40
30	DKGr/Bl - clay silt w/OM-f. detrius/leaf frags, shell frags - WET					5		28-33"		
	DKGr/Bl silty SAND w/OM shells & shell frags, WET					6		33-40"		
40	DK Gr/Bl clayey SILT w/ lenses of f-m SAND w/ tr. OM shell frags & f-m gravel @ btm leaf frags. WET					7		40-48"		
50	EOB-~~50"~~ 48"									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/21/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
US EPA	52012	23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6	Dark grey silt, some clay & roots. slight moisture & odor					1		0"-6"		
12	As above. increase in root content.					2		6"-12"		
18" 24"	Dark brown to black silt. trace clay, roots and organic material. moist - slight odor. trace fine sand.					3		12"-18"		
24"	Black silt. trace sand, clay, roots, organics and wood. moist - slight odor, trace fine gravel and steel fragments							18"-24"		Duplicate sample
										24" - 36" hexan sample/core pushed to a depth of 36" where refusal was encountered.

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/21/01	1 of 1

DRILLING METHOD: HA/ hexan

DRILLED BY: Joe/Sarah

LOGGED BY: Jose

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1410
163

SOIL BORING LOG

(12)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
10										
20	HA 0-24"									
	DkGr/Bl-silty f. SAND tr/shells & OM-leaf frags & fr m gravel.					4		24-36	12	MR-12"
30	WET									
	EOB-36"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/21/01

PAGE: 2 of 2

DRILLING METHOD: HA/CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(6)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Br- silt w/ tr. clay & OM-roots					1		0-6		
	slightly moist									
	SAA									
10	moist					2		6-12"		
	Dk Br/mottled B/B silt w/ some clay-									
20	Dk Br/mottled Bl - clayey silt w/ f-m @ btm.					3		12-24	DUP	
	moist/WET									
	EOB-24"									
30	CORE									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/20/01

PAGE: 1 of 1

DRILLING METHOD: HA/CORE

DRILLED BY: SARAH/JOE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1805

(6)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: S10-12

BORING NUMBER: 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									24	24 18 MR=42
10										
	HA-24"									
20										
	Gr/Ok Dr-poorly graded f-m SAND w/tr f-m gravel, silt, shells & shell & wood frags ↳ near btm. (bottom)					4		24-36		
30										
40	WET					5		36-42		
	EOB-42"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/20/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1003

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SL012	25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	Grey silt. some clay + roots. moist. farmt odor					1		0"-6"		Duplicate sample
12"	As above to 8". Below is a Dark brown coarse sand. trace roots and fine gravel very moist.	trace silt + shells.				2		6"-12"		
24"	Dark grey to brown coarse sand. Some shells. trace slag and fine gravel (subrounded). wet - farmt odor. sand becomming finer with depth.					3		12"-24"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 8/21/01
PAGE: 1 of 1
DRILLING METHOD: HA / Lexan
DRILLED BY: Joe / Sarah
LOGGED BY: Jose
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1000
1407

SOIL BORING LOG

(8) (9)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
								~~12~~24		MR-20 24" 20" 44 24 9 33 SAT
10										
20	HA - 0-24"									
	Gr/DK- poorly graded f-m SAND w/ f-m gravel (gravelly SAND) tr. silt, OM, wood & shell frags					4		24-33		
30										
33"	WET									
	Bk- clayey SILT w/ tr. OM shell frags.					5		33-44"		
40										
	MOIST/WET									
50	EOB- 44"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/21/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1623

SOIL BORING LOG

③

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Br - clayey SILT w/ OM - roots & wood frags. moist/wet					1		0-6"		
	Lt Gr/Br - mottled clayey SILT - granular texture moist/wet					2		6-12"		
10	SAA					3		12-24"		
20	EOB									
30	CORE									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/20/01
PAGE: 1 of 1
DRILLING METHOD: HA/CORE
DRILLED BY: SARAH / JOE
LOGGED BY: MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)
LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

30
~~1603~~

(3)

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-12	26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
								24		~~24~~ 24" MR 20 44"
10										
	HA									
20										
24"	Lt Gr/Clayey SILT tr/ OM-leaf frags-slight odor									
30	WET					4		24-34		
	SAA									
40	MOIST /WET					5		34-44	DUP	
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/20/01	2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LAWNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0845

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: SL012

BORING NUMBER: 27

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6	Brown silt. trace clay, roots. slight moisture and odor					1		0"-6"		
12	Greyish brown clayey silt. trace roots. slight moisture & odor					2		6"-12"		
24	Brown silt. trace clay, roots/organics, slag. moist - slight odor					3		12"-24		Duplicate
33" 36"	Dark grey silt. some fine sand. trace shells and organics. very moist. slight odor. Increase in sand with depth					4		24"-~~39"~~ 33"		
	Black silt, trace fine sand and shells. trace organics. moist slight odor					5		33-36		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED: 8/21/01

PAGE: 1 of 1

DRILLING METHOD: HA / Hexan

DRILLED BY: Joe / Sarah

LOGGED BY: S. Morris

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0850
1347

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 27

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
								18		4/54 36 / 18
10										MR-15 36 15 1' 36 / 44
20	HA 0-36"									
30										
40	Sandy DkGr/Bl- ~~clayey~~ SILT w/ tr f. SAND & OM leaf frags shell frags - ~~tr clay~~ MOIST/WET.					6		36-44"		
44"	DkGr/Bl- sandy SILT w/ OM Peat/leaf frags tr. clay shell MOIST/WET					7		44-51		
51" 50										
60	EOB-51"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/26/91

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1723

SOIL BORING LOG

(5)

WESTON	SUBSIDIARY	LOCATION SLO-12	BORING NUMBER 28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DK Br/Gr SILT w/ tr OM									
	DRY					1		0-6		
	SAA									
10						2		6-12		
	Br/Gr poorly graded gravelly SAND f-c SAND					3		12-18		
18	and f-gravel tr/silt									
20						4		18-24		
	DRY									
	R/B-w/ ~~mottled~~ Gr clayey SILT @ btm 24"					5		24-30		
24	↳ poorly graded gravelly									
30	SAND f-c. SAND					6		30-36		
	24-30" DK Gr/silty f-m sand w/ shell frags/WET									
	~~EOB-24"~~									
40										
	CORE									
	30-36" - DK Br-Gr - mixed clayey SILT w/ f-c. SAND & f									
50	gravel - moist WET									
	EOB-36"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/20/01	1 of 1

DRILLING METHOD: HA / CORE

DRILLED BY: SARAH / JOE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1740
1010

5

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-12

BORING NUMBER: 28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
								24		~~24~~ 23 36 23-24 19-60
10										
20										36 13 49 SAT
	HA									
30	36"									
	Bi- clayey SILT w/ tr. f-m. SAND & OM-shells & frags									
40						7		36-49		
49	WET									
50	Bi- clayey SILT w/ tr. wood frags, leaf frags, shell frags tr. fine SAND					8		49-~~60~~ 59"		
	MOIST/WET									
60	EOB 59"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/20/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARYLANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-1

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk. gray sand, trace silt, ~~standing water on top~~ wet, O.M., slight organic odor					1		0-6		48" penetration 1128 hrs sample taken
6"	s.a.a.					2		6-10		38" recovery standing water on top of sample
10"	dk. gray silt w/clay, strong organic odor, wood pieces					3		10-18		
18	s.a.a.					4		18-30		
30	s.a.a.					5		30-38		
38										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemer

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1130
1425

(15)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 2

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DkGr/Bl - f-m SAND tr. OM, silt near top - ~~WET~~ moist ↳ leaf frags & woods					1		0-6		SAT - Sediment
10						2		6-15		
	Sand (m-c) near bottom tr f-gravel leaf fragments. f-m SAND - loose @ top Bl - clayey SILT w/ tr OM - plant fragment moist					3		15-24		
20	SAA									
30						4		24-36		
	moist SAA									
40						5		36-48	DUP	
	moist vfine gravel near btm.									
50	EOB - 48"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1407
0953

SOIL BORING LOG

(3)

WESTON	SUBSIDIARY	LOCATION SDO-36	BORING NUMBER 3

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	fr poorly graded fm SAND w/ tr. OM					1		0-6	≈11" DUP	MR-40" SAT
10	11" WET					2		6-11"		
	Br-Dk Gr Clayey SILT w/ tr OM - plant leaf-wood-shell fragments - moist - WET					3		11-24		
20										
30						4		24-36		
40						5		36-40		
	EOB - 40"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	8/15/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1140
1353

(14)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SP036

BORING NUMBER: #4

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DkGr/Bl-f-m Sand tr OM tr silt near top WET								48"	Measured Recovery ~~52"~~ SAT. 48"
	SAA					1		0-6"		
10						2		6-16"		
	Sand m-c near bottom									
	Br clayey SILT w/tr. OM-plant fragments tr. f. SAND near top Thin lense moist-WET					3		16-24		
20										
30						4		24-36		
	SAA moist-WET									
	SAA									
40						5		36-48"		
	tr. shell moist WET									
50	EOB-48"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1120

SOIL BORING LOG

(22)

WESTON	SUBSIDIARY: EPA	LOCATION: SDO-36	BORING NUMBER: 5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/poorly graded f-m SAND w/ tr. silt OM-wood frags & f-gravel. WET					1		0-4"		MR-35" SAT
10	Bl-clayey SILT w/ tr. f-SAND wood & shell OM-leaf frags + shred of paper noted (f-m sand not matrix in sample)					2		4-12		
20	from above along sides. WET SAA					3		12-24		
30	SAA f-m silty sand w/ wood frags & OM @ btm 1"					4		24-35		
40	ECB-35"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/15/01
PAGE	1 of 1
DRILLING METHOD	CORES
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1056
T620

SOIL BORING LOG

(19)

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/f-m SAND w/ tr. OM plant leaf & wood frags (poorly graded) Gr moist-wet					1		0-6"	2/6"	MR-
10						2		6-11		
	Bl-Dk Gr clayey SILT w/ tr. OM wood & plant leaf frags - moist-wet					3		11-24"		
20										
30						4		24-36		
40	EOB-36"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(4)

1415
1022

WESTON	SUBSIDIARY	LOCATION SDO-36	BORING NUMBER #7

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/ poorly graded silt. f-m SAND w/ tr. OM. Shell fragments - WET					1		0-6	44"	Penetration 55" MR-36
10	f-m sand coarse @ btm					2		6-11"		SAT 44 VOID between 11-17"
	VOID									
20	Bl-Blk Gr clayey SILT w/ tr. OM plant leaf - wood - frags MOIST-WET									
30										
40	@ btm f-m sand & gravel tr silt WET									
50	EOB - 44"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/15/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1425
1110

SOIL BORING LOG

(5)

WESTON	SUBSIDIARY	LOCATION SDO-36	BORING NUMBER 8

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Bl- poorly graded f-m SAND (DkGr) detrius tr. silt & OM ~~plant leaf frags~~.					1		0-6		60" penentration MR- ~~36~~ 13/49"
10	Bl- / Gr MOIST-WET					2		6-12"		SAT
15	Bl-2"/Gr"1"					3		12-18		
18										
20	DkGr/Bl- Clayey SILT w/tr. OM plant leaf, shell fragments, f-sand to 30" (piece of paper)					4		18-30"	DUP	
30						5		30-42		
40										
	near btm.							42"-49"		
47	Gr/Bl f-m SAND/tr silt f-m gravel woodfrags. MOIST-WET									
50	EOB-49"									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/15/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

6.15

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-9

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
3	Lt Gr- poorly graded f-m SAND tr. OM - WET -					1		0-6"	DUP	sampled at 1433 hrs. depth of 66" recovery of 48" SAT
10	DK Gr/Bl poorly graded f-m SAND. tr/course SAND silt. shell fragement - WET					2		6-12"		
13	Gr/Lt - poorly graded f-m SAND w/ tr shell frags MOIST-WET					3		12-24		
19	Bl-Sandy SILT w/ OM-leaf frags.									
20 21	Gr clayey SILT									
23 24	Bl-Sandy SILT w/OM leaf frags.									
30	DK Gr/Bl clayey SILT w/ tr OM-leaf-wood fragements shell frags MOIST-WET tr f-sand					4		24-36		
40						5		36-48"		
	EOB-48"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heid. Nenert

EXISTING GRADE ELEVATION (FT-AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1145
1521

(17)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DkBr f-m. SAND w/tr. silt, OM. poorly graded.								54"	Measured Recovery 41-42"
	Br-f-m-SAND w/tr. OM Shell frags.					1		0-6"		
	Gr-f-c. SAND w/tr. OM WET									
	Dk Gr/Bl- clayey SILT massive w/tr OM- plant ~~& Shell~~? frags.					2		6-12"		
10	MOIST-WET									
						3		12-24"		
20										
						4		24-36"		
30										
						5		36-42"		
40	tr. f-m sand near bottom									
	EOB-41-42"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1108
1722

21

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SDG-36	11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
Br/Gr	0.5 Inches Gr f-c sand w/ f. gravel - WET					1		0-6"	FR-36"	penetration 60" MR-37"
10	Bl- Dk Gr clayey SILT tr. shell frags - MOIST-WET					2		6-12"	DUP	
12" 14"	Bl- f-m - sand w/shell frag grades into Gr - f-c sand w/ tr f. gravel -					3		12-24"		
20						4		24-37		
30										
	Bl- organic SILT w/some clay MOIST-WET bottom @ EOB-37									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/15/07	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1138
0915

SOIL BORING LOG

(2)

WESTON | SUBSIDIARY | LOCATION SDO-36 | BORING NUMBER 12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr to Bl – poorly graded f-m SAND w/tr. OM silt @ top. WET coarser @ btm 8"					1		0-8"		54" penetration 43" Recovery MR ~42"
10	Bl-DK Gr. clayey SILT w/ tr. OM. wood fragments leaf litter – moist. WET									
20										
30										
40										
	EOB- 42"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 8/15/01 | PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1120
0753

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr poorly graded f-m SAND w/ tr. f-m gravel, silt OM-fr leaf frags. WET					1		0-7"		54" penetration MR-35" SAT.
10	Bl-DK Gr Clayey SILT w/tr. OM -WET					2		7-12		
20						3		12-24	DUP	
30						4		24-35		
	Bl-f-m sand w/ OM leaf frags. tr. silt									
	EOB-35"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1101
X 1638

SOIL BORING LOG

(20)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SDO-36	14

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr f-m well-graded gravelly SAND (f-c) tr OM - shell frags & shells gravel (f.) (tr silt detrius) WET					1		0-7	MR-41"	4.5' penetration measured Rec SAT
10	DK Gr/Bl - clayey SILT tr OM & Shell frags (plant leaf) MOIST-WET					2		7-12		
20	SAA					3		12-24		
30	SAA					4		24-31		
40	Gr/Bl (31-33') poorly graded f-m SAND tr. some shell frags MOIST/WET					5		31-41"		
50	EOB 41"									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/15/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk. gray sand, wet, organic odor, med. sized granules					1		0-6		taken at 1410 hrs to a depth of 60". recovery of 37" standing water on top of sample
6"										
	S.a.a.					2		6-10		
10"										
	black/gray silt w/ trace clay, moist, strong organic odor					3		10-18		
18										
	S.a.a.					4		18-30		dup
30										
	wet, gray, lg. particles of sand w/ gravels & rocks, shells, O.M.					5		30-37		
37										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: Lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION ON GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION

BORING NUMBER SD036-16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	wet, brown sand, sm. uniform particles, organic odor, roots									taken at 1415hrs recovery of 35"
4"	~~black silt~~									
	wet, brown sand, sm. uniform granuales, organic odor, roots					1		0-7		
7"	dk. gray silt w/clay strong organic odor					2		7-12		
12"	Saa					3		12-24		
24"	Saa					4		24-35		
35										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED 8/15/01

PAGE of

DRILLING METHOD lexan tube

DRILLED BY

LOGGED BY Heidi Nemeth

EXISTING GRADE ELEVATION (FT. AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk. brown sand, roots, O.M., wet, varied granule size, slight odor					1		0-6"		Sampled at 1424
6"	black silt w/ clay, slight odor									recovery of 36"
	s.a.a.					2		6-12"		layer at 12" was split. water filled tube from 12-25" & sample continued at 25"
12"										
	s.a.a.					3		12-19"		
19"	gray sand & gravel, organic odor, shells, O.M., wet					4		19-36"		
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT. AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1756
0910

(4)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SPO-36

BORING NUMBER: 18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- organic SILT w/tr. clay f. gravel, shells, fibrous OM	WET				1		0-6"		Penetration 30" Recovery 18" MR
10	DkGr/Bl clayey SILT w/f. sand & gravel OM-fibrous moist wet plant frags					2		6-15"		
silty SAND	Gr-Br ~~clayey~~ f-m sand w/ tr. silt fibrous OM-peat					3		15-18		
20	coarser SAND w/depth EOB 18" Clay									
30										
40										
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNEN

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk. brown silt w/ trace clay & trace sand, o.m., slightly moist, slight odor, roots					1		0-6		collected at 1734 pushed to 54" with a recovery of 24"
6	~~silt w/ gray sand med. granules~~									
	s.a.a.					2		6-11		
11	lt. brown sand w/ dk. brown silt, slight odor, wet, o.m., roots									
19"	gray, fine sand w/ some med-lg., wet, slight odor, o.m.					3		11-24	dup	
24										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample

REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1726
1721

(10)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bk DKBr – organic SILT – PEAT w/ plant leaf & wood frags tr clay					1		0-6		penetration on 60" Recovery 36" MR – 36" SAT
10						2		6-12"		
	MOIST – WET wood frag					3		12-19"		
20 19	PEAT w/ clayey SILT – CM w/ tr f. sand @ btm WET – MOIST					4		19-25"		
25	DKGr/Bl f-c SAND w/ tr. silt, f-m gravel, wood frags					5		25-36"		
30	Chunk of Wood @ 30-32									
	f-m sand w/ depth WET									
	EOB-36"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1545 SOIL BORING LOG (8)

to 1554

WESTON

SUBSIDIARY

LOCATION SPO-36

BORING NUMBER 21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl-Br. organic SILT-PEAT OM-roots-plant & wood frags.					1		0-6"	36"	penetration & recovery 36"
10						2		6-15		
15	WET									
20	Gr/LtGr. sandy silt (f sand) tr. lense of clayey silt & f-SAND OM-wood frags roots					3		15-27"	DVP	
27										
30	LtGr/Br f-m SAND w/thin lense-clayey silt @ 27 shell fragments & wood -WET	$<1 $31				4		27-36"		
40	EOB-36"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 8/15/01

PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1620

1805

(11)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DkGr/Br-organic SILT-PEAT w/ tr. clay plant & wood frags WET					1		0-9		Penetration 48" Recovery 30" MR-30" SAT
10	Bl/DkBr clayey silt w/ tr f sand OM - plant & wood frags & f-m gravel MOIST-WET					2		9-15"		
15	Gr/Br poorly graded f-m sand w/ tr. silt & OM plants & frags f-m gravel between 22-24 DkBr thin lenses of clayey silt MOIST/WET					3		15-25	DUP	
25	LtBr/Gr-poorly graded f-m SAND w/ tr OM silt & f gravel @ btm WET					4		25-30"		
30	EOB-30"									
40										
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: (of)

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNEN

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	black silt, organic odor, moist,					1		0-6"		Sample taken at 1828 lost one" on the bottom pushed to 54" & a recovery of 36"
6"	s.a.a.					2		6-12"	dop	
12"	s.a.a.					3		12-17"		
17"	brown, silty, sand, fine to med. sized, shells, wood pieces, some roots, moist					4		17-24'		
24"	gray sand w/ trace silt, fine to med., shells, gravel, ~~geo~~ wood pieces, wet					5		24-36"		
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1458 SOIL BORING LOG (7)

1514

WESTON | SUBSIDIARY | LOCATION SDO-36 | BORING NUMBER 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Gr/Bl clayey SILT w/ OM - plant frags					1		0-8		Penetration 48" MR-34" SAT
8	MOIST-WET									
10	Lt Br/Gr ~~silty SAND~~ sandy silty w/ tr. f gravel					2		8-12"		
12 13	Br f-m SAND - w/ OM - plant frag w/ sand silt lense and <in peat WET tr clay, f gravel					3		12-25"	~~DVP~~	
20	Br - well graded f-m sand w/ some f-m gravel & peat, plant & wood frags; lense of f-m sand & OM ~~m~~ tr. silt									
25" 27						4		25-34"	DVP	
30	Gr/Bl - poorly graded f-m SAND w/ OM - tr. f gravel WET									
	EOB - 34"									
40										
50										
60										

color change Br-Gr/Bl

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 8/15/01 | PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SD036-25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	black silt, trace clay, wet, organic odor					1		0-6"		sample collected at 1652 33" were sampled & recovered
6"	S.a.a.					2		6-12"		
12"	S.a.a.					3		12-24"		
24"	S.a.a.					4		24-33"		
33"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED	8/15/01
PAGE	of
DRILLING METHOD	lexan tube
DRILLED BY	
LOGGED BY	Heidi Nemeth
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1802
1010

SOIL BORING LOG

(5)

WESTON	SUBSIDIARY	LOCATION SD36	BORING NUMBER 26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DK Br - clayey SILT w/fiberous OM-PEAT - tr f. sand f-m gravel moist-WET					1		0-5"		Penetration 50" Recovery 21" MR - 2" SAT
10 11 12	DK Gr/ clayey SILT w/ more clay (stiffer) tr. shells & OM Gr f. sandy SILT moist-WET					2		5-11		
20	Lt Br/Gr poorly graded f-m SAND w/ lenses of Br - Silty SAND w/ OM fiberous tr. clayey SILT plant frags - moist WET @ SAND w/ f-m gravel w/depth @ btm					3		11-21"		
	EOB - 21"									
30										
40										
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/15/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-27

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk. gray sand, wet, shells, lg. granules, slight odor organic					1		0-6"		Sample taken at 1636 pushed ~~augered~~ to 42" w/ a 38" recovery. Standing water at both ends of the core
6"	s.a.a.					2		6-9"		
9"	black silt w/sheen, strong organic odor, wet					3		9-17"		
17"	black silt w/ fine sand, some shells, organic odor, wet									
23"	lt. gray fine-med sand with shells & wood pieces, organic odor, wet					4		17-27"		
27"	black sand w/ silt, shells, o.m., wet, slight organic odor					5		27-38"		
	black silt w/ ~~sft~~ gravel & trace sand, wet									
38"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
  - SPLIT BARREL
  - AUGER
  - ROCK CORE
  - THIN WALLED TUBE
  - CONTINUOUS SAMPLER
  - NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- ____
- ____

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1110
1452

SOIL BORING LOG

(16)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SDO-36	28"

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br - gravelly SAND-f-c Sand w/ f-gravel-shells, frags, too OM,	tr. silt WET				1		0-4"	42"	measured Recovery 41" SAT.
	DK GY/Bl - clayey SILT w/ tr. OM plant frags, shells & frags					2		4-12		
10										
						3		12-24		
20	MOIST-WET tr. f-m sand near btm									
	Gr- f-m SAND tr. coarse SAND, shell frags, OM. lense OM Bl.									
30						4		24-36		
	organics silt more OM Bl.									
40	finer sand near btm MOIST-WET					5		36-41"		
	EOB 41"									
50										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER.
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/15/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1810
10-32

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SDO-36	29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Gr/Br - Bl - organic SILT - PEAT w/ tr. f. sand f. gravel & shell frags fibrous OM more clayey w/ depth moist/wet					1		0-6"		Penetration - 36" Recovery 24" MR - 24" SAT.
10	Dk Gr/Bl - clayey SILT w/ tr f. SAND near top - f. gravel tr OM f. detrital & wood frags. moist/wet					2		6-15	Dwd	
20	Lt-Dk Gr/Br - poorly graded f-m sand w/ tr. silt lenses of Br / PEAT f-c. sand w/ depth @ btm ↳ f. gravel					3		15-24		
30	EOB - 24									
40										
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/15/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARYLANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1682
1640

SOIL BORING LOG

WESTON | SUBSIDIARY: DPA | LOCATION: SDO-36 | BORING NUMBER: 30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	1" well graded gravelly SAND tr silt, shell frags, WET					1		0-6"	MR 32"	penetration 40" Recovery 31" MR-32"
10	Bl/DkGr clayey SILT w/ tr. OM-f. leaf frags & shells & frags.					2		6-12		Void w/water between 22-24
20	WET					3		12-24	DUP	2" were lost from the btm. - SAT.
30	DkGr/poorly graded f-m SAND w/tr. silt, OM-shell & wood frags sand finds @ btm. WET					4		24-32"		
	EOB-32"									
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LAWLON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

172
0811

(2)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	f-m-SAND @ top									
	GW/well graded gravelly sand - w/ f-c sand & f-m gravel tr. OM wood frags & shells. WET					1		0-6		Penetration 30" Recovery - 25" MR - 22" 4" Lost Btm lost 2" actual Rec. 20"
						2		6-11		
10	Bl clayey SILT w/ f. detritus OM. MOIST-WET				-	3		11-20		
20	Bl sandy SILT w/ f. gravel f detrital OM WET									
	EOB - 20"									
30										
40										
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1719
0841

SOIL BORING LOG

(3)

WESTON	SUBSIDIARY	LOCATION	BORING NUMBER
	EPA	SDO-36	32

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DK-Br- organic SILT-PEAT fiberous OM plant wood frags WET					1		0-4"		Penetration 36" Recovery 26" MR-~~23~~ 24" SAT
	DKBr/Gr-Bl- clayey SILT w/f. Sand & gravel OM plant frags					2		4-~~10~~"	12	
10	SAA moist/WET					3		12 10-20"		
20	Lt Br fm SAND w/ lenses of fiberous Br-PEAT coarser SAND (wood frags) @ bttm					4		20-24		
	EOB-24"									
30										
40										
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01
PAGE: 1 of 1
DRILLING METHOD: CORE
DRILLED BY:
LOGGED BY: MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1619

SOIL BORING LOG

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WESTON	SUBSIDIARY: EPA-	LOCATION: SDO-36	BORING NUMBER: 33

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br well graded sandy gravel f-m gravel w/ f-m SAND tr. ~~OM~~ wood frags WET					1		0-4"		MR-29" SAT
	DK ~~Br~~ Gr/Bl clayey SILT tr. f. sand OM plant leaf/wood frags WET									
10										
11	Dk. Br organic SILT-PEAT fiberous OM-plant/wood frags tr. clay & f sand. WET					2		4-~~19~~ 11"	DUP.	
						3		11-19"		
20	Lt Gr/poorly graded f-m SAND w/ OM plant & wood frags WET					~~3~~ 4		19-28"		
29	DK Gr-f-m SAND w/tr f-m gravel WET									
30	EOB 29"									
40										
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/15/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARYLANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

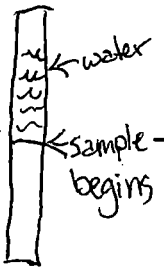
WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-34

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	med granular sand, dk.gray brown, some gravel, shells, wood pieces, wet, few roots					1		0-7"		Sampled at 1600. 15" recovery with 2' of water above sample in tube
	lg. granular sand, gravel dk.gray, few rocks, shells, wet					2		7-15"		



EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1436

(6)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-36

BORING NUMBER: 35

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr - poorly graded f-m SAND w/tr OM - leaf frags.					1		0-6"		MW-35 5/41"
10	moist-wet					2		6-11"		SAT
11	Gr/Bl, f-c SAND shells poorly graded and shell frags & OM -					3		11-24"		
20	moist - wet									
						4		24-35"		
30										
	Gr poorly graded f-m SAND w/ some shell frags.					5		35-41"		
40	EOB 41"									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

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1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

10:50
16:02

(18)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDG-36

BORING NUMBER: 36

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/ f-m SAND W/ tr shell frags & OM moist-WET					1		0-6"	DP	SAT
10	DK Gr/Bl clayey SILT w/OM - plant frag - moist-WET					2		6-12"		
	SAA							12-24		
20	SAA					3				
30						4		24-30"		
	f-m sand @ btm									
40	EOB									
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/15/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-37

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	gray, fine sand, wet, O.M., no odor									Sampled at 1530
	dk. brown/black silt mottled with gray fine sand, many roots, shells, wood pieces, moist, slight organic odor					1		0-6"		break in sample at 28½" for 1"
6"	dk brown silt, many roots, wood pieces, moist, slight organic odor					2		6-12"		40" total recovery
12"	S.a.a.					3		12-18"		dup.
18"	fine gray sand layer ½" thick									
	dk brown silt w/ trace clay, roots, wood pieces, moist, slight organic odor					4		18-27"		
	fine sand, dk gray ½" thick									
	coarse sand w/ gravel, shells, wet, dk. gray,					5		27-40"		
	fine brown/gray sand, uniform granule sizes, wet									
40"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- ____
- ____

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemoth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
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HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD036-38

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1"	brown sand, wet, shells, o.m.									sampled at 1449. Depth of 48" recovery of 30"
	gray/black silt w/ clay, appears to have sheen, moist, organic odor, o.m.					1		0-6"		
6"	s.a.a.					2		6-12"		
12"	s.a.a.					3		12-23"		
23"	gray sand, med. sized granuales, o.m., gravel, shells, moist, slight organic odor					4		23-30"		
29"	gray/black silt w/ clay, sheen appears, wet organic odor									
30										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/15/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY:

LOGGED BY: Heidi Nemen

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1652
0753

SOIL BORING LOG

①

WESTON

SUBSIDIARY:

LOCATION: SDO-30-01

BORING NUMBER: # 1

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Br- well-graded gravelly SAND f-c. sand w/ f-m gravel tr. silt. WET tr. wood frags					1		0-3"	≈3"	mixed sediment measured recovery 3.5"
	EOB 3.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: mary

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1658
0847

(5)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-30

BORING NUMBER: 02

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/DK Gr - well graded gravel SAND - f-c. SAND w/ f-c gravel tr. cobbles silt f. shell frags - WET OM.					1		0-8"	14"	SAT - mixed sediment measured recovery is 8"
	EOB - 8"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SD-30	BORING NUMBER #3

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	SAND & GRAVEL									measured 13" rec.
	GRAVELLY SAND - WET					1		0-13"		@1450 collected
	WELL ~~POORLY~~ GRADED									
	m-c sand f-c gravel									
	tr. cobble >2" diam.									
	tr. shells & shell fragment									
	slight odor									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	8/14/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SD-030	BORING NUMBER ~~1~~ 4

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	well graded f. Br/tan f-c. Sand – from gravel shells, shell fragments. to silt & clay – WET					1			≈16" 0-16"	measured rec. 12" SAT NO PICTURE
12										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED 8/14/01	PAGE 1 of 1
DRILLING METHOD CORE	
DRILLED BY	
LOGGED BY MARY LAWNON	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

16 ~~15~~ 50
0919

SOIL BORING LOG

(8)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SDO-30	#5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr poorly graded f-c. SAND w/ tr. f-m gravel tr. Shell frags, OM- WET					1		0-7"	NM	mixed ~~at~~ - Sediments measured recovery 7"
	EOB-7"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/14/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1709
0838

④

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SDO-30	06

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr f-c sand w/ little silt tr. f-m. gravel & shell frags. WET					1		0-6"	16"	mixed SAT sediments measured recovery 6"
	EOB - 0-6"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	PAGE
8/14/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION ON GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1456

1649

SOIL BORING LOG

(5)

WESTON

SUBSIDIARY

LOCATION SDO-30

BORING NUMBER #7

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	← WELL GRADED GRAVELLY SAND-w some silt (WET) tr. clay m-c. sand; f-c. gravel tr shells, shell fragments. tr. cobble >2" diam - slight odor					1		0-11'	≈11"	mixed sample

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED 8/14/01

PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1503
1702

(6)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD-030

BORING NUMBER: #08

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	SG: Gr/Bl f-c. sand w/ tr f-gravel shells - shell fragment WET - slight odor					1		0-7"	≈7"	mixed SAT sample.

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD030

BORING NUMBER: 09

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown fine sand, trace silt, roots/organics to 4". Increase in root content and silt with depth. Bottom 1" is a black silt trace sand.				moist/sl	1		0"-6"		
6	Tan fine sand, well sorted, trace roots, moist - slight odor					2		6"-12"		
12	As above, increase in silt content w/depth					3		12"-18"		
18	Black silt (organic), trace roots and fine sand, moist slight odor					4		18"-24"		
24	As above. Increase in gravel with depth. Becoming a poorly sorted gravel with some silt and trace fine sand at 33". wet - slight odor.					5		24"-36"		duplicate sample
36"	As above. Increase in sand.									
	As above (poorly sorted gravel, rounded to well rounded. trace slag.									
48"										Sample recovery below 48" was not possible. State was gravel & could not be collected using either method

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/7/01

PAGE: 1 of 1

DRILLING METHOD: HA

DRILLED BY: Joe

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1510
16:30

SOIL BORING LOG

(3)

WESTON	SUBSIDIARY	LOCATION SD-30	BORING NUMBER # 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- clayey-SILT- odor-slight sheen tr. fmsand around outside of tube annulus					1		0-6"	≈14"	Penetration ≈36" SAT
	Bl-Gr f-c sand w/ f-m gravel "1 @ bttm WET					2		6-12"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 8/14/01
PAGE: 1 of 1
DRILLING METHOD: CORE
DRILLED BY:
LOGGED BY:
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0923
1003

SOIL BORING LOG

(12)

WESTON	SUBSIDIARY	LOCATION SDO-30	BORING NUMBER 11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br/Gr poorly graded f-c SAND w/ tr. c. gravel-cobble Silt, Shell frags, WET	①	>2" diam			1		0-5"	5"	SAT-mixed sediment measured recovery 5"
	EOB-5"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/15/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0855
0958

SOIL BORING LOG

(11)

WESTON	SUBSIDIARY	LOCATION SDO-30	BORING NUMBER 12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Br/Gr well graded gravelly SAND (f-c SAND w/ f-m gravel & f shell frags; tr. silt.					1		0-5"	5"	SAT-mixed sediment measured recovery 5"
	EOB-5"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	PAGE
8/15/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1724
0806

(2)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-30-

BORING NUMBER: #13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Br-well graded gravelly SAND (f-c SAND w) f-~~m~~ gravel tr. silt & shells & frags. WET					1		0-7"	8"	SAT- mixed sediment. measured recovery 7"
	EOB - 7"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/14/01

PAGE: 1 of

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1625
0940

SOIL BORING LOG

(9)

WESTON	SUBSIDIARY	LOCATION SDO-30	BORING NUMBER #14

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br-well graded sandy GRAVEL-gravelly SAND f-c SAND-f-c. gravel tr. silt, shell frags, wet f.-om					1		0-14"	18"	mixed SAT sediment measured recovery 14"
	EOB-14"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/14/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0915
0951

(10)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-30

BORING NUMBER: ~~10~~ 15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br- well graded gravelly SAND (f-c sand w/ f-c. gravel) shell frags, Silt. WET					1		3" 0/6"	6"	SAT-mixed sediment measured recovery 3"
	EOB - 3"									

15

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0917

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	SD020	16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt. trace sand, organics/roots, clay - slight moisture + odor					1		0"-6"		
6"	Light brown fine sand. rounded to subrounded. trace roots, silt slight moisture + odor					2		6"-12"		
12"	~~Grey silt. some fine sand - sil~~ Grey sandy silt. trace roots/organics, and clay. moist - slight odor. Increase in silt w/depth					3		12"-24"		
24"	Dark gray to black sandy silt. trace roots and fine gravel - rounded to subrounded. moist slight odor					4		24"-36"		
36"	Black organic silt. trace sand roots and shell fragments. trace slag. wet at bottom 2". slight odor trace fine gravel at bottom 2"					5		36"-46"		
46"										
48"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	8/17/01
PAGE	1 of 1
DRILLING METHOD	HA
DRILLED BY	Sae
LOGGED BY	J. Moreno
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

7820

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: 9D030-

BORING NUMBER: 7

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Sur									
	~~Dark~~ brown silt, trace sand, organics, roots - slight moisture and odor - trace clay					1		0"-6"		
6"	Grey clayey silt. trace organics (roots), fine sand - slight moisture & odor					2		6"-12"		
12"	As above, less clay. Wood present at 20" and increases with depth (wood content)					3		12"-24"		
24"	As above					4		24"-30"		
	Grey silty clay. trace fine sand + shell fragments, organics moist, slight odor					5		30"-36"		
36"	As above. Increase sand with depth					5		36"-42"		
	Dark grey silt. trace fine sand increasing with depth. trace fine shells - very little organics. wet. slight odor					6		42"-54"		
48"										
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/16/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Joe Ruiz

LOGGED BY: S. Moore

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1533
1717

(7)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SDO-30

BORING NUMBER: 18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gv/Bl. gravelly sand. f-c sand w/ f gravel shells; shell & wood frags well-graded WET					1		0-6		0-21" measured recovery
						2		6-12		
12						3		12-21"		
24	EOB-21"									
36										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1715
0817

SOIL BORING LOG

(3)

WESTON

SUBSIDIARY:

LOCATION: SDO-30

BORING NUMBER: 19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/poorly graded f-c SAND tr. fine gravel, silt shell frags WET					1		0-7"	8" DUP.	SAT-mixed sediments-measured recovered 7"
	EOB-7"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: DSEPA

LOCATION:

BORING NUMBER: SD030-20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt. trace organics, roots, slight moisture. slight odor.					1		0"-6"		
6"	As above. some clay					2		6"-12"		
12"	As above. increase in clay w/ depth. trace roots					3		12-24		combined duplicate sample
18"	As above									
24"	As above					4		24"-30"		
30"	Dark tan silty sand. trace shells, organics, roots. Sand and moisture content increasing with depth.					5		30"-42"		
36										
42"	Dark brown to black organic silt trace shell fragments. wet-slight odor trace wood.					6		42"-48"		
48"	Black organic silt. Some poorly sorted gravel - well rounded to rounded. trace wood and shell fragments. wet - slight odor. Gravel and shells decreasing with depth.					7		48"-60"		
60"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/6/01

PAGE: 1 of 1

DRILLING METHOD:

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD030-22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Sandy silt, brown, roots, dry, no odor					1		0-6"		NO SD030-21
6"	s.a.a.					2		6-12"		
12"	silt w/ some sand, brown, roots, wood pieces, o.m. slightly moist, no odor					3		12-24"		
24"	silty sand, brown, mottling of black silt + red sand, roots, slightly moist, trace clay, no odor					4		24-36"		
36"	gray silty, sand, wet, slight odor, o.m., very moist					5		36-48"		
48"	gray silt w/ some fine sand, organic odor, moist					6		48-60		dup
	silt w/ sand (coarse) + gravel									
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/17/01

PAGE: of

DRILLING METHOD:

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD027-23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	sandy silt, brown/gray, roots, wood pieces, trace clay, o.m., dry, no odor					1		0-6"		sampling began at 0815
6"	sand w/some silt, lt. brown, roots, shells, o.m., dry, no odor					2		6-12"		
12"	sandy silt, brown/gray, roots, wood pieces, o.m., slightly moist, no odor					3		12-24"		
19"	silt w/ sand, gray, mottling w/ red sand, roots, o.m., moist, no odor									
24"	S.a.a. gray sand w/some silt, wet, no odor,					4		24-36"		
36"	fine gray sand w/ silt, wet, no odor					5		36-42"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/17/01

PAGE: of

DRILLING METHOD:

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1008

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: SD030

BORING NUMBER: 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	Brown silt, trace sand, organics/roots - slight moisture + odor					1		0"-6"		
12	Grey silt, some clay, trace sand, roots/organics. slight moisture + odor					2		6"-12"		
	As above					3		12"-18"		
24	Reddish-brown sandy silt, trace roots/organics, fine gravel (rounded) and clay - moist - slight odor					4		18"-24"		
30"	Dark brown, silt, trace sand and gravel (poorly sorted - rounded to well rounded) increasing w/depth, trace roots and organics. moist - slight odor					5		24"-30"		
36	light brown gravel, poorly sorted - rounded to subrounded, trace sand and slag. very moist - no odor					6		30"-42"		
42"										Refusal below 42" End of boring
48										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/17/01

PAGE: 1 of 1

DRILLING METHOD: HA

DRILLED BY: Joe

LOGGED BY: Joe

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1545
0908

SOIL BORING LOG

(7)

WESTON	SUBSIDIARY	LOCATION SDO-30	BORING NUMBER 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br - well graded gravelly SAND - f-c. sand w/ some f-c. gravel, tr. cobble > 2" diam, silt. Shell frags, OM. WET					1		0-5"	5"	SAT-mixed sediment measured recovery 5"
	EOB-5"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/14/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** *Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)*
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1106

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SD030

BORING NUMBER: E6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, some fine sand, trace organics, slight moisture and odor.					1		0"-6"		
6"	Light brown sandy silt, trace organics - slight moisture & odor, trace shells					2		6"-12"		
12"	Dark brown silt, trace fine sand and organics, slight moisture and odor, trace clay. Increase in clay with depth					3		12"-24"		duplicate sample
24"	Light brown clayey silt. some sand increasing with depth. Trace shells and fine to medium gravel (rounded to subrounded. moist, - slight odor					4		24"-34"		
34"										
36"	Dark brown to black silt, trace clay, organics and fine sand, trace shell fragments. sand content decreasing with depth. Trace fine gravel					5		34"-48"		
48"	Dark brown silt. some fine sand, trace shells and organics, moist slight odor					6		48"-54"		
60"										no recovery possible below 54". wet sand.

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/16/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Joe / Sarah

LOGGED BY: J. Lorenz

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1020

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: 9D030

BORING NUMBER: 27

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	SA ~~Dark~~ brown silt, trace organics, clay very little sand, moist - slight odor					1		0"-6"		
6"	As above, some clay					2		6"-12"		
12"	As above					3		12"-18"		
18"	Dark brown clayey silt trace sand and organics, shell fragments, moist, slight odor					4		18"-24" 24"-30"		
30"	Dark brown silt, trace clay, organics, shell fragments and fine sand, moist, faint odor					5		30"-42"		
42	Dark grey silt trace shells and organics, very moist, faint odor					6		42"-54"		
54"	As above, trace fine sand					7		54"-60"		
60"										

EXPLANATION

▼ Water Table (24 Hour)

▽ Water Table (Time of Boring)

PID Photoionization Detection (ppm)

NO. Identifies Sample by Number

TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE

THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample

REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL

SILT | HIGHLY ORGANIC (PEAT)

SAND | SANDY CLAY

GRAVEL | CLAYEY SAND

SILTY CLAY

CLAYEY SILT

DATE DRILLED: 8/16/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Joe / Sarah

LOGGED BY: J. Lorenz

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

120f

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SD030	BORING NUMBER 28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown fine sand to 2". trace organics, moist. Dark brown silty sand. trace organics. moist - slight odor					1		0"-6"		
6"	Brown silt, some sand, trace organics and wood. moist-slight odor. trace clay					2		6"-12"		
12"	Dark brown silt, some clay, trace organics and sand. moist-slight odor. clay content increasing with depth					3		12"-24"		
24"	Dark brown to black silt. trace clay - decreasing with depth. trace fine sand, organics, shell fragments. moist - slight odor					4		24"-36"		
36"	Dark tan fine sand - some shells trace organics. wet - slight odor. Sand grain and shell grain decreasing with depth					5		36"-48"		
48"	As above - trace fine to medium gravel. rounded to subrounded.					6		48"-54"		
54"	Dark tan poorly sorted gravel - rounded to subrounded. trace shells and poorly sorted sand - rounded to subrounded. wet - faint odor					7		54"-60"		
60"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/16/01	1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Joe / Sarah

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SD030

BORING NUMBER: 29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark ~~light~~ brown silt, some clay, little sand, slight moisture + odor					1		0"-6"		
6"										
	SAME AS ABOVE					2		6"-12"		
12"										
	As above, trace light brown fine sand, trace slag					3		12"-18"		
18										
	Dark brown sandy silt, trace shells and organics, moist					4		18"-24"		
24"										
	Dark brown fine sand, trace organics, wet					5		24"-30		Duplicate sample taken
	Dark brown sandy silt, trace organics, moist					6		30"-36		
36"										
	Dark brown silt, trace fine sand, little organics, wet					7		36"-42"		
48"										Below 42", sand was wet, no recovery was possible at any depth below this point.

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/16/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: [illegible] / Sarah

LOGGED BY: [illegible]

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1640

1035

SOIL BORING LOG

(13)

WESTON

SUBSIDIARY:

LOCATION: SDO-30

BORING NUMBER: 30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl- silty f. SAND w/tr. f. gravel OM - WET					1		0-4"	NM	unmixed SAT sediments. measured recovery 30"
	Gr- poorly graded f-c SAND w/ f. gravel tr. silt, OM, ~~shell frags~~ ~~leaf frags~~ WET					2		4-12"		
10	SAA									
	SAA					3		12-18		
20	Bl-DkGr clayey SILT w/tr. f. sand, OM, leaf & shell frags, f-m gravel - WET Slight odor					4		18-30"	DVP	
30	EOB-30"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/14/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed? Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0838

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: SD030

BORING NUMBER: 31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown - silt, trace sand, clay, organics/roots - slight odor & moist-wet					1		0"-6"		
6"	As above - increase in clay with depth					2		6"-12"		
12	As above - becoming a silty clay at 13".					3		12"-18"		
18"	Reddish-brown silt, trace sand roots, clay. moist - slight odor	trace shell fragments				4		18"-24"		
24"	As above					5		24"-36"		
36"	Dark grey organic silt, trace sand, roots, and shell fragments. moist - slight odor, becoming wet at bottom 2". trace wood.					6		36"-48"		
48"	Dark grey silt - trace sand and organics. trace shell fragments, moist - slight odor					7		48"-54"		
54"										Bottom 6" fell out of auger, (fine wet sand).

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/17/01

PAGE: 1 of 1

DRILLING METHOD: HA

DRILLED BY: Joe

LOGGED BY: S. Adams

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
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			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1735

1054

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD030

BORING NUMBER: 32

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	gray gravel w/trace silt & sand, wet, no odor					1		0-4"		Recovery 32" MR = 31"
4"	black/gray silty sand, wet, slight organic odor									
10						2		4-12"		
12"	gray silty sand, fine sand, some shells, moist, no odor									
20						3		12-24"		
24"	S.2.2.									
30						4		24-36"		
36"										
40										
50										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/16/91

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD030-33A

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silt w/ sand, brown, wood pieces, roots, dry, no odor					1		0-6"		
6"	silt w/ trace sand + clay, lt. brown, wood pieces, roots, dry, no odor					2		6-12"		
12"	gray silt w/ trace clay + sand, roots, o.m. slightly moist, no odor									
	brown/gray silt w/ trace clay, roots, slightly moist, no odor					3		12-24"		
	~~lt. brown sand w/ red mottling, med~~ fine to med									
24"	brown sand w/ silt mottled with black silty sand + red sand, roots, slight odor, shells, slight moisture, med-fine sand					4		24-30"		
30"	gray-black silty fine sand, shells, o.m., roots, organic odor, slightly moist					5		30-36"		
36"	gray fine sand w/ trace silt mottling of red + black sand, shells, roots, ~~grave~~ rock, moist, slight odor					6		36-48"		
48"	gray, wet, fine, sand, shells									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
  - SPLIT-BARREL
  - AUGER
  - ROCK CORE
  - THIN-WALLED TUBE
  - CONTINUOUS SAMPLER
  - NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- ____
- ____

DATE DRILLED: 8/17/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemoth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1540

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: SD 030

BORING NUMBER: 34

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silty, trace organics, fine sand. slight moisture - no odor trace clay					1		0"-6"		
6	Dark ~~grey~~ brown silt, trace organics. sand increasing w/ depth, trace clay, moist					2		6"-12"		
12"	As above. Increase in clay w/ depth					3		12"-18"		
18"	Dark brown clayey silt. trace shell fragment & organics and wood. moist - faint odor					4		18"-24"		
24"	Dark brown to black silt, trace organics wood & shell fragments, moist - slight odor					5		24"-30"		
30	Dark grey silt. trace organics, wood and shell fragment. slight odor. moist.					6		30"-42"		
36"	As above. Increase rate of decomposition w/ depth.									
42	Dark grey poorly sorted gravel. Rounded to well rounded. trace poorly sorted sand and shells wet - no odor					7		42-54		combined
54										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/16/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Sarah Soe

LOGGED BY: S. Morris

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1615
0902

SOIL BORING LOG

(6)

WESTON	SUBSIDIARY	LOCATION SDO-30	BORING NUMBER 35

DEPTH IN FEET	LITHOLOGIC DESCRIPTION (fair Uniform, poorly, gravelly)	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br- well graded f-c SAND w/f. gravel tr. silt shells &					1		0-3"	4"	SAT-mixed sediment + measured recovery 3"
	shell frags & CM-WET									
	EOB-?3"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/14/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** *Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)*
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals *in Sand*
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1636

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: SD030

BORING NUMBER: 36

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	Dark brown silt, trace clay, organics, sand, moist (slight), trace shells and plastics. slight odor					1		0"-6"		
12"	Dark brown silty sand trace organics, wood, plastics, slight moisture + odor.					2		6"-12"		
	As above, trace shells, 1" organic silt layer at ~~13"-14"~~ 17"-18"					3		12"-18"		
24"	Dark grey organic silt trace sand, roots. moist - slight odor					4		18"-24"		
	As above, trace wood.									
	As above. wet					5		~~24-36~~		combined - duplicate sample taken
36"	Black poorly sorted gravel. well rounded to rounded. trace poorly sorted sand, shells. trace silt at 36"-37" decreasing with depth.					6		36-48		
48"										
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/16/01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Joe / Sarah

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	01

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	RB-DK mottled silty clay w/ tr. OM roots. moist					1		0-6"	DUP	
10	RB-Gr/Gr. silty CLAY-less clay -OM-PEAT moist					2		6-12"		
12	PEAT-DK-Br. moist									
	DKBR. — some Y/B-Gr/Gr PEAT— silty CLAY moist					3		12-24"		
24	BK. PEAT					4		24-36"		
36	SAA moist									
	— — — moist					5		36-48		
48	SAA WET									
	WET					6		48-60"		
60	SAA EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED	8/10/01
PAGE	1 of 1
DRILLING METHOD	HA / CORE
DRILLED BY	MIKE
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-2

BORING NUMBER: 2

DEPTH IN ~~FEET~~ inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. brown silt w/clay & trace sand, o.m., dry, no odor, roots					1		0-6"		
6"	s/a/a					2		6-10"		
10"	black, organic rich, silt, wood pieces, roots, wet, slight odor					3		10-24"		
24"	s.a.a.					4		24-36"		
36"	s.a.a.					5		36-48"		
48"	s.a.a.					6		48-60"		
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: ~~8/9/01~~ Ben Medkel

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(5)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER # 03

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC:	REMARKS OR FIELD OBSERVATIONS
	Y/B-R/B- clayey SILT									
	tr. OM roots & wood frags-	DRY MOIST				1		0-6"		
8"	Y/B R/B silty CLAY									
	Bl-Gr organic SILT-PEAT-MOIST-WET					2		6-12"	DUP	
12	woody fibrous OM-									
						3		12-24"		
24	SAA									
						4		24-36"		
		WET								
36	SAA									
		WET						36-48"		
48	SAA	WET								
								48-60"		
60	END-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED	8/9/01
PAGE	1 of 1
DRILLING METHOD	HA
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: 4053-4

BORING NUMBER: 4

DEPTH IN ~~FEET~~ inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. brown clay w/silt, roots, wood pieces, leaves, dry, no odor					1		0-6"		
6"	s/a/a lt. brown clay, leaves, roots, slightly moist, no odor					2		6-12"		
12"	s dk. brown/black silt w/ lt. brown clay, O.M., moist, slight organic odor, roots					3		12-24"		dup
24"	dk. brown silt, many fibrous roots, lg. wood pieces, leaves, wet, slight odor					4		24-36"		
36"	s.a.a.					5		36-48"		
48"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: Mike Browning for ~~Heidi Nemeth~~

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

16-10

(11)

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	#4

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER								22"	48-70 45 22 measured
48	DK Br- organic SILT- PEAT W/fiberous wood & plant fragment WET					6		48-60"		
60						7		60-70"		
72	EOB-70"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/9/01	1 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
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			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(2)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B-mottled DK Br-silty CLAY w/ tr OM-roots moist					1		0-6		
8"	SAA-Gr/Gr									
12	PEAT-DK Br-Jr. Y/B-R/B silty clay moist					2		6-12		
	DKBR ~~BT~~ PEAT - wood frags.					3		12-24"		
24	SAA moist									
	BI PEAT moist					4		24-36		
36	SAA moist ~~WET~~									
						5		36-48		
48	SAA WET									
	CORE					NS		48-60		sample was not collected prior to returning sample to borehole
60	SAA WET									
	EOB-60'									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/10/01
PAGE	1 of 1
DRILLING METHOD	HA/CORE
DRILLED BY	MIKE
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

8:30

SOIL BORING LOG

(2)

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: #6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown silty clay, trace organics, moist, slight odor, plastic					1		0-6"		
	As above to 8" depth, After 8" is an olive clayey silt, moist, trace organics, slight odor					2		6-12"		
12	Dark brown organic silt. Some roots and wood fragments. high moisture, wet. (Peat)					3		12"-24"		
24	Black organic silt. Some wood fragments and trace roots. high moisture content, slight odor					4		24"-36"		
36	As above. more decomposed, slightly less wood fragments. higher moisture content.					5		36"-48"		
48	As above. higher moisture content. higher rate of decomposition with depth							48"-60"		
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/14/01

PAGE: 1 of

DRILLING METHOD: HA/CORE

DRILLED BY: JOE/KEITH

LOGGED BY: JOSEI MARY

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(1)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER #7

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B-Y/B mottled Dk Br- silty CLAY w/ tr. OM- MOIST					1		0-6		DUP.
6	Gr/Gr mottled Bl- clayey SILT & R/B					2		6-12		
10	Dk Br- PEAT- moist									
12	Dk-Br/Bl- PEAT - moist organic SILT - fiberous woody & plant material - frags.					3		12-24"		
24	MOIST									
	SAA organic SILT - PEAT MOIST					4		24-36"		
	SAA wood fragments. WET									
36	SAA					5		36-48"		
48	SAA.					6		48-60"		
60	EOB-60"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/13/01
PAGE	1 of 1
DRILLING METHOD	HA/CORE
DRILLED BY	HEIDI / JOE
LOGGED BY	MARY / JOSE
EXISTING GRADE/ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-8

BORING NUMBER: 8

DEPTH IN FEET inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. brown silty clay roots, o.m., dry no odor					1		0-6"		
6"	brown clay w/silt, black organic rich ~~clay~~ silt roots, wood pieces, slightly moist, no odor					2		6-12"		
12"	black brown silt, organic rich, wood pieces, roots, moist, slight odor					3		12-24"		
24"	s.a.a. but all black					4		24-36"		
36"	s.a.a.					5		36-48"		
48"	s.a.a.					6		48-60"		
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: Ben Mekdel

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1543
ft

(3)

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	#9

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B Y/B mottled Dk Br silty CLAY w/ tr. slightly moist					1		0-6"		
6	Gr/Gr/Bl-mottled clayey SILT moist									
10	Dk-Br-Bl-organic SILT-PEAT moist					2		6-12		DUP
12	SAA					3		12-24		
18" WET	tr. sit clayey SILT-collapse moist									
24	SAA WET									
	SAA - organic SILT-PEAT less fiberous					4		24-36"		
36	WET									
	Bl-R/B - organic SILT-PEAT WOOD FRAGMENTS					5		36-48"		
48	SAA WET									
	CORE REFUSAL @ 48"									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/13/01
PAGE	1 of 1
DRILLING METHOD	HA/CORE
DRILLED BY	SARAH/JOE
LOGGED BY	MARY/JOES
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, *Organic Silt*, Silt, Clay, Sandy Clay, *Organic Clay*
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1572

(2)

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SLO-53 | BORING NUMBER #10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B-Y/B mottled DK Br-silty CLAY w/tr. OM. roots - moist					1		0-6"		
HA	Gr/Gr/DK-Bl-mottled clayey SILT - w/ organic SILT-PEAT moist					2		6-12		
12	SAA							12-18"		
18	moist					3		~~12-24"~~		
	Compacted PEAT									
24	Bl-DK-organic SILT w/							18-30"		Tube - in hole 24"-6" compacted
						4		~~24~~ ~~18-36"~~		CORE INTERVAL 24-42" did not collect sample not represnt. ?? CAVED-IN HOLE COLLAPSE
	moist-WET									
36	DK-Gr/Br clayey SILT w/ tr. f. SAND					5		30-36"		
42"	moist-WET									
48										
60	Pushed tube 60"									

#1 CORE

CORE #2 22-42"??

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 8/13/01

PAGE: 1 of 1

DRILLING METHOD: HA / CORE

DRILLED BY: SARAH / JOE

LOGGED BY: MARY / JOSE

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

①

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B-mottled Dk Br. silty CLAY w/ trOM-moist					1		0-6"		
8"	Gr/Gr clayey SILT w/ tr-OM					2		6-12"		
	DK Br-PEAT-moist									
	SAA moist					3		12-24		
	SAA moist					4		24-36	OVP	
	SAA WET									
	SAA WET					5		36-48		
	CORE					6		48-60"		
	SAA WET									
	E									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- ____
- ____

DATE DRILLED	8/10/91
PAGE	1 of 1
DRILLING METHOD	HA / CORE
DRILLED BY	MIKE
LOGGED BY	MARY
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-12

BORING NUMBER: 12

DEPTH IN ~~FEET~~ inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	gray fine sand, w/ trace brown sand, roots, leaves, dry, no odor					1		0-6"		
6"	same as above					2		6-12"		
12	fine gray sand, gravel, roots, wood pieces, no odor, dry, leaves, trace black silt					3		12-18"		
18	same as above brown silt w/ clay, roots, leaves, dry, no odor, O.M.					4		18-24"		
	brown (dk.) sand w/ silt, gravel, roots, leaves, o.m., gray sand, dry, no odor									
24"	same as above w/ rocks					5		24-36"		
36"	Same as above lt. brown clay w/ silt, dry, roots, wood pieces, no odor					6		36-42"		
	brown, black, silt, o.m., wood pieces, dry, no odor									
42"	black gray silt, mottled w/ lt. brown moist clay, lt gray fine sand, moist, many fibrous roots, wood pieces, leaves, slight odor					7		42-48"		
	black silt w/ gray sand, many fibrous roots, leaves, wood pieces, slightly moist, slight organic odor					8		48-54"		
48"	black silt w/ trace gray fine sand, many fibrous roots, leaves, wood pieces, moist, organic odor					9		54-60"		
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: Mike Browning

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL053-13	13

DEPTH IN ~~FEET~~ inches	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty clay, lt. brown w/reddish tint, lg roots +1" dia., many fibrous roots, no odor, somewhat moist					1		0-5"		
5"	dk brown silt w/ trace clays, many many fibrous roots, few larger roots, no odor, very moist					2		5-12"		
12	same as above					3		12-24"		
24										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
8/7/01	of

DRILLING METHOD: hand auger / lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1230

(3)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: #13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									22"	24-60" ~~22"~~ measured 0-5 22" 5-12 12-24
	HAND AUGER									
24	Bl-Dk Br- organic SILT fr clay - moist - (wood frags) wood chunks @ 33" & btwen ~~14-17"~~ (38-41")					4		36 24-~~44"~~		24 66 -24 22 46 36
36	PEAT					5		36-44 24		24 9 33
~~44~~ 44"	Bl-Gr- clayey silt tr OM - moist-wet					6		44-46"		24 14 38
48 46"	EOB-46"									appear to be upper 22"

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/7/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY: JOE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-14

BORING NUMBER: 14

DEPTH IN ~~FEET~~ inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	brown silt w/ clay, dry, live creatures, many roots, O.M., no odor, wood pieces					1		0-6		
6	same as above					2		6-12"		
	brown silty clay w/ black silt, moist, roots, leaves, O.M., no odor					3		12-18"		
	black silt, many fibrous roots, wood pieces, leaves, no odor, wet					4		18-24"		
	Same as above							24-36"		
	same as above w/ more water							36-48"		
	same as above w/ standing water							48-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: Mike Browning

LOGGED BY: Heidi [illegible]

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(4)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER #15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Y/BY/B mottled Dk Br silty CLAY w/tr OM. Slightly moist					1		0-6"		
6	Gr/Gr mottled Bl-clayey SILT-moist									
8	Dk-Br/Bl-fiberous organic SILT moist					2		6-12"		
12	Dk-Bl-organic SILT-PEAT fiberous OM					3		12-24"		
24	MOIST									
	SAA									
WET						4		24-36		
36	MOIST-WET									
	SAA					5		36-48"		
48	WET									
	SAA CORE					6		48-60"	RUP	
60	WET									
	EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED	PAGE
8/13/01	1 of 1

DRILLING METHOD: HA/CORE

DRILLED BY: JOE/HEIDI

LOGGED BY: MARY/JOE

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-16

BORING NUMBER: 16

DEPTH IN ~~FEET~~ INCH	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	clay w/ silt. Lt. brown, leaves, some roots, dry, no odor	CL				1		0-6"		
9"	clay w/silt, lt. brown, leaves, some roots, moist, no odor	CL				2		6-9"		
12"	black-gray silt, O.M., roots, moist, slight organic odor	ML				3		9-12"		
20"	lt. brown silty clay, gray silt, black silt, roots, leaves, slight organic odor, moist	ML				4		12-20"		
24"	black silt, moist, organic odor, roots, leaves	ML				5		20-24		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/7/01

PAGE: of

DRILLING METHOD: hand auger / lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOIL

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(4)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER #16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									20"	24-44" measured recovery 20". 0-6 9-12 20-24 6-~~12~~9 12-20
24	Bl-organic SILT-tr clay organic mat. roots & wood frags. WET	ML				~~3-4~~ (6)		24-28"		
28"										
36	DK-Gr-silty f SAND w/tr. tr clay & OM wood & shell frag	ML SM				(7)		28-44"	DUP	
39"	Gr/Lt. SAA.									
44"										
48	EOB-44"									

44
28
16

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/7/01	2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-17

BORING NUMBER: 17

DEPTH IN FEET inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Clay silt, lt. brown, dry, no odor, many roots, O.M. (leaves)					1		0-6"		
6"	same as above slightly more moist					2		6-12"		
11"	black silt, many fine roots, moist, slight odor, OM.									
12"	black silt, many fine roots, lg. roots, many leaves, wood pieces, very moist, organic odor					3		12-24"		
24"	same as above w/ large pieces of cattails					4		12-32"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 8/7/00

PAGE: of

DRILLING METHOD: hand auger / lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: 17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									24"	measured 24"
	HAND AUGER									
36	Bl-Dk-Br - organic SILT - PEAT - WET					5		36-48"		60 36 24
48										
	WOOD CHUNK @ 50-52"					6		48-60"		
60	EOB - 60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/7/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LAWNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

1

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
						1		0-6"	28"	Sample collected @0820-1
						2		6-12		
12										
24										
36										
48										
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/14/01	1 of

DRILLING METHOD: ~~Jet~~ HA/CORE

DRILLED BY: JOE/SARAH

LOGGED BY: JOSE/MARY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0820
1543 8/14

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	#18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	JOE IN / MUCK-MUD ~~HAND AUGER~~								28"	
0	Bl-organic SILT-PEAT fiberous OM. shell frags WET.					1		0-6"		
						2		6-12		
12						3		12-18"		
19	Gr/Bl-silt w/ tr. f. SAND, OM-roots, wood shells, fragments-WET					4		18-25"		
24 27 25	chunk of wood @ 24-25"									
28	1" f-m-lt. br. SAND & shell fragment									
	EOB-28"									
36										See 1 AM

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/14/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE RUIZ

LOGGED BY: MARY LANDON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: #19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Y/B-R/B- clayey SILT w/ tr. OM roots - DRY					1		0-6"		
	R/B-Y/B - SAA slightly moist					2		6-12"		
12	Dk Br-Bl-organic SILT-PEAT fibrous OM roots-fr clay MOIST					3		12-24		
	SAA MOIST									
24	SAA MOIST									
WET 30	SAA WET					4		24-36"	DUP.	
36	SAA - no clay - more decomposed OM - WET					5		36-48"		
48	SAA WET					6		48-60"		
60	EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/9/01

PAGE: 1 of 2

DRILLING METHOD: HA / CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-20

BORING NUMBER: 20

DEPTH IN ~~FEET~~ inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dry, brown, clay w/silt + trace sand, roots, O.M., no odor, lg. root					1		0-6"		
3"	slightly moist, brown, clay, trace silt, very lg. roots, many sm. roots									
6"	black, gray, brown, clay w/silt roots, leaves, no odor, moist					2		6-12"		
	black, organic odor, wet, many roots, leaves									
12"	Same as above					3		12-24"		
24"	Same as above					4		24-30"		
30"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED | PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1555

(2)

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION SLO-53

BORING NUMBER 20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER							22"		measured 22" 36-58 36 22
36	DK-Bk-organic SILT-PEAT fiberous wood & plant frags-WET					5		36-53"		
48										
53	DK Gr silty clay w/ thin Lt Gr lenses of f. sand & tr OM roots-shell frag WET					6		53-58"		
60	EOB 58"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 8/8/01

PAGE 2 of 2

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft; Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53 21

BORING NUMBER: 21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B - Dk Br. SILT w/ tr - little Clay & OM - Dry				1			0-6"	DUP	
	R/B - Dk Br clayey SILT w/ tr. OM				2			6-12"		
2'	Br - R/B - clayey SILT more OM - moist									
	1 - EOB LEXAN.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/7/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER/CORE

DRILLED BY: JOE / MIKE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER #21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER								30"	measured recover. 31" 12-42" refusal chunk of wood 42-60"
12	Bl- organic SILT w/ fiberous OM- (cattails) tr. clay					3		12-20"		
20" 24	Gr/Gr sandy silt w/ tr om- Y/B mottled- MOIST					4		20-30"		
30" 36	Gr/mottled Y/B clayey SILT tr. f sand OM (shell frag) MOIST-WET					5		30-40"		
40" 42" 0930 1"	DK Br f-m sand-wood frag-chw FK-BTM-3/4"									Recovery-18" some slump per JR. 42 18 60
48	Gr/Gr- ~~sandy~~ silty ~~silt~~ sandy w/ tr. clay & OM- SAT-WET					6		42-54"		
54" 0945 60	Gr/mottled-Y/B sandy SILT w/ tr. clay- OM- Shell frags - WET					7		54-60"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/7/01
PAGE	2 of 2
DRILLING METHOD	CORE
DRILLED BY	JOE/MIKE
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53-22

BORING NUMBER: 22

DEPTH IN ~~FEET~~ inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	clay w/silt, dry, no odor, some small roots, lt. brown					1		0-4"		
4"	silt w/clay, no odor, small roots, leaves, lt. brown, slightly moist					2		4-8"		
8"	dk. brown silt, many roots, organic matter, slightly moist, no odor					3		8-12"		
12"	same as above					4		12-24"		
20	black silt, moist, slight odor, roots. O.M.									
~~24"~~ 24"										

EXPLANATION

▼ Water Table (24 Hour)

▽ Water Table (Time of Boring)

PID Photoionization Detection (ppm)

NO. Identifies Sample by Number

TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE

THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample

REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL

SILT | HIGHLY ORGANIC (PEAT)

SAND | SANDY CLAY

GRAVEL | CLAYEY SAND

SILTY CLAY | ____

CLAYEY SILT | ____

DATE DRILLED: 8/7/01

PAGE: of

DRILLING METHOD: hand auger / lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(6)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
								24-48"		Measured recovery 24 0-4 24 4-8 48" 8-12 SAT. 12-24
24	Dk Gr- silty SAND to clay OM- roots, wood frags. WET							5	24-36"	
31	SAA- slightly more ~~slit~~ silt & clay, wood & shell frags. & OM- roots							6	36-48"	
46" 48	SAA slightly more f-m SAND									
	EOB 48"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 8/7/01 | PAGE 2 of 2
DRILLING METHOD CORE
DRILLED BY
LOGGED BY MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)
LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

10:30

(4)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: 23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Y/B-R/B silty CLAY w/ tr OM roots & wood frags. slight moist					1		0-6"		
8"	~~Y/B-R/B-silty clay w/OM roots wood frag moist-WET~~ clayey-SILT									
	DK Br-Bl-organic silt-PEAT									
12	fibrous OM-wood frag-roots-moist-WET					2		6-12"	RP	
	SAA-organic SILT-PEAT w/ fibrous OM-woody-WET					3		12-24"		
	SAA									
24	Gr-Lt. Br f-m-SAND-BTM 1-0.5" WET									
						4		24-30"		
	Gr-Br-f-m sand w/ tr. silt OM/wood frags.-WET					5		30-36"		
36	Gr/Br-f-m sand w/ tr OM/root frags-WET					6		36-40"	15"	CORE 36-51" compacted-rec. @ 4"-TOP of CORE to 40"
	EOB-40"									
48										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/8/01

PAGE: 1 of 2

DRILLING METHOD: HAND AUGER / CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0910

SOIL BORING LOG

(2)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	# 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	YB/silty clay w/OM- roots wood frags - moist					1		0-6"		
9"	SAA					2		6-12"	DUP.	
12	Y/B-Gr. organic SILT-PEAT-tr. clay wood frags - slt. moist - wet W/silty clay I									
	B/- organic SILT-PEAT wood-plant frag-fiberous-WET					3		12-24"		
	SAA									
24	SA					4		24-30"		Refusal @ 30"
36	NO CORE									
48										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
8/8/01	1 of 2

DRILLING METHOD: HAND AUGER/CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1500

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53-25

BORING NUMBER: # 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER							20"		measured rec. 20"
36	DK-Br-Bl-organic SILT-PEAT WET fiberous wood&plant frags.					6		36-48"	DUP	56 / 36 / 20
48	SAA.					7		48-56"		
60	EOB-56									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/8/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-25

BORING NUMBER: 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	brown silt w/clay, trace sand, leaves, fibrous roots, lg. roots, dry, no odor	ML				1		0-6"		
6"	clay w/silt, brown, moist, no odor, some roots, some leaves	CL				2		6-12"		
	~~black silt, many fibrous roots, moist, no odor~~									
12"	clay w/silt, brown, moist, no odor, some roots, some leaves	CL				3		12-19"		
	black silt, many fibrous roots, wet, slight odor, leaves, O.M.	ML				4		19-24"		
	same as above	ML				5		24-36"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0948
408

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Gr clayey SILT w/ OM - PEAT								22	23" measured
3"	MOIST WET					1		0-6"		
	DK Br/R/B PEAT - fiberous OM - roots, plant & wood frags					2		6-12		
12						3		12-23"	Dup	
	MOIST									
21"	DK Br/Gr organic SILT - clayey SILT w/ shell, shell frags, OM wood frags - moist									
24	EOB 23"									
36										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/14/01
PAGE	1 of 2
DRILLING METHOD	CORE
DRILLED BY	JOE
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(9)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
US EPA	SL053-	26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									23"	Pushed to a depth of 5'.

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	8/14/01
PAGE	1 of 1
DRILLING METHOD	Hand Auger
DRILLED BY	Joe/Keith
LOGGED BY	Jose/Adam
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0903

SOIL BORING LOG

(3)

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	# 217

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown clayey silt. Trace roots and organics, slight moisture and odor. Brittle.					1		0"-6"		
6"	As above to 8". moist.									
12"	Dark brown silt w/high organic content. moist. slight odor					2		6"-12"		
18"	Black organic silt/Peat. moist slight odor									
	As above					3		12"-24"		
24"	As above. moisture and rate of decomposition increasing with depth. Trace wood.					4		24"-36"		
36"	As above. Increase in wood fragments.									
42"	As above. less wood fragments. trace clay, high moisture content.					5		36"-48"		
48"	light brown to dark green silt, trace organics, shell fragments/sand. very moist. faint odor.					6		48"-54"		
54"	Grey clayey silt. trace fine sand/shell fragments and organics. no odor, wet. trace wood fragments					7		54"-60"		
60"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/14/01
PAGE	1 of 1
DRILLING METHOD	Hand Auger
DRILLED BY	Joe/Keith
LOGGED BY	Jose/Clary
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(4)

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: H 28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B - clayey SILT w/ tr. OM - root DRY					1		0-6"		
	R/B mottled Gr/Gr silty clay w/ OM - roots & wood frags - slightly moist					2		6-12		
12	GR/Gr/R/B mottled SILTY clay - moist					3		12-20"		
20	Bl - organic SILT - PEAT - WET					4		20-24"		
24	SAA w/ f-m. sand & tr. clay Gr Shell frags. WET					5		24-36"		
36	YB/Gr/Gr - silty f-m sand w/ tr. OM & f-m. gravel WET					6		36-48"		
48	YB/Gr/Gr SAA CORE WET									core 5" rec.
	EOB - 53"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: 1 of 1

DRILLING METHOD: HA / CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT. AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

(3)

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION: SLO-53

BORING NUMBER: #29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br-Y/B silty clay w/ OM roots & wood frag - slightly moist					1		0-6"		
	R/B - w/YB mottled clayey SILT w/ tr f. sand & OM roots - moist					2		6-12"		
12	R/B/YB - silty f sand w tr Clay & OM - Dry - slighty moist					3		12-18"	DUP	
18"	YB/TAN - SILTY CLAY - WET					4		18-22"		
22	Bl - DK Br organic SILT & PEAT - WET					5		22-36"		
24	fiberous OM - woody - plant. tr. clay WET									
30	SAA WET									
36	SAA w/ tr. clay WET					6		36-42		
	DK-Gr/B sandy SILT w/ tr. Clay & OM - WET					7		42-48		48-54" SAT - sloppy
48	DK-Gr - sandy SILT w/ tr. OM f-m sand shell frags - WET					8		48-54"		
54	EOB - 54"									
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: 1 of 1

DRILLING METHOD: HA

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

8:20

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	#30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk-Br-SILT w/ tr. clay & organic material-moist					1		0-6"		
	SAA					2		6-12"		
	Bl. organic SILT w/ tr. clay moist-wet									
	Bl-Dk Gr- clayey SILT w/ tr. sand & organic material-moist-wet					3		12-24"		
	Gr/Grey-mottled Y/B sandy SILT- w/ tr. clay & OM-moist WET					4		24-36"		
	Gr/Grey mottled Y/B silty SAND w/ tr. clay & OM -WET									
	~~Y/B~~ Gr/Grey mottled Y/B ~~SILTY SAND~~ Sandy silt w/ tr. clay tr. f-m gravel & OM-WET					5		36-42"		
	LEAK- 60" - sluff recovery ≈ 22.5"									
	EOB - 60" 9:00 AM									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	8/7/01
PAGE	1 of 1
DRILLING METHOD	SARAH MEYER / JOE RUIZ
DRILLED BY	HAND AUGER
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: #30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER									0-6 6-12 12-24 24-36 36-42 Core 42-60" Δ6" slough.
36										
42	Gr/Lt. f-m sand w/ tr. silt. OM- roots, shell frags- moist.									
46"						6		42-46"		
48	Dk-Gr - SILT w/ tr f. sand shell frag, OM- moist									
49						7		46-49"		
	Gr- SILTY f-m SAND w/ tr. f-m gravel & OM shell frags. WET.									
60						8		49-60"		
	EOB									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL / AUGER / ROCK CORE / THIN-WALLED TUBE / CONTINUOUS SAMPLER / NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY / SILT / SAND / GRAVEL / SILTY CLAY / CLAYEY SILT / DEBRIS FILL / HIGHLY ORGANIC (PEAT) / SANDY CLAY / CLAYEY SAND / ____ / ____

DATE DRILLED: 8/7/01

PAGE: 2 of

DRILLING METHOD: CORE

DRILLED BY: JOE / MIKE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL053-31

BORING NUMBER: 31

DEPTH IN FEET-inch	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Clay with silt, lt. brown, large roots, many fibrous small roots, organic matter i.e. leaves, no odor, dry					1		0-6"		
6	Clay w/ trace silt, lt. brown, somewhat moist, many fibrous small roots, leaves, no odor, few lg. roots					2		6-12"		
12	Same as above					3		12-15		
15	black - dk. gray silt, slight ~~organ~~ odor, fibrous roots, organic matter, slightly moist					4		15-24		
24"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/7/01

PAGE: of

DRILLING METHOD: hand auger / lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi [illegible]

EXISTING GRADE ELEVATION (FT @MSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1430

(5)

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SLO-53	31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER							41 -24 17-19		recovery measured 17" 0-6 15-24 6-12 12-15
24	Bk- organic SILT w/ tr. clay OM- wood fragments, roots WET							5	24-36"	24 12
36	Gr- clayey SILT w/ tr. sand & shell frags - WET							6	36-39"	DUP
39"										
48	EOB - 48 - loss btm 2" 39"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/7/1
PAGE	2 of 2
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARK CANADA
EXISTING GRADE ELEVATION (FT. AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

0946

SOIL BORING LOG

(3)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 32

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Y/B-R/B - silty CLAY w/OM roots-wood frags-slightly moist					1		0-6"		
8"	Br/Gr-Bl ~~silty clay~~ clayey SILT w/OM-roots-moist wet wood frags.					2		6-12"		
12	~~Org~~ organic SILT-PEAT-fiberous-moist-wet									
	SAA-organic SILT-PEAT fiberous wood-plant matter-WET					3		12-24"		
24	Bl-organic SILT w/tr. clay & f. sand-fiberous OM-WET					4		24-30"		
	Gry f-m. sand w/tr silt OM wood & shell frags. WET					5			DUP	
36	EOB-36" CORE									
48										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/8/01
PAGE	1 of 2
DRILLING METHOD	HANDAUGER/CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1005

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 24 32

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	HAND AUGER								14"	rec. measured 4 56 -36 14"
36	Grey - f-c. SAND w/ tr. OM (shell fragments					5		36-47		
47" 48						6		47-50"		
	EOB-50"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/8/1
PAGE	2 of 2
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

8:30

①

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER 33

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	R/B-Y/B SILTY CLAY w/ OM-slightly moist (roots) wood frags					1		0-6"		
	SAA					2		6-12"		
8"	Y/B-Gr mottled ~~silty clayey~~ clayey silt) moist-WET-PEAT wood frags.									
12	Gr-Bl- organic SILT-PEAT WET-wood frags					3		12-24	DUP.	
	SAA									
24	SAA					4		24-36		
	SAA									
36	CORE									
48										
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/8/01
PAGE	1 of 2
DRILLING METHOD	HAND AUGER/CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1425

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-53

BORING NUMBER: 33

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									18"	measured 18"
	HAND AUGER									
36	Bl- organic SILT-PEAT fiberous woody material WET & wood frags. ??					5		36-48"		4 15/4 36 / 15
48						6		48-54"		
	EOB 54"									
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/8/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNOIN

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(5)

WESTON	SUBSIDIARY	LOCATION SLO 53	BORING NUMBER 34

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Y/B - sandy silt w/ tr. clay & OM - roots & wood frags slight moist					1		0-6"		
	Y/B - silt w/ tr f. sand & OM. - moist - WET					2		6-12		
12	Y/B - silt w/ tr. clay & OH wood frag ments, roots - moist - WET					3		12-18"		
18	Y SAA - little clay.									
	Y/B - mottled Gr/Gr silty CLAY					4		18-28"		
24	w/ OH wood frags. moist - WET									
28	Gr/Gr - Lt. Br. silty clay w/ fiberous wood frag - wet					5		28-36		
36	Bl - organic SILT - PEAT fiberous OH - woody - WET					6		36-40"		
40	CORE 40-58									
48										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL · AUGER · ROCK CORE · THIN-WALLED TUBE · CONTINUOUS SAMPLER · NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY · SILT · SAND · GRAVEL · SILTY CLAY · CLAYEY SILT · DEBRIS FILL · HIGHLY ORGANIC (PEAT) · SANDY CLAY · CLAYEY SAND

DATE DRILLED 8/8	PAGE 1 of 2
DRILLING METHOD HAND AUGER / CORE	
DRILLED BY	
LOGGED BY MARY LANNON	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CH[redacted] FOR FINE-GRAINED AND PARTLY ORGA[redacted]

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION SLO-53

BORING NUMBER ~~32~~ 34

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
									18"	measured 16" 58 40 18"
	HAND AUGER									
36						7		40-48"		
48"	Bl-Blk - organic SILT - PEAT fibrous wood material & wood									
48	frags, roots - WET					8		48-58"		
57" ~~59"~~	Gr/Gr - silty f-m. sand w/ shell frag & OM - WET									
60	EOB-58"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 8/8/01

PAGE 2 of 2

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANAN

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHE[redacted] FOR FINE-GRAINED AND PARTLY ORGAN[redacted]

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(2)

WESTON	SUBSIDIARY	LOCATION SLO-53	BORING NUMBER #35

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Y/BR/B - SILT w/ tr. [illegible] micaceous & OM - roots & wood frag - slightly moist					1		0-6"		
	Y/BR/B - SILT w/ tr. clay micaceous & OM - roots & wood frags - moist					2		6-12"		
12	R/B/YB - silty clay mottled Gr/Gr w/ OM fiberous wood frags - root - moist					3		12-18"		
	Gr/Gr mottled Y/B w/ Bl fiberous OM → silty clay					4		18-24	~~Dup~~	
24	Bl-DK Br - organic SILT - PEAT tr. clay - fiberous OM - woody - moist - WET					5		24-36"		
	SAA									
36	SAA									
	SAA									
48										
60	EOB-60"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/9/01
PAGE	1 of 2
DRILLING METHOD	HA / CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
US EPA	SL053	36

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Black organic silt, trace fine gravel and clay. Slight moisture and odor trace roots					1		0"-6"		
6"	As above. Increase in gravel (rounded, poorly sorted - to subrounded). trace fine sand and wood fragments					2		6"-12"		Duplicate sample
12"	As above. trace clay					3		12"-24"		
24"	As above. A 2" silt layer is present between 18"-20". light tan, trace mica.									
	tan clayey silt, trace mica and organics, slight moisture and odor					4		24"-36"		
36"	As above. Increase in clay with depth. trace wood + shell fragments.									
	light brown silty clay, trace wood, organics. Increase in organics with depth. Interval 40"-42" black organic silt/peat.					5		36"-42"		
	Black organic silt/peat. trace slag, slight moisture.					6		42"-48"		
48"										Refusal at 4'

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/14/01	1 of 1

DRILLING METHOD: Hand Auger
DRILLED BY: Joe / Keith
LOGGED BY: Joe / Mary
EXISTING GRADE ELEVATION (FT AMSL)
LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-1

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, some sand, trace organics, clay. slight moisture and odor					1		0"-6"		sample
	light brown fine sand, trace silt and clay, organics, shells. moist. slight odor.					2		6"-12"		sample
	As above, brown, trace slag.					3		12"-18"		sample
	dark brown silt. some fine sand, trace clay, organics, and shell fragments. moist - slight odor					4		18"-24"		sample
	dark brown clayey silt, trace organics and shells. moist. slight odor.					5		24"-30"		sample duplicate
	As above. sand lense encountered at 33"-34". tan fine sand. moist. slight odor.					6		30"-36"		
	Dark brown clayey silt, trace sand and organics, shells. moist, slight odor.					7		36"-42"		sample
	As above.					8		42"-48"		
	Dark brown sandy silt. trace organics, shell fragments, sand. moist. slight odor					9		48"-54"		sample
	Black silty sand. trace organics, shell, poorly sorted gravel. moist rounded to subrounded					10		54"-60"		sample

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8-1-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Mike B.

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-2

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace clay and organics. slight moisture. faint odor					1		0"-6"		sample
	Dark brown sandy silt. trace organics. slight moisture faint odor. trace shell fragments					2		6"-12"		sample
	As above.					3		12"-18"		sample
	As above. some clay									
	As above. moist					4		18"-24"		
	As above. sand lense layer interbedded at 32"-33" (tan fine sand). trace coarse gravel. rounded to subrounded.					5		24"-30		sample
								30"-36"		
	Tan to dark brown ~~silty sand. trace clay~~ sandy silt. trace clay, organics, shells. moist. slight odor.					6		36"-42"		Duplicate sample
	Dark brown to black clayey silt. trace sand, shells and organics. moist-slight odor					7		42"-48"		sample
	As above. slightly higher ~~clay~~ sand content.					8		48"-54"		sample
	Black sand silt. trace organics, shells, and poorly sorted gravel (rounded to subrounded) faint odor, trace wood. moist. Bottom 1/2 inch is a dark brown silty sand.					9		54"-60"		sample

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8-1-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: J. Ruiz

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA ~~Kalamazoo River~~

LOCATION: Kalamazoo River

BORING NUMBER: SL029-3

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt trace sand organics. dry - ~~no~~ faint odor. trace clay					1		0"-6"		sample
	As above, slightly more sand visible. slight moisture					2		6"-8"		
	light brown sand (fine grained, well sorted). trace organics. moist.					3		8"-10"		sample
	Dark brown silt, trace sand organics, wood. moist - no odor trace clay					4		10"-12"		
	As above.					5		12"-18"		sample
	As above, slightly less ~~to~~ sand. some clay					6		18"-24"		
	bright brown fine sand. Some silt, trace clay, shells moist. faint odor					7		24"-30"		
	As above, slightly higher clay content					8		30"-36"		sample Duplicate
	As above					9		36"-44"		sample
	Dark brown clayey silt trace organics, sand (fine). moist slight odor.					10		44"-48		sample
	Dark brown silt. trace clay, fine sand, organics, shells, moist, slight odor					11		48"-54"		sample
	Dark brown to black silty sand, trace organics, shells and poorly sorted gravel, rounded to subrounded, moist, slight odor.					12		54"-60"		sample

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8-1-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: J. Ruiz

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-4

BORING NUMBER: 4

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dry, lt. gray silt, roots, no odor, living creatures					1		0-6		
6	lt. gray fine sand w/trace silt, some roots, living creatures					2		6-12		
12	same as above					3		12-18		
18	brown gray silt w/ sand, no odor, dry, roots					4		18-24		
24	same as above									
30	tan sand, shells, calcified object					5		24-36		
34	brown gray silt w/sand, no odor									
36	brown silt w/ some tan sand, shells, fine roots, slight odor					6		36-48		
48	black silt w/ some clay & dk. brown sand, trace organics (roots), shells, trace med. to coarse gravel, moist, slight odor					7		48-54		dup
	black sand, very moist, shells, trace poorly sorted gravel some silt, faint odor					8		54-60		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 8/1/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: M. Browning

LOGGED BY: Heidi Menefee

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-5

BORING NUMBER: 5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	gray silt, many roots, dry, no odor, wood pieces					1		0-6"		
6"	sandy silt, ~~gray~~ roots, wood pieces, shells lt. brown-gray					2		6-12"		
12"	sandy silt. lt. brown, roots, wood pieces, no odor					3		12-18" ~~12-24"~~		
	silt w/ traces of sand, no odor, wood pieces, roots					4		18-24"		
24"	silt w/ traces of sand, no odor, brown, traces of O.M. (organic matter)					5		24-36"		dup
36"	moist silt w/ traces of sand & O.M. mottled with gray silt, black silt, & reddish brown sand					6		36-48"		
48"	dk. brown sand, moist, no odor, w/ gravel, & trace O.M.									
	hit wat at 57"									
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7/31/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY:

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-6

BORING NUMBER: 6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty sand, lt. gray, dry, shells, fine roots, no odor					1		0-6		
6	~~silty~~ same as above					2		6-12		
12	sandy silt, brown, roots, no odor, slight moisture					3		12-24		
24	sandy silt, brown, no odor, dry					4		24-36		
32	lt. brown sand / coarse sand, moist, shells, no odor									
36	sand w/ silt, lt. brown, moist, shells, no odor					5		36-42		
	brown silt w/ trace sand & trace clay, roots, wood pieces, no odor					6		42-48		
48	black silt, organic odor, moist					7		48-54		
	black sand w/ coarse sand & silt, slight odor, appears saturated, gravel, some rocks					8		54-60		
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/1/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: J. Ruiz

LOGGED BY: Heidi Neuss

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-7

BORING NUMBER: 7

DEPTH IN ~~FEET~~ inches	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	Sandy silt, lt gray, fine roots no odor, dry					1		0-4		
12"	silty sand, lt gray, dry no odor, fine roots					2		6-12		
	silt, lt. gray, dry, no odor, slag, fine roots, shells, wood pieces					3		12-24		dup
24	lt. brown sand, trace silt, moist, no odor, fine roots, shells, live creatures					4		24-36		
36	same as above mottled w/ red sand brown silt, trace clay, no odor, fine roots, shells					5		36-48		
48	black silt w/ brown sand, wood chips, moist, organic odor					6		48-60		
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 8/1/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: J. Ruiz, M. Browning

LOGGED BY: Heidi Nemesh

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-029

BORING NUMBER: #08

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk-Br-SILT w/tr. f sand & clay & OM - DRY					1		0-6"		
	Dk Br - f sandy SILT w/ tr. OM & clay - DRY					2		6-12"		
12	Dk Br - SILT w/ little clay & tr. OM - DRY					3		12-24		
24	R/B mottles									
	SAA					4		24-30		
	Br. silt w/ Y/Bf sand w/ shell fragment tr OM & clay - slightly moist							30-42"		
35" 36	SAA lense of Dk Br - SILT w/ some clay - moist @ 36					5		38" roots		
42								DUP		
	Dk Br - mottled Blk & R/B clayey silt - moist tr. OM & Y/B f. sand					6		42-48		
48										
54	Blk organic SILT w/ wood/leaf frag - moist					7		48-54		
	Blk - Silty Sand f-m w/ shell frag									
60	wood					8		54-60		
	EOB - 60									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/1/01

PAGE: 1 of 1

DRILLING METHOD:

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-9

BORING NUMBER: 9

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dry, gray brown silt w/traces of sand, shells, wood chips, many roots, earthy odor					1		0-6		
6	same as above					2		6-12		
12	same as above w/more moisture					3		12-24		
24	same as above w/trace clay					4		24-30		
	silty sand, gray + lt. brown, no odor, slight moisture, wood chips, fine roots					5		30-36		
36	brown silt w/ trace clay mottled with red + tan sand, moist, roots.					6		36-48		
48	same as above					7		48-54		
	black silt, organic odor					8		54-60		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; ____; CLAYEY SILT; ____

DATE DRILLED: 8/1/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: J. Ruiz

LOGGED BY: Heidi [illegible]

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-10

BORING NUMBER: 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty sand, gray brown, roots, shells, no odor					1		0-6		
6	silty sand w/ coarse granules, lt. gray brown, roots, no odor					2		6-12		
12	same as above									
	sandy ~~sa~~ silt, gray brown, fine roots, live creatures, no odor					3		12-24		
24	sand silt, gray brown, shells, no odor					4		24-30		
30	~~same as above~~ tan sand mottled w/ red sand, moist, no odor ~~sandy silt, gray brown~~					5		30-36		
36	silty sand w/ trace clays, shells, slight organic odor, pockets of red sand, slightly moist, lt. brown					6		36-48		dup
48	lt. brown sand mottled with red sand & black silt, organic odor					7				
	black sand, slight odor, rocks, gravel, standing water					~~8~~		48-54		
60						8		54-60		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 8/1/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY: Joe Ruiz / Mike Brown

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt, trace fine sand, organics, wood, clay slight moisture, faint odor					1		0"-6"		sample
	As above. slightly higher clay content.					2		6"-12"		Sample
	As above. slightly less sand,					3		12"-18"		Sample
	Dark brown clayey silt, traces organics, fine sand. moist slight odor.					4		18"-24		sample
	As above, trace shell fragments					5		24"-30"		
	As above, slightly higher clay content					6		30"-36"		SAMPLE
	As above.					7		36"-42"		
	As above. Dark brown to black.					8		42"-48"		Duplicate sample
	Dark brown fine sand, trace silt, shells, wet - no odor					9		48"-54		sample
	As above. saturated.					10		54-60"		

NO SL029-11

EXPLANATION

- Water Table
- Water Table
- PID Photoionizati
- NO. Identifies San
- TYPE Sample Colle

SPLIT-BARREL | AUGER | CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8-1-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Joe Ruiz

LOGGED BY: S. Morano

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL029-	# 13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DK Br- SILT w/some f-sand & tr-ON - DRY angular gravel					1		0-6"		
	Same as above w/ shells					2		6-12"		
12										
	same as above					3		12-24"		
24	brown fine sands, slightly moist, wood pieces, roots, shells					4		24-30"		
	med. to coarse brown sands w/silt, roots, shells, slightly moist					5		30-34"		
	dk. brown silt w/ trace sands, roots slightly moist					6		34-36"		
36	sandy silt, brown gray, moist, roots, gravel, shells, wood pieces					7		36-48		
46										
48	lt. brown sand mottled w/ red, shells, trace silt very moist									
50	same as above									
	black silt, trace tan sand, trace clay, strong organic odor, wood pieces, roots, shells, very moist					8		48-54		
54"	same as above									
60	black/ dk. gray sand, very moist, strong odor					9		54-60		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
8/1/01	1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-14

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace fine sand, organics, shells, slag. slight moisture and odor.					1		0"-6"		sample
	light brown fine sand. Trace organics, shells and clay. slight moisture and odor.					2		6"-12"		sample
	As above. slightly higher moisture content.					3		12"-18"		sample
	Brown silt. Trace sand, organics, clay and shells. Slightly moist, faint odor, trace slag					4		18"-24"		sample
	As above, increase in clay.					5		24"-30"		sample
	Dark brown clayey silt. trace sand, organics, shell fragments, faint odor, moist.					6		30"-36"		sample duplicate
	As above, sand lense encountered at 38-39.					7		36"-42"		sample
	As above, trace poorly sorted gravel, rounded to subrounded					8		42"-48"		sample
	Dark brown sandy silt, some gravel (poorly sorted), rounded to subrounded, trace organics. moist. faint odor. Interval 58"-59" of light colored, shell like fragments.					9		48"-60"		sample

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8-1-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-15

BORING NUMBER: 15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	brown gray silt, trace sand, trace o.M., no odor roots, dry					1		0-6		
0-6	silty sand brown, no odor									
8	brown gray silt, trace sand, roots, wood pieces, no odor, trace clay, dry					2		6-12		
12	brown gray silt w/ red particles, slightly moist, roots, wood pieces, trace clay, no odor					3		12-24		
24	dk. brown silt w/ traces of clay & sand. Bugs, roots, slightly moist, no odor					4		24-36		dup
36	brown gray silt w/ tan sand, shells, fine roots, wood pieces, no odor, moist					5		36-48		
	black silt, organic odor									
48	black silt w/ coarse sand & gravel, wood pieces, organic odor					6		48-54		
	brown sand w/ black silt, organic odor, standing water, coarse sand							54-60		
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 8/1/01

PAGE: of

DRILLING METHOD: Hand Auger

DRILLED BY: Joe Ruiz

LOGGED BY: Kevin Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SLO-29	BORING NUMBER #16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br-f-m SAND w/ tr. SILT, Shell fragments, f. gravel - DRY					1		0-6"		
	Lt. Br-f-m-Sand w/ tr. SILT cinders - DRY poorly ~~sorted~~ graded					2		6-12"		
12	Lt. Br-f-m SAND w/ tr SILT & OM cinder - DRY poorly graded									
	Dk Br-Br f-m SAND poorly graded tr. cinders wood & shell fragments DRY					3		12-24"		
24	Br-SILT w/ tr. clay - moist sand & shell fragments.									
	lense of Y/B m-SAND 1"					4		24-36"		
	SAA									
36	Br-SILT w/ lenses of (tr. clay) & Y/B f-m sand tr-shell fragments moist					5		36-48		
48										
	mottled Blk/Gr Blk-clayey SILT w/ tr. shell fragment f-sand OM moist-wet f-m gravel					6		48-60'	DUP	
60										
	EO									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
7/30/01	of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-17

BORING NUMBER: 17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dry, silt w/trace clays, organics such as wood pieces, no odor, dk. gray					1		0-6		
6	dry, silt w/trace sand & trace clay, wood pieces, no odor, dk. gray					2		6-12		
12	lt. gray same as above					3		12-24		
24	lt. gray - brown same as above					4		24-35	dup	
35	sand w/trace silt, shells, wood pieces, brown, no odor					5		35-42		
42"	silt w/traces of clay & sand, dk. gray, moist, wood pieces					6		42-48		
48"	dk. gray - black silt, trace sand, organic odor, wood pieces, moist.					7		48-60"		
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 7/31/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY:

LOGGED BY: [illegible]

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown silt, trace organics, slight moisture and odor.					1		0"-6"		
	As above. Little sand					2		6"-12"		
	As above, trace clay.					3		12"-~~24"~~ 18"		
	As above					4		18"-24" ~~24"-30"~~		
	As above. some sand, some clay.					5		24"-30"		
	Dark brown silty sand. moist, trace organics and clay.					6		30"-36"		
	Tan fine sand, poorly sorted. Trace organics and fine subangular gravel, moist no odor					7		36-42"		
	As above					8		42"-48"		
	Tan sand, poorly sorted. Trace subangular gravel, poorly sorted. trace cobble. wet-no odor					9		48"-54"		
	As above.					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-30-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: [illegible]

LOGGED BY: [illegible]

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL029	BORING NUMBER # 19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr-SILT w/ tr. clay & OM-DRY					1		0-6"		
	Br-SILT w/ tr f. sand & clay & OM. DRY					2		6-12"		
12	Br-SILT w/ ~~little~~ tr. clay, f gravel & OM. DRY					3		12-24"	DUP	
24	Br-SILT w/ tr clay f. sand OM, shell fagment DRY					4		24-36		
36	Br/Y/B mottled SILT w/ lensed f. sand (silty sand) DRY - tr. shell frag.					5		36-~~32~~ 42		
48	Gr/Gr/Green-mottled blk SILT w/ ~~tr.~~ some clay tr. ~~f~~ OM - moist					6		42-48"		
54	Br/Gr w/ blk mottled clay/silt w/ OM leafs/wood fragment f-m gravel - moist					7		48-54"		
~~60~~	DK Br/Bl. SILTY SAND w/ tr. f-c. gravel									
57" ~~57~~ ~~60~~ 60'	DK Br/B-SILTY GRAVEL w/ some f-c. SAND tr/OM & shell fragment WE					8		54-60"		
	EOB-60									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/31/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	BEN / KIETH
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, *Organic Silt*, Silt, Clay, Sandy Clay, *Organic Clay*
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SLO-29 | BORING NUMBER # 20A

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr-SILT w/ tr. OM & shell fragments - DRY					1		0-6"		
	DK Br/ Br/SILTY f. SAND w/ tr. clay OM DRY					2		6-12"		
12	SAA w/ more shell fragment.					3		12-18"		
	DK Br/Br, SILT mottles R/B w/ ~~tr.~~ little clay - OM, - DRY					4		18-24"		
24	SAA					NS				
30	Br/DK-SILT w/ tr. clay w/ thin lense Y/B f. sand. moist					5		30-~~36~~ 42"		
36	SAA - few more shell frag little clay									
46	Br/R/B mottled SILT w/ some clay, tr. OM - moist					6		42-48"		
48	BK-Gr clayey SILT w/ OM leaf/wood fragments some f. sand tr. shell fragments moist fine gravel									
54	Blk-Gr/SILTY SAND w/ shell fragments - WET (mottled)					7		48-60"		
60	Blk Gr/ SILTY SAND w/ tr shell fragment f. gravel wet.									
	EOB-60"									

Sandy SILT

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 7/31/01 | PAGE 1 of 1

DRILLING METHOD HAND AUGER

DRILLED BY BEN / KEITH

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-29

BORING NUMBER: #21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	DK Br-Br-SILT w/ little f-m sand & tr. OM - shell frag. DRY					1		0-6"		
	Br-SILTY SAND - f-m sand w/ tr. SILT & OM shell frag - DRY					2		6-12"		
12	less of SILT @ TOP. DK-Br-SILT w/ f sand, OM slightly moist SANDY SILT					3		12-24	DUP.	
24	Br-SILT w/ tr. f-sand OM & shell frag - moist									
→ WET	DK Br- mottled Y/B-R/B f-m SAND w/ tr. silt, f gravel WET					4		24-36		
36	Blk - f-m poorly graded sand w/ tr. OM SILT shell frags. wood frag - WET f. gravel					5		36-48		
48	Br-Gr- f-m well sand well graded w/ shell fragments, tr. f gravel common wet					6		48-60		
60	Br-SILTY SAND - WET									
	EOB 60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/30/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: JOE RUIZ / SARAH MEYER

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-029

BORING NUMBER: #22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br- ~~SILT w/tr.~~ f- ~~SAND~~ w & tr SILT OM- DRY					1		0-6"		
	Br- f-m poorly graded sand w/ tr. SILT & shell fragments DRY					2		6-12"		
12	Br- ~~f. SAND~~ SILT w/some f- ~~sand~~ SILT DRY tr clay					3		12-24"		
	DkBr- SILT w/ little f. sand tr. clay DRY									
24	DkBr- SILT w/ tr f. sand & clay, & OM - slightly moist					4		24-36		
	slightly more clay w/depth									
36	lense of Y/B f. sand ½" thick DkBr. mottled R/B & BlK SILT w/ tr. fine ~~sand~~ clay, OM slightly moist					5		36-48"		
48	Blk- clayey SILT w/tr. f. sand, moist-wet.					6		48-60"	PVP	
60	EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7/30/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: JOE RUIZ / SARAH MEYER

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SLO-29	BORING NUMBER #23A

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	DK-Br/Br. SILT w/ some f sand & tr. OM - DRY					1		0-6"		
	Br/G - SILT w/ tr f. sand & clay OM, shell fragment - DRY					2		6-12"		
12	Br/Lt Br - SILTY f. SAND w/ tr. OM shell frag - DRY					3		12-18"		
18	Br/DK Br. SILT w/ ~~little~~ tr clay & f. sand tr. OM - DRY					4		18-30"		
24										
30	Y/B f-m SAND tr. silt OM, shell fragment DRY					5		30-36"		
36	DK Br - Br - mottled R/B SILT w/ little clay tr. f. sand OM & - moist. shell frag. R/B mottled					6		36-48	DUP.	
48	Br. SILT w/ some clay tr. sand, OM, shell fragment moist									
54	Lense of Y/B - R/B f. SAND w/ SILT & some clay - moist - wet					7		48-59		
59 60	Blk - organic clayey SILT w/ leaf/wood fragments					8		59-60"		
	EOB - 60"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/31/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	BEN / KEITH
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL029-24

BORING NUMBER: 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0-6"	silty clay, lt. gray, dry, no odor, trace organics including roots					1		0-6"		
6-12"	sandy silt with some clay, lt gray, dry, no odor, organics including roots & wood piece					2		6-12"		
	Same as above w/ slightly more clay					3		12-24"		
24	dk. gray silt w/ clay, no odor, moist, few roots, wood pieces					4		24-36"		
36	Same as above					5		36-42"		
42"	silty with sand, dk. gray with tan sand, strong organic odor, wood pieces					6		42-54"	chip	
54"	silty, lblack, strong organic odor, leaves, wood pieces, roots,					7		54-60"		
60"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
  - SPLIT-BARREL
  - AUGER
  - ROCK CORE
  - THIN-WALLED TUBE
  - CONTINUOUS SAMPLER
  - NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED: 7/31/01

PAGE: of

DRILLING METHOD: 4" auger

DRILLED BY:

LOGGED BY: Heidi [illegible]

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION SLO-29

BORING NUMBER # 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr/Br-SILT w/ tr. clay & OM - DRY					1		0-6"		
	Gr/Br-SILT w/ tr. clay & f. sand w/ & OM - DRY					2		6-12"		
12	DK Br-SILT w/ tr-little clay tr-OM. slightly moist					3		12-24	DUP	
24	Br-Y/B silty sand & tr. grey silt & clay OM-DRY					4		24-33'		
33	Y/B f-m sand poorly graded									
WET 36	(wet) tr. silt & f. gravel OM (gray)					5		36-48		
3										
48	SAA									
	SAA					6		48-60"		
60	EOB 60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED 7/31/01

PAGE 1 of 1

DRILLING METHOD HAND AUGER

DRILLED BY BEN / KEITH

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark tan ~~silt~~ sand with trace silt. Trace organics, shells and fine gravel.					1		0"-6"		
	As above					2		6"-12"		
	Dark tan silt with trace sand, clay, organics, moist, no odor.					3		12"-18"		
	As above, slightly more clay.					4		18"-24"		
	As above.					5		24"-30"		
	As above, some clay					6		30"-36"		
	Dark brown fine sand. Trace organics, moist, faint odor					7		36"-42"	—	sample
	Tan fine sand, trace organics, silt, moist, no odor					8		42"-48"	—	sample
	As above					9		48"-54"		
	As above					10		54"-60"	—	H_2O encountered at 56"

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7-30-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SL029 | BORING NUMBER #27

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Dk-Br/f-SAND w/tr. OM DRY					1		0-6"		
9"	SAA									
12	Dk Br-SILT w/f-sand tr OM, & clay - dry					2		6-12"		
	Br-f. SAND w/SILT tr. OM & clay - DRY					3		12-24	DUP	
24	Dk-Br-SILT w/tr. f. sand, clay & OM, DRY									
	Dk Br-SILT w/ little clay, tr. f. SAND, & OM - slightly moist					4		24-30		
36	Br/Y/B f-m SAND w/tr. SILT, & OM (shell fragments & c gravel moist - WET					5		30-36		
40	SAA									
43'	Blk-clayey SILT-moist									
	Bk-f-c. SAND w/tr. silt and some f-c. gravel-WET					6		43-48"		
48	Bk-silty SANDY w/ tr shell, f. gravel fragment & clay-WET									
SAA	Gr-~~f-m. SAND w/s~~ sandy SILT-w/tr. shell fragment & clay WET					7		48-60		
60										
	EOB-~~STL~~ 60"									

R/B mottles

slightly more sand.

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample In Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 7/30/01 | PAGE 1 of 1

DRILLING METHOD HAND AUGER

DRILLED BY JOE RULZ / SARAH MEYER

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
USEPA	Kalamazoo River	SL029-28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark grayish brown fine sand, some silt, trace organics, and shells. moist, faint odor					1		0"-6"		
	As above, trace silt.					2		6"-12"		
	~~As above~~, trace clay, no shells visible					3		12"-18"		
	As above, some clay, trace shells.					4		18"-24"		
	Dark tanish brown clayey silt, trace sand and organics moist					5		24"-30		> sample
	Dark tan to reddish brown silty sand. Trace organics, and clay, moist, faint odor					6		~~24"-30~~ 30"-36		> sample
	As above, trace shell fragments					7		36"-42		
	Tan fine sand with trace organics, moist, no odor.					8		42"-48"		
	As above. Trace fine gravel					9		48"-54"		
	As above.					10		54"-60"		> H_2O encountered at 57"

Tanish dark brown silt, some sand

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
7-30-01	1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. ***MAXIMUM PARTICLE SIZE***
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SLO-29

BORING NUMBER: #29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br - SILT w/ ~~some~~ tr. f-SAND & tr. clay tr. ON - DRY					1		0-6"		
	Br - f-m SAND w/ tr silt some f. gravel & tr. shell fragment - DRY					2		6-12"		
12	Br - Blk - f-c. SAND w/ tr f-c. gravel. burnt coal (clinkers) and shell fragments - DRY					3		12-24"		
24	SAA - to f. gravel									
30	Gr/ f-c. SAND w/ tr. SILT shell fragments Wood fragment. WET.					4		24-36"		
36	Br - f-c SAND w/ shell fragments, coal & f. gravel - moist - WET, GM SAA - moist					5		36-48"		
48	Br/Gr - f - ~~m~~ c SAND w/ shell fragments, f-m gravel - WET - piece of rubber debris					6		48-60"		
60										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/30/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: JOE RUIZ/SARAH HEYER

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL-029	BORING NUMBER # 29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	DK Br-SILT w/ tr. OM DRY					1		0-6"		
Sandy silt silty SAND 12	DK Br-SILT w/ some f. SAND tr. OM DRY					2		6-12"		
	Br-Lt. silty f SAND tr. OM & shell fragments DRY					3		12-18"		
24	DK Br-SILT w/ tr. f. SAND & clay OM-DRY					4		18-24"		
30 ~~27~~ 32 ~~24~~	SAA - slightly moist w/ little more clay Lt Br/Y/B & f. SAND lense w/ tr SILT - DRY SAA - w/ some clay - moist					5		24-36"	DUP.	
36	Br-R/B mottled SILT w/ some clay/tr. OM, f Y/B sand - slightly moist					6		36-48"		
30 32	Br-SILT w/ f. Y/B SAND lense - DRY									
48	Gr/Br w/ Blk mottled clayey SILT moist.									
51	DK Br/Blk-SILTY SAND w/ some f-c. gravel-WET → moist DK Br/Blk-SANDY SILT w/ little-f-c gravel wet					7		48-60"		
60	EOB-60"									

Two Different Borings identified as SL029-29. This boring is saved as SL029-[redacted].bor XX

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
7/31/01	1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: KIETH

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-029

BORING NUMBER: #30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dry, gray brown, silt w/ traces of clay, small roots, wood pieces, no odor					1		0-6"		
	moist, sandy silt w/ 10% clay, small roots, some wood pieces, no odor, brown sand, grey silt					2		6-12"		
12	silty clay otherwise same as above					3		12-24"		
24	Br-DkBr-SILT w/ tr clay & f. sand & OM-slightly moist slight increase in clay w/ depth					4		24-36	DUP	
36	Y/B f. SAND w/ little Br-SILT & tr. OM. -moist Dk Br-mottled					5		36-42		
43	Blk-Clayey SILT w/ OM leaves wood fragment -moist-wet					6		43-48"		
48	Gr/Blk-sandy SILT w/ tr. f-m. gravel & shell fragments-WET									
60	Gr/Blk SILTY SAND (f-m) w/ tr-OM-shell fragment-f-m gravel WET				7			48-60"		
	EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/31/01

PAGE: 1 of 1

DRILLING METHOD: HAND BUGER

DRILLED BY: BEN / KEITH

LOGGED BY: HEIDI / MARY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL029-31	BORING NUMBER 31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. gray silt, wood pieces, dry, no odor, trace clay					1		0-6		
6	Same as above with more moisture					2		6-12"		
12	Same as above with brown tint					3		12-24"		
24"	same as above					4		24-36"		dup
36"	dk. gray to black silt w/clay organic odor, wood pieces leaves, moist					5		36-48"		
48"	black silt w/ traces of sand, organic odor water encountered at 56"					6		48-60"		
60"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/31/01
PAGE	of
DRILLING METHOD	hand auger
DRILLED BY	
LOGGED BY	Heid. Nemsl
EXISTING GRADE ELEVATION (FT. AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** *Sandy Silt* *Silt* *Silty Clay* *Clay* *Clayey Silt* *Sandy Clay* *Organic Silt* *Organic Clay*
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. 4 PA

LOCATION: Kalamazoo River

BORING NUMBER: SL029-SB JM

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark brown fine sand with trace silt. Trace organics and fine to medium gravel, (subrounded). moist, slight organic odor.					1		0"-6"		
	Reddish to dark brown fine sand. Trace organics, silt, and poorly sorted gravel. moist, slight odor.					2		6"-12"		
	Light brown to red poorly sorted sand. Trace organics and poorly sorted subrounded gravel. moist, slight odor					3		12"-18"		
	As above					4		18"-24"		
	As above, trace cobble									
	As above					5		24"-30"		
	Boring terminated due to auger refusal.					6		30"-36"		

NO SL029-32

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 7-30-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: S2029-34

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark ~~tan to~~ brown silt. Some sand and trace organics, clay and slag. Slight moisture.					1		0"-6"		
	As above. trace shells					2		6"-12"		
	Dark brown silt. Some clay ~~sand~~, trace organics, sand, shells, moist, no odor					3		12"-18"		
	As above					4		18"-24		
	~~dark bro~~ As above, slightly higher clay content.					5		24"-30		
	As above, some sand					6		30"-36		
	Dark brown sand, some silt, trace organics. moist. no odor					~~36"-42"~~ 7		36"-42"		sample
	Tan fine sand, trace clay, moist no odor.					8		42"-48"		sample
	Poorly sorted tan tan. Trace of fine subrounded gravel, wet no odor					9		48"-54"		H_2O encountered at 49"
	As above					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-30-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben A.

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

③ ~~②~~

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER #01

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	light brown poorly sorted sand. subrounded. ~~trace~~ some poorly sorted gravel (subrounded). trace shells. wet				~~1~~ sec	1		0"-6"		Recovery 40" 3" - H_2O-sat 0-15 cr SG 15-33-BL 33-40-GR
	Dark grey poorly sorted sand. rounded to subrounded trace poorly sorted gravel and shells. wet.					2		6"-~~14~~ 15"		
	Dark grey silty sand. trace shells and organics and fine gravel. moist, slight odor					3		15"-~~21~~ 17-24"		
	Dark brown to black clayey silt. trace organics and sand moist, slight odor					4		24-32"		
	Dark grey fine sand. trace organics, shells and fine to medium gravel. wet. no odor. trace silt.					5		32"-40"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE
7/31/01	of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

10:28

SOIL BORING LOG

(5)

WESTON | SUBSIDIARY | LOCATION SD-045 | BORING NUMBER #2

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr, well graded sandy gravel - f-c sand f-m gravel, tr SILT, shell, OM-wood frag - fragments - WET					1		0-6"	30"	SAT 4" gap near btm measured recovery 31"
5										B-SG
10						2		6-13"		11" = Bl/Gr frag 4" gap. 3" Gr f/sand
13"	Blk Gr - organic SILT w/some-little clay, f. sand OM shell frag. 16-18" Gr/SILTY SAND									31"
15										
20						3		13-24"	OLP	
25	Gr - clayey SILT w/ f. sand w/ shell frag WET									
	VOID					NS				
30	Gr/ sandy SILT w/ shell frag OM-wood-WET									
	EOB-3,									
35										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 7/31/01

PAGE 1 of 1

DRILLING METHOD CORE

DRILLED BY

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

11:35

1511 (7)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD-045

BORING NUMBER: #03

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/ well graded sandy gravell w/ tr. SILT, OM shell & wood frag. WET					1		0-6"	30"	Meased 30" SAT
5										
	Bl- organic SILT w/some f. sand - leaf/wood/shell fragments - WET					2		6-12		
10										
12½	DkGr - clayey SILT lense									
	Gr- Lt- SILTY SAND w/ OM shell fragments - WET									
15										
16	Bl- Organic silt, tr f. sand, OM- leaf/wood frag- WET					3		12-25"		
20	Gr- clayey SILT w/ f. sand									
25	Gr- sandy silt w/ tr. clay & OM- shell/wood/leaf. frag									
30										
35										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/31/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(1)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER #04

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	f-c SAND w/ f-m gravel Br / rounded / sub angular WET					1		0-6"	35	Measured Rec - 35 9" = SG 13" - Blk f-s/s 13" = Gr f s/s
7 ½" Silty Sand	Blk/Gr - Sandy silt w/ some OM (leafs, shell fragments root traces) more silt w/ depth & clay WET Banded - Varved.					2		9-20	Dup	
20" Sandy Silt	Gr - ~~silty sand~~ w/ more sand w/ depth some shell frag. tr. OM. WET					3		20-34		
34" 35"	Bottom Gr - f-m sand shell frag - wet EOB - 35"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	PAGE
7/31/01	1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(1)

WESTON	SUBSIDIARY: USEPA	LOCATION: Kalamazoo River	BORING NUMBER: SD045-05

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Tan to light brown poorly graded sand. Trace medium to coarse gravel, and shells. wet.					1		0"-6"	52"	
	Black silty fine sand, Trace organics and shells. wet - trace fine gravel. slight odor					2		6"-10"		
	Black silt. trace organics, and sand. moist, slight odor					3		10"-18"		
	Dark brown Gr. silt, some fine sand, trace shells and organics wet.					4		18"-26		
26	DK Gr - F SAND W/SILT tr OM. Shell fragments wet					5		26-36		
33	Lt. Gr/Tan F-m SAND W OM shell frag. WET poorly graded					6		36-48"	OLD	
52	EOB-52"									

silty sand

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- 3"
- CLAYEY SILT

DATE DRILLED	7-31-01
PAGE	1 of 1
DRILLING METHOD	PVC / Lexan tube
DRILLED BY	Joe Ruiz
LOGGED BY	J. Moreno
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

9:52 **SOIL BORING LOG** 1450 (4)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER #06

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr f-c. sand f-m gravel - well graded - shell fragment WET tr. OM					1		0-6	34"	measured 34" 12" S&G 11 - Bl-f/s&S 11 - Gr f/S&S
5						2		6-10"		
10	Blk-Gr - organic clayey SILT w/ little f. sand & OM leaf & wood fragments WET					3		10-15		
15	Gr/ SILT w/ little f. sand - more f. w/ depth tr OM / Shell frags - WET					4		15-26"		
20										
25										
26	Gr/ f-m sand w/ tr. SILT shell frag WET					5		26-34"		
30										
35										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED 7/31/01 | PAGE 1 of 1

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANN.

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION ON GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1340 1520 (X)

SOIL BORING LOG

WESTON | SUBSIDIARY: | LOCATION: SD-045 | BORING NUMBER: #07

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br - well graded ~~gravel~~ sandy gravel w/tr. SILT Shells & OM - WET					1		0-6"	31"	measured 31". 10" SAT 10" - SG 14" - Blk fines 7" Gr fines/SD
5	Blk - SILTY SAND w/TR CLAY, OM (leaf/shell fragments) WET					2		6-12		31"
10	GR - ~~G SA SD~~									
12										
12	Br - clayey SILT w/TR f. sand									
15	Blk - organic SILT w/ ~~some~~ trace f. sand & clay OM - leaf/wood fragments. WET					3		12 15-20"		
20	~~SI~~ OK Gr - Silty sand w/ tr. clay OM. shell frag. WET									
25	Gr - Lt Gr SILTY SAND f-m - sand increase w/ depth tr. shell fragment OM.					4		20-31'		
30										
	EOB 31"									
35										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/3/01

PAGE: (of)

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARYLANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION ON GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1100 **SOIL BORING LOG** 1504 (8)

WESTON	SUBSIDIARY	LOCATION SD045	BORING NUMBER #08

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
5	Br/Gr - well-graded sandy gravel - f-c sand & f-m gravel tr. SILT & shell fragments - WET					1		0-6	30"	measured 31" SAT 1/2" - H_2O 10" = SG 6" - Gr/Bl-f. 8" - Bl/f. 7" = Gr f/ss
10	Bl - SILTY - f. sand w/ OM - leaf/wood					2		6-12		
12"	Gr - clayey SILT w/ some f. sand tr OM - shell frag. WET									31"
15	Bl - Clayey SILT w/ some OM - leaf & wood - fragment WET					3		12-23		
20										
23	Gr - SILT ~~w/ f. sand~~ clayey w/ some OK w/ fine shell fragment WET					4		23-30"		
25	less - sand more clay									
30	EOB 30-31"									
35										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/31/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SD-0[illegible]5 | BORING NUMBER #09

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	~~0-12"~~ Sand & gravel Gr/Br f-c WET f-m well graded					1		0-6"		Core saturated 1.5" H_2O
	Gr-f-c Sand and f-gravel well graded					2		6-12	1	0-1" 1-1.5"
	Blk-organic clayey SILT w/some OM-leaf wood frag WET					3		12-24"		1.5-2"
20	Gr-sandy silt w/little clay tr. OM-shell frag-leafs wet									2-33"
29 ~~20~~	Gr-f-m Sand shell fragment wet					4		24-33	DUP	
1/2"	trace Gr/Dk Gr SILT w/f sand WET									
	EOB 33									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED | PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

14:26

1550 (9)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD 045

BORING NUMBER: #10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr- well graded sandy gravel- f-c sand - f-m gravel w/tr. SILT, shell frag. OM- leaf fragment-WET					1		0-6"	30"	measured recovery 29
5										
	SAA					2		6-11"		
10										
13	Blk - organic silty sand w/OM (frag - leaf/wood) WET									
14	~~Gr/Blk Gr~~ Lt. Gr - clayey SILT									
15	~~Gr/Lt~~ Lt. Dk Gr - clayey silt w/some sand tr. OM shell frag. WET					3		11-19"		
20	Gr- silty sand w/ tr. clay - shell frag OM-WET									
26						4		19-30"	DUP	
	more clayey SILT w/depth									
30	EOB-29"									
35										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/31/01

PAGE: of

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT. AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

15:06 **SOIL BORING LOG** 1557 (10)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER # 11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	S&G well graded f-c-sand - fine gravel sandy gravelly tr silt - WET - shell fragments					1		0-6	33"	measured 32.5" SAT 1 - gravel sand. 10" - SG 11" = Blk fines 10 = Gr fines/SS 32"
5										
	SAA					2		6-12		
10										
12										
13	Blk - OM - silty sand - wet									
	Gr - OM - organic silt w/ tr f sand & clay									
15	Blk - clayey silt - tr OM f-sand									
	DK Gr - clayey silt tr. OM - WET					3		12-19	DIP	
20	Gr/Lt. - silty sand w/ shell fragments, OM - roots/leaf frags. tr lenses (thin < 0.5") clayey silt - WET									
25										
	DKer Gr. less shell frag.s SAA							19-33		
30										
35										

shell/ leaf/wood frags

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	7/31/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LAWNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

(3)

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
US EPA	Kalamazoo River	SD045-12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown poorly sorted sand rounded to subrounded. Some gravel (fine to coarse) rounded to subrounded. trace shells slight odor wet					1		0"-2"	JM ~~4"~~ 3"	1" water 8" Gray sand
	As above. ~~to~~ only fine gravel present. wet.					2		2"-4"		
	Dark grey poorly sorted sand. rounded to subrounded. wet.					3		4"-6"		
	Black fine sand with some silt. wet, slight odor.					4		6"-8" JM		
	Grey clayey silt. trace shells and organics. very moist.					5		9"-10"		
	Black silt. trace clay and organics. very moist slight odor.					6		10"-13		
	Dark grey silty fine sand. trace organics. wet - slight odor.					7		13"-21"		
	Grey silt. ~~trace~~ some clay. ~~and~~ JM trace sand and organics. wet. slight odor.					8		21"-24"		
	Great fine sand - trace shells and fine gravel. wet - wooder.							24"-29"		
	Grey sand. poorly sorted. trace shells, wet. no odor							29"-34"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" core | CLAYEY SILT | ____

DATE DRILLED	PAGE
7-31-01	1 of 1

DRILLING METHOD: PVC / Lexan tube

DRILLED BY: J. Boie

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(4)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER #13 (3)

DEPTH IN FEET	LITHOLOGIC DESCRIPTION (sub rounded to angular)	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown peach sorted sand and gravel. trace shells, wet					1		0"-2"	40"	Recovery 0.5" H_2O 7"-S & G 15"-BL-fine 11"-Gr-fine sand 33"-40"
	As above: only fine gravel observed					2		2"-6"		
	Dark brown to black silt. trace fine sand and coarse gravel, organics. slight odor wet. trace clay					3		6"-12"		
	Black clayey silt. trace sand and organics. moist. slight odor.					4		12"-16"		
	Grey clayey silt. trace fine sand. wet. faint odor.					5		16"-19"		
	Grey fine sand. trace fine gravel wet - no odor.					6		19"-24"		
	Grey clayey silt. trace sand and ~~organics~~ shells. moist, slight odor					7		24"-28"		
	Grey fine sand. wet. no odor					8		28"-31"		
	Dark grey fine sand. trace shells and silt. moist.					9		31"-32"		
	Grey sand (fine). trace shell fragments. moist - no odor					10		32"-35"		
						11		35"-40"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	7-31-01
PAGE	1 of 1
DRILLING METHOD	PVC / 3" Lexan
DRILLED BY	J. Rust
LOGGED BY	J. Adams
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1443

SOIL BORING LOG

(3)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER 14

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0"	Br/Gr/ f-c sand – f-c gravel. Shells, well graded					1		0-3"	33"	measured 33" 4" – SG 15" – Gr/Gr/Bl f- 14" – f-m Gr 33" saturated
3"	Gr. SILTY SAND w/tr. OM & Shell fragment					2		3-12"		
	Gr SANDY SILT TR. CLAY OM shell frag-f. – wht. band. WET					3		12-21	~~DUP~~	
21"	Gr-f-m sand w/ some SILT/tr. OM Shell frag. – WET									
22	Gr-Lt Gr – well graded gravelly sand – w/tr OM – Shell frag – WET					4		21-33"	DUP	
33	EOB → 31									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	7/31/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1154

SOIL BORING LOG

(5)

WESTON	SUBSIDIARY	LOCATION	BORING NUMBER
	EPA	SD-045-	15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Br sandy gravel well graded w/ tr. OM wood & shell frags WET.					1		0-6	34"	Saturated
10						2		6-12"		
	Bl-Dk br Organic silt sandy silt w/ leaf & wood frag. WET					3		12-20"		
20	Gr-clayey SILT Bl-organic SILT- w/tr. clay. Gr-clay SILT WET					4		20-35"	DUP	
30	Dk Gr clayey SILT w/tr f-m gravel tr f. sand OM-shell frag WET									
	EOB-35'									
40										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	8/9/01
PAGE	of
DRILLING METHOD	CORE
DRILLED BY	JOE
LOGGED BY	MARY LANNON
EXISTING GRADE/ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(2)

WESTON	SUBSIDIARY	LOCATION SD-0245	BORING NUMBER 16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Bl f-c sand w/ f gravel wet					1		~~29"~~ 0-3"	29"	2"-H_2O measured & Rec-29"
3"	Gr/Bl - SILTY SAND w/ OM leaf frag/root/traces, shell frag - WET									5"-S & G
9"	Bl - OM - leaf/wood frag. organic silt WET w/ silty clay/silty sand lenses <1-2"					2		3-~~15~~" 17"		7"-Bl-Gr-f-S/S.
17 ~~18~~	Sandy silt w/ trace Gr OM & shell frag WET (f-sand) more sand w/ depth					3		17-29"		12" ~~Gr~~ Bl f/S/S 5" = Gr/f/SS. 29"
29										

ECB-29 1

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 7/31/01	PAGE 1 of 1
DRILLING METHOD CORE	
DRILLED BY	
LOGGED BY MARY LANNON	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

(6)

WESTON	SUBSIDIARY: US EPA	LOCATION: Kalamazoo River	BORING NUMBER: SD04S-17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown fine sand, rounded to subrounded. Trace shell fragments. Upper layer consists of fine to medium gravel, rounded to subrounded. wet - no odor					1		0"-2"	23"	
	Dark grey sandy silt, wet - no odor.					2		2"-8"		
	Grey fine sand, well sorted, wet. no odor.					3		8"-23"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	7-31-01
PAGE	1 of 1
DRILLING METHOD	PVC / 3" lexan core
DRILLED BY	Joe Ruiz
LOGGED BY	S. Moreno
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1205

SOIL BORING LOG

(6)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER 18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
3	Gr- gravelly well graded SAND w/ tr silt OM WET					1		0-3'	22"	SAT-
	Bl- organic SILT fiberous wood & plant frags-WET									
10	Dk Gr- sandy silt w/ tr clay, shell fragments, f. gravel.					2		5-12	DUP	
						3		12-20		
20	Gr/Gravelly f-c SAND f-m gravel-WET tr. silt.					4		20-22"		
30	EOB-22									
40										
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/9/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE
LOGGED BY	MARY CANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

15:31

SOIL BORING LOG

(11) 16 29

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER # 19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr / f-c sand tr f-gravel & shell & wood fragments WET					1		0-6" DUP.	36	SAT 1" silty H2O measured 35.5'
5										
	SA A									
10						2		6-16"		
15	fining w/ depth.									
	Blk/Gr- organic silt w/ lenses containing									
20	Lt. Gr. clayey silt @20" & 28"					3		16-24"		
	& Blk- silty sand w/ shell fragments woody material & leafy chunk of wood 3-4" size 23-26" WET	@ 16-20" & 21-23"				4		24-36"		
25										
30										
	Gr- Clayey silt w/ tr. OM & shell frags in wet wood									
35										
	EOB									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/31/01
PAGE	of
DRILLING METHOD	CORE
DRILLED BY	
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1496

(7)

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SD-045

BORING NUMBER: 20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Bl-Dk Gr. clayey SILT w/ tr. OM					1		0-6'	~~30"~~	measured 28"
6	Dk- clayey SILT w/ tr SAND & OM - WET									
10	Lt. Gr - silty f-m SAND w/ shell fragment - wood frag - WET					2		6-10'		
						3		10-16"		
20						4		16-28		
	Lt Gr (F-C) SILTY SAND w/ tr f. gravel & shell frags - WET									
	Bl organic SILT w/ some clay - wood fragment / f. gravel / shell									
30	EOB-28"									
40										
50										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
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	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
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			SC	Clayey Sands, Sand-Clay Mixtures
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			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

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1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1502

SOIL BORING LOG

(8)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER 21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr-poorly graded f. gravel - sandy wet					1		~~35~~ 0-6"	35"	measured
10	Bl-organic SILT - tr. clay OM - nearbt moist					2		6-12		
20	Gr/silty fmn sand w/ tr OM wood fragment leaf litter shell fragment sand f-coarse w/depth WET					3		12-24	Dup	
30	Gr/Gr, f-m sand w/some SILT Lt Gr/w/Br thin <0.5 of OM-WET					4		24-35		
40	EOB-35									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS. FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/9/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE
LOGGED BY	MARY CANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1507

(9)

SOIL BORING LOG

WESTON

SUBSIDIARY: EBA

LOCATION: SD-045

BORING NUMBER: 22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br-poorly graded gravelly sand f-m gravel w e					1		0-5	31"	measured
5	~~Bl-organic silt PEAT fibrous woody~~									
7	Gr/Bl clayey SILT w/ OM- MOIST-WET					2		5-12		
	Bl-DkBr-SILT w/ tr f-sand & clay, OM moist					3		12-20		
20	Lt-DK-clayey SILT w/OM					4		20-26		
30	Lt-f-m SAND w/ tr. OM-silt & shell fragment WET					5		26-31		
	EOB-31 m-gravel.									
40										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 8/9/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1120

SOIL BORING LOG

(4)

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER 24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	B1 - organic SILT w/ tr. clay roots & wood - frags - WET									measured rec. 22"
4	DK-Gr - clayey SILT w/ tr. OM					1		0-6"		
						2		6-12		NO SD045-23
10	DK Gr silty SAND w/ f									
	WET					3		12-22"		
18										
20	Lt Gr - silty fm SAND w/ tr OM - Shell frag - WET coarser									
	EOB 22"									
30										
40										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	8/9/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1550

(10)

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SD-045	BORING NUMBER 25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr-Bl- well graded gravelly sand					1		0-6		
10	f-c sand- f m-gravel tr. c. gravel-OM					2		6-12		
	Shell fragment well									
20	Sand fines w/ depth					3		12-24		
30						4		24-34		
	EOB- 34'									
40										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	8/9/01
PAGE	1 of 1
DRILLING METHOD	CORE
DRILLED BY	JOE RUIZ
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

1117

(3)

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION: SD-045

BORING NUMBER: 26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Br- sand & gravel. f-c sand & WET gravel					1		~~41"~~ 0-6"		Rec 41"
10	Gravelly Sand - finer WET					2		6-12"	DUP	
						3		12-18"		
20	Bl- f- m sand w/ shell frags. silty woodfrag wet					4		18-26"		
26	DKGr. ~~silty f-m sand w/~~ clayey f. SAND tr. ~~clay~~ & OM - shell frags wood frags - WET					5		26-33"		
30										
33	Bl- DKGr. f-m silty SAND wood ~~w/ shell frags~~ - WET					6		33-37		
37	Bl- silt - ~~w/ some clay~~ organic odor -					7		37-41		
40	EOB - 41" clayey									
50										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 8/9/01

PAGE: 1 of 1

DRILLING METHOD: CORE

DRILLED BY: JOE

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015

BORING NUMBER: # 1

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr/Br - SILT, w/ tr. OM DRY					1		0-6"		
	Gr/Br - SILT w/ tr. clay & OM - DRY					2		6-12"		
12	Br - SILT w/ tr. f. sand, clay & OM - DRY									
	Br - SILT w/ little clay & tr f-sand & OM - DRY					3		12-24"		
24	Br/R/B mottled - SILT w/ some clay & tr. OM. - slight moist					4		24-36"		
33										
36	Br/Gr mottled Blk clayey SILT w/ tr. OM. tr. R/B mottled along root traces - moist					5		33-42"		
42	Br/GrBr. - SANDY SILT w/ some shell frags & wood frag. moist - wet					6		42-48		
48										
51	Lt.Br - f-m sand w/ tr shell frag silt. - WET					7		48-51"		
60	Blk - clayey SILT w/ tr. OM & f sand shell & wood fragments moist - wet.					8		51-60"		
	f-m sandy - BTM WET. EOB - 60'									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7/26/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: JOE RUIZ

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL-015	BORING NUMBER #2

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Br - SILT w/tr OM DRY					1		0-6"		
	Gr/Br - SILT w/tr. OM & clay DRY					2		6-12"		
12	Br/~~SAA~~ SILT w/tr f.sand DRY / clay & OM									
18	Lt Br/Br									
20	lense of silty sand w/tr OM - shell frag DRY SAA					3		12-24"	DUP	
24	Dk Br - SILT w/tr f. sand & ~~little~~ clay OM - DRY SAA - little slightly no sand/more clay moist					4		24-36		
36	Dk Br/R/B mottled SILT w/ ~~tr~~ little clay & tr. OM - f.sand moist					5		36-42		
42	Gr/Grey/Black R/B mottled clayey SILT w/ tr. OM - moist					6		42-48		
48	SAA ↓ moist - wet									
51	Br/Lt Br f-m sand w/ silt w/sand OM shell frag wet					7		~~48-60'~~		
53	Bk - clayey silt w/tr. OM shell moist							48-60'		
60										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/26/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	HEIDI
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-03

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown to tan silt. trace organics, dry-no odor					1		0"-6"		
	Tan to brown silt. trace clay and organics. dry-no odor.					2		6"-12"		
	As above trace shell, and sand.					3		12"-18"		
	As above.					4		18"-24"		
	Brown silt, trace sand, organics, trace clay, slight moisture, no odor					5		24"-30"		
	As above, slightly higher clay content.					6		30"-36"		
	Dark brown to black silt. Trace fine sand, organics, clay, mica, shell fragments. moist - no odor					7		36"-42"		
	As above.									
	Dark brown silt, trace fine sand shells, organics, clay. moist no-odor.					8		42"-48"		
	As above; Dark brown to black					9		48"-54"		
						10		54"-60"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- ____
- ____

DATE DRILLED: 1-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-04

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brownish tan silt, trace clay organics, dry, no odor					1		0"-6"		
	Tanish grey silt, trace silt organics, clay - dry, no odor.					2		6"-12"		
	As above, trace sand and mica					3		12"-18"		
	Tanish brown silt, trace sand organics, clay and mica and shells - slight moisture.					4		18"-24"		
	Dark brown silt, trace sand, organics, mica, shell fragments, some clay - moist, no odor					5		24"-30		
	As ablove, minor traces of sand					6		30"-36"		
	~~Dark b~~ As above					7		36"-42"		
	As above, more shells present					8		42"-48"		
	Tan to light brown fine sand, some shells, very moist, no odor							44"-46"		
	Dark brown to black silt, trace organics, moist - slight odor							46"-48"		
	Black silt, trace organics and fine sand, moist, slight odor.					9		48"-54"		
	As above					10		54"-60"		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED: 7-26-00

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: S. Moreau

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

8:25

6

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015

BORING NUMBER: #5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gr/Br, SILT, tr. OM, DRY					1		0-6"		
	Gr/Br, SILT, tr OM & clay DRY					2		6-12"		
12	Br, SILT, tr. OM & f. sand & clay DRY					3		12-24"		
	SAA									
24	Br/DkBr, SILT, tr OM & little clay-slightly, moist					4		24-36"		
	SAA									
36	DkBr, SILT w/some clay & tr. OM- moist					5		36-45		
45	LtBr, f-m SAND w/tr. silt shell frag moist					6		45-48		
47										
48	Gr, clayey SILT, OM, moist-wet					7		48-60"		DUP
60	EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 7/26/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

9:50

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL-015	#6

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr- SILT, tr. OM, DRY					1		0-6"		
	Br/Gr- SILT, tr OM & clay R/B-mottles DRY					2		6-12"		
12	Br/R/B SILT w/ tr f. sand & clay & OM, DRY → roots, shell frag					3		12-24"		
24	Br/R/B mottled SILT w/ some clay & tr. OM - slightly moist					4		24-36		
36	SAA - moist					5		36-48"		
	Br-Gr/ sandy silt w/ tr. OM (wood & shell fragments) - WET					w				DP
47	Lt Br/Tan - f-m. sand w/ tr. silt & shell ~~frag - WET~~					6		48-50"		
50	Blk-~~Gr mottled~~, clayey silt - sheen w/ tr. OM - shells/wood WET (Modor)					7		50-60"		
59	Blk-Gr - SILTY, SAND									
60	EOB - 60" f-m									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/26/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	JOE RUIZ
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015

BORING NUMBER: #7

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr/Br-SILT/tr. OM-DRY					1		0-6"		
	Gr/Br-SILT/tr. clay, OM f.sand DRY					2		6-12"		
12	Br/SILT/w ~~f.sand and~~ sandy tr. clay OM-Shell fragment DRY					3		12-24"		
16 24	Br/SILT/w/f.sand and ~~tr.~~ little clay-DRY									
	Br SILT/w R/B mottled little clay & tr OM-slightly moist					4		24-30"		
30	DKBr/GrBr SILT w/some clay & Black mottles tr. f.sand					5		30-36		
36	SAA					6		36-42"		
42 45	Br/Tan f-m sand w/shell fragment wet									
	Black-clayey silt w/tr. OM moist-wet-moist					7		42-48" 48-60"	PUP	
48	↓									
60	wet-Bl/Gr SANDY SILT EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7/26/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: HEDI / KEITH

LOGGED BY: MARY LANDER

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

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3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-08

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace organics dry-no odor					1		0"-6"		
	Brownish grey silt, some clay, trace organics, dry no odor.					2		6"-12"		
	As above above, trace fine sand.					3		12"-~~24"~~ 18"		
	As above trace shells.					4		18"-24"		
	As above. higher moisture content, trace mica, brown in color					5		24"-30"		
	As above					6		30"-36		
	Brown to dark brown clayey silt, trace organics, moist. faint odor					7		36"-42"		
	Fine sand tan, trace shells, wet, no odor					8		42"-~~48"~~ 43"		
	Dark brown clayey silt, trace sand, organics and shells. moist, faint odor.							43"-48"		
	Dark brown to black silt trace fine sand, shell. wet, slight odor					9		48"-54"		
	As above.					10		54"-60"		water encountered @ 50".

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 1-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL-015	# 9

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr - SILT w/ tr. OM DRY					1		0-6"		
	Br/Gr - SILT w/ tr. OM & clay DRY					2		6-12"		
12	Br - ~~f-m~~ silty f-m SAND w/ tr. OM - DRY					3		12-24"		
15	Br/ SILT w/ little clay & tr. OM - DRY									
24	Br/ SILT w/ lense f sand tr. OM - shell DRY					4		24-30		
clay - 33	DK Br - SILT w/ ~~tr. OM~~ some f-m sand lense tr. OM moist - shells					5		30-36		
36	SAA									
	Blk-Gr mottled clayey SILT w/ tr. OM.					6		36-48		
48	Gr - lense of f-m. SAND w/ tr. OM - shell frag - wet									
51	Blk-Gr mottled clayey SILT w/ tr. OM. wet					7		48-60'		
60	wet - clayey SILT w/ f-m sand wet									
	EOB - 60'									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/26/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	JOE RUIZ
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: 1700 RUGR

BORING NUMBER: SL015-10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0-7"	tan, silty organic soil, roots present, silt					1		0-7"		
7"-14"	A Brown silt, trace organics trace sand, dry					2		7-14"		
14"-21"	Dark brown fine sandy silt, trace organics, trace clay					3		14"-21"		
21"-28"	AS ABOVE					4		21"-28"		
28-35"	AS ABOVE, higher clay content with depth (~20%), less sand					5		28-35"		
35"-42	Brown clayey silt, trace fine sand, trace organics					6		35"-42"		
42"-49"	AS ABOVE, slightly darker color					7		42"-49"		
49"-52"	Brown, fine to medium sand with fine silt, shell fragments					8		49"-52"	52"	
52"-56	Black organic clayey silt					9		52"-56"		
	Sample taken with 3" core. Core reached maximum depth at 74"					10		56-74"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-24-01

PAGE: 1 of 2

DRILLING METHOD: Hand Auger

DRILLED BY: S. Kolz

LOGGED BY: Sose

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
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	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
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			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC S[redacted]

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3. **SIZE DISTRIBUTION**
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5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-95

BORING NUMBER: 10

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
56 1.2 / 7.8	Black/clayey SILT w/ OM organic OL leaf/wood frag.		OL							
62	~~and~~ lenses of f-m sand					10		56-68		
~~61~~ 68	↓		OL			11		68-74		
	EOB									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 7/24/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY:

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

9:00

0

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL-015	#11

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	~~Dk~~ Gr/Br/SILT, tr. OM-DRY					1		0-6"		
	Gr/Br/SILT, tr. OM & f. sand DRY					2		6-12"		
12	Dk Br/SILT, tr f. sand, clay & OM, DRY					3		12-24"		
	Dk Br/SILT, w/ ~~tr.~~ f little clay & tr. f. sand & OM (roots, shell frag - slightly moist									
24	Dk Br/SILT w/ little - some clay R/B mottles & tr. OM - slight moist					4		24-~~48~~ 36"		
36	SAA									
42-44	Lt Br - f-m sand w/ tr. SILT OM/shell fragment moist-wet					5		42-44"		
48	Blk - clayey SILT, tr. OM Gr mottles wood shell fragment moist-wet					6		48-60'		DUP
59										
60	Blk-Gr-f-m SILTY f-m SAND ~~SILTY SAT~~ wet tr OM - shell fragment									
	EOB-60'									

Should be 44-60

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/26/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	JOE RUIZ
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-12

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Light brown to tan silt, trace organics, dry - no odor, trace clay					1		0"-6"		
	As above, slightly higher clay content.					2		6"-12"		
	As above					3		12"-18"		
	As above, trace shells and sand					4		18"-24"		
	Brown silt, trace fine sand, organics and clay, slight moisture - no odor.					5		24-30"		
	As above, slightly less sand. higher clay content.					6		30"-36"		
	Brown to dark brown silt. Trace clay, organics, shell fragments, and fine sand, slightly moist - no odor					7		36"-42"		
	Dark brown silt, some clay, trace shell fragments, organics, moist no odor.					8		42"-48"		
	Dark brown clayey silt, trace organics, moist - no odor					9		48"-54		
	As above					10		54"-56" ~~60"~~	SM	
	Dark brown to black clayey silt, trace ~~organ~~ sm organics slight odor, moist.							56"-60		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

NEED DUP

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SL-015 | BORING NUMBER # 13

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Dk-Gr/Br silt, tr. OM, DRY					1		0-6"		8:13
	SAA					2		6-12'		8:15
12	DkGr/Br silt, w/ little f. sand tr. OM, DRY GK Gr/Br silt, w/ tr. f. sand tr. OM, DRY					3		12-24'		8:17
24	~~Dk Gr/Br, silt w/ tr. clay mottles, slightly moi~~ SAA Dk ~~Gr~~/Br, silt, w/ tr. clay & mottles, slightly moist					4		24-36"		8:25
36	Dk Br, clayey silt, w/ same OM (wood frag.), moist					5		36 ~~24~~-42"		8:30
42, 43"	1" f. sand w/ tr. silt & clay shell fragment Bk - clayey silt, moist slight petr. odor					6		42-48"		
48	SAA - moist ~~we~~ Slight sheen & petr. odor					7		48-60"		
60	EOB 60"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED: 7/25/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER/ ~~CORE~~

DRILLED BY: JOE RUIZ / SARAH MURRAY

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON | SUBSIDIARY | LOCATION SL-015 | BORING NUMBER #14

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr- SILT, tr. OM & DRY					1		0-6"		
	Br/Gr- SILT, tr. OM & clay, DRY					2		6-12"		
12	DKBr/Gr- SILT, little clay tr. OM- DRY SAA - slighty moist little more clay					3		12-24"		DUP
24	DKBr/SILT w/some clay tr. OM- moist					4		24-36"		
36	DKBr/SILT w/ some clay tr. f sand, shell frag- moist.					5		36-42"		
	Br/Green Gr/ Blk mottled clayey SILT w/ ~~f sand~~ (wood fragment) tr. trace OM shell moist wet					6		42-48.		
48	Blk- clayey silt, some Br/Green Grey mottles & tr. OM moist wet 59-60' SAA - tr. f. sands					7		48-60		
60	EOB 60									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 7/25/01 | PAGE 1 of 1

DRILLING METHOD HAND AUGER

DRILLED BY JOE RUIZ/HIEDI

LOGGED BY MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Light brown silt, trace clay organics. dry, no odor					1		0"-6"		
	Light brown to grey silt, trace organics, clay, dry - no odor					2		6"-12"		
	As above trace mica and fine sand. Brown in color					3		12"-18"		
	As above, slightly higher moisture content.					4		18"-24"		
	Dark brown silt trace: clay, mica, shells and fine sand, and organics, slight moisture no odor.					5		24"-30"		
	As above, no shells observed					6		30"-36"		
	Dark brown silt, some clay present, trace shells, sand, organics and mica. moist no odor.					7		36"-42		
	Dark brown to black silt. some sand. traces of shells, organics, clay and mica. moist - no odor					8		42"-48"		duplicate sample taken
	Dark brown to black silt, trace fine sand shells and organics. moist slight odor					9		48"-54"		
	As above					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 7-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben A.

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Tan silt, highly organic material (roots)					1		0"-~~4"~~	6"	
	Tan silt, traces of sand and organic material					2		6"-12		
	AS ABOVE with traces of shells					3		12"-18"		Duplicate Sample taken
						4		18"-24"		
	As above: traces of micaceous material									
	AS ABOVE dry					5		24"-30		
	AS ABOVE: traces of clay: mottled dry					6		30"-~~35~~	35	
								35"-36"		
	Fine sand well sorted tan dry									
	light brown sand with traces of silt and clay and organic material - slightly moist & micaceous ~~moist~~					7		36"-42"		
	AS ABOVE with slightly a higher clay content					8		42"-48"		
	Light brown sand, well sorted. slightly moist					9		48"-~~54"~~ ~~50~~	49"	
	Dark brown to black clayey silt with organics, slight petroleum odor, moist							49"-54		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7-24-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Mike B

LOGGED BY: Jose Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-16

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	AS ABOVE					10		54'-60'		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 7-24-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Mike B

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-17

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace roots, clay. dry, no odor					1		0"-6"	1	
	Grey to brown silt, trace: roots, organics, clay, dry-no odor					2		6"-12"	2	
	As above.					3		12"-18"	3	
	Brown to dark brown silt. Trace organics, trace sand. slightly higher clay content and moisture.					4		18"-24"		
	As above, slightly higher higher clay and moisture content. trace mica.					5		24"-30"	4	
	As above.					6		30"-36"		
	Dark brown to black clayey silt. trace fine sand, organics, mica, moist, slight odor					7		36"-42"	5	
	Dark brown to black silt. Trace fine sand, organics. moist, slight odor.					8		42"-48"		
	Black silt, trace: fine sand and organics, and shells. moist, slight odor.					9		48"-54"	6	
	As above. No visible sand wet.					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: J. Lorenno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: US EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-18

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Light brown silt, trace organics, and clay, dry - no odor.					1		0"-6"		
	Tanish brown silt, trace organics, clay, dry - no odor					2		6"-12"		
	As above: slightly higher clay content.					3		12"-18"		
	Brown silt, trace sand, clay and organics, dry no odor.					4		18"-24"		
	As above, slightly ~~higher~~ less moisture content.					5		24"-30"		
	As above, slightly higher moisture content, trace shells					6		30"-36"		
	Brown clayey silt, trace fine sand and organics, moist					7		36"-42"		
	As above					8		42"-48"		
	Dark brown to black silt, trace sand, clay, shells, moist. slight odor, trace organics					9		48"-54"		
	As above, no clay observed. wet					10		54"-60"		> water encountered @ 54".

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 1-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H.

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: USEPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-19

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt trace clay, organics, sand, dry - no odor					1		0"-6"		
	Light brown to grey silt with trace organics, sand. Slightly higher clay content. dry - no odor					2		6"-12"		
	As above					3		12"-18"		
	Dark brown silt, some fine sand. Trace clay, mica and organics, dry - no odor.					4		18"-24"		
	As above, trace shells fragments, slightly less sand content. slight moisture					5		24"-30		
	As above					6		30"-36"		
	Dark brown silt, some clay, trace organics and fine sand, moist no odor.					7		36"-42"		
	As above					8		42"-48"		
	Black silt, trace organics, shells, sand, high moisture content. slight odor					9		48"-54"		water encountered at 52"
	As above. wet.					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 7-26-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Ben H

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-20

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace organics, dry, no odor					1		0"-6"		
	As above, slight moisture					2		6"-12"		
	As above, trace fine sand, shells, trace organics					3		12"-18"		
	As above less sand content					4		18"-24"		
	Brown silt, trace organics, clay, slight moisture					5		24"-30"		
	As above, slightly higher clay content.					6		30"-36"		
	Dark brown to black silt, trace fine sand, organics, clay, moist.					7		36"-42"		
	~~As above, slightly higher sand content~~ SM					8		42"-~~48~~ 44"	SM	
	42"-44" – Brown silt, some sand, trace organics, shells, moist					9		~~48"~~ 44"-48"		
	Dark brown to black ~~clay~~ silt with some clay, trace organics, slight petroleum odor, moist									
	Fine sand, trace shells, tan very moist					10		48"-52"		
	Dark brown to black clayey silt, trace fine sand, moist							52"-~~60~~ 54"	SM	>H_2O encountered at 54"
	Brown to black silt, trace shell, fine sand, organics, very moist							54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-25-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: J. Browning

LOGGED BY: S. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015

BORING NUMBER: 21

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk Br-Grey, silt, some OM Dry.		ML			1	G	0-0.5		
0.5										
1	Dk Br-Grey, Silt, tr. clay SLIGHTLY, MOIST		ML			2	G	0.5-1'		
						3	G	1-2'		
2										
2.5	SAA					4	G	2-3'		
	Dk. Br. silty, some clay tr. mottle Y/B & OM-moist									
3	Dk Br. clayey silt tr. Y/B mottle, OM, moist					5	G	3-3.5		
	Dk Br-Y/B, silty F. sand tr. clay, wet					6		3.5-4		
4	Y/B-f. sand/tr silt & f-c. gravel-WET					7	CORE	4-4.5'		
54"	EOB-54"									
5										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/24/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER / CORE

DRILLED BY: JOE / SARAH

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-22

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	light brown silt with high organic content, dry					1		0"-6"		
	AS ABOVE with slightly less organic content					2		6"-12		
	Brown silt with traces of fine sand and organic material, slight moisture					3		12"-18"		
	AS ABOVE with trace shells					4		18"-24"		
	AS ABOVE									
	AS ABOVE, traces of clay. Slightly higher moisture content					5		24"-30"		
	AS ABOVE, dark brown					6		30"-36		
	AS ABOVE with a higher clay content					7		36"-42"		
						8		42"-48		
	Dark brown to black ~~organic~~ silt, some clay, slight odor moist					9		48"-54"		
	AS ABOVE					10		54"-60"		
						~~11~~ SM				

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7-24-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: M. & Browning

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

Kalamazoo River

WESTON	SUBSIDIARY	LOCATION	BORING NUMBER
	U.S. EPA	SL015	SL015-23

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Light brown silt, some organ material, dry					1		0"-6"		
	As above. Possible residuals, trace plastics					2		6"-12"		
	~~Dark~~ brown silt, trace; organics plastic, fine sand, possible residuals					3		12"-18"		
	As above; slightly more sand content and moisture.					4		18"-24"		
	Dark brown silt, trace; fine sand, shells, organics, clay, slightly moist					5		24"-30		
	Dark brown silt, As above, slightly less fine sand content, slightly more moist.					6		30"-36"		
	Dark brown to black silt, little clay, slight petroleum odor, trace: organics, shells, fine sand, moist.					7		36"-42"		
	Brown to black silt, trace fine sand, some clay, slight petroleum odor, trace organics					8		42"-48"		
	As above, more fine sand,					9		48"-53"		
	fine sand, some shells, wet							53" 55"		
	Brown to black silt, trace organics, slight petroleum odor, high moisture content					10		55"-60		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	7/25/01
PAGE	of
DRILLING METHOD	
DRILLED BY	
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-24

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace organics, trace fine sand, dry					1		0"-6"		
	Grey brown silt, trace: organics, fine sand, clay, dry					2		6"-12"		
	Grey brown silt, some clay, trace: fine sand, organics, slight moisture					3		12"-18"		
	As above, less moisture.					4		18"-24"		
	Grey brown clayey silt, moist, trace organics, trace fine sand					5		24"-30		
	Grey to black silt, some clay, trace organics, moist					6		30"-36"		
	Black silt, slight petroleum odor, moist, slight organic content					7		36"-42"		
	As above, trace: sand, shells					8		42"-48"		
	Black silt, trace: shells, organics fine sand, clay, wet					9		48"-54		
	As above					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7-25-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: Mike Browning

LOGGED BY: S. Moceno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY: US EPA	LOCATION: Kalamazoo River	BORING NUMBER: SL015-25

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt, trace fine sand and organics					1		0"-6"		
	tanish brown silt. Some sand. trace organics, shells, clay and mica. dry - no odor					2		6"-12"		
	Tanish brown ~~Grey~~ clayey silt. Trace organics, sand slight moisture, no odor. trace mica					3		12"-18"		
	As above. Greyish color. slightly higher moisture content.					4		18"-24"		
24	Gr/ ~~CLAYEY~~ SILT w/ f-m sand w/ some OM leaf WET									
27	Black - clayey SILT w/ OM - leaf material. WET							24"-65"		3" core lexan tube with 41" of recovery
						5		24-36	Dup	
						6		36-48		
65						7		48-60		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7-26-01
PAGE	1 of 1
DRILLING METHOD	Hand Auger
DRILLED BY	Ben H.
LOGGED BY	J. Lorenz
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL-015	BORING NUMBER #26

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br- SILT, tr. OM, DRY					1		0-6"		
	SAA					2		6-12"		
12	SAA + tr. clay, shell frag.					3		12-24		
24	SAA +									
	Br-SILT, tr OM & shell fragments, moist					4		30-36		
36	Br-Frags AND, some shell frag, moist wet					5		36-48'		
48	Blk - Clayey SILT w/some sand & tr. OM (wooded fragment - moist		mottles Gr							
60	Bl-Gr Clayey SILT w/ tr. f-m sand shell frag - moist wet EOB = 6.00									

37" Silt 37-

48'

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/25/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	JOE RUIZ
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT. AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL-015	BORING NUMBER #27A

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Br/Gr, SILT, tr. OM, DRY					1		0-6"		
	Br/R/B mottled, SILT, tr OM & clay, DRY angular					2		6-12"		
12	SAA									
	SAA - slightly moist					3		12-24"		
24	DK-Br - SILT w/some clay & tr OM, moist					4		24-36		
	SAA									
36	DK Br/mottled R/B clayey SILT w/tr. f. sand & OM moist					5		36-~~48~~ 46		DUP
46	DK Br/R/B silty sand-wet									
48	Br/LT Br. Silty sandy-wet					6		46-60		
56	Br/Y/B f. sand w some silt - wet									
60	EOB 60"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	7/25/01
PAGE	1 of)
DRILLING METHOD	HAND AUGER
DRILLED BY	JOE / HIEDI
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: S1-015

BORING NUMBER: ~~#26~~ 28

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	DK Br-Gr, SILT, tr. f. sand, OM, R/B mottles, DRY					1		0-6"		
	SAA					2		6-12"		
12	Br-SILT, tr. clay & OM R/B mottles, DRY SAA.					3		12-24"		
24	SAA-									
	SAA slightly moist to					4		24-36'		
36	SAA							NS		
42-44"	DK Br/Y/B. F-m sand w/ some shell fragments & tr silt, WET					5		42-44		
	Blk-Gr mottle clayey SILT & f-m gravel moist-WET slight odor					6		44-48		DUP
48	DK Gr-Br. silty F-m sand, WET									
52-53	DK Gr/Br Silty F sand WET					7		48-60		
	Gr-F-m sand w/ some SILT, WET									
60	EOB 60'.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/25/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: JOE RUIZ / SARAH MURRAY

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015-

BORING NUMBER: #29

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Br-SILT, tr. clay, DRY, OM platy structure					1		0-6"		
	Br-Gr/Br-SILT, tr clay & OM DRY-granular					2		6-12"		
12	Br-Gr-SILT, tr clay DRY-platy					3		12-18		
	Red Br/ ~~SILTY~~ F SAND W/ SILT some f-c. gravel - DRY					4		18-24"		
24	SAA less c. gravel					5		24-30"		
	30-32 SAA COBBLES Refusal "34"							NS		
36										
48										
60										

24/6/20

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7/25/01

PAGE: 1 of 1

DRILLING METHOD: HAND AUGER

DRILLED BY: JOE RUIZ/SARAH MURRAY

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015

BORING NUMBER: #30

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	DK Br-Gr, silt, tr. OM & R/B mottles - DRY		ML			1	G	0-0.5'		
	SAA		↓			2	G	0.5-12"		
12	DK Br-Gr, silt, tr. clay & OM, slightly moist		ML			3		12-24"		
24	SAA- trace clay (little) (increasing)		↓			4		~~2-2.5'~~		24-33"
33'	DK-Br. Y/B silty SAND, tr. clay, moist		SM			5		~~3.5-4'~~		33-36"
36	Br-Y/B silty F. SAND wet, f. gravel		SM			6		36-48"		
4			SP			7		48-60	DUP	
58										
5	Br-Y/B F-m sand w/tr. f. gravel-wet EOB-60"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 7/24/01

PAGE: 1 of

DRILLING METHOD: HAND AUGER/CORE

DRILLED BY: JOE / SARAH

LOGGED BY: MARY LANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL015-31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Grey brown silt, trace organics, trace residual material, dry					1		0"-6"		
	As above, trace plastics					2		6"-12"		
	Grey brown silt, trace sand, trace organics, trace fines, slightly moist, possible residual fines.					3		12"-18"		
						4		18"-24"		
	As above, less sand, slightly higher moisture content.					5 SM				
	Grey silt, trace fine sand, wet					5		24"-~~30~~ 26"		
	Dark brown to black silt, trace organics, trace fine sand, wet, strong petroleum odor, some clay							26"-30		duplicate sample taken
	Black silt, trace fine sand trace organics wet.					6		30"-36		
	34" recovery of sample obtained via lexan core 3" and PVC sampling apparatus							36-70"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED: 7-25-01

PAGE: 1 of 2

DRILLING METHOD: Hand Auger

DRILLED BY: Ben Marrakel

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC S

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL-015

BORING NUMBER: # 31

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
36	Gr/Black f-ma silty sand wet w/ OM-~~wood fragments~~									
6 / F2	Black- clayey SILT w/ OM (wood fragment leaf litter)					7		36-48		DUP
48	WET					8		48-60		
60						9		60-70		
70	EOB 70'									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7/25/01

PAGE: 2 of 2

DRILLING METHOD: CORE

DRILLED BY: B M

LOGGED BY: MARY CANNON

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
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	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
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			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
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HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL-015	BORING NUMBER #32

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0	Gr/Br/ SILT, tr. OM DRY					1		0-6"		PIC-1
	SAA					2		6-12"		
12	Gr/Br w/ R/B mottled SILT w/tr ~~little~~ clay & trf. sand & OM DRY. ~~slight moist~~					3		12-24"		PIC 2
	SAA w/ little clay slightly moist									
24	Gr/Br - SILT w/some clay w/tr OM - DRY					4		24-36		DUP
	SAA - slightly more clay moist									
36" WET 36	Grey Bl - Clayey SILT, slight sheen & odor tr - wet					5		36-48		
	SAA									
48	Bl - clayey SILT/tr f. sand, f gravel & shell fragm					6		48-60		
	WET									
60	EOB 60"									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	7/25/01
PAGE	1 of 1
DRILLING METHOD	HAND AUGER
DRILLED BY	JOE / HIEDI
LOGGED BY	MARY LANNON
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: S1015-33

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silt trace organics, dry, no odor,					1		0"-6"		
	Dark brown silt, Trace fine sand, trace organics, dry					2		6"-12"		
	As above, trace shells					3		12"-18"		
	As above, slight moisture					4		18"-24"		
	As above, slightly less organic content. worm present					5		24"-36		
	Trace clay. As Above					6		30"-36"		
	Dark brow silt, trace organics, trace shells, slight moisture slightly micaceous					7		36"-42"		
	As above, slightly higher moisture content.					8		42"-48"		
	Dark brown silt, trace shells, some clay, trace fine sand, moist					9		48"-54"		
	Dark brown to black silt, some clay, trace shells, trace black vitreous fragments, petroleum odor, slightly higher moisture content.					10		54"-60"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 7-25-01

PAGE: 1 of 1

DRILLING METHOD: Hand Auger

DRILLED BY: M. Browning

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL001

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILTY CLAY, trace M- & SAND, DRY, NO ODOR roots noted		CL			1		0-6	6	Total Recovery 21"
5"										
6"	light GRAY SILTY CLAY, as Above.		CL			2		6-12	6	
10.5"	roots noted @ 10" depth									
12"	GRAY SILTY CLAY, little M-S SAND, DRY, NO ODOR, roots noted.		CL			3		12-21	9"	
18"										
19.2										
20.4										
21.6	Core Completed to 21" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 2"

DATE DRILLED	PAGE
6/01/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: S2002

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BROWN SILTY CLAY, trace c-f SAND, moist, no odor (7.5YR 5/2) organics present		CL			1		0-6	1	Total Recovery 17"
3"	Light BROWN SILTY CLAY, trace c-f SAND, moist no odor. organic roots, leaves present.		CL							
6"	Light GRAY SILTY CLAY, trace m-f SAND, moist NO ODOR (7.5YR 5/0)		CL			2		6-12	2	
10"	DARK GRAY SILTY CLAY, trace c-f SAND, moist, NO ODOR. 7.5YR 4/0)		CL			3		12-17"	3	
12"										
15"	GRAY c-f SAND, wet, NO ODOR		SP							
17"	Core completed @ 17" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 2"

DATE DRILLED: 5/31/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: J. Klomp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL003

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY ~~SILT~~ CLAY-trace-~~CLAY~~ SILT, wet, NO ODOR, roots present, grass at surface. (7.5 YR 4/0)		CL			1		0-6"	6	
6"						2		6-12"	6	
12.3"	GRAY m-f SAND, wet, NO ODOR, coarsens upward (7.5 YR 4/0)		SP			3		12-24"	12	
18"	GRAY CLAY-trace-SILT, wet NO ODOR, high plasticity, organic at bottom of core, trace.		CL							
19.2 20.4 21.6	GRAY SANDY CLAY, wet, NO ODOR.		CL							
24" 25"	GRAY m-f SAND, trace CLAY, organic material noted, thin branches, roots, wet, NO ODOR.		SP			4		24-36"	12	
32"	GRAY SILTY CLAY, little SAND, moist, NO ODOR		CL							
34"	GRAY m-f SAND, wet, NO ODOR roots present.		SP							
36"	Core complete to 36" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 2"

DATE DRILLED	PAGE
5/31/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: R. Kehl

LOGGED BY: S. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL004	

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
						1		0-6"		no water high off of river bed next to pasture
6"	sandy clay, lg. rocks, large particles, lt. brown with flecks of red sand		CL							
12"	sandy clay, numerous rocks lg. & sm., distinct red tint to color		CL			2		6-12"		
24"	gravel sandy clay. mostly rocks lg. & sm. red tint. more clay than previous layer		CL			3		12-24"		

EXPLANATION

- Water Table (24 Hour) no
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED	PAGE
5/31/01	of

DRILLING METHOD: Bucket Auger

DRILLED BY: Mein!

LOGGED BY: Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL005

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0.5	Light Gray SILTY CLAY, trace M-F SAND, roots present, moist, NO ODOR (7.5YR 4/0)		CL			1		0-6"		
1.0	As Above		CL			2		6-12"		
16.5"	0.5 INCH Darker Gray CLAY @ 15.5-16"		CL			3		12-24"		extra Just PCB sample @ 17-19" bgs
1.5	BROWN SILTY CLAY, wet, NO ODOR		CL							
2.0	Black Organic SILTY, CLAY, Shells noted		CL							TOC 6-12 24-29"
29.0"	0.5" Brown SILTY CLAY, trace Sand @ 27.0" Depth		CL			4		24-29"		
2.5	Boring Completed @ 29.0" bgs									DIOXIN ON FULL INTERVAL

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: R. Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL 006

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILT-trace-CLAY		ML			1		0-6		Pushed to 32" only 24" recovered.
0.5										
			ML			2		6-12		
1.0										
			ML			3		12-24		
	±" SILTY CLAY } Annotations in Description 1" SAND LAYER									
2.0										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	5/24/01
PAGE	1 of 1
DRILLING METHOD	
DRILLED BY	G. Gehrig
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL006

BORING NUMBER:

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										0-24"
										0-6", 6-12" / 12-24" intervals taken Previously
24"										
	fine sand particles gravel brown traces of silt & minor traces of clay		SM			1		24-36"		water encountered at 22"
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 6/1/01

PAGE: of

DRILLING METHOD: Hand auger

DRILLED BY: Heidi Nemitt

LOGGED BY: Heidi Nemitt

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SL007

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
						1		0-6"		Overall Site log says core was logged
.5						2		6-12"		on 5/25/01. No mention in sample
1						3		12-20"		from logbooks.
1.5 20"	core complete @ 20" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 5/25/01

PAGE: 1 of 1

DRILLING METHOD:

DRILLED BY:

LOGGED BY: from logbooks

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL008

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILTY CLAY, trace m-f SAND, moist, No odor.							0-6"		Total Recovery 23"
0.5	As Above.							6-12"		A&B cores split at 10" depth
1.0	As Above, color has more brownish tint to gray.							12-23"		
2.0	End of Core @ 23" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: G. Gehrig

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SL 009

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Light Gray SILTY CLAY, trace m-f SAND, DRY NO ODOR, (2.5YR 4/0)					1		0-18	12"	Sampled intervals
0.5	Gray SILTY CLAY, trace m-f SAND, light Brown mottling, Dry, NO ODOR.					2				0-6 6-12 14-24"
1.0 14"	No Recovery							14-32	18"	24-32"
	As Above (interval 0.5-1.0)					3				Core split into A & B cores A (0-18" B (14-32")
2.0"										
32" 2.5"						4				
	Total core depth is 32" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 5/24/01

PAGE: 1 of 1

DRILLING METHOD: HAND BUSH

DRILLED BY: S. RUIZ

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SL010

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records of this core collected or shipped for sampling. -SM 7/12/01									
	There is a location on the map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED | PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL011

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown organic silty clay, trace m-f sand, wet, no odor		CL					? 0-6"		
0.5	Brown c-f sand, wet, no odor		SP							
1.0	As above									
	Gray silty clay, trace m-f sand, moist, no odor		CL							extra grab PCB sample 1-1.5'
2.0	Brown c-f sand, wet, no odor		SP							
2.8'	Dark brown organic clay, wet, no odor.		OL							
3.0	~~End~~ Boring depth is 37" bgs End OE									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: J. Ruiz

LOGGED BY: J. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL012

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown organic clay, roots and leaves present, wet, no odor (7.5 YR 5/2)		OL			1		0-6"	6	Total Recovery 21"
6"	Brown C-F sand, wet no odor. (7.5 YR 6/4)		SP			2		6-16"	10"	
12"										SL
	Gray C-F sand, wet, no odor (7.5 YR 4/6)		SP							
17"										
17.2	Dark gray ~~[illegible]~~ organic clay-trace-silt, wet, no odor. (7.5 YR 2/0)		CL			3		16-21"	5"	
20.5										
	Core completed @ 21" bgs									
24"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 5/31/01

PAGE: 1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: R. Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: GRA / A.P.

LOCATION: KALAMAZOO

BORING NUMBER: SL013

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	SAND and gravel.	SP				1		0-6		
						2		6-12		
1						3		12-18		Water encountered @ 12" bgs.
	Core compacted @ 18" bgs.									
2										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 5/23/01

PAGE: 1 of 1

DRILLING METHOD: Bucket Auger

DRILLED BY: G. Gehrig

LOGGED BY: H. Nemi 4h

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION

BORING NUMBER SL014

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray silty CLAY, trace c-f SAND, wet, roots and organics noted, light brown mottling.		CL			1		0-6"	6"	
0.5	Gray m-f SAND		SP			2		6-12"	6"	
1.0			SP			3		12-24"	12"	
1.5 20"	Dark Gray ORGANIC SILT, wet, slight organic odor, high plasticity.		ML							
2.0						4		24-34"		
2.5	As Above		ML							
3.0	Boring terminated @ 3.0 ft bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 5/22/01

PAGE 1 of 1

DRILLING METHOD HAND PUSH

DRILLED BY Rick Mehl

LOGGED BY S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL015

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray silty CLAY, trace c-f SAND, roots noted, Dry No ODOR, Low plasticity		CL			1		0-6"	6"	
0.5	As Above		CL			2		6-12"	6"	
1.0	Gray silty CLAY, little c-f SAND, moist, No ODOR, Low plasticity (7.5YR 4/0)		CL			3		12-24"	12"	
2.0	Gray silty CLAY, trace m-f SAND, DRY, No ODOR, Low plasticity (7.5YR 4/0)		CL			4		24-36"	12"	
2.5										
3.0	Boring terminated @ 3.0' bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 5/22/01

PAGE: 1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: Rick Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL016

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILTY CLAY, trace MA-S SAND, roots noted, DRY NO ODOR	CL	CL			1		0-6"	6"	16" Total Recovery
0.5	As Above, slight brown mottling around roots	CL	CL			2		6-12"	6"	
1.0	As Above	CL	CL			3		12-16"	4"	
	Boring terminated @ 16.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 5/23/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

5/30/01

WESTON	SUBSIDIARY	LOCATION SL016	BORING NUMBER

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1										
14"	Grayish clay - with Paper waste					A				
2						B				
3	Light brown sand w/ black streaks & red chunks					C				
4						D				
Paper waste end										
5										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 5/30/01

PAGE: of

DRILLING METHOD: Bucket Auger

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL017

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILTY CLAY, trace m-f SAND, DRY, NO ODOR (7.5 YR 4/0)		CL			1		0-18"	9"	Sample Intervals
0.5										1) 0-6"
	No Recovery									2) 18-24"
1.0										3) 24-36"
						2		18-36"	16"	
1.5										
2.0	AS Above, ~~little~~ trace SAND									
3.0										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: G. Gehrig

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL 018

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray silty clay, trace m-f sand, dry, no odor (7.5YR 4/0)		CL			1		0-6	6"	
0.5	As above		CL			2		6-12	6"	
1.0	As above		CL			3		12-24"	12"	Split between core A and core B. Core A started as pushed 18". Core B pushed at 18-36" only 24" total recovery
2.0	Boring completed @ 24" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	5/24/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	G. Gelvig
LOGGED BY	J. Kemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL018

BORING NUMBER:

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										0-24" intervals taken previously
	24" gray sludge									encountered water at 24"
	30" gray sludge mixed with coarse, red sand particles & gravel 36" silt & clay.									no odor definite residual

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED: 6/1/01

PAGE: of

DRILLING METHOD: hand auger

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION

BORING NUMBER SL019

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BROWN SILTY SAND, ROOTS NOTED, NO ODOR, DRY. (7.5YR 3/2)		SM			1		0-6"	6"	Total Push Depth is 14" only 11" of Recovery
0.5	BROWN SILTY SAND, trace m-f Gravel, Dry NO ODOR. (7.5YR 5/8)		SM			2		6-11"	5"	
	Boring terminated @ 11.0" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 5/24/01

PAGE 1 of 1

DRILLING METHOD Hand Push

DRILLED BY Greg Gehrig

LOGGED BY J. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL020

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILTY CLAY, trace m-f SAND, DRY, NO ODOR, ROOTS NOTED (7.5 YR 4/0)		CL			1		0-6"		
0.5	BROWN SAND, trace m-f Gravel from 6-9" depth, roots Noted, NO ODOR wet (7.5 YR 5/6)		SP			2		6-12"		
1.0	DARK GRAY SAND, medium to fine grained, shells present, wet, NO ODOR (7.5 YR 3/0)					3		12-24"		
1.5	BROWN SAND, trace m-f Gravel, wet, NO ODOR.		SP							Split of Cores A&B @ 21.0"
	roots present at 18-20" depth (7.5 YR 5/6)									
2.0			SP			4		24-36"		
2.5										
32"										
3.0	GRAY m-f SAND, shells present, trace organic material, wet, NO ODOR. (7.5 YR 3/0)		SP			5		36-48"		
3.5										
4.0	Boring terminated @ 48.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	5/23/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	J. RUIZ
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

Logged 5/24/01

SOIL BORING LOG

WESTON	SUBSIDIARY: U.S. EPA	LOCATION: Kalamazoo River	BORING NUMBER: SL021

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0.5	GRAY SILTY CLAY, trace m-f SAND, roots present moist, NO ODOR (7.5YR 6/0)		CL			1		0-6"	6	40" of Recovery
8"	BROWN c-f SAND, wet NO ODOR		SP			2		6-12"	6	
1.0						3		12-24"	12	
1.5										
2.3"										
2.0	GRAY c-f SAND, roots noted, wet, NO ODOR (7.5YR 3/0)		SP							
2.5	BLACK ORGANIC SILTY CLAY, wet, NO ODOR (7.5YR 2/0)		CL			4		24-36"	12	
3.0	DARK Gray SILTY SAND, wet, NO ODOR, shells noted. (7.5YR 2/0) (0.5 INCH CLAY layers at 36" and 38" bgs) organic material noted. (leaves)		SM			5		36-40"	4	
40"	Boring terminated @ 40.0" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	5/24/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	~~SD011A~~ SD022

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SANDY CLAY, organic material present					1		0-6"	6	30" Total Recovery.
6"	Brown to Gray Organic ~~CLAY~~ JK Sandy CLAY with Black mottling.		CL			2		6-12"	6	
11"	0.1" shell layer @ 11.0"									
12"	DARK GRAY ORGANIC SANDY CLAY 0.01" Thin brown organic layer @ 13" 0.1" Thin Dark Gray Line @ 14.5"					3		12-24"	12	
18"	Light Brown to Brown m-f SAND with Black mottling Gray at Bottom of interval from 21-23"		SP							
23"										
24"	GRAY SAND and GRAVEL, wet NO ODOR. (2.5YR 6/0)		SW			4		24-30"	6"	
30"	Core Completed @ 30" by S									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 2"

DATE DRILLED	5/31/01
PAGE	1 of 1
DRILLING METHOD	Hand Push
DRILLED BY	R. Mehl
LOGGED BY	S. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL023

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILTY CLAY, trace m-f SAND, dry, NO ODOR. roots noted, brown mottling. (7.5YR 4/0)		CL			1		0-6"	6"	Total Recovery 18"
6"			CL			2		6-12"	6"	
11.5	BROWN m-f SAND		SW							
12	DARK GRAY SANDY CLAY, DRY NO ODOR. 7.5YR 2/0		CL			3		12-18"	6"	
15.5	BROWN to GRAY m-f SAND, DRY NO ODOR		SP							
18"	Core completed @ 18" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 2" | CLAYEY SILT

DATE DRILLED	5/31/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	S. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U. S. EPA	Kalamazoo River	SL 024

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Grey SILT-Trace-CLAY, roots noted, Dry, NO ODOR (7.5YR 4/0)		ML			1		0-6"	6"	
0.5 / 6"	BROWN m-f SAND		SM							
	Gray SILT-vdc-CLAY, trace c-f SAND, Brown mottling noted. DRY, NO ODOR. (7.5YR 4/0)		ML			2		6-12"	6"	
1.0	Gray SILTY-CLAY, trace c-f SAND, DRY, NO ODOR (7.5YR 4/0)		CL			3		12-24	12"	
2.0	As Above. (7.5 YR 4/2)		CL			4		24-36	12"	
3.0	Boring terminated @3.0' bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	5/22/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	Rick Mehl
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL025

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0.5	Grey SILTY CLAY, trace m-f SAND, DRY, NO ODOR, (7.5YR 4/6)		CL			1		0-6"	6"	
1.0	As Above		CL			2		6-12"	6"	
16.0 ft	As Above		CL			3		12-16"	4"	
	Boring terminated @ 16.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED	PAGE
5/22/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Rick Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

5/30/01

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	52025	

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1										
14"										
2	Clay - paper waste mixture w/ some sandy black loam					A		18-24		USGS Duplicate taken
						B		24-30		
3	Brownish - Blackish Sand					C		36-48		
	brownish sand									
4										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	5/30/01
PAGE	of
DRILLING METHOD	Bucket Auger
DRILLED BY	
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** *Sandy Silt* *Silt* Silty Clay Clay Clayey Silt Sandy Clay *Organic Silt* *Organic Clay*
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL026

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark Brown Silty CLAY, trace m-f sand; roots present, Dry, NO ODOR (7.5YR 4/2)		CL	NA		1		0-6"	6"	
0.5	GRAY SILTY CLAY, trace c-f sand, trace m-f Gravel, roots noted, Dry, NO ODOR. STIFF (7.5YR 4/0)		CL	NA		2		6-12"	12"	
1.0	BROWN SAND & GRAVEL, DRY NO ODOR (7.5YR 5/6)		GC	NA						
	Boring terminated 14"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
5/23/01	1 of 1

DRILLING METHOD: Hand push

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	S6027

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark Brown Sandy SILT, organic material Noted NO ODOR, DRY (7.5YR 3/2)		ML					0-6		Total Recovery 16"
0.5	Brown SILTY SAND, little c-f Gravel, NO ODOR, DRY (7.5YR 4/4)		SC					6-12		
1.0	BROWN Sand & Gravel with SILT (LOAM), Dry- NO ODOR. (7.5YR 4/4)		GC					12-16		
1.5	Boring terminated @ 16.0"									
2.0										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	5/23/01
PAGE	1 of 1
DRILLING METHOD	Hand Push
DRILLED BY	J. Klamp
LOGGED BY	J. Klamp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG 5/30/01

WESTON

SUBSIDIARY

LOCATION SL 027

BORING NUMBER

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1										
16"	sandstone					A				
2	Larger chucks of sandstone					B				
30"	refusal from sandstone									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED 5/30/01

PAGE of

DRILLING METHOD Bucket Auger

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL-02B

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray silty clay, trace m-c sand, moist, no odor 7.5YR 4/0		CL			1		0-6"	1	Total Recovery 25"
	As above. 1/16" sand layers at 15.5", 17.2", and 20.0".		CL			2		6-12"	2	
1.0						3		12-24"	3	
2.0	Boring Terminated @ 25.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	3/23/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	J. Klemz
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

3" WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL029

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0.5	Gray SILT-Trace-CLAY, roots present on top 3", DRY NO ODOR (7.5YR 5/0)	ML				1		0-6"	6	
1.0	Gray SILT-trace-CLAY, Thin 0.5 inch SAND with shells at 8inch depth. DRY; NO ODOR	ML				2		6-12"	6	
15"	Gray SILTY-CLAY, trace m-f SAND, DRY, NO ODOR	CL				3		12-15"	3"	
	Boring Terminated @ 15.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED	PAGE
5/23/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Joe Ruiz

LOGGED BY: J Klempe

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

Core logged on 5/24/01

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL029	

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										0-15" intervals
	15" clay silt with med. size sand particles	CL								
	24" fine to med. sand particles little roots.	SP								30" encountered water
	30" light brown sand particles w/gravel	SP								
	36" silty clay black to gray	CL								

EXPLANATION

- Water Table (24 Hour) 30"
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	PAGE
6/1/01	of

DRILLING METHOD: hand auger

DRILLED BY: Heidi Nemec

LOGGED BY: Heidi Nemec

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION

BORING NUMBER SL030

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY SILT - trace - CLAY		ML			1		0-14"	10"	Sample intervals
0.5	9" - 0.5 inch sand layer. 9.5" - 0.5 inch sand layer					2				0-6" 6-10" 14-26"
1.0	22" - 0.5" Brown sand (m-f) 23" - 0.5" Brown sand (m-f) 25"					3		14-36	12"	
2.0	Brown m-f SAND		SP							
	Boring terminated @ 26.0' bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED 5/24/01

PAGE 1 of 1

DRILLING METHOD HAND PUSH

DRILLED BY J. RUIZ

LOGGED BY J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL031

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Light Gray silty CLAY, moist, no odor; (7.5 YR 6/0)		CL			1		0-6"	6"	Total Recovery 24"
0.5			CL			2		6-12	6"	
1.0	Brown coarse to fine SAND,		SP							
	wet, no odor, shells present. (7.5 YR 6/6)		SP			3		12-24"	12"	A plum pit found 12-24" depth sample
	Dark Brown coarse to fine SAND, wet, no odor shells present (7.5 YR 3/0)		SP							
2.0	Boring terminated @ 24.0" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: Joe Ruiz

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL031	BORING NUMBER

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										Previously sampled 0-6", 6-12", 12-24"
24"	gray coarse sand, gravel									Saturation at 6 inches
36"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	PAGE of
DRILLING METHOD	hand auger
DRILLED BY	
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL032

BORING NUMBER:

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
		CL				1		0-6"	1	water was visible at 6"
6inch	silty clay large granuals roots organic matter lt. gray									
						2		6-12"		
12in	encountered water some rooted material clay loam lt. gray compacted	CL								
						3		12-24"		
24"	black clay silt compacted sludgy when mixed with water fine particles peaty	CL								
						4		24-36"		
36"	clay silt compacted finest particles saturated below 36" ?									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 5/31/01

PAGE of

DRILLING METHOD: Bucket Auger

DRILLED BY:

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL033

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray SILTY CLAY, trace m-f sand, moist, No odor. (7.5YR 4/0)					1		0-6"	6"	
0.5			CL							
	As Above.					2		6-12"	6"	
										split between cores A & B depths.
1.0	As Above		CL			3		12-18.5"	6.5"	Note: core B is 12-44" with 14" recovery. Core A is 0-36 with 17" recovery
	DARK GRAY SILTY CLAY, slight organic material		CL							
	End of Boring @ 18.5" bgs (7.5YR 2/0)									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 5/28/01

PAGE: 1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: Rick Neil

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

Logged on 5/24/01

SOIL BORING LOG 5/30/01

WESTON	SUBSIDIARY	LOCATION SLG 33	BORING NUMBER

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1										
2	perched water above									
	Black peat-like material, saturated w/ petroleum odor					A		24-30		
3						B		36-40		
4										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED 5/30/01 | PAGE of

DRILLING METHOD Bucket Auger

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL034

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	3" Grey CLAYEY Gravel over 3" SILT-Trace-CLAY, roots noted, wet, NO ODOR (7.5YR 4/0)		ML			1		0-6"	6"	14" on 1st Tube
0.5	Grey Silty CLAY, trace L-f SAND, moist, NO ODOR. (7.5YR 4/0)		CL			2		6-12"	6"	
1.0	As Above (7.5YR 3/0)		CL			3		6-18"	6"	
1.5			CL							7.5" recovery @ 1.5-2.0'
2.0	Boring pushed to 2.0' b.g.s.									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED	PAGE
5/22/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: R. Mehl

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SL Ø 34

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
~~DEPTH BEGINS @ 24"~~ 24-32"	GREY, SILTY CLAY, ~~&~~ C-F SAND TRACE MOIST, NO ODOR 7.5 YR 4/0		CL			4		24/32		
32-42"	AS ABOVE					5		32-42		
BROWN	AS ABOVE, LITTLE SAND		CL			6		42-52		
42-52"										
52-68"	BLACK ORGANIC CLAY, MOIST, SHELLS NOTED, GRAY MOTTLING		OL			7		52-68		
3'3" TOTAL LENGTH	THIS CORE BEGINS @ 24" OSC REPEATED SAMPLE AT THIS SITE. ORIGINAL WAS TAKEN ON 5/21/01.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 5/25/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY:

LOGGED BY: J. KLEMP

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION	BORING NUMBER SL034

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	clay									
1	surface sample was retrieved									
2	water									
	sample pulled from 5'									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED | PAGE of
DRILLING METHOD
DRILLED BY
LOGGED BY
EXISTING GRADE ELEVATION (FT AMSL)
LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: SL034 2"

BORING NUMBER:

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1'										
	– end of 1st sample									
2'	– Stuff 2"									
	– end of 2nd sample									
3'										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
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	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL035

6/3/15

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray SILT-TRACE-CLAY, Dry, No ODOR, White flecks noted. (7.5YR 4/0)		CL			1		0-6"	6"	20" pushed 15" of Recovery
0.5	As Above		CL			2		6-12"	6"	
1.0	As Above		CL			3		12-15"	3"	
1.5	Boring terminated @ 15"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED	3/22/01
PAGE	1 of 1
DRILLING METHOD	Hand Push
DRILLED BY	Rick Mehl
LOGGED BY	S. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL 03C

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown Silty SAND, DRY No odor; roots noted (7.5 YR 4/4)		SM			1		0-6"	6"	Total Recovery 29"
0.5	As Above, lighter colors (7.5 YR 5/8)		SM			2		6-12"	6"	
1.0	BROWN Fine-grained SAND, trace SILT,									
1.5	~~As Above~~ SK, trace m-c Gravel, Dry, No odor (7.5 YR 5/8)		SM			3		12-24"	12"	
2.0						4		24-29"	5"	
	Boring terminated @ 29.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED: 5/23/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: FRA

LOCATION: K700

BORING NUMBER: SL037

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	CLAYEY SAND, brown		SC			1		0-6		
	SILTY SAND, ~~sand, brown~~ SM		SM			2		6-12		
1	SAND, BROWN, trace gravel		SW			3		12-24		
2						4		24-36		
3										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED: 5/30/01

PAGE: 1 of 1

DRILLING METHOD: Bucket Auger

DRILLED BY: ~~Joe~~ SM Greg Gehring

LOGGED BY: Joe Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

6/5 = 1 1/5

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL03B

DEPTH IN FEET (inches)	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	Gray silty clay, trace m-f sand; roots noted, moist, no odor. (7.5YR 4/0)		CL			1		0-6	6	A core 15" Total Recovery
12"						2		6-12	6	B core 13" Total Recovery (28" overall) Cored to 40" Depth
13.8 14.4 16.8 16.8								12-24"		Split Between core intervals A & B is at 15"
18"						3			12	
24"	Black organic lenses 0.1 to 0.5" thick noted at 26" & 27" Depths.					4		24-28"	4"	
	Core terminated @ 28" Depth bgs									
36"										
48"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 2"

DATE DRILLED	PAGE
5/29/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: G. Ehring

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

Note Core logged on 5/30/01

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION

BORING NUMBER SL039

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BLACK ORGANIC CLAY (PEAT), wet, NO ODOR. (7.5YR 2/0)					1		0-6"	6"	Total Recovery 24.5"
0.5						2		6-12"	6"	
1.0			CL			3		12-25"	13"	
2.0	Core Completed @ 25.0" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED 5/25/01

PAGE 1 of 1

DRILLING METHOD HAND PUSH

DRILLED BY G. Gehring

LOGGED BY S. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL040

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BLACK ORGANIC PEAT							0-6		Total Recovery 32"
0.5								6-12		
1.0			PT					12-24		
2.0								24-32		
2.5	Core terminated @ 32" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
5/25/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES: 3" Tube

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL041

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark Brown Organic ~~SILTY~~ CLAY, moist, no odor (7.5YR 2/0)		OL			1		0-6	6"	
0.5	BLACK ORGANIC PEAT (7.5YR 2/0)		PT			2		6-12	6"	
1.0										
1.5						3		12-24	12"	
2.0						4		24-31"	7"	
2.5	Boring terminated @ 31.0" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY:

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL042

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BARK Brown to BLACK Highly Organic PEAT (roots, leaves, wood, etc.)					1		0-6	6"	Total Recovery 36"
0.5										
			PT			2			16"	
1.0										
						3			12"	
2.0										
						4			12"	
3.0	Core completed @ 36" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	5/25/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	S. Ruiz
LOGGED BY	S. Kemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL043

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BROWN TO BLACK ORGANIC PEAT					1		0-6		Total Recovery 30"
0.5						2		6-12		
1.0						3		12-24		
2.0						4		24-30		
28"	GRAY SANDY CLAY, moist, trace SILT, NO ODOR (7.5YR 3/0)									
30	Core terminated @ 30.0" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	5/25/01
PAGE	1 of 1
DRILLING METHOD	
DRILLED BY	R. Mehl
LOGGED BY	S. Kleny
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	3" Tube

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL044

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
5"	BLACK ORGANIC MATERIAL TO 5" Depth over Brown SILTY CLAY to 7" Depth (7.5YR 2/0)		PT			1		0-6		Total Recovery 39.5"
0.5 7"	BROWN SILTY CLAY (7.5 YR 6/6)		CL							
1.0	BLACK ORGANIC PEAT moist, no odor (7.5 YR 2/0)		PT			2		6-12		
2.0	As Above		PT			3		12-24		
3.0	As Above		PT			4		24-36		
	As Above (7.5YR 3/2)		PT			5		36-39"		
3.5	Boring terminated @ 39.5" bgs.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	PAGE
5/23/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Rick Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL045

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BROWN Clayey SAND, ORGANIC material present, wet, NO ODOR. (7.5YR 4/6)			SC						
0.5	BROWN Sandy CLAY, roots and leaves noted, High plasticity, wet, NO ODOR. (7.5YR 6/2)			CL						
1.0										
1.2	BLACK ORGANIC PEAT			PT						
1.5	As Above			PT						
2.0	As Above			PT						
2.5										
3.0	Boring terminated @ 36"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 5/23/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Rick Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL 046

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silty CLAY, trace m-f SAND, wet, no odor		CL			1		0-6	6"	
0.5	Brown sandy SILT, wet, no odor, organics material noted.		ML			2		6-12	6"	
1.0	As Above		ML			3		12-24	12"	
2.0	As Above		ML			4		24-29	5"	Bucket Auger Samples collected 6/4/01 30-36" m-f clayey SAND, trace organic 36-48" As Above, less organic.
	Boring terminated @ 29.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED: 5/23/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY EPA / A.P.	LOCATION KALAMAZOO RIVER	BORING NUMBER SL047

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records of this core being collected or shipped for sampling. — SM 7/12/01									
	There is a location on the map.									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | ____ | CLAYEY SILT | ____

DATE DRILLED | PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SL048

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown SAND, little silt, moist, NO ODOR some m-f Gravel. (7.5 YR 4/4)					1		0-6"	6"	
0.5			SC	NA	N/A					
	As Above					2		6-12"	6"	
1.0'										
	As Above								4"	
	Boring terminated @ 16.0"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 5/22/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL049

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DARK BROWN CLAY - trace - SILT (7.5 YR 3/2), wet, NO ODOR		ML			1		0-6	6	Total Recovery 28"
0.5										Core pushed 36"
10"						2		6-12	6	
	DARK BROWN m-f SAND, wet NO ODOR (7.5 YR 3/2)		SP							
1.0	BROWN c-f SAND, wet, NO ODOR (7.5 YR 5/6)		SP			3		12-24	12	
20"										
	BROWN CLAY - trace - SILT		CL							
21.5"	BROWN ORGANIC PEAT (7.5 YR 3/4)		PT							
2.0	BLACK ORGANIC PEAT (7.5 YR 2/0)		PT			4		24-28"	4	
28"	Boring completed @ 28.0" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
5/24/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. RUIZ

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SL050

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DARK BROWN ORGANIC CLAY, wet, NO ODOR (7.5YR 2/0)		CL							
3"						1		0-6"		
	BLACK ORGANIC CLAY (PEAT)									
.5										
						2		6-12"		
1										
			CL							
1.5						3		12-24"		
2	Core terminated @ 24" bgs									
	TOTAL RECOVERY = 24"									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 5/25/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: G. Gehring

LOGGED BY: V. KLEMP

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	Kalamazoo	SL051

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	BROWN ORGANIC PEAT									Total Recovery 39"
						1		0-6		
0.5										
						2		6-12		
1.0			PT							
						3		12-24		
2.0										
						4		24-36		
3.0						5		36-39		
39"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	5/24/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	Ruiz
LOGGED BY	Kump
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL052

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
0.5	Gray sandy silt, wet, organics noted, no odor (7.5YR 5/4)		ML			1		0-6"	6"	
1.0	As above (7.5YR 4/2)		ML			2		6-12"	6"	
1.5	Gray clay, roots and organic material, wet, no odor (7.5YR 4/6)		CL			3		12-24"	12"	
2.0	Black organic peat (7.5YR 2/0)		PT			4		24-36"	12"	
3.0	Brown sandy clay, ~~trace~~ varved material, moist, no odor (7.5YR 4/4)		CL							
	As above					5		36-40"	4"	
	Boring terminated @ 40" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 5/23/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Rick Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL053

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown silty clay, organics present		CL			1		0-6"	6"	
0.5	Brown organic material (peat)		PT			2		6-12"	6"	
1.0	Black organic peat		PT			3		12-24"	12"	
2.0			PT			4		24-29"	5"	Bucket Hand Augered Samples 6/4/01
29.0"	Boring terminated @ 29.0" bgs									30-36" As Above (peat) less organics 36-48" Peat (As Above)

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	PAGE
5/23/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Rick Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

Boring logged on 5/24/01

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL054

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown CLAY, organic material present, no odor wet (7.5YR 5/6)		CL			1		0-6"	6"	Total Recovery 41 inches
0.5										
	As Above (7.5 YR 5/2)					2		6-12"	6"	
1.0										
	Brown PEAT, no odor, moist (7.5YR 5/6)		PT			3		12-24"	12"	
2.0										
	As Above (7.5YR 5/6)					4		24-36"	12"	
3.0										
	As Above					5		36-41"	5"	
	Boring terminated @ 41" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	5/23/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	Rick Meil
LOGGED BY	S. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** *Sandy Silt* *Silt* Silty Clay Clay Clayey Silt Sandy Clay Organic Silt Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL0 5-5

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Gray SILTY CLAY, wet NO ODOR 7.5YR 6/0		CL			1		0-6"	6"	31" Inch recovery
0.5										
	AS Above 7.5YR 7/0		CL			2		6-12"	6"	
1.0										
	BLACK ORGANIC PEAT, DRY, ORGANIC ODOR, ROOTS PRESENT (7.5 YR 2/0)		PT			3		12-24"	12"	
1.5										
2.0										
	DARK BROWN SANDY CLAY, Light Brown mottling, wet, NO ODOR (7.5 YR 3/2)		CL			4		24-31"	7"	
2.5										
	Boring terminated @ 31.0"									
3.0										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	5/23/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	Rick Mehl
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL056

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown m-f SAND, trace SILT, DRY, NO ODOR, roots NOTED, gravel NOTED (7.5YR 4/6)		SP	NA	NA	1		0-6"	6"	Total Recovery 17"
0.5	As Above, little c-f Gravel (7.5YR 6/6 to 4/6)		SP	NA		2		6-12"	6"	
1.0	As Above		SP			3		12-17"	5"	
16"	Brown c-f SAND, moist NO ODOR (7.5YR 6/6)		SP							
1.5	Boring terminated @ 1.5'									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
5/22/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	SL056	

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										Previous sample taken of 0-6", 6-12", & 12-18" intervals
18"	Red tinted. Sandy material. Large particles. Large rocks Lt. Brown	SW				1		18-24"		
24"	Brown with less of a red tint. Sandy with a lot of gravel. Majority gravel. Large particles.					2		24-36"		Water was encountered at 24"
36"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	6/1/01
PAGE	of
DRILLING METHOD	Hand auger
DRILLED BY	
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL057	BORING NUMBER

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Black organic topsoil, trace f-m grained sand		OL			1				
	Lt. Brown to dark brown silty sand, trace f-m gravel		SM							
▼	brown fine silty sand trace gravel					2				
	brown to lt. brown silty sand trace gravel less moisture f-m grained									
1	f-m grained sand, trace gravel, wet, lt. brown		SP							
	dk. brown f grained sand more gravel than above, wet									
	as above									
	as above									
2	f-m grained sand, lt. brown to dk. brown, trace gravel (f-c) wet									
	as above, more c gravel									
3										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED	5/2[illegible]
PAGE	of
DRILLING METHOD	bucket auger
DRILLED BY	Joe Ruiz
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION Kalamazoo River	BORING NUMBER SL058

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2"	lt brown organic layer of silt, dry, many healthy roots	3/1	OL							marked by field crew as 0-33" but measured as 36" of recovery
6	elastic, gray clay, very moist, some black roots, slight odor of peanut butter	4/1	CL							
12	elastic, dense, gray clay, moist, odor of fuel	4/1	CH							
14	Same as above	4/1	CH							
29"	visible sheen, silty clay, moist, elastic, strong fuel ~~oil~~ odor	4/1	CH							
33	highly organic, dk. red, brown in color, peat & silt, many roots, wood pieces, strong rotten egg odor	3/2	PT							
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" dia tube | CLAYEY SILT | ____

DATE DRILLED	PAGE
6/6/01	of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Greg Gehrig

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION: Kalamazoo River

BORING NUMBER: SL059

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty sand, brown, earthy odor, many roots, worm, no odor	2S/4	SM			1		0-6		
6"	same as above and red tint, no odor	3/4	SM			2		6-12		
12	lt. brown sand, red tint, slightly, moist, no odor	5/8	SP			3		12-19		
19										MISSING Layer ~~from 19-24"~~
12	same as above but watery	5/8	SP			4		hand auger 12-24		12-24 was sampled in the field with a hand auger along with 24-36
36 24	same as above only moist	5/8	SP			5		hand auger 24-36		
36										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 2" dia tube

DATE DRILLED: 6/6/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Greg Gehrig

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

SOIL BORING LOG

Allied Paper

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
	52059	

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Top Soil									
12"	Transition zone Brownish tan very moist sand w/ fine gravel & organic material (small amounts)					X				
24"						X				
4'										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
6/6/01	of

DRILLING METHOD: Hand Auger 4"

DRILLED BY: M.B.

LOGGED BY: G.L.

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
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			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. ***SIZE DISTRIBUTION***
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
EPA / A.P.	KALAMAZOO RIVER	SL060

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	PEAT					1		0-6		Log reproduced from photos and data
.5		PT				2		6-12		
1								12-25		
1.5						3				
28"			SM							
2										
25"	Organic CLAY, roots and twigs noted.	OL				4		25-38		
38"	Core complete @ 38" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3"

DATE DRILLED	6/7/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	RICK MEHL
LOGGED BY	JOE KLEMP
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL061

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty clay, light brown, earthy odor, many healthy roots, slightly moist	3/1	OL			1		0-6		0-30" of recovery 0-18" and 18-30" separated by a 6" gap
6	Same as above with traces of sand & smaller roots, slightly moist	3/1	OL			2		6-12		
12	no odor, few small, thin roots, sandy & silty, slightly moist, traces of organic material	3/1	SM							
18	Sandy, traces of organic material	3/1								
21	~~darker~~ sand (lighter) than above layer	4/1	SW							
24	light colored sand with shells & gravel									
	heavy sands, shells & gravel	6/8	SW							
30"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3" dia tube

DATE DRILLED: 6/5/01

PAGE: of

DRILLING METHOD: lexan tube & slam bar

DRILLED BY: Rick Mehl

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL062

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	3" root material in a m-f clayey SAND to Dark Grey SILTY SAND, WET, NO ODOR.		SM	NA	NA	1		0-6"	6"	
0.5	Grey m-f SAND, trace SILT, wet, NO ODOR, roots noted in 20% of sample. (5YR 4/1)		SM	NA	NA	2		6-12"	6"	Brown mottling around roots
1.0	Grey to Brown m-f SAND, wet, NO ODOR (5YR 6/3)		SP	NA	NA	3		12-25"	13"	
1.5	Grey m-f SAND, wet NO ODOR, trace branch debris (5YR 5/1)		SP	NA	NA					clear quartz grains noted
2.0	Boring terminated @ 2.0'									
2.5										
3.0										
3.5										
4.0										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	5/22/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSHED
DRILLED BY	J. Klemp
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SL063

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown SILTY SAND, some m-f Gravel, roots noted, moist, no ODOR		SP			1		0-6"	9"	9" Total Recovery
0.5	(7.5 YR 4/4)									
	Boring terminated @ 9" bgs									
1.0										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND

DATE DRILLED	PAGE
5/22/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: J. Klemp

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL064

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Silty sand, fine roots, dk. brown in color, not dense, earthy odor,	3/2	SM			1		0-5"		
5"	lt. brown sand with red tinted throughout. Pockets of organic material, earthy odor, small particles	4/8	SW			2		5-12"		
12"	same as above									
15"	organic silty, clay layer with small roots					3		12-25"		
18"	return to sandy layer of lt. brown tinted with red throughout. Pockets of organic material, earthy odor, small particles		SW							
25"	gray sand stratified thinly with organic matter, strong volatile organic odor,	3/0	SM					25-36"		
36"	same as above	3/0	SM					36-40"		
40"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 2" dia tube
- _____

DATE DRILLED: 6/6/01

PAGE: of

DRILLING METHOD: lexan tube + slam bar

DRILLED BY: Greg Gehring

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL065

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty sand, dk. brown, some roots, earthy odor, dry	2.5/2	SM			1		0-6		
6"	fine sand, well graded, some silt, some roots, colored black, lt. brown, + red, dk. moist, earthy odor	3/4	SW			2		6-12		
12"	very silty, elastic, black, faint fuel odor	2.5/0	SM ~~SW~~			3		12-17		
17	black sand, well graded, no distinct odor, moist	2.5/0	SW			4		17-24		
24	same as above	2.5/0	SW			5		24-34		
34										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3" dia tube, _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube w/push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL066

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. gray - brown silt, elastic, some roots, faint fuel odor	4/2	ML			1		0-5		
5''	well graded sand, few roots, sea shells, earthy odor	4/6	SW			2		5-12		
12''	well graded sand, tinted red, somewhat moist, earthy odor	4/8	SW			3		12-24		
24''	gray sand, well graded, somewhat moist, earthy odor		SW			4		24-38'		
38'										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3" dia tube
- _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SL067

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark Brown sandy clay, some silt, wet, no odor, leaves and organic material noted. (7.5YR 3/2)	CL				1		0-6"	6"	17" Total Recovery
	Dark brown peat c-f gravel (7.5YR 2/0)	PT				2		6-12"	6"	
1	as above	PT				3		12-17"	5"	
	Boring Terminated at 17"									
2										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT; ____; ____

DATE DRILLED: 5/22/01

PAGE: of

DRILLING METHOD:

DRILLED BY: J Ruiz

LOGGED BY: J Ruiz

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** *Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay*
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** *None, Slow, Rapid*
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY: U.S. EPA	LOCATION: Kalamazoo River	BORING NUMBER: SL067 (A)

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6" 7.2 8.4	BLACK CLAYEY ORGANIC material, wet, no odor (2.5 YR 2/0), + trace m-f sand, + trace m-f gravel.		CL			1		0-6	0-6"	Total Recovery is 21" bgs
9.0" 12" 13.5"	BROWN to GRAY m-f SAND and GRAVEL, dry, no odor.		SP			2		6-12	6-12"	
18" 19.2 20.4 21.6 22.8	DARK GRAY CLAYEY SAND, trace m-f gravel, dry no odor, twigs noted.		SC			3		12-21"	12-21"	
24"	BROWN m-f SAND		SP		20.5 21"					
	Core completed @ 21" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- 2"
- CLAYEY SILT

DATE DRILLED	06/01/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	S. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River, MI	SL068

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2.5"	DARK BROWN SILTY CLAY, little m-f SAND, DRY, NO ODOR, roots present. (7.5YR 3/2)		CL							Total Core length 22"
6"	DARK BROWN CLAYEY SAND, moist, No ODOR, trace m-f Gravel (7.5YR 4/2)		SC			1		0-6"	6"	
9"						2		6-12"	6"	
12"	Light Brown c-f SAND, trace m-f Gravel, moist, No ODOR. (7.5YR 5/6)		SW			3		12-22"	10"	
18"										
11.2										
20.4										
21.6										
22.8										
24"	Core Completed @ 22" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 2" | CLAYEY SILT | _____

DATE DRILLED	PAGE
6/6/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: G. Behrig

LOGGED BY: S. Kemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION SL068 (2nd) A	BORING NUMBER

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	ONLY Logging 22"-56"									
12										
	---- Gwater ----									
14	saturated for sand & gravel		SW			X				Very saturated, lots of sluff + slide of material.
16										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED	6/6/01
PAGE	of
DRILLING METHOD	4" Hand Auger
DRILLED BY	J. M.
LOGGED BY	G.G.
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL069

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk brown silt, heavy organic matter, many many roots, earthy odor, traces of sand, moist	2.5/2	OL							
2	sandy layer, many roots, earthy odor, moist	5/6	SP			1		0-6		
4 5	~~dk brown silty sand as 1st layer~~	2.5/2	OL							
7	sandy silt with organic matter + red streaks, moist	5/6	SM			2		6-9		
9	silty with some sand, earthy odor, many fine roots, moist	2.5/2	OL			3		9-12		
12	black peat, many fine roots, rich earthy odor, moist	2/0	PT			4		12-24		
24	gray sand with a lot of organic material, pieces of wood, moist, dense	2/0	SM			5		24-36		
36	Peat, mostly fine roots, very most	2/0	PT			6		36-40		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3" dia tube, ____

DATE DRILLED: 6/6/01

PAGE: of

DRILLING METHOD: lexan tube & slam bar

DRILLED BY: Greg Gehrig

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON | SUBSIDIARY: EPA / A.P. | LOCATION: KALAMAZOO RIVER | BORING NUMBER: SL070

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records of this core being collected or shipped for sampling. -SM 7/12/01									Noted that this site was proposed to be sampled on 11/6/01 in overall Site log. No other mention of it elsewhere.
	No such location on map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED | PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SL071

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	silty clay, organic odor, many roots large & small, small particles	3/2	OL			1		0-4		30" recovery
12"	silty clay, organic odor, small roots	3/2	OL			2		6-12"		
24"	silty clay stratified at 18" with peat large roots, volatile odor	2.5/1	PT			3		12-24"		
30"	silty organic, organic odor peaty, roots visible	2.5/1	PT			4		24-30		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3" tube

DATE DRILLED:

PAGE: of

DRILLING METHOD: Lexan tube w/stem bar

DRILLED BY: Rick Mehl

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SL 072

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	gray silty clay little m-f sand roots present, wet, no odor (7.5 YR 3/2)		CL			1		0-6"	6"	
	as above, little less roots slight brown mottling (7.5 YR 3/0)		CL			2		6-12"		
1	Dark brown organic silt little m-f sand shells present, wet, organic odor (7.5 YR 3/0)		ML			3		12-24"		
2	As above.		ML							
	Boring Terminated at 29"									
3										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; ____; ____

DATE DRILLED	5/22/01
PAGE	1 of 1
DRILLING METHOD	hand push
DRILLED BY	Joe Ruiz
LOGGED BY	
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SD 001

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DARK GRAY ORGANIC CLAY-trace-SILT, wet, organic odor, soft. (7.5YR 2/0)									Total Recovery 56"
6"	shells noted from 5-12" bgs									
12"										
24"	shells noted from 25-27" bgs									
36"	Clay is stiffer at depth but still below 1.0 tsf.									
48"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3'; _____

DATE DRILLED	5/31/01
PAGE	1 of 2
DRILLING METHOD	HAND PUSH
DRILLED BY	J. RUIZ
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
		SD001

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
48"	Dark Gray organic clay - trace - silt.									
54"										
	Core Completed @ 56" bgs									
60"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3"

DATE DRILLED	5/31/01
PAGE	2 of 2
DRILLING METHOD	Hand Push
DRILLED BY	J. Ruiz
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD 002

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	DARK GRAY ORGANIC CLAY-trace-SILT, wet, slight odor, leaves noted (7.5YR 2/0)					1		0-6	6	
10"	DARK GRAY ORGANIC SANDY CLAY wet, slight odor. (7.5YR 2/0)					2		6-12	6	
12"	DARK GRAY ORGANIC CLAY-trace-SILT, wet slight odor, leaves noted (7.5YR 2/0)					3		12-24	12	
24"						4		24-36	12	
36"	Core Complete to 36" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; _____; _____

DATE DRILLED: 5/31/01

PAGE: 1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: J. Ruiz

LOGGED BY: J. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD003

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1.2	BROWN C-F SAND, wet, no odor, shells present.	SP								Total Recovery 28"
2.4	DARK GRAY ORGANIC CLAY-TRACE-SILT, slight organic odor, moist, soft. (7.5YR 2/0) Leaves and roots noted.					1		0-6"		
6"						2		6-12		
12"		CL				3		12-25		
24"										
25" / 25½	GRAY m-f SAND, trace m-f GRAVEL, moist, no odor. (7.5YR 3/0)	SP				4		25-28"		
27.4 / 27.6 / 28.8	Core Completed @ 28" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED	PAGE
5/31/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: J. Ruiz

LOGGED BY: Joe Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kishwaukee River	SD004

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	SAND and GRAVEL, GRAY, Shells present		GP			1		0-6"	6"	
6"	DARK GRAY CLAY, leaves and organics noted, wet, strong ODOR, (7.5YR 2/0)		CL			2		6-12"	6"	
12"	18.5" a 0.1" wood layer. 19.5-20" thin m-f SAND layer. 22" a 0.1" Dark Gray Fibrous material					3		12-24"	12"	
24"	32" a 0.1" leaves and organic layer 33" a 0.1" Dark organic Fibrous layer.					4		24-36"	12"	
36" 37.2 38.4 39.6 40.8	Core Completed @ 39.0" bgs					5		36-39"	5"	

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3"

DATE DRILLED	PAGE
5/30/01	1 of 1

DRILLING METHOD: Hand push

DRILLED BY: R. Mehl

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD005

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown SAND and GRAVEL, wet, No ODOR.		SW			1		0-6"		Total Recovery is 43"
6"	DARK GRAY CLAY-trace silt, wet, slight ~~no~~ ODOR. (7.5YR 2/0)		CL			2		6-12		
12" 13"	GRAY m-f SAND, wet No ODOR, shells present.		SP					12-24		
24"								31-43"		
31"	GRAY ~~CLAY~~ CLAY, moist, NO ODOR, organic material present. (stratified) (7.5YR 2/0)		CL							
36" 42" 43"	Core completed @ 43" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" | CLAYEY SILT | _____

DATE DRILLED: 5/30/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Anchl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD006

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1.2 2.4 3.6	Brown m-f SAND, wet, No odor 4.0		SP							
5.8 6"	Dark Brown organic CLAY - trace-silt 7.0		CL			1		0-6"	1	
12"	Brown m-f SAND, wet, No odor, shells present (Fining upward sequence)		SP			2		6-18"	2	
17.0	Gray m-f SAND, wet, No odor, shells present (7.5 YR 5/0)					3		18-24"	3	
24"	DARK GRAY CLAY - trace-silt wet, slight odor, 0.01" sand seams from 17-21" at approximately 1" intervals.		CL			3		24-36"		
36"	Leaves noted from 28" to 31"					4		24-36"	4	
	Core Completed @ 36" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; CLAYEY SILT

DATE DRILLED	PAGE
5/30/01	1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: R. Mehl

LOGGED BY: S. Klempo

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, *Organic Silt*, Silt, Clay, Sandy Clay, *Organic Clay*
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY

LOCATION

BORING NUMBER SD007

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
4"	GRAY m-f SAND, trace clay, wet, no odor, shells present.		SP			1		0-4"	4"	
6"	DARK GRAY SILTY CLAY, some m-f SAND, High organic content, moist, slight odor. shells noted. Thin 0.1" Gray SAND at 5.5" depth		CL			2		4-12"	8"	
12"	High organic fiber content from 18-20", roots, leaves.					3		12-24"	12"	
24"						4		24-34"	10"	
34"	Core Completed @ 34.0" bgs									
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3"

DATE DRILLED 5/30/01

PAGE 1 of 1

DRILLING METHOD HAND PUSH

DRILLED BY R. Mehl.

LOGGED BY S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY: U.S. EPA	LOCATION: Kalamazoo River	BORING NUMBER: SD008

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	Brown ~~SAND and GRAVEL~~ dk C-f SAND, trace m-f Gravel, wet, NO ODOR, Shells noted.		SW			1		0-6"	6"	Total Recovery is 32"
11"						2		6-12"	6"	
12"	Dark GRAY ~~CLAYEY SILT~~ dk CLAY, wet, NO ODOR, organic material present.		CL			3		12-24"	12"	
24"	Dark Gray m-f SAND, shells present, wet, NO ODOR.		SP							
	DARK GRAY organic CLAY, wet, slight ODOR, trace gravel. 0.1" fibrous organic material at 28.5" bgs.		CL			4		12-32"	10"	
	Core Completed @ 32" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- CLAYEY SILT

DATE DRILLED	5/30/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD009

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dark Brown organic clayey SILT, slight odor, wet, oily sheen present at 1-3"					1		0-6"	6	Total Recovery is 16"
6"	0.1" fibrous organic material at 6" bgs. 1" Gray m-f SAND @ 7-8" bgs		CL			2		6-12"	6	
12"	Large root @ 13.0" bgs									
13"	Gray m-f SAND, wet, No odor (7.5YR 4/0)		SP			3		12-16"	4"	3" Diameter flat stone @ 15.5-16" bgs.
	Core Completed @ 16" bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3"

DATE DRILLED: 5/30/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD010

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	1" M-F GRAY SAND over Brown C-F SAND, wet, no odor, Shells present		SP			1		0-6"	6"	
6"										
	& SANDY CLAY					2		6-9"	3"	
8.4	DARK GRAY ~~GRAY-TAN SILT~~, wet, no odor		CL							
9.6	Core completed @ 9" logs									
10.8										
12"										
	NO SAMPLES SENT OFF FOR ANALYSIS. PER S. BORRIES									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3"

DATE DRILLED	PAGE
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DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA/A.P.

LOCATION: KALAMA 200

BORING NUMBER: SD011

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
										12-18" slipped out of bottom of core at ~~collection~~ time. 0-12" total recovery.
	12" recovered									
	NO SAMPLES SENT OFF FOR ANALYSIS. PER USC BORRIES.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3 4

DATE DRILLED: 5/31/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Joe Ruiz

LOGGED BY: from logbooks

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Ashtabula River

BORING NUMBER: SD012

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DARK GRAY ORGANIC CLAY, trace m-f SAND, trace m-f Gravel, moist, slight organic odor. (7.5YR 2/0)		PT			1		0-6"	6"	Total Recovery 10"
6"										
7.2						2		6-10"	4"	
8.4										
9.6										
10.8	Core Completed @ 10.0" bgs									
	NO SAMPLES SENT FOR ANALYSIS PER S. BORRIES									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3"

DATE DRILLED: 5/31/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD016

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Black organic sand with traces of organic material, and clay. slight odor, wet	5YR 2.5/1	SC							Recovery 12" total
6"	Black silty sand. with little poorly graded. wet, no odor, traces of shells	5YR 2.5/1	SP							
12"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3" Core; ____

DATE DRILLED	PAGE
6-8-01	1 of 1

DRILLING METHOD: HAND PUSH
DRILLED BY: F. Dehl
LOGGED BY: S. Moreno
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SD017

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records of this core being collected or shipped for sampling. SM 7/12/01 There is a location for this on the map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD018

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	DARK GRAY ORGANIC ~~SANDY SILT~~ SILTY SAND Twigs noted, wet, slight organic odor.		SM			1		0-6"	6	Total Recovery 17"
6"	DARK GRAY m-f SAND, wet, no odor, shells noted		SP							
8"	DARK GRAY SILT, wet, twigs present, no odor.		OL			2		6-12"	6	
11" 12'	DARK GRAY m-f SAND, twigs present, wet, no odor.		SP			3		12-17"	5"	
15"	DARK GRAY CLAY TRACE SILT		CH							
18'	Core completed @ 17.0' bgs									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3"

DATE DRILLED: 6/09/01

PAGE: 1 of 1

DRILLING METHOD: Hand Push

DRILLED BY: S. Ruiz

LOGGED BY: S. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD022

DEPTH IN ~~FEET~~ inches	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6	DARK GRAY SILTY SAND, ORGANIC MATERIAL NOTED, layered, wet, light ODOR (7.5YR 2/0)		SP			1		0-6"	6	Report Recovery 44"
						2		6-12"	6	
12	DARK GRAY ORGANIC CLAY, moist, slight ODOR. (7.5YR 2/0)		CL			3		12-24	12	
13.9										
14.6	DARK GRAY CLAYEY SAND, wet light ODOR. (7.5YR 2/0)		SC							
15.5										
18	DARK GRAY CLAY-trace-SILT, wet, strong ODOR, oil sheen. (7.5YR 3/0)		CL							
24						4		24-32"	8"	
5.2										
6.4										
7.6										
28										
8.8										
30	DARK GRAY m-f SAND, wet, light ODOR. (7.5YR 2/0)		SP							
32"	SAND and Shells, ~~[illegible]~~ wet, NO ODOR.		SW			5		32-44"	6"	
36										
36.5	DARK GRAY m-f SAND, wet, NO ODOR. (7.5YR 2/0)		SP							
39	m-f SAND and Shells, Organics noted (twigs, leaves) (light sheen?)		SW							
42										
43.2										
44.4	Core Completed @ 44" bgs									
48										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- 3"
- CLAYEY SILT

DATE DRILLED	PAGE
06/01/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, *Organic Silt*, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD023

DEPTH IN ~~FEET~~ Inches	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Brown m-f SAND, wet no odor					1		0-6	6	Reported Recovery 24" of Sandy material.
3"	GRAY c-f SAND, wet No ODOR, shells noted (coarsening downward) trace m-f gravel	SP	SP			2		6-12	6	measured core is 20" recovered
6						3		12-20"	8"	
12										
18										
20"	Core completed @ 20" bgs									
24										
30										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED	06/01/01
PAGE	1 of 1
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	J. Klemp
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD024

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
1.2 2.4 3.6 4.8	BROWN m-f SAND, shells noted, wet, NO ODOR.		SP			1	G	0-4	4"	
6 7.2 8.4 9.6 10.8	DARK GRAY CLAY-trace-SILT, wet, slight odor, trace m-c gravel, organic material noted (0.5 YR 2/0) Core Completed @ 8.0" bgs		CL			2	G	4-8"	4"	

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 6/01/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mach

LOGGED BY: J. Kemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD025

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk gray, lg. sand particles, shells, no odor, very moist-wet	2.5/0	SP			1		0-4		
6in	Same as above with pieces of wood	2.5/0	SP			2		6-12		
12	Same as above	2.5/0	SP			3		12-24		
24		2.5/0	SP			4		24-38		
34	well graded brown sand	4/2	SW							
36	pieces of bark	2/0	PT							
38	inorganic clay & silt, strong fuel odor	2/0	CL			5		38-41		
41										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" dia tube | CLAYEY SILT | _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Klemp

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD026

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	medium sized sand particles, lt. brown, earthy odor, no roots	4/3	SP			1		0-3		
3	silty, sheen, strong fuel odor, black, no roots	3/0	ML			2		3-9		
9	black sand, well graded, slight fuel smell, no roots	2.5/0	SW			3		9-12		
12	lt. gray sand, well graded, slight fuel odor, no roots	4/0	SW			4		12-24		
24	dk gray sand, poorly graded, fuel odor, no roots, some organic matter	2.5/0	SM			5		24-30		
30										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3" dia tube
- _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube w/ push bar

DRILLED BY: Joe Klemp

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** *Sandy Silt* Silt; Silty Clay Clay; Clayey Silt Sandy Clay; Organic Silt Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD027

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silt, black, sheen, fuel odor	2.5/0	ML			1		0-6		
6	Same as above	2.5/0	ML			2		6-12		
12	Same as above	2.5/0	ML			3		12-24		
24	Same as above	2.5/0	ML			4		24-34		
34										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3" dia tube
- _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Klemp

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. ***MAXIMUM PARTICLE SIZE***
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION Kalamazoo River	BORING NUMBER SD028

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	sandy w/ gravel & coarse gravel, organic odor	3/3	GP			1		0-5"		
5"	organic peat with some silt, sands, & clay, organic odor	2.5/2	PT			2		5-12		
12"	organic silt, organic odor, some roots	2.5/0	OL			3		12-18"		
~~31"~~ 18"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3" tube

DATE DRILLED	6/5/01
PAGE	of
DRILLING METHOD	lexan tube & slam bar
DRILLED BY	Joe Ruiz
LOGGED BY	Heidi Nemeth
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY	LOCATION Kalamazoo River	BORING NUMBER SD029

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	inorganic gray clay, strong volatile organic odor plasticity high, small particles	3/0	CH			1		0-6"		29" were initially recovered. 8" were lost. 21" were finally recovered. A 5" gap is left between the top 17.5" of recovery and the bottom 3.5" of recovery.
12"	same as above					2		6-12"		
21"	same as above visible paper sludge									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3" dia tube; _____

DATE DRILLED	6/5/01
PAGE	of
DRILLING METHOD	lexan tube & slam by
DRILLED BY	Joe Ruiz
LOGGED BY	Heidi Nemeth
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD030

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Dk. Brown sand, small particles, no roots, slight volatile organic odor, moist	25/0	SW			~~0~~ 1		0-4		
12"	Similar as above with lg. particles, moist	25/0	SW			2		6-10.5		
9"	Sandy silt mixture volatile organic odor present, moist									
10½	silty clay, strong volatile organic odor moist, paper sludge present	25/0	CL			3		10.5-18		
18	Gravel with sand, moist, no roots, volatile organic odor	25/1	GP			4		18-30"		
30"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3" dia. tube
- _____

DATE DRILLED: 6/5/01

PAGE: of

DRILLING METHOD: lexan tube & slam bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD031

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Black organic silty clay. wet, strong odor, roots present.	2.5YR 2/0	OL							Total Recovery-32"
12.5	Black peat, high root content	10YR 2/2	PT							
29"	Tan gravely silt with sand, wet, slight odor	10YR 5/1	GM							
33"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3" core, ____

DATE DRILLED: 6-7-01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: Joe Klemp

LOGGED BY: [illegible]

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD032

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2"	brown coarse sand with silt, wet, strong odor		5YR 3/4	SM						Total Recovery 39"
6"	Black clayey silt with sand. Organic material present. slight odor		5YR 2.5/1 ML							
10.5"	~~Black~~ SM SAME AS ABOVE		ML							
28.5"	Tan silty clay with traces of sand. Traces of organic material, wet, slight odor. Wood present.		10YR 5/2 SM							
37"	Tan clayey sand with traces of organic material, wet, slight odor.		SC	5YR 5/4						
39"	Black organic silt, wet, odor		7.5YR 2/0 OL							

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3" core

DATE DRILLED: 6-7-01
PAGE: 1 of 1
DRILLING METHOD: HAND PUSH
DRILLED BY: R. Mehl
LOGGED BY: J. Moran
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD033

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Tan sa coarse sand with fine gravel, Traces of shells, moist	7.5YR 6/4	SP							Total Recovery 27"
6"										
12"										
	Tanish gray sandy silt. Traces of roots	7.5YR 6/2	SM							
16"										
	Tan coarse sand with traces of coarse + fine gravel, moist	7.5YR 6/6	SW							
24"										
	Tan coarse sand with traces of coarse gravel, moist	7.5YR 6/6	SW							
27"										
	~~SAME AS~~									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" core | CLAYEY SILT | _____

DATE DRILLED: 6-7-01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: J. Moreno

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON	SUBSIDIARY U.S. EPA	LOCATION Kalamazoo River	BORING NUMBER SD034

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2"	Black organic soil, silty, moist, odor present	OL	7.5YR 2/0							Total Recovery 40"
6"	Dark brown ~~gravelly~~ coarse sand fine fine gravel. Root and ~~ex~~ trace shells and roots.	SP	2.5YR 3/2							
6¼"	Black organic soil, silty, clayey, moist, slight odor	OL	7.5YR	2/0						
12"	light brown sand with fine gravel, trace shells and roots, moist, slight odor	SP	7.5YR 3/4							
24"	Dark tan coarse sand with fine gravel. Trace shells and roots. Moist, slight odor	SP	7.5YR 3/2							
36"	Dark brown coarse sand with fine gravel, moist, slight odor. Trace roots and shells	SP	2.5YR 3/2							
	Same as above	SP								

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- 3"
- CLAYEY SILT

DATE DRILLED	6-7-01
PAGE	of
DRILLING METHOD	HAND PUSH
DRILLED BY	R. Mehl
LOGGED BY	J. Moreno
EXISTING GRADE ELEVATION (FT AMSL)	
LOCATION OR GRID COORDINATES	

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD035

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty, lt. gray brown, fine dark roots, wood pieces, moist, not dense, ~~elastic~~	3/1	MH			1		0-6		
6'	silty clay, some small dark roots, wood pieces, slight fuel odor, somewhat elastic	3/1	MH			2		6-12		
12'	inorganic silt, wreaks of fuel, black, elastic	2/0	ML			3		12-21		
21'	sandy, small particles, traces of organic matter					4		21-36		
36'										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 3' dia tube
- ____

DATE DRILLED: 6/6/01

PAGE: of

DRILLING METHOD: lexan tube + slam bar

DRILLED BY: Greg Gehrig

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD036

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk brown peat, strong rotten egg odor, ~~slightly roots~~, majority roots	3/2	PT			1		0-6		
6	same as above	3/2	PT			2		6-12		
12	dk brown peat, earthy odor, roots	3/2	PT			3		6-19		
19	dk. gray sand with traces of organic matter, earthy odor, roots, well graded	3/0	SW			4		19-27		
27										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3" dia tube; _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube + push bar

DRILLED BY: Joe Klemp

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD037

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2"	BROWN C-F SAND, wet, no ODOR		SW							Total Recovery ≈30"
6"	DARK GRAY CLAY- trace-SILT, wet, slight organic ODOR (7.5YR 2/0) twigs @ 3-4" depth noted.		CL			1		0-6	6	26" remain in core
12"						2		6-12	6	
18"	twigs @ 21-22" depth noted.					3		12-23"	11	
23" 24"	GRAY m-f SAND, wet, no ODOR (7.5YR 4/0)		SP			4		23-26"	3"	
52 64	Core Completed to 26" bgs									
30"										
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" | CLAYEY SILT

DATE DRILLED	PAGE
6/7/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: S. Klemp

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD038

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
3in	Sandy with bits of small gravel no odor, moist, no roots		GM			1		0-6		
6in	silty sand, no odor, moist	2.5/1	SM							
11in	silty sand, moist, no odor	2.5/1				2		6-11		
12in	silty sand, no odor, moist	5/2	ML			3		11-~~18~~ 17		
24in	Sandy silt, moist, shells, small rocks, no odor	3/1	SM			4		~~18~~ 17-24		
29in	sandy silt with a small amount of clay, moist, no odor, pieces of wood	3/1	ML			5		24-29		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | CLAYEY SILT

DATE DRILLED: 6/1/01

PAGE: of

DRILLING METHOD: lexan tube

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD039

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6in	Sand + gravel, no roots, no odor, lg particles	GW	4/3			1		0-6		
12in	Sand + gravel, no roots, no odor, lg particles	GW	4/3			2		6-12		
24in	Sand + gravel, no roots, no odor, lg. particles	GW	4/3			3		12-24		
34	Sand + gravel with little fines, no roots, no odor lg. particles	SW	3/2			4		24-34		
36 in	gravel + sea shells	GP								
48	Sand + gravel, no fines, no roots, no odor lg. particles	SW	3/2			5		36-48		
60"	Sand + gravel, no fines, no roots, no odor, lg. particles, sea shells	SW	3/2			6		48-60		

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" tube | CLAYEY SILT | ____

DATE DRILLED: 4/5/91

PAGE: of

DRILLING METHOD: Lexan tube + slam bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemon

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD040

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	GRAY CLAY, wet, NO ODOR (7.5 YR 4/0)		CL			1	G	0-6"		Dioxin Sample taken
3.5"										
4.5"	GRAY SANDY CLAY, wet, NO ODOR		CL						6	
6"	DARK GRAY ORGANIC SANDY CLAY, moist, NO ODOR, leaves present.		CL							TOL Dup.
8"						2	G	6-12	6	
	DARK BROWN SANDY CLAY, moist, NO ODOR, twigs present, shells noted.		CL							
12"										
13"	DARK BROWN SILTY CLAY, NO ODOR.		CL							
	GRAY SANDY CLAY, light Brown mottling, moist, NO ODOR.		CL			3	G	12-20"	8"	
18"	GRAY LAYER SAND, moist, NO ODOR		SC							
20"	Core Completed @ 20.0" bgs									
24"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" | CLAYEY SILT

DATE DRILLED: 6/5/01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: S. Klemp

LOGGED BY: S. Klemp

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD041

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	gravel with sand particles, organic odor, no roots	3/2	GP			1		0-4		Lexan shavings in sample
6"	gravel with sand particles, organic odor, no roots	3/2	GP			2		6-11		
11"	Peat & clay, no roots, organic odor	2.5/1	PT			3		11-21		
21"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 2" tube; _____

DATE DRILLED: 6/5/01

PAGE: of

DRILLING METHOD: Lexan Tube & Slam Bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemesh

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD042

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
2"	silty clay, organic odor, many roots									
6"	sandy with some gravel, organic odor		SP			1		0-6"		
12"	sandy, organic odor no roots	4/3	SP			2		6-12"		
24"	sandy, no odor, some gravel & lg. sand particles	3/2	SP			3		12-24"		
30"	Sandy, slight volatile odor		SP			4		24-36"		
36"	silty clay, slight volatile odor	2.5/0								
42"	clay, slight volatile odor									
	sandy, no odor	5/4				5		36-42"		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
  - SPLIT-BARREL
  - AUGER
  - ROCK CORE
  - THIN-WALLED TUBE
  - CONTINUOUS SAMPLER
  - NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- 2" tube
- _____

DATE DRILLED: 6/5/01

PAGE: of

DRILLING METHOD: lexan tube + slam bar

DRILLED BY: Rick Mehl

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD043

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. brown sand, well graded, wet, earthy odor, no roots	4/6	SW							41" total recovery
	lt. gray sand, well graded, wet, earthy odor, no roots	4/6				1		0-6		
6"	Same as above	4/0	SW			2		6-12		
12"	silty, dk. gray, strong fuel odor, sheen, no roots, moist	3/0	CL			3		12-24		
24"	Same as above	3/0	CL			4		24-36		
36"	Same as above	3/0	CL			5		36-41		
41"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; 3" diatube; CLAYEY SILT; _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SB044

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	brown sand, very moist, earthy odor, few roots, pieces of wood,	4/4	SP			1		0-6"		
6"	Same as above	4/4	SP			2		6-12"		
12"	Same as above									
	finer sands, slightly gray	4/4	SP			3		12-24"		
	gray sands with some fines, ~~orga~~ earthy odor, pieces of wood	3/0	SM			4		24-36"		
36"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 2" dia tube | CLAYEY SILT | ____

DATE DRILLED: 6-6-01

PAGE: of

DRILLING METHOD: lexan tube + slam bar

DRILLED BY: Greg Gehrig

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD045

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lg. particle, poorly graded sand, earthy odor, no roots, wet	3/2	SP			1		0-6		
6in	Silty sand, black, fuel odor, roots, moist	3/1	SM			2		6-12		
12in	gray silty sand, slight fuel odor, roots, moist	4/1	SM			3		12-24		
24	gray, brown, green silty sand	5/3	SM			4		24-36		
36	gray silty sand, somewhat elastic	3/0	SM			5		36-44		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH — Depth Top and Bottom of Sample

REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3"dia tube

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube + push bar

DRILLED BY: Joe Klemp

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U. S. EPA	Kalamazoo River	SD046

DEPTH IN ~~FEET~~ inches	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
6"	GRAY SANDY CLAY, ~~trace~~ SK roots noted, ~~trace~~ SK ~~SAN~~ (7.5 YR 4/0) moist, no odor.		CL			1		0-6"	6	Total Recovery is 39"
12"						2		6-12"	6	
3.2 4.4 15" 5.6	DARK GRAY SANDY CLAY, organic material noted, light oily sheen @ 16-18" depth, wet, light organic odor.		CL			3		12-24"	12	PCB dup
24"	shells noted @ 29" bgs					4		24-32"	8"	
1.2 2.4 36" 7.2 8.4	DARK BROWN ORGANIC PEAT, moist, no odor, twigs and roots present.		PT			5		32-39"	7"	JK
9.6	Core Completed @ 39" bgs									

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- DEBRIS FILL
- SILT
- HIGHLY ORGANIC (PEAT)
- SAND
- SANDY CLAY
- GRAVEL
- CLAYEY SAND
- SILTY CLAY
- 3"
- CLAYEY SILT

DATE DRILLED	PAGE
6/7/01	1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: J. Klemp

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY	LOCATION	BORING NUMBER
U.S. EPA	Kalamazoo River	SD047

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Black clayey silt, with organics. Strong odor. low plasticity, wet	10YR 2/2	OL							29" of recovery
8"	Black organic ~~clayey silt~~ soil SM. strong odor, low plasticity, moist	5YR 2.5/1	PT							
13.5	Dark brown organic ~~silt~~ soil SM with high ~~veto~~ SM root concentration. strong odor, moist	5YR 3/3	PT							

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3" core; ____

DATE DRILLED	PAGE
6-7-01	1 of 1

DRILLING METHOD: HAND PUSH
DRILLED BY: S. Mehl
LOGGED BY: D. Moreno
EXISTING GRADE ELEVATION (FT AMSL):
LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION:

BORING NUMBER: SD048

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	large particles of gravel in sand many roots, odor volatilizing									
3 in	sand + gravel, roots, volatile odor	2/1	GP			1		0-6		
6 in	Sand with gravel + fines, very volatile, large roots	2/0	SP			2		6-12		
12 in	Sand with gravel, no fines, very volatile, large roots	2.5/1	GP			3		12-21		
21 in	silty clay, very volatile no roots,	2.5/1	CL							
	Silty with fines roots, small particles, heavy clays, peat	2/1	PT			4		21-24 ~~24-38~~		
						5		24-34		
38 in	Peat with clay & silt	2.5/2	PT					34-39		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 6/5/01

PAGE: of

DRILLING METHOD: Rick Mehl Lexan tubing + slam bar

DRILLED BY: Rick Mehl

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION (OR GRID COORDINATES)

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD049

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	organic silt, thick, vigorous roots, shells, wood, organic odor		ML			1		0-6		
3in	gravel, wood, organic odor	3/2	GM							
6in	sand, organic odor, no roots, shells	3/3	SP			2		6-12		
12in	sand, strong odor.	2.5/2	SP			3		12-18		At 17" odor became strong + color began to darken but still sandy
	silty clay, strong volatile odor, distinct layer	18" 2.5/0	CL			4		18-22		
		22"								
24"	sand with slight volatile odor from previous layer, some fine particles	2.5/6	SP			5		22-32		
	organic peat		PT			6		32-42		
36"										
42"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL | AUGER | ROCK CORE | THIN-WALLED TUBE | CONTINUOUS SAMPLER | NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY | DEBRIS FILL | SILT | HIGHLY ORGANIC (PEAT) | SAND | SANDY CLAY | GRAVEL | CLAYEY SAND | SILTY CLAY | 3" tube | CLAYEY SILT | _____

DATE DRILLED: 6/5/81

PAGE: of

DRILLING METHOD: Lexan tube + slam bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD050

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	Sandy with some fine particles, organic odor, no roots	4/3	SM							0-31"
5"						1		0-5"		
	many roots, organic odor, silty clay, hard clay	3/2	OL			2		5-12"		
12"										
	black organic layer	3/0	OL							
	Soft silty, roots, organic odor									
24"	silty organic; organic odor	3/6	OL							
31"										

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND

DATE DRILLED: 6/5/01

PAGE: of

DRILLING METHOD: Lexan tube + slam bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD051

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. gray silt, slight peanut butter odor,	3/1	ML			1		0-6		Recovered 28" of sample with a gap of 5" between 20" & 25" therefore 1-20" & 25"-33"
6	lt. gray, silty clay same as above	3/1	ML			2		6-12		
12	silty sand, strong fuel odor, lt. gray	3/1	SM			3		12-20		
20	Elastic silt, strong fuel odor, visible sheen, ~~dk.~~ black	2.5/1	CH			4		20-33		
33										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; 3" dia tube; _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD052

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty clay, many roots, earthy odor, ~~wet~~ moist	3/2	OL			1		0-6		
6in	Same as above	3/2	OL			2		6-12		
12in	peat with red tint, many roots	2.5/9	PT			3		12-24		
24	Same as above	2.5/4	PT			4		24-34		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; 3" dia tube; CLAYEY SILT; ____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: K-200 River

BORING NUMBER: SD053

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	lt. brown poorly graded sand, many roots, moist, earthy odor	5/4	SP			1		0-6		
6"	Same as above	5/4	SP			2		6-12		
12"	Same as above	5/4	SP			3		12-24		
24"	gray sand, poorly graded, earthy odor, moist, no roots.	3/6	SP			4		24-33		
33"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; 3" dia tube; CLAYEY SILT; ____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tubing & push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: Kalamazoo River

BORING NUMBER: SD054

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	silty clay, brown, earthy odor, roots, moist + wet	2.5/0	OL			1		0-5		
5in	lg. sand particles, wood pieces, shells, moist + wet, fish odor, ~~not~~ poorly graded	4/3	SP			2		5-19		
19	silty clay, dk. gray, strong fuel odor, no roots, somewhat moist	2.5/0	OL			3		19-24		
24	inorganic silty clay, wreaks of fuel, no roots, somewhat moist, black	2.5/0	CL			4		24-36		
	inorganic silty clay, slight fuel odor, dry, no roots, dk. brown	2.5/1	OL			5		36-47		

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3" dia tube, ____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube + push bar

DRILLED BY: Joe Ruiz

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: U.S. EPA

LOCATION: Kalamazoo River

BORING NUMBER: SD055

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
3"	Black silty organic soil with fine gravel: strong odor, moist	OL	7.5YR 2/0							Total recovery is 35"
10.5	Dark brown sandy soil with fine gravel, moist, strong odor. Some roots present	OL	10YR 2/1							
24	Black silty clay with some organic material present. Moist, plastic.	OL	7.5YR 2/0 10YR 2/1							
35	Black silty clay with some organic material present, very moist, plastic, strong odor	OL	7.5YR 2/0							

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL, AUGER, ROCK CORE, THIN-WALLED TUBE, CONTINUOUS SAMPLER, NO RECOVERY

DEPTH Depth Top and Bottom of Sample
REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY, SILT, SAND, GRAVEL, SILTY CLAY, CLAYEY SILT, DEBRIS FILL, HIGHLY ORGANIC (PEAT), SANDY CLAY, CLAYEY SAND, 3" core

DATE DRILLED: 6-7-01

PAGE: 1 of 1

DRILLING METHOD: HAND PUSH

DRILLED BY: R. Mehl

LOGGED BY: Clive Loomis

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION ON GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SD056

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No record of this core being collected or sampled. SM 7/12/01									
	No such location on map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND; _____; _____

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SD057

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records for this location. -SM 7/12/01									
	No such location on map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

DEPTH — Depth Top and Bottom of Sample
REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; SILT; SAND; GRAVEL; SILTY CLAY; CLAYEY SILT; DEBRIS FILL; HIGHLY ORGANIC (PEAT); SANDY CLAY; CLAYEY SAND

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silty Clay, Clayey Silt, Organic Silt, Silt, Clay, Sandy Clay, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO RIVER

BORING NUMBER: SD058

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records for this location. -SM 7/12/01									
	No such location on map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT. AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY: EPA / A.P.

LOCATION: KALAMAZOO River

BORING NUMBER: SD059

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	No records.									
	for this									
	location.									
	-SM 7/12/01									
	No such									
	location on map.									

EXPLANATION

- Water Table (24 Hour)
- Water Table (Time of Boring)
- PID — Photoionization Detection (ppm)
- NO. — Identifies Sample by Number
- TYPE — Sample Collection Method
- SPLIT-BARREL
- AUGER
- ROCK CORE
- THIN-WALLED TUBE
- CONTINUOUS SAMPLER
- NO RECOVERY
- DEPTH — Depth Top and Bottom of Sample
- REC. — Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

- CLAY
- SILT
- SAND
- GRAVEL
- SILTY CLAY
- CLAYEY SILT
- DEBRIS FILL
- HIGHLY ORGANIC (PEAT)
- SANDY CLAY
- CLAYEY SAND
- _____
- _____

DATE DRILLED

PAGE of

DRILLING METHOD

DRILLED BY

LOGGED BY

EXISTING GRADE ELEVATION (FT AMSL)

LOCATION OR GRID COORDINATES

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS	CLEAN SANDS	SW	Well-Graded Sands and Gravelly Sands, Little or No Fines
			SP	Poorly Graded Sands and Gravelly Sands, Little or No Fines
		SANDS WITH FINES	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT >50%		ML	Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clay, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT <50%		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sands or Silts, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Muck and Other Highly Organic Soils

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR FINE-GRAINED AND PARTLY ORGANIC SOILS

1. **TYPICAL NAME:** Sandy Silt, Silt, Silty Clay, Clay, Clayey Silt, Sandy Clay, Organic Silt, Organic Clay
2. **MAXIMUM PARTICLE SIZE**
3. **SIZE DISTRIBUTION**
4. **DRY STRENGTH:** None, Very Low, Low, Medium, High, Very High
5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
13. **CEMENTATION:** Weak, Strong
14. **LOCAL OR GEOLOGIC NAME**

ASTM GEOLOGICAL DESCRIPTION CHECKLIST FOR COARSE GRAINED SOILS

1. **TYPICAL NAME:** Boulders, Cobbles, Gravel, Sand (Add Descriptive Adjectives For Minor Constituents)
2. **GRADUATION:** Well Graded, Poorly Graded
3. **MAXIMUM PARTICLE SIZE**
4. **SIZE DISTRIBUTION:** Percent Gravel, Sand and Fines
5. **GRAIN SHAPE:** Angular, Subangular, Subrounded, Rounded
6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed, Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES

SOIL BORING LOG

WESTON

SUBSIDIARY:

LOCATION: K-200 River

BORING NUMBER: SD060

DEPTH IN FEET	LITHOLOGIC DESCRIPTION	GRAPHIC LOG	UNIFIED SOIL FIELD CLASS.	BLOWS PER FOOT	PID (ppm)	SOIL SAMPLE NO.	TYPE	DEPTH	REC.	REMARKS OR FIELD OBSERVATIONS
	dk. brown, roots, organic odor, silty clay	3/2	OL			1		0-6		38" recovery
6"	Same as above, organic debris, wet	3/2	OL			2		6-12"		
12"	Same as above	3/2	OL			3		12-25		
	black peat layer	2.5/0	PT							
25	gray brown silty clay, moist, plastic, slight earthy odor	4/3	OL			4		25-38		
36	sandy, well graded, no odor, moist	4/2	SW							
38"										

EXPLANATION

- ▼ Water Table (24 Hour)
- ▽ Water Table (Time of Boring)
- PID Photoionization Detection (ppm)
- NO. Identifies Sample by Number
- TYPE Sample Collection Method

SPLIT-BARREL; AUGER; ROCK CORE; THIN-WALLED TUBE; CONTINUOUS SAMPLER; NO RECOVERY

- DEPTH Depth Top and Bottom of Sample
- REC. Actual Length of Recovered Sample in Feet

GRAPHIC LOG LEGEND

CLAY; DEBRIS FILL; SILT; HIGHLY ORGANIC (PEAT); SAND; SANDY CLAY; GRAVEL; CLAYEY SAND; SILTY CLAY; 3" dia tube; CLAYEY SILT; _____

DATE DRILLED: 6/7/01

PAGE: of

DRILLING METHOD: lexan tube & push bar

DRILLED BY: Joe Klemp

LOGGED BY: Heidi Nemeth

EXISTING GRADE ELEVATION (FT AMSL):

LOCATION OR GRID COORDINATES:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
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5. **DILATENCY:** None, Slow, Rapid
6. **PLASTIC THREAD:** Weak and Soft, Medium, Stiff, Very Stiff
7. **PLASTICITY OF FINES:** None, Low, Medium, High
8. **COLOR:** Use Munsell Notation, If Possible
9. **ODOR:** None, Earthy, Organic
10. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
11. **CONSISTENCY:** Soft, Firm (Medium), Stiff, Very Stiff, Hard
12. **STRUCTURE:** Stratified, Laminated, Fissured, Slickensided, Blocky, Lensed, Homogeneous
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6. **MINERALOGY:** Rock Type For Gravel, Predominant Minerals in Sand
7. **COLOR:** Use Munsell Notation, if Possible
8. **ODOR:** None, Earthy, Organic
9. **MOISTURE CONTENT:** Dry, Moist, Wet, Saturated
10. **NATURAL DENSITY:** Loose Dense
11. **STRUCTURE:** Stratified, Lensed; Nonstratified
12. **CEMENTATION:** Weak, Strong
13. **LOCAL OR GEOLOGIC NAME**

NOTES