APPENDIX 4A

Soil Boring Logs

BORING NO. 1

ELEVATION 22±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/Ft.	Wn (%)	
	ML	Brown, fine, sandy SILT to clayey silt, medium dense, moist.	5 ▽		17	7.4	
					13	42	
					4	37	
	SM	Gray, silty, fine to medium SAND, loose, wet.	10		9	30	
	ML	Gray, clayey SILT, soft, wet.			15	32	LL=36 PL=26
	SM	Gray, black, silty SAND with lenses of soft clayey silt, medium dense, wet.	15		16	32	
			20				
			25		16	59	
			30		9	27	
			35		24	25	
	SP	Black, clean SAND, medium dense, wet, with lenses of soft, clayey silt and silt with sand and clay.	40		15	45	
			45		25	26	
	SM	Gray, silty SAND, medium dense, wet.	50		11	27	
					18	33	

Boring terminated at 54 feet on 8/8/79.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

PLATE 3

BORING NO. 2

ELEVATION 23±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/ Ft.	Wn (%)	Dry Density (pcf)
	ML	Brown, fine sandy SILT with clay, loose, wet.	▽		15	29	
					4	41	
			5		2	36	
					3	30	91 pcf
	SM	Black, silty fine to medium SAND, medium dense, wet with lens of clayey silt at 33 feet.	10			38	
					15	26	
			15				
					10	38	79 pcf
			20				
					7	29	
			25				
					41	23	
			30				
					15	46	
			35				
	SP	Black, clean, fine to medium SAND, medium dense, wet with lenses of silt.			11	28	
			40				
					5	39	
	ML	Gray, clayey SILT, soft, wet.	45				
	SP	Black, clean SAND, medium dense, wet.			15	36	
	SM	Gray, silty SAND, medium dense, wet.	50				
					13	29	

Boring terminated at 54 feet on 8/8/79.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

PLATE 4

BORING NO. 3

ELEVATION 24.5±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/ Ft.	Wn (%)	Dry Density (pcf)
	SM	Brown, silty SAND, medium dense, becomes loose, moist.			15	68	
					6	19	84.5
					4	42	
	ML	Brown, mottled SILT with clay and sand, soft, wet.	5		3	43	
					3	44	
	SM	Gray, silty SAND, loose, wet.	10		6		
					5	62	
	ML	Gray, fine SILT with clay and sand, loose, wet.	15		3	54	
					25	28	
	SM	Gray silty SAND, loose to medium dense, wet with silt lenses.	20				
					8	29	
	ML	Gray, clayey SILT with organics, soft, wet	25				
	SM SP	Black, slightly silty to silty SAND, medium dense, wet with clayey silt lens at 33 and 39 feet.	30		13	33	
					31	24	
			35				
					6	22	

Boring terminated at 39 feet on 8/9/79
Pore pressure transducer installed at 16 feet.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

BORING NO. 4

ELEVATION 23±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/ Ft.	Wn (%)
	ML	Brown, mottled, fine, clayey SILT, medium dense, becomes loose, moist.	5 ▽		16	8.3
					7	34
					8	41
					12	31
	SM SP	Gray, silty fine SAND to slightly silty SAND with lenses of clayey SILT at 12 and 28 feet, loose to medium dense grading to dense at about 33 feet.	10			
			15		4	56
			20		20	32
			25		11	27
			30		11	47
					39	27

Boring terminated at 34 feet on 8/9/79.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

PLATE 6

BORING NO. 5

ELEVATION 22.5±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/Ft.	Wn (%)	
	SM ML	Brown, silty SAND to sandy SILT.			13	9	
					6	43	
	ML	Mottled, fine, sandy SILT with clay, soft, wet.	5		4	42	
					13	28	
	SM	Black, silty fine to medium SAND, loose to medium dense, wet. Soft silt lens at 13 feet.	10				
			15		3	43	
			20		22	29	
	ML OL	Brown, clayey SILT with organics, stiff, moist.	25		4	103	qu-1.5tsf
	SM SP	Black, slightly silty to silty fine to medium SAND, loose becomes dense, wet.	30		8	36	
					34	24	

Boring terminated at 34 feet on 8/9/79.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

BORING NO. 6

ELEVATION 23.5±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/ Ft.	Wn (%)
	ML	Mottled, sandy SILT, medium dense, moist.			11	94
					11	32
			5		4	41
			▽		7	32
	SM ML	Black, silty SAND, loose to medium dense, wet with lenses of clayey sandy SILT.	10		12	32
					3	28
			15			
					34	23
			20			
	ML	Gray, clayey SILT with some peat and organics, medium stiff, becomes very soft, wet.			5	45
			25			
					0	84
			30			
	SM	Black, silty SAND, dense, wet.			31	41

Boring terminated at 34 feet on 8/10/79.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

PLATE 8

BORING NO. 7

ELEVATION 23.5±

Graph	USCS	Soil Description	Depth (ft.)	Sample	(N) Blows/Ft.	Wn (%)
	ML	Mottled SILT, medium dense, becomes loose, moist.	5		14	34
					5	39
	SM	Black, silty fine SAND, loose, wet.			6	36
			10		5	37
	ML	Gray, clayey SILT, soft, wet.	15		4	44
	SM SP ML	Black, slightly silty to silty sand with lenses of clayey SILT, loose to medium dense, wet.	20		35	
			25		5	59
			30		5	42
			35		28	30
					16	25

Boring terminated at 39 feet on 8/10/79.

Driving Energy: 140 lb. Weight Dropping 30 inches

W. O. No. 998

Earth Consultants

CROSBY AND OVERTON
Environmental Management, Inc.
11791 Monarch Street
Garden Grove, California 92641

FIELD DRILL/LITHOLOGIC LOG

BORING/WELL NUMBER MW-1

PROJECT C&O, Inc., Kent
OWNER Jim Dent
LOCATION Kent, Washington
PROJECT NUMBER
DATE DRILLED 2/8/89
TOTAL DEPTH OF HOLE 13'
SURFACE ELEVATION
DEPTH TO WATER 5'
SCREEN: DIA. 4" LENGTH 10' SLOT SIZE 0.02'
CASING: DIA. 4" LENGTH 3' TYPE PVC, SCHED 40
DRILLING COMPANY C&O Inc.
DRILL METHOD HSA
DRILLER Hala
LOG BY Hubbard

DEPTH (FEET)	WELL CONST PIPE	WELL CONST FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOW	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0								Dark brown silty-sand with numerous volcanic pebbles, cobbles and boulders, fair permeability, no odor
5			0			7 9 14		Note: Groundwater at 5'
10								As above
								TD 13'
15								

FIELD DRILL/LITHOLOGIC LOG

CROSBY AND OVERTON
Environmental Management, Inc.
11791 Monarch Street
Garden Grove, California 92[illegible]

BORING/WELL NUMBER MW-2

PROJECT C&O, Inc. Kent
OWNER Jim Dent
LOCATION Kent, Washington
PROJECT NUMBER
DATE DRILLED 2/7/89
TOTAL DEPTH OF HOLE 13'
SURFACE ELEVATION
DEPTH TO WATER 4 1/2'
SCREEN: DIA. 4" LENGTH 10' SLOT SIZE 0.02'
CASING: DIA. 4" LENGTH 3' TYPE PVC, SCHED 40
DRILLING COMPANY C&O Inc
DRILL METHOD HSA
DRILLER Hale
LOG BY Hubbard

DEPTH (FEET)	WELL CONST: PIPE	WELL CONST: FILL	PID (PPM)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOW	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0								Volcanic pebbles, cobbles, and boulders in a dark brown silty-sand, no odor
5			0					Note: GW at 4 1/2'
10								TD 13'
15								

CROSBY AND OVERTON
Environmental Management, Inc.
11791 Monarch Street
Garden Grove, California 92641

FIELD DRILL/LITHOLOGIC LOG

BORING/WELL NUMBER MW-3

PROJECT C&O, Inc. Kent
OWNER Jim Dent
LOCATION Kent, Washington
PROJECT NUMBER
DATE DRILLED 2/7/89
TOTAL DEPTH OF HOLE 14'
SURFACE ELEVATION
DEPTH TO WATER 5 1/2
SCREEN: DIA. 4" LENGTH 10' SLOT SIZE 0.02'
CASING: DIA. 4" LENGTH 4' TYPE PVC, SCHED 40
DRILLING COMPANY C&O, Inc.
DRILL METHOD HSA
DRILLER Hale
LOG BY Hubbard

DEPTH (FEET)	WELL CONST PIPE	WELL CONST FILL	PID (PPM)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOW	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0								Dark brown silty-sand with numerous volcanic pebbles, cobbles and boulders, fair permeability, no odor
5			0					Note: Drilling slow and diffiecult groundwater 5 1/2
10								As above
								TD 14'
15								

FIELD DRILL / LITHOLOGIC LOG

BORING/WELL NUMBER MW-4

CROSBY AND OVERTON
Environmental Management, Inc.
11791 Monarch Street
Garden Grove, California 926

PROJECT C&O, Inc. Kent
LOCATION Kent, Washington
DATE DRILLED 2/7/89
SURFACE ELEVATION
SCREEN: DIA. 4" LENGTH 10' SLOT SIZE 0.02"
CASING: DIA. 4" LENGTH 4' TYPE PVC, SCHED 40
DRILLING COMPANY C&O, Inc.
DRILLER Hala

OWNER Jim Dent
PROJECT NUMBER
TOTAL DEPTH OF HOLE 14'
DEPTH TO WATER 5 1/2
DRILL METHOD HSA
LOG BY Hubbard

DEPTH (FEET)	WELL CONST: PIPE	WELL CONST: FILL	PID (PPM)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOW	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0								Dark brown silty-sand with numerous volcanic pebbles, cobbles and boulders, fair permeability, no odor
5			0					Note: Drilling slow and difficult Groundwater at 5 1/2'.
10								As above
15								TD 14'

FIELD DRILL / LITHOLOGIC LOG

BORING / WELL NUMBER MW-5

CROSBY AND OVERTON
Environmental Management, Inc.
11791 Monarch Street
Gordan Grove, California 92641

PROJECT C&O, Inc. Kent
LOCATION Kent, Washington
DATE DRILLED 2/7/89
SURFACE ELEVATION
SCREEN: DIA. 4" LENGTH 10' SLOT SIZE 0.02"
CASING: DIA. 4" LENGTH 3' TYPE PVC, SCHED 40
DRILLING COMPANY C&O Inc.
DRILLER Hale

OWNER Mr. Dent
PROJECT NUMBER
TOTAL DEPTH OF HOLE 13'
DEPTH TO WATER 5 1/2
DRILL METHOD HSA
LOG BY Hubbard

DEPTH (FEET)	WELL CONST: PIPE	WELL CONST: FILL	PID (PPM)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOW	GRAPHIC LOG	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
0								Dark brown clayey-silt, very moist, cohesive, poor permeability, no odor
						6		
5			0			11		Note: Groundwater at 5 1/2'.
						14		As above, with minor sand
10								As above
								TD 13'
15								

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-7S
LOCATION	(see figure)	PAGE	1 OF 1
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	16.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/19/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 - 2.5 feet: SANDY GRAVEL; (FILL).
1	CAL	4-5-6						2.5 - 5.0 feet: SILT; grey; abundant root fragments; low plasticity; soft to medium stiff; moist. (ML)
2	CAL	3-3-5		5				5.0 - 7.5 feet: CLAYEY SILT to SILTY CLAY; grey mottled brown; trace root fragments; soft to medium stiff; moist. (ML)
			▽					7.5 - 16.5 feet: SAND; black; fine; trace organics; loose to medium dense; wet. (SP)
3	CAL	3-6-8		10				
4	CAL	8-10-15		15				Boring terminated at 15.5 feet.
				20				

REMARKS

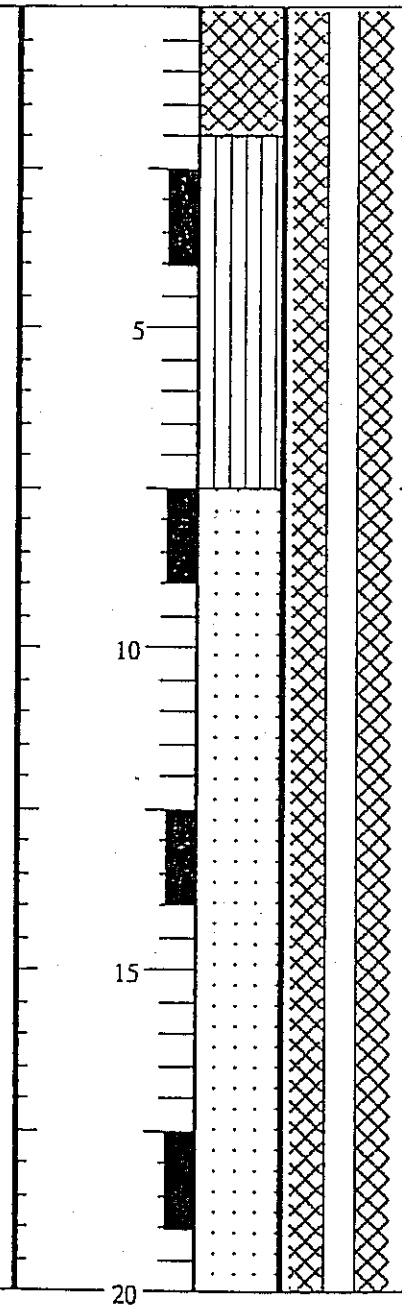
SWEET-EDWARDS/EMCON

594-17.01 CROSS SECTION 06/30/89

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW- 7D
LOCATION	(see figure)	PAGE	1 OF 3
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	51.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/21/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	LITHOLOGIC DESCRIPTION
			0 - 2.0 feet: SANDY GRAVEL; (FILL).
1	CAL	6- 6- 4	2.0 - 7.5 feet: SILT to CLAYEY SILT; grey mottled brown; scattered organic root fragments; medium stiff; low plasticity; moist. (ML)
2	CAL	5- 5- 5	7.5 - 27.0 feet: SAND; black, fine; loose; wet. (SP)
3	CAL	10-22-24	
4	CAL	8- 8- 10	SAND; black; fine; trace medium, trace silt. (SP)



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW- 7D
LOCATION	(see figure)	PAGE	2 OF 3
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	51.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/21/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
5	CAL	4- 6-10		25				2 inch silt lense.
6	CAL	6- 8-14		30				27.5 - 30.0 feet: SILT; grey; organic fragments; low plasticity; some bedding; soft to medium stiff; moist. (SP) 30.0 - 51.5 feet: SAND; black; fine to medium, trace coarse; 1 inch silt lense; dense; wet. (SP)
7	CAL	9-24-50		35				
				40				

REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-7D
LOCATION	(see figure)	PAGE	3 OF 3
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	51.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/21/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
8	CAL	20-21-21		45				
9	CAL	10-24-39		50				50.0 - 51.5 feet: SAND; black; very fine, trace medium, trace silt; thinly bedded (1/16 to 1/8 inch); dense; wet. (SP)
				55				Boring terminated at 51.5 feet.
				60				

REMARKS

SWEET-EDWARDS/EMCON

S94-17.01 CROSB.C.IF 06/30/89

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-8
LOCATION	(see figure)	PAGE	1 OF 1
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	16.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/16/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 - 0.25 foot: ASPHALT.
								0.25 - 5.0 feet: SANDY GRAVEL (Fill); dark grayish brown. (GP)
1	CAL	2-10-15		5				5.0 - 9.5 feet: SILTY SAND; very dark grey; fine, trace fine gravel; slightly plastic; medium dense; wet. (SP)
2	CAL	3-7-11		10				9.5 - 11.0 feet: CLAY; dark grey; trace fine sand; medium plasticity; moist. (CL)
								11.0 - 16.5 feet: SILTY SAND; dark grey; slight to low plasticity; medium dense; wet. (ML)
3	CAL	3-6-9		15				Boring terminated at 16.5 feet.
				20				

REMARKS

SWEET-EDWARDS/EMCON

S94-17.01 CROSB C IE 06/30/89

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-9
LOCATION	(see figure)	PAGE	1 OF 1
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	16.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/14/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 - 0.25 foot: ASPHALT.
								0.25 - 2.0 feet: SANDY GRAVEL (Fill); dark grey brown; fine to coarse; dense; moist. (GP)
1	CAL	21-14-12		5				2.0 - 9.0 feet: GRAVELLY SAND; dark grey; medium, trace fine; gravels fine; medium dense; moist. (SP)
2	CAL	2-5-12		10				9.0 - 15.0 feet: CLAY; dark grey; medium plasticity; soft to medium stiff; wet. (CL)
3	CAL	5-6-8		15				15.0 - 16.5 feet: SILTY CLAY; dark grey; trace fine sand; slight to medium plasticity; stiff; wet. (CL)
				20				Boring terminated at 16.5 feet.

REMARKS

SWEET-EDWARDS/EMCON

594-17.01 CROSB C.IF 06/30/89

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-10
LOCATION	(see figure)	PAGE	1 OF 1
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	16.50'
LOGGED BY	K. Lakey	DATE COMPLETED	6/14/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 - 3 inches: ASPHALT.
								3 inches - 2.0 feet: SANDY GRAVEL (Fill); olive brown; medium; trace fine; dense; moist. (GP)
1	CAL	15-16-18						2.0 - 9.0 feet: GRAVELLY SAND; dark grey; medium, trace fine; medium dense; moist. (SP)
2	CAL	18-17-12		5				
								9.0 - 14.0 feet: CLAYEY SILT; olive grey; fine; soft to medium stiff; wet. (ML)
3	CAL	2-2-5		10				
								14.0 - 16.5 feet: SAND; dark grey; fine; loose; wet. (SP)
4	CAL	7-5-3		15				
								Boring terminated at 16.5 feet.
				20				

REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-11
LOCATION	(see figure)	PAGE	1 OF 1
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	16.50'
LOGGED BY	A. Udaloy	DATE COMPLETED	6/23/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	LITHOLOGIC DESCRIPTION
			0 - 3.0 feet: SANDY GRAVEL with COBBLES (Fill); light brown; <30% medium and coarse sand, 40% subrounded gravel, 1 to 3 inches; 10% cobbles to 6 inches; dry.
1	CAL	25-36-27	3.0 - 11.3 feet: CLAY; grey with occasional orange mottles to 1/8 inch; interbedded with silty clay; trace fine sand; rare roots; soft; wet at 5.5 feet. (CH)
2	CAL	7-6-8	
3	CAL	1-2-5	
			11.3 - 11.5 feet: SILTY SAND; black with purple cast, 20% silt, 80% fine sand, loose, wet. (SM)
			11.5 - 15.7 feet: CLAY; grey; soft; wet. (CH)
4	CAL	6-4-4	
			15.7 - 16.5 feet: SILTY SAND; black, 25% silt, 75% fine sand; loose; wet. (SM)
			Boring terminated at 16.5 feet.

GROUND WATER LEVELS | DEPTH IN FT. | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS

5 10 15 20

REMARKS

SWEET-EDWARDS/EMCON

594-17.01 CROSB.C.IF 06/30/89

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro - Crosby and Overton	BORING NO.	MW-12
LOCATION	(see figure)	PAGE	1 OF 1
DRILLED BY	P.T.L.	REFERENCE ELEV.	'
DRILL METHOD	4" ID HSA	TOTAL DEPTH	16.50'
LOGGED BY	A. Udaloy	DATE COMPLETED	6/26/89

SAMPLE NUMBER	SAMPLE TYPE	PENETRATION RATE/TIME PER 6"	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 - 5.0 feet: SANDY GRAVEL with COBBLES (Fill); light brown; 30% medium and coarse sand, 60% subrounded gravel 1 to 3 inches; 10% subrounded cobbles to 8 inches. (GW-SW)
1	CAL	30-32-15						
2	CAL	4-6-6		5				5.0 - 6.0 feet: INTERBEDDED CLAY and SANDY SILT; clay; beds 1 to 4 inches; sandy silt beds 1/2 to 1 inch. Grey with orange mottles to 1/4 inch, organic root fragments, soft, low plasticity, moist. (CL/ML)
								6.0 - 11.0 feet: CLAY; grey, massive, brown mottles to 1/4 inch, soft, low plasticity, moist. (CL)
3	CAL	3-8-15		10				
								11.0 - 15.0 feet: SAND; black with purple case, 90% fine sand; <10% silt, loose, wet. (SP)
4	CAL	8-6-15		15				15.0 - 16.5 feet: INTERBEDDED SAND and SILTY SAND black with purple cast, 20% silt, 80% fine sand, loose, wet. (SP/SM)
								Boring terminated at 16.5 feet.
				20				

REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-13
LOCATION	Kent, Washington	PAGE	1 OF 2
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	27.10'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	16.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	2/25/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	G							0 - 0.3 feet: ASPHALT. 0.3 - 4.5 feet: SANDY GRAVEL with COBBLES (GW), medium olive gray, fine to coarse gravel, fine to coarse sand, trace non-plastic fines, dry to 2.5 feet, moist below 2.5 feet, compacted. (FILL)
2	SB	22-23-16		5				4.5 - 6.4 feet: SILTY SAND (SM), medium olive gray, fine sand, trace clay, low plasticity fines, wet. (ALLUVIUM)
3	SB	12-5-6						6.4 - 9.5 feet: SANDY SILT (ML), light olive gray, trace fine sand, firm to stiff, low to medium plasticity, moist to wet. Very thinly laminated. Abundant orange mottles to 7.5 feet, abundant orange-brown concretions to 1/4-inch diameter from 7.5 to 8.8 feet. (ALLUVIUM) -- @ 8.8 - 9.0 feet: sandy silt.
4	SS	2-3-3						
5	SS	5-4-4		10				
6	SS	2-4-10						9.5 - 10.5 feet: SANDY SILT (ML), dark gray, fine sand, firm, low plasticity, wet. (ALLUVIUM)
7	SS	1-3-3						10.5 - 11.3 feet: CLAYEY SILT (MH), light olive gray, firm, medium plasticity, wet. (ALLUVIUM)
8	SS	2-2-3						11.3 - 14.3 feet: SILTY SAND (SM), grayish black, fine to medium, non-plastic fines, loose, wet. Gradational lower contact. (ALLUVIUM)
9	SS	2-3-5		15				14.3 - 15.7 feet: SILT (ML), medium olive gray, trace clay, trace fine sand, firm, low plasticity, wet. Trace organic matter. Very thinly laminated. (ALLUVIUM)
				20				

REMARKS

1) See General Remarks. 2) Hammer weight: approximately 140 lbs. 3) T.O.C. = 26.83 feet. 4) Sample numbers are prefaced with "MW13-". 5) Stainless steel centralizers placed one foot below top of screen, and one foot above bottom of screen.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-13
LOCATION	Kent, Washington	PAGE	2 OF 2
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	27.10'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	16.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	2/25/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION

15.7 - 16.5 feet: SANDY SILT (ML), medium olive gray, fine sand, trace clay, firm, low plasticity, wet. Gradational upper contact. (ALLUVIUM)

Total depth drilled: 15.5 feet.
Interval sampled: 0 to 16.5 feet.

WELL COMPLETION DETAILS:
0.3 - 5.0 feet: 2-inch schedule 40 PVC riser.
5.0 - 14.4 feet: 2-inch schedule 40 PVC with 0.020-inch slots.
14.4 - 15.2 feet: 2-inch schedule 40 PVC threaded end plug.
0 - 1.0 feet: concrete.
1.0 - 4.0 feet: Enviroplug medium bentonite chips.
4.0 - 15.5 feet: 10x20 Colorado Silica Sand.

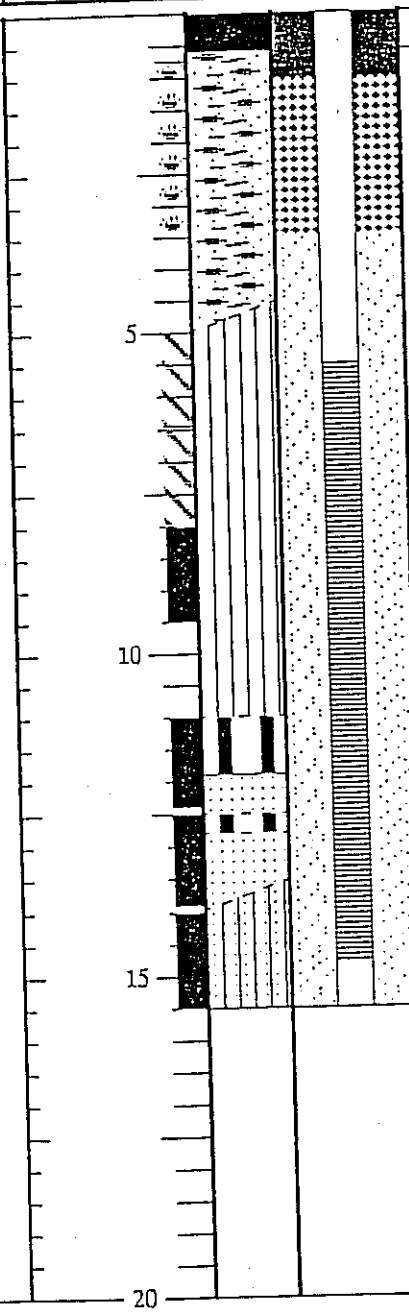
25
30
35
40

REMARKS
1) See General Remarks. 2) Hammer weight: approximately 140 lbs. 3) T.O.C. = 26.83 feet. 4) Sample numbers are prefaced with "MW13-". 5) Stainless steel centralizers placed one foot below top of screen, and one foot above bottom of screen.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-14
LOCATION	Kent, Washington	PAGE	1 OF 2
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	27.70'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	15.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	2/23/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS
1	G	
2	SB	18-19-4
3	SB	7-19-31
4	SS	2-4-6
	SS	3-6-5
5	SS	7-10-6
6	SS	4-5-4
7	SS	4-8-14



LITHOLOGIC DESCRIPTION

0 - 0.6 feet: CONCRETE.

0.6 - 4.5 feet: SANDY GRAVEL with COBBLES (GW-GM), grayish brown, fine to coarse gravel, fine to coarse sand, trace boulders to 14 inches diameter, dry, compacted. (FILL)

4.5 - 11.0 feet: SANDY SILT (ML), moderate yellow brown to grayish brown, fine to medium sand, trace plastic fines, firm to stiff, low to medium plasticity, wet. Sand content increases downhole. (ALLUVIUM)

-- @ 7.0 - 7.5 feet: moderate yellow brown silt with abundant organic matter (roots and grasses).

-- @ 8.0 - 9.5 feet: abundant organic matter (very fine roots).

11.0 - 11.9 feet: CLAYEY SILT (MH), light olive gray with tan streaks, trace fine sand, soft, medium plasticity, wet. (ALLUVIUM)

11.9 - 14.0 feet: SAND (SP), black, fine to medium, trace fines, loose to medium dense, wet. (ALLUVIUM)

-- @ 12.4 - 12.8 feet: light olive gray clayey silt.

14.0 - 15.5 feet: SILTY SAND (SM), brownish black, fine to medium, non-plastic fines, medium dense, wet. (ALLUVIUM)

Total depth drilled: 15.5 feet.
Interval sampled: 0 to 15.5 feet.

REMARKS

1) See General Remarks. 2) Hammer weight: approximately 140 lbs. 3) T.O.C. = 27.30 feet. 4) Sample numbers are prefaced with "MW14-". 5) Stainless steel centralizers placed one foot below top of screen, and one foot above bottom of screen.

SWEET-EDWARDS/EMCON

S94-16.04.CKENT.15/kk:5.06/04/90

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-14
LOCATION	Kent, Washington	PAGE	2 OF 2
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	27.70'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	15.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	2/23/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				25				WELL COMPLETION DETAILS: 0.4 - 5.5 feet: 2-inch schedule 40 PVC riser. 5.5 - 14.8 feet: 2-inch schedule 40 PVC screen with 0.020-inch slots. 14.8 - 15.7 feet: 2-inch schedule 40 PVC threaded end plug. 0 - 1.0 feet: concrete. 1.0 - 3.5 feet: Enviroplug medium bentonite chips. 3.5 - 15.5 feet: 10x20 Colorado Silica Sand.
				30				
				35				
				40				

REMARKS

1) See General Remarks. 2) Hammer weight: approximately 140 lbs. 3) T.O.C. = 27.30 feet. 4) Sample numbers are prefaced with "MW14-". 5) Stainless steel centralizers placed one foot below top of screen, and one foot above bottom of screen.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-15
LOCATION	Kent, Washington	PAGE	1 OF 2
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	24.30'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	15.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	2/22/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	G							0 - 3.5 feet: SANDY GRAVEL with COBBLES (GW-GM), light tan to light gray, fine to coarse gravel, fine to coarse sand, non-plastic fines, trace boulders, moist, compacted. (FILL)
2	SB	7-9-12		5				3.5 - 5.5 feet: SILT (ML), light olive gray with tan streaks, trace clay, trace fine sand, stiff, low to medium plasticity, moist to 4.5 feet, wet below 4.5 feet. Trace organic material from 4 to 5 feet. Clay content increases downhole, gradational lower contact. (ALLUVIUM)
3	SS	5-3-2						
4	SS	1-2-2						5.5 - 8.5 feet: SILT (ML), medium olive gray, trace clay, trace fine sand, soft, medium plasticity, wet. Trace organic material (leaves, twigs). Thinly laminated. (ALLUVIUM)
5	SS	2-2-2						
6	SS	1-3-4		10				8.5 - 9.3 feet: SANDY SILT (ML), grayish black, fine sand, soft, low plasticity, wet. Very thinly laminated. (ALLUVIUM)
7	SS	1-2-3						-- @ 9.1 - 9.3 feet: greenish gray color, sand content decreases.
8	SS	1-2-5						9.3 - 10.8 feet: CLAYEY SILT (MH), medium olive gray, soft to stiff, medium to high plasticity, wet. (ALLUVIUM)
9	SS	1-3-6		15				10.8 - 14.0 feet: SANDY SILT (ML), grayish black, fine sand, soft to firm, low to medium plasticity, wet. Thinly laminated beds to 1-1/2-inch thick, interbedded with medium olive gray silt which is very thinly laminated in beds to 1/2-inch thick. (ALLUVIUM)
								14.0 - 15.5 feet: SILT (ML), medium olive gray, trace clay, trace fine sand, firm, low to medium plasticity, wet. Very thinly laminated. (ALLUVIUM)
				20				

REMARKS
1) See General Remarks. 2) Hammer weight: approximately 140 lbs. 3) T.O.C. = 27.15 feet. 4) Sample numbers are prefaced with "MW15-". 5) Stainless steel centralizers placed one foot below top of screen, and one foot above bottom of screen.

SWEET-EDWARDS/EMCON

S94-16.04.CKENT.15/kk:5.06/04/90

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-15
LOCATION	Kent, Washington	PAGE	2 OF 2
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	24.30'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	15.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	2/22/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION

Total depth drilled: 15.5 feet.
Interval sampled: 0 to 15.5 feet.
WELL COMPLETION DETAILS:
+2.9 - 0 feet stickup: 2-inch schedule 40 PVC.
0 - 5.4 feet: 2-inch schedule 40 PVC riser.
5.4 - 14.3 feet: 2-inch schedule 40 PVC screen with 0.020-inch slots.
14.3 - 14.7 feet: 2-inch schedule 40 PVC threaded end plug.
0 - 1.0 feet: concrete.
1.0 - 3.8 feet: Enviroplug medium bentonite chips.
3.8 - 15.5 feet: 10x20 Colorado Silica Sand.

25
30
35
40

REMARKS
1) See General Remarks. 2) Hammer weight: approximately 140 lbs. 3) T.O.C. = 27.15 feet. 4) Sample numbers are prefaced with "MW15-". 5) Stainless steel centralizers placed one foot below top of screen, and one foot above bottom of screen.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-16
LOCATION	Kent, Washington	PAGE	1 OF 4
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	26.70'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	51.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	3/7/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	LITHOLOGIC DESCRIPTION
1	G		0 - 0.3 feet: ASPHALT 0.3 - 5.5 feet: SANDY GRAVEL (GW-GM), moderate yellow brown to light gray, fine to coarse gravel, fine to coarse sand, non-plastic fines, trace cobbles, dry to 0.5 feet, compacted. (FILL)
2	SB	37-50-31	5.5 - 7.0 feet: SILTY SAND (SM), black, fine to medium, non-plastic fines, medium dense to dense. (ALLUVIUM)
3	SB	6-7-15	7.0 - 10.5 feet: CLAYEY SILT (ML), medium olive gray, trace fine sand, soft, medium plasticity. Orange mottles and streaks to 9.8 feet. (ALLUVIUM)
4	SB	6-4-4	-- @ 8.0 to 9.8 feet: some fine to coarse subrounded gravel.
5	SB	5-10-20	10.5 - 14.6 feet: SILTY SAND (SM), black, fine to medium, loose to medium dense. (ALLUVIUM)
6	SB	10-11-9	
7	SS	2-3-6	
8	SS	6-4-3	14.6 - 16.7 feet: CLAYEY SILT (MH), light olive gray, medium to high plasticity, firm. Trace brown organic matter (grasses). Very thinly laminated. (ALLUVIUM)
9	SS	4-2-8	
12	SS	7-14-17	16.7 - 25.5 feet: SAND (SP), black, fine to medium, trace fines, loose to medium dense. Gradational lower contact. (ALLUVIUM)
11	SS	5-2-2	

REMARKS

1) See General Remarks. 2) Hammer weight: approximately 300 lbs. 3) T.O.C. = 26.00 feet. 4) Sample numbers are prefaced with "MW16-". 5) Water added below 0.5 feet during drilling. 6) Stainless steel centralizers placed 0.5 foot below top of screen, and 0.5 foot above bottom of screen.

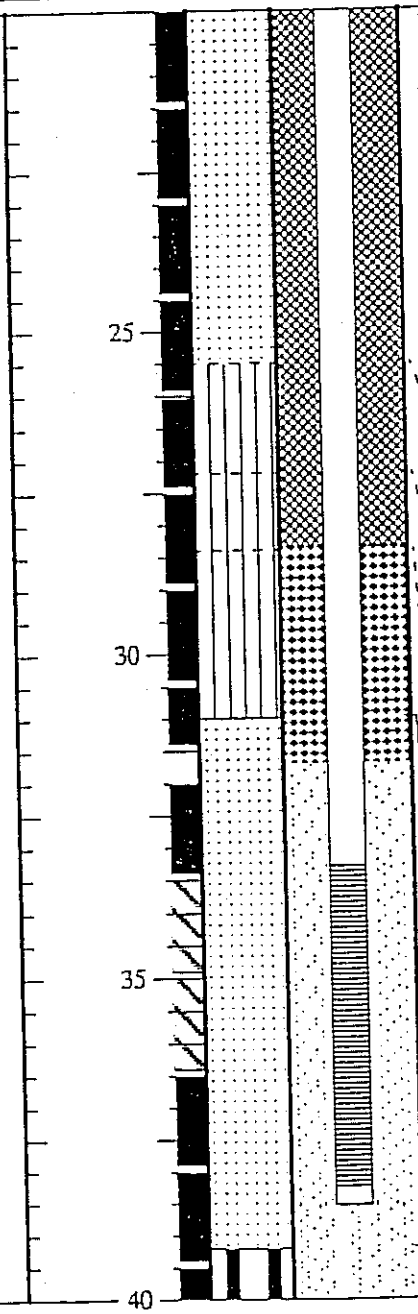
SWEET-EDWARDS/EMCON

S94-16.04.CKENT.15/kk:5.06/04/90

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-16
LOCATION	Kent, Washington	PAGE	2 OF 4
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	26.70'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	51.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	3/7/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS
12	SS	3-5-11
13	SS	3-3-6
14	SS	3-4-14
15	SS	8-7-11
16	SS	7-5-4
17	SS	4-6-5
18	SS	5-3-14
19	SS	3-3-10
20	SS	10-11-15
21	SB	20-42-47
22	SB	27-25-27
23	SS	9-12-15
24	SS	8-4-3
25	SS	3-2-2



16.7 - 25.5 feet: See description on preceding page.
-- @ 20.7 - 20.8 feet: mostly fine to medium sand.
-- @ 20.8 - 20.9 feet: light olive gray silt.

-- @ 25.2 - 25.5 feet: thin laminae of silt and organic matter (grasses).

25.5 - 27.2 feet: SANDY SILT (ML), light olive gray to black, fine sand, soft, low plasticity. (ALLUVIUM)

27.2 - 28.4 feet: SILT (ML), light olive gray to light brown, soft, low plasticity. Abundant dark brown organic matter (leaves, twigs). Occasional very thin sand interbeds. (ALLUVIUM)

28.4 - 31.0 feet: SILT (ML) light olive gray with white and grayish green mottles, trace clay, trace fine sand, firm, low plasticity. (ALLUVIUM)
-- @ 30.2 - 30.5 feet: black sand.

31.0 - 39.2 feet: SAND, black, fine to medium, trace fines, medium dense. (ALLUVIUM)
-- @ 33.0 feet: trace wood fragments.
-- @ 33.8 feet: abundant grasses and wood fragments.
-- @ 34.5 - 34.7 feet: fine to coarse sand underlain by thin silt bed.
-- @ 35.0 - 36.0 feet: occasional very thin light olive gray silt laminae
-- @ 36.0 - 36.5 feet: trace coarse sand.

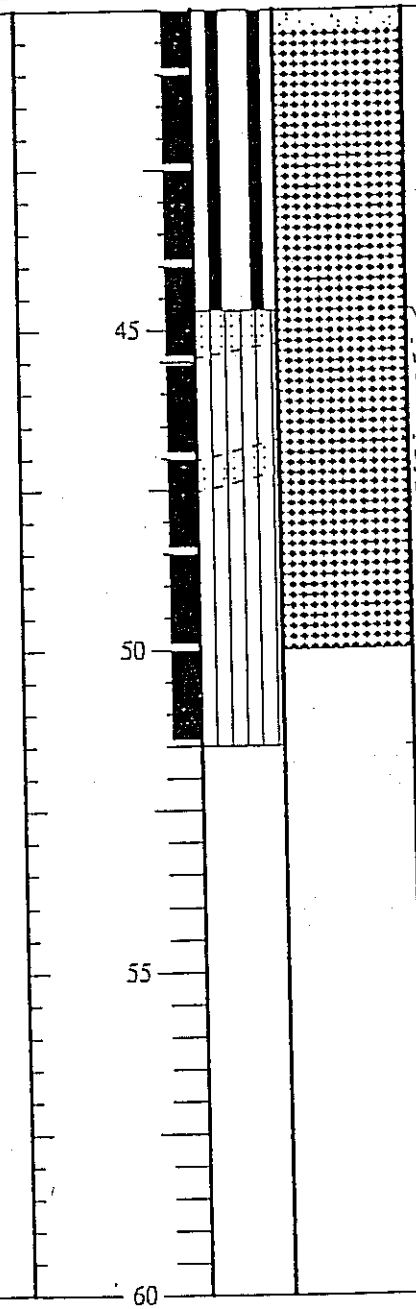
REMARKS
1) See General Remarks. 2) Hammer weight: approximately 300 lbs. 3) T.O.C. = 26.00 feet. 4) Sample numbers are prefaced with "MW16-". 5) Water added below 0.5 feet during drilling. 6) Stainless steel centralizers placed 0.5 foot below top of screen, and 0.5 foot above bottom of screen.

SWEET-EDWARDS/EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-16
LOCATION	Kent, Washington	PAGE	3 OF 4
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	26.70'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	51.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	3/7/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS
26	SS	5-3-2
27	SS	4-3-8
28	SS	7-27-30
29	SS	10-18-24
30	SS	6-5-14
31	SS	18-16-16
32	SS	8-5-4



LITHOLOGIC DESCRIPTION

39.2 - 44.8 feet: CLAYEY SILT (MH), light olive gray to grayish brown, firm to stiff, medium to high plasticity. Clay content decreases downhole. (ALLUVIUM)

-- @ 41.5 - 42.5 feet: abundant brown organic matter (leaves).

-- @ 44.0 - 44.8 feet: trace organic matter (grasses).

44.8 - 45.2 feet: SILTY SAND (SM), dark gray to black, fine, medium dense to dense, non-plastic fines. (ALLUVIUM)

45.2 - 46.8 feet: SANDY SILT (ML), light olive gray, fine sand, soft, low plasticity. Trace organic matter. (ALLUVIUM)

46.8 - 47.3 feet: SILTY SAND (SM), dark gray, fine, medium dense to dense, non-plastic fines. (ALLUVIUM)

47.3 - 51.5 feet: SANDY SILT (ML), medium olive gray, fine sand, soft to firm, low plasticity. Abundant silty sand interbeds. (ALLUVIUM)

Total depth drilled: 50 feet.
Interval sampled: 0 to 51.5 feet.

REMARKS

1) See General Remarks. 2) Hammer weight: approximately 300 lbs. 3) T.O.C. = 26.00 feet. 4) Sample numbers are prefaced with "MW16-". 5) Water added below 0.5 feet during drilling. 6) Stainless steel centralizers placed 0.5 foot below top of screen, and 0.5 foot above bottom of screen.

SWEET-EDWARDS/EMCON

S94-16.04.CKENT.15/kk:5.06/04/90

LOG OF EXPLORATORY BORING

PROJECT NAME	Chempro-Kent	BORING NO.	MW-16
LOCATION	Kent, Washington	PAGE	4 OF 4
DRILLED BY	Hokkaido D & D	REFERENCE ELEV.	26.70'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	51.50'
LOGGED BY	Anne Udaloy	DATE COMPLETED	3/7/90

SAMPLE NUMBER	SAMPLING METHOD	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				65				WELL COMPLETION DETAILS: 0.7 - 33.3 feet: 2-inch schedule 40 PVC riser. 33.3 - 38.3 feet: 2-inch schedule 40 PVC screen with 0.020-inch slots. 38.3 - 38.5 feet: 2-inch schedule 40 PVC slip cap. 0 - 2.0 feet: concrete. 2.0 - 4.0 feet: Enviroplug medium bentonite chips. 4.0 - 28.3 feet: Pure Gold bentonite grout. 28.3 - 31.7 feet: Enviroplug medium bentonite chips. 31.7 - 40.3 feet: 10x20 Colorado Silica Sand. 40.3 - 50.0 feet: Enviroplug medium bentonite chips.
				70				
				75				
				80				

REMARKS

1) See General Remarks. 2) Hammer weight: approximately 300 lbs. 3) T.O.C. = 26.00 feet. 4) Sample numbers are prefaced with "MW16-". 5) Water added below 0.5 feet during drilling. 6) Stainless steel centralizers placed 0.5 foot below top of screen, and 0.5 foot above bottom of screen.

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-17
Facility: Kent
Project: Kent 12.1
Location Type: _ Soil Boring Only X Well _ Test Pit
Date: 6/29/00
Field Geologist: Lou LaRosa
Drilling Method: HSA
Sampling Method: Split Spoon
Total Depth: 14

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:	0-3"	Asphalt
					Fill
4		5 6 7 5	0.0 1.5	100% 0-8	SM Olive gray, moist, soft silty Sand, well graded (100, 2)
				8-20	SM Same (4-6, 0-5) dry, increasing sand. Orange mottling silty sand
▽5.5				20-24	ML Dark gray, wet, orange spotting, soft, silt clay, well graded
6		0 0 5 6	0.0 19.0	100% 0-24"	ML Same as (4-6, 20-24) very wet.
8					Collect Shelby SILT
10		4 4 3 2	0.0 107	75% 6-12 12-24	ML Same as (4-6, 20-24) very wet, very soft. no orange spotting SM Dark gray, wet, loose increasing sand silty sand. well graded
12		3 6 6 3	0.0 42.3	60% 6-24	SM Same as (10-12, 12-24)
14					Total Depth 14

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 1 of 1

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-18
Facility: Kant
Project: Kant RI
Location Type: _ Soil Boring Only X Well _ Test Pit

Date: 7/7/00
Field Geologist: Lou LaRosa
Total Depth: 15
Drilling Method: Limited Access Rig, HSA
Sampling Method: Split Spoon / Shelby Tube

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Asphalt
3" 2-5 3½		38 50	53.7 2000	80% 3-12"	GP Poorly graded gravel, sand mixture, sand-gravel (coarse) dry, loose, cobbles, light gray
5		16 17 12	0.0 2000	60% 5-12"	GP Same as above.
6½ 8 ▽		3 3 3	0.0 2000	80% 2-12"	GC Clayey gravels, gravel sand with cobbles, coarse sand. wet Olive gray. loose. organic matter - roots Increasing clays, less sand
9½					SHELBY TUBE 10-12' sandy silt
12 12.5		22 28 30	0.0 2000	100% 0-5	ML? SC ~~SM~~ clay-silt, fine sands, wet Olive gray, soft, clay smear on outside of sample
				5-12"	SM sand (fine) wet, med dense, dark gray, silt
14					
			Total Depth 15		

Geologist's Signature ______ Date ____ Reviewer ______ Date 7/7/00 Pg 1 of 1

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-19
Facility: Kent
Project: Kent-RI

Date: 6/29/00
Field Geologist: Lou LaRosa
Location Type: _ Soil Boring Only Δ Well _ Test Pit
Drilling Method: HSA
Sampling Method: Split Spoon
Total Depth: 13.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		
2		4 5 4 6	4 0.0 5 4 4 >2000	100% 0-4 4-12 12-24	Stuff - Sawdust ML Olive gray, dry, with light brown streaking, silt with fine sand low plasticity, stiff ML Medium gray - dark olive gray moist, silt w/ fine sand orange markings, med stiff
4		3 4 3 3	0.0 72000	50% 12-14 14-20 20-24	Stuff - Sawdust, gravel SM Silty sand, ~~dark gray~~ brown moist, ~~med stiff~~ loose - med dense, SM Silty sand, dark gray, wet well graded, med dense
▽5.5					
6		1 1 1 1	0.0 1156	50% 4-6 6-12 12-18 18-24	Stuff - gravel SM same as 4-6, 20-24 SM same as 4-6, 20-24, brown - olive gray, increasing fines. CL-ML dark gray, moist, med plasticity, med stiff silt, clay, fine sands ~~well graded~~
8			sandy silt		collect Shelby Tube
10					

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 1 of 2

PHILIP SERVICES	Soil Stratigraphy Field Log	Location ID MW-19 Facility Kent Project
Date 4/29/00	Field Geologist Louka Rosa	Location Type: _ Soil Boring Only X Well _ Test Pit
Drilling Method HSA	Sampling Method Split Spoon	Total Depth 13.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		
10		6 10 10 10	0.0 >2000	~~100~~ 90% 4-10 10-14 14-24	ML same. seepy wet. increasing sand. ML mostly silt ~~fines~~, very moist. med ~~dense~~ stiff well plasticity SM dark gray, well graded moist, med dense silt sand
12			0.0 35.2	80% 4-24	SM sandy silt, well graded dark gray. loose. @4-6 wet @6-10 increasing silt, wet. soft @10-24 sandy silt. very moist. same as 10-12 (4-24).
14		Total Depth 13.5			

Geologist's Signature ____________ Date ____ Reviewer ____________ Date ____ Pg 2 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-20
Facility: Kent
Project: Kent

Date: 6/28/00
Field Geologist: LouLaRosa
Location Type: __ Soil Boring Only X Well __ Test Pit
Total Depth:
Drilling Method: HSA
Sampling Method: Split Spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:	3"/4	Asphalt
3"/4				NA	Fill
4	MW-20-4.0 MAT	2 3 4 5	0.0 170	100% 0-2 2-4	Fill CL Clay, stiff, dark gray, moist-dry. Red streaking on outside of sample, well graded
				4-6	CL same. Soft, moist
6		3 5 5 8	0.0 0.5	90% 0-2 2-6 6-12 18-24	Fill CL Soft Same as (4-6, 4-6) CL hard, orange streaks same as (4-6, 2-12) SC/CL clayey, sands, silt, dark gray, wet, well graded
8			NA	0%	Attempt to collect Shelby TUBE
10	MW-20-4.0 SCREEN		0.0 0.0	100% 0-12 12-14	CL SC very wet, dark gray SCL same, few sand SAND SC moist, fine sand, silt
12					Attempt to collect SHELBY TUBE
14	Total Depth 12'				

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 1 of 1

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-21
Facility: Kent RL
Project:

Date: 7/14/00
Field Geologist: Lou L. Rosen / Salamah Magallon
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method: Limited Access
Sampling Method: Split Spoon 2½" id
Total Depth: 15

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Fill
5	MW-21-MW-0000 TPH-G VOC SVOC RCB TPH-D pH Cr+6 Cyanide Total Metals	9 9 12	~~0.0~~ 7.0 31.00	100% 0-12"	SM Moist, Organic matter - roots clay smear on outside. Olive gray with dark gray-black sandy. Sandy, with silt, well graded
6.5 ▽					
7½	MW-21-SP-0000 VOC TPH-G SVOC RCB TPH-D Total Metals Cr+6 pH Cyanide	4 8 10	0.0 260	100% 0-12	CL Wet. Olive gray with light brown-orange streaking. Medium stiff. Organic matter roots Clay. no silt, no sand.
9					
10		14 30 45	57.5 180	100% 0-12 6"	SW Moist, Dark gray, loose fine ?? well graded, sand ~~fine med~~ little to no ~~fine~~ silt, clays. @ wet.
11.5				100%	
12.5		12 18 45	0.0 0.3	0-12 @0-2 @8-10	SW same as (10-11.5, 0-12") @ wet very ↓ Decreasing fines. fine sand. wet.
14.0					

Geologist's Signature _____ Date ____ Reviewer _____ Date 7/14/00 Pg 1 of 1

Total Depth 15.0

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-22
Facility: Kent
Project:

Date: 6/29/00
Field Geologist: Laila Rosa
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method: HSA
Sampling Method: Split Spoon
Total Depth: 13.5'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Fill
2		9 8 4 4	0.0 35.7	75% 0-2 2-14 14-18	Fill SM Light brown/olive gray dry, well graded, fine silty sand, medium dense SC Light brown w/ orange spotting ML dry, well graded dense-soft
4		2 2 3 5	0.0 51.5	40% 0-2 2-24	SC/ML same as 2-4, 14-18', loose SC/ML same. orange streaking. moist. wet at 12" Gray medium stiff, clayey sandy silt
6		4 5 6 8	0.0 46.2	80% 4-6 6-24 22-24	Sluff ML same. very wet. SM olive gray. very wet. Silty sand, mostly fines. soft. well graded.
8					Collect Shelby Tube SANDY SILT
10		1 1 3 4	0.0 28.1	50% 10-14 14-24	SM yellowish orange - light gray, soupy wet. well graded very soft. Silty sand. SM dark gray, wet. soft. Silty Sandy. More sand
12		4 7 4 4	0.0 62.7	50%	Same as 10-12. more sand.
14					Total Depth 13.5

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 1 of 1

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-23
Facility: Kent
Project:
Location Type: __ Soil Boring Only __ Well __ Test Pit

Date: 7/7/00
Field Geologist: LouLaRosa
Total Depth: 15
Drilling Method: Limited Access Rig/HSA
Sampling Method: Split Spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Asphalt
2"			~~5.7~~	~~5%~~	Fill
3	MW-23-0000 MA+		5.7 72000	5%	~~SP~~ ~~gravels, gravelly~~, sand. ~~SM~~ ~~silty~~ sand and gravel with silt, moist, dark gray, loose, cobbles, organic black matter.
3.5	composite to obtain enough sample				
5		6 12 13	0.0 388	75% 0-6	SM Clayey sands, moist dark brown, loose-med dense, gravel mixed in. organic matter
6.5				6-12	SM same as (5, 0-6) wet.
7.5	MW-23-0000 SCR MW-23-0600 SCR MS/MSD	2 3 5	0.0 72000	100% 0-3"	SM same. no gravel. increasing fines. moist. med stiff.
9				3-12"	CL inorganic clay. stiff. olive gray. ~~dry~~ moist red streaking on outside and in. well graded.
10		5 12 9	~~0.0~~ 136 72000	100% 0-12"	ML olive gray wet. soft inorganic silt, fine sand, & some clay. well graded.
11.5					
12.5		17 15 10	0.0 72000	100% 0-12"	ML same as (10-11.5, 0-12")
14.0					

Geologist's Signature _____ Date ___ Reviewer _____ Date ___ Pg 1 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-23
Facility Kent
Project

Date 9/7/00
Field Geologist Lou La Rosa
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method HSA (Limited Access)
Sampling Method Shelby Spoon
Total Depth 15

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		
15- 16.5		4 4 4	0.0 1547	100% 0-12	CL Clay. no silt. dry. med stiff. Brown fiberous organics Dark gray.
			← Total Depth		~~16.5~~ 15.0

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 2 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-24D
Facility: Kent
Project: Kent RI June-July
Location Type: __ Soil Boring Only X Well __ Test Pit
Total Depth:

Date: 6/28/00
Field Geologist: Lou LaRosa
Drilling Method: HSA
Sampling Method: Split Spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm) Breathing Zone: / In-Spoon: / Headspace:	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'				~~2~~ 3"	Asphalt
		N.A.		3"-3'	~~Gravel~~ GW, Cobbles, loose fine to coarse sand, grayish brown, dry. (fill)
3.3		25 21 19	0.0 / 125	~~3~~ 6"	GW Cobbles, loose fine to coarse sand, grayish brown, moist.
4 ~~4.5~~ ~~5.0~~		2 2 5 7	26.1 / 95.3	~~0-3~~ 3-6"	GP Poorly Graded gravels, sand mixture, little fine s, gray moist
				6-9"	CL. Inorganic clay, ~~low~~ med plasticity, olive gray, silt moist
				9-12	ML Inorganic, brown soft moist, ~~clay~~ silt w/ fine clay
				12-15	CL Inorganic (same as 6-9) ~~very stiff~~ Hard
6.0	MW-24D ∇ MAX	~~3 3 6~~ 2 2 2 6	2.8 / 2000	0-5	ML
				6-8"	Cl very stiff, very moist. w/ brown streaking fine
~~8.0~~		4 5 6 7	16.1 / ~~23~~ 65	100% 0-12	ML Wet very sandy silt
~~[illegible]~~		∇		12-24	Cl very wet, med stiff fine
10		4 7 9 15	4.2 / 15.0	100% 0-24"	ML very wet sandy silt olive grave, soft
12					

Geologist's Signature ______ Date ___ Reviewer ______ Date ___ Pg 1 of 4

300 lb hammer

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-24D
Facility Kent
Project

Date 6/28/00
Field Geologist
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method
Sampling Method
Total Depth

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone:		
12		6 5 6 2	In-Spoon: Headspace: 0.0 231	6-24" 6-12 12-24	ML Sandy Silt, soapy wet, gray ish brn ~~ML~~ SM med stiff, sandy silt, fines wet, more sand than silt
14		2 3 3	0.0 15.8	100% 0-9 9-24	SM/SC soapy wet. Brown gray sandy silt. Soft, well graded SM/SC same medium stiff
16		7 10 19 23	0.0 10.6	100% 0-12 12-24	SC soapy wet. same & med stiff gray, well graded SM ~~moist~~ wet, soft, sandy fine gray-brown, olive gray well graded loose
18		10 6 12 17	0.0 7.0	0-24 12-24"	SM fine sand wet, soft, few fines well graded, olive gray/brown loose
20		12 15 11 20	0.0 100	6-24	SM sand wet ~~black~~ gray dark gray well graded ~~fine~~ medium few fines loose
22		6 11 14	0.0 261	100% 0-24	SM same as (20-22 6-24") wet. black dark gray. few fines med sand.
24		5 4 2 5	0.0 261	100% 0-6 6-12 12-24	SM same as med wet, olive gray sandy silt SC ~~silt~~ clayey sand, wet olive gray, well graded OL Woody fibers, dry med stiff, Dark gray w/ dark brown discoloration fines, silty,
26					

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 2 of 4

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID	MW-24D
Facility	Kent
Project	
Location Type:	__ Soil Boring Only X Well __ Test Pit
Date	6/28/00
Field Geologist	LaLaRosa
Total Depth	39'
Drilling Method	HSA
Sampling Method	Split Spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' 26		10 6 6 12	Breathing Zone: In-Spoon: Headspace: 0.0 778	100% 0-6 6-18 18-24	CL woody, moist, sandy clay; CL clay fine, wet, ~~[illegible]~~ stiff; SM wet, loose, sandy, soft olive gray, ~~[illegible]~~ some fines
28		3 3 12 22	0.0 889	60% 0-6 6-18 18-24 22-24	SM wet, ~~dark~~ gray, ~~[illegible]~~; SM woody, wet, dark gray; CL stiff, moist, dense, ~~stiff~~; ~~[illegible]~~ SM with organics, dark black, ~~sandy silt, few fines~~
30		4 4 12 20 22	0.0 817	100% 0-18" 18"-24"	SM silty sand, soupy wet, soft, fines; SW well graded sand, loose, med dense, dark brown/black, no fines, moist-dry,
32		4 7 9 11	0.0 859	100% 0-2 2-24	SW with organics; SW same as (30-32, 18"-24")
34	MW-24D-600 SCREEN 1130	9 19 19 25	0.0 801	60% 6-24	SW same as (30-32, 18"-24")
36					

Geologist's Signature ______________ Date ____ Reviewer ______________ Date ____ Pg 3 of

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-24D
Facility: Kent
Project:

Date: 6/28/00
Field Geologist: Lou LaRosa
Location Type: __ Soil Boring Only Δ Well __ Test Pit
Drilling Method: HSA
Sampling Method: Split Spoon
Total Depth: 39

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'	MW-24D Screen	5 7 9 12	Breathing Zone: In-Spoon: Headspace: 0.0 807	75% 6-24	SW same. loose wet
		4 4 7 11	0.0 ~~5.0~~ 210	100% 0-8 18-24	SW same as (36-38, 6-24) CL ~~very~~ moist, silty clay, slight med. dense, olive gray no organics
			Total Depth 39		

Geologist's Signature _____ Date ____ Reviewer _____ Date ____ Pg 4 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID	MW-25
Facility	Kent
Project	Kent RI
Date	7/7/00
Field Geologist	Lou LaRosa
Location Type:	__ Soil Boring Only X Well __ Test Pit
Drilling Method	Limited Access Rig HSA
Sampling Method	Split Spoon/Shelby Tube
Total Depth	15'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' – 3"			Breathing Zone: In-Spoon: Headspace:		Asphalt
3" – 4.5		100-0			Fill
4.5 – 5'					Denied
5' – 8'		0	0.0 0.0	24	ML inorganic silt with red sheen on outside. Dry. Dark gray. Medium stiff. with fine clay. NOTE: Based on visual of cuttings.
8' – 8.5'					
8.5' – 10.0				75%	Collect Shelby Tube sandy silt
10.0 – 11.5 (▽ 10.3)		5 7 19	0.0 0.0	100% 0 3" / 3"-12"	CL Same as (5-8'), Inorganic clay, stained plasticity. no silt or sand. Dark gray. / CL same as (10-11.5, 0-3"), wet. silts.
12.5 – 14		9 11 11	0.0 0.0	25% 9-12"	CL same as (10-11.5, 3"-12") wet.
14 – 15		Total	Depth	15'	

Geologist's Signature ______________ Date ____ Reviewer ______________ Date 7/7/00 Pg 1 of __

PSC PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-102-I-21
Facility: KPAT
Project: Well Installation
Location Type: __ Soil Boring Only ✓ Well __ Test Pit

Date: 2/8/01
Field Geologist: Salomon Mestrenon / Jimmy ... [illegible]
Total Depth: 19'

Drilling Method: 17.25" OD & 7.5 CME ... 8.25" OD
Sampling Method: 1.5' x 2" Splitspoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 — 0.0'			Breathing Zone: In-Spoon: Headspace:		fill - not logged
4		1 3 5 5	0	8	0-2" SM silty sand, wet, fine - very fine, medium dense, olive grey, well sorted 2-8" ML silt with some organic debris (roots), olive grey, little ~~fg~~ vf sand, well sorted, moist, dense, crumbly, not plastic
	NOT LOGGED			24"	0-16" Bentonite Chips.
7		50 100	0		16-18" ML silt with few clay. Well sorted. Medium gray. Dry. Medium stiff. 18-19" ML silt with some clay. Moderately sorted. Dry. Medium stiff. ~~Greenish gray~~ Brownish gray. 19-20" ML silt. Well sorted. Dry. Medium stiff. Greenish gray. 20-22" ~~ML~~ SM Sandy silt. Silt with very fine sand. Dry. Loose. Olive [illegible]. Poorly sorted. 22-24" ~~ML~~ CL clay with some silt. Dry. Medium [illegible]. Moderately sorted. Stiff.
9					

Geologist's Signature [signature] Date 2/8/01 Reviewer ________ Date ____ Pg 1 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-102-I-Z
Facility: Kent
Project: Well Inst.

Date: 2/8/01
Field Geologist: Salainah Magnuson
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method: 8.25" ID 14.25" OD 75CME, 300 lb Hammer
Sampling Method: 2' x 2.5" Split Spoon
Total Depth: 19'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
9 0.0'		3 7 9 12	Breathing Zone: In-Spoon: Headspace: 0	0-20"	0-16" CL clay. Well sorted no silt or sand. Moist. Medium stiff to soft. Medium gray. 16-20" ~~ML~~ SM Sandy silt. Silt with some very fine sand. 65-35. Poorly sorted. wet. Loose. Medium gray to olive black.
11		4 9 10 15	0	20"	0-20" SM same as above. @16-20" increasing sand.
13		9 10 12 15	0	20"	0-20" SW fine sand with some silt 60-40. Poorly sorted. wet. Loose. Medium gray. @18-20" increase in sand.
15		11 17 20 24	0	20"	0-20" ~~Silt~~ SP fine sand with few silt. 80-20 Well sorted. Soft. Olive black. @0-10" very wet, soupy. @10-20" Moist to wet.
17		11 10 11 15	0	24"	0-3" SP Same as above. 3-24" ~~SM~~ ML ~~Sandy~~ silt with fine sand. Moderately sorted 75-25 Moist. Loose. Brownish gray.
19					

Geologist's Signature [signature] Date 2/8/01 Reviewer ____________ Date ____ Pg 2 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-102-I
Facility Kent
Project Well Inst.

Date 2/8/01

Field Geologist Salaimah Magnuson

Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method 4.25" OD, 8.25" ID, 175 CME, 300lb hammer

Sampling Method 1-5'x2" Split Spoon

Total Depth 19

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
19 0.0'		15 21 22 25	Breathing Zone: In-Spoon: Headspace: 0	18"	0-6" ML Silt with some sand. 70-30 moderately sorted. wet. Soft. Medium gray. 6-18" SP medium and fine grained sand, no silt. Well sorted. wet. loose. Olive Black. Red and white specs.
21					Total Depth = 19' with Auger Split Spoon = 21'

Geologist's Signature [signature] Date 2/8/01 Reviewer _____ Date ___ Pg 3 of 3

PSC PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-112-S
Facility: ~~CTF~~ Kent
Project: Supplemental Offsite Char
Location Type: X Soil Boring Only X Well __ Test Pit

Date: 2/1/01
Field Geologist: Salamah Magnuson
Drilling Method: Limited Access ~~Geoprobe~~ 140 lb Hammer
Sampling Method: 1.5", 2" Split Spoon ~~2", 1" diameter acetate liners~~
Total Depth: 8.0'

5.75" OD

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (Inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 / 0.0'			Breathing Zone: In-Spoon: Headspace:		NOT LOGGED - Fill
5.5		2 4 10	0.0	8"	0-3" GM Silty-sandy-gravel fine and medium sand with gravel, silt and pebbles. Poorly sorted. Very loose. Dry. Olive gray silt smear. Organic roots. 3-4" ML Silt with clay. Dry. Very stiff. Well sorted. Medium gray. 4"-8" SM matrix w/ CL clumps throughout SM Sandy silt. Silt with fine sand. Poorly sorted. Dry. Loose. Dark gray, fine and with white specs. Organic matter. shoe: CL - Clay, well sorted. Dry. Very stiff. Olive gray.
6.5			~~0.0 ppm~~		NOT LOGGED
7.0		9 13 22	0.0	12"	0-12" ML Silt with clay stringers and sand stringers. Moist. Medium gray with red streaking. Medium stiff. Poorly sorted. Organic debris, roots.
8.0					NOT LOGGED
8.5					

Geologist's Signature: [signature] Date: 2/1/01 Reviewer ________ Date ____ Pg 1 of 2

PSC PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID MW-11E-1
Facility Kent
Project MW 11 Install

Date	Field Geologist	Location Type:
2/1/01	Salamah Magnuson	X Soil Boring Only X Well __ Test Pit

8.25"

Drilling Method	Sampling Method	Total Depth
140 lb Hammer Limited Access	1.5 X 2" Split Spoon	8.0

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
8.5 / 0.0'	-	9 / 7 / 8	Breathing Zone: In-Spoon: Headspace: 0.0	12"	0-12" CL Clay with some to [illegible] silt. well sorted. Dry. very stiff. Light to medium gray with Light Brown Streaking. Black fibrous matter
9.5					Total Depth = 8.0

Geologist's Signature [signature] Date 2/1/01 Reviewer, ________ Date ____ Pg 2 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID	[illegible]
Facility	[illegible]
Project	[illegible] Installation
Location Type:	__ Soil Boring Only ✓ Well __ Test Pit
Date	2/5/01
Field Geologist	Salamah Mimanne[illegible]
Drilling Method	14.25"OD & 8.25"ID 75 CME, 300 lb Hammer
Sampling Method	2'x1.5" Split Spoon
Total Depth	44'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 / 0.0'			Breathing Zone: In-Spoon: Headspace:		Fill Not Logged
5.0		3 3 4 5	0.0	20"	0-3" FILL 3-20" ML Silt with very fine sand and clay. 60-20-20 Silt-Sand-clay. Poorly sorted. Dry. Stiff. Dark gray. Organic roots throughout. @ 10" woody debris @ 14" woody debris
7.0		2 4 3 2	0	22"	0-6" Bentonite Seal 6-22" CL Clay with few silt. Well sorted. Moist to Dry. Very stiff. Light Gray. @ 12", Dark gray @ 20", Light brown color mixed w/ light gray.
9		3 3 5 6	0	24"	0-20" CL Same as above. with more light brown. 20-24" SM Sandy silt. Silt with very fine and fine sand 50-50. Poorly sorted. Moist to wet. Medium loose. Dark gray.
11		5 6 7 12	0	18"	0-6" CL Clay with few silt. Well sorted. Moist to Dry. Very stiff. Light gray. 6-18" SM/SW Silty Sand. Mostly sand, fine, with some silt. Poorly sorted. Very wet. Loose. Olive black. @ 10" [illegible] fines
13					

Geologist's Signature [signature] Date 2/5/01 Reviewer ______ Date ____ Pg 1 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-112-D
Facility: Kent
Project: Well Installation

Date: 2/5/01
Field Geologist: Salamah Magnuson
Location Type: __ Soil Boring Only ✓ Well __ Test Pit
Drilling Method: 16.25" OD, 8.25" OD 75 CME, 300 lb Hammer
Sampling Method: 2' x 2.5" Split Spoon
Total Depth: 44'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
13 0.0'		4-6-10-11	Breathing Zone: In-Spoon: Headspace:	24"	0-24" SP Same as above
15		2 4 3 4	0	24"	0-14" SM Sand - Silt, 65-35 Silt to Sand. Poorly sorted. Stiff. Moist. Dark gray. @ 12" organic wood & debris. 14-24" SP fine sand little to no fines. Well sorted. Olive black. wet. Medium dense.
17		2 2 2 3	0	24"	0-14" SP Same as above. Very wet. 14-16" ML Silt with clay. Moderately sorted. Moist. Stiff. Light gray. 16-20" SP fine sand well sorted. Moist to wet. Olive black brown. Medium dense. white specs. 20-24" ML Same as 17-19 (14-16") white specs. Organic debris.
19 21		12 22 50/6	0	24"	0-3" SP intermixed with CL 3-8" CL ~~Same as~~ clay with few silt. Well sorted. moist. Stiff. light gray. white specs. 8-12" SP/SM fine sand, silt. 12-18" CL Same as 19-21 (3-8") 18-24" SP Same as 17-19 (16-20")

Geologist's Signature [signature] Date 2/5/01 Reviewer ______ Date ____ Pg 2 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-118-D
Facility: [illegible]
Project: Well Installation

Date: 2/5/01
Field Geologist: Salamah Magnusson
Location Type: __ Soil Boring Only X Well __ Test Pit

Drilling Method: 4.25", 8.25" OD 75 CME, 300lb Hammer
Sampling Method: 2x1.5" Split Spoon
Total Depth: 44'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
21 0.0'		5 10 15 18	Breathing Zone: In-Spoon: Headspace: 0	18"	0-4" CL clay with few silt. well sorted. moist. soft. Medium gray. 4-18" SP fine sand with few fines. well sorted. wet. loose Olive black. white specs.
23		14 25 50	0	18"	0-18" SP same as above. @ 16-18" organic wood debris.
25		5 9 7 11	0	12"	0-12" SP same as above. organic root material throughout
27		5 6 14 20	0	24"	0-22" OL/CL clay with some silt. Moderately sorted. 65-35. wet. Stiff. white specs. Dark gray organic matter throughout. @ 16" organic woody debris prolific @ 18" SP stringer, 1cm long. 22-24" SP SW fine sand with some silt. Poorly sorted. Olive black. wet. Stiff. white specs
29		9 9 11 11	0	24"	0-10" OL Same as 27-29 (0-22") 10-24" ~~SP~~ SW/SM fine sand with some silt. Poorly graded. wet. Olive black. ~~Stiff.~~ Medium dense. white specs.
31					

Geologist's Signature [signature] Date 2/5/01 Reviewer ______ Date ____ Pg 3 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-112-D
Facility: Kent
Project: Well Installation

Date: 2/5/01
Field Geologist: Salamah Magnuson
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method: 300 lb Hammer 75CME Split Spoon
Sampling Method: 2'x.25" Split Spoon
Total Depth: 44'

8.25"
14.25"

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
31 0.0'		3 5 5 6	Breathing Zone: In-Spoon: Headspace: 0	22"	0-2" CL Same as 27-29 (0-22") 2-4" SM/SW same as 29-31 (0-24") 4-8" CL/OL Same as 27-29 (0-22") organic debris throughout 8-11" SP medium grain sand with no fines well sorted. Olive black. wet. loose. Red and white specs. 11-14" OL Same as 27-29 (0-22") 14-24" SM Sandy silt organic debris poorly sorted. wet. loose to medium dense. Olive black. Organic woody debris.
33		3 4 7 7	0	24"	0-14" SM silty sand, sandy silt. 50-50 poorly sorted. Moist. ~~Loose~~, Medium dense. Dark gray/olive black. Organic matter throughout. Large pieces of woody debris 14-24" OL clay with few silt. well sorted. Moist. Stiff. Dark gray organic debris throughout. @21" woody debris prolific
35		9 N12			

Geologist's Signature: [signature] Date 2/5/01 Reviewer ________ Date ____ Pg 4 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-112-D
Facility Kent
Project Well Installation

Date 2/5/01
Field Geologist Salimah Magnuson
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method 7.5 CME, 300 lb hammer
Sampling Method 2" x 2.5" Split Spoon
Total Depth 44'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'		25 25	Breathing Zone: In-Spoon: Headspace: 0	24"	0-19" Same as above. CL 19-24" SP Medium and fine sand, no silt. well sorted. Clive black. wet-moist. Medium dense. Red and white specs. @ 20, 20" CL stringer.
		7-17-20-30	0	24"	0-24" Same as above 19-24" SP.
		6-19-21-30	0	24"	0-24" SP Same as above
		12-8-7-15	0	24"	0-24" SP Same as above. No fine sand. All medium
		12-8	0	18"	0-12" SP same as above. 12-18" CL clay, no silt. well sorted. Moist. Stiff. Dark gray.
					Total Depth @ 44'

Geologist's Signature [signature] Date 2/5/01 Reviewer _____ Date ___ Pg 5 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-113-I-1
Facility Kent
Project: Well Installation

Date 2/12/01

Field Geologist Tasya Gray

Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method HSA 10.25"/14.25" 4.25"/8.25" limited access mobile drill rig

Sampling Method 2" split spoon/6" driver

Total Depth 18

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'		5 7 17	Breathing Zone: In-Spoon: Headspace: 0	12	0-12" GW poorly sorted, gravelly sandy soil fill material, dry, loose, gravel up to 2.5", moderate yellowish brown
5.5		16 17 31	0	15	0-3" GW may be sloughing from above 3-6" SM sandy silt, fine-very fine, wet, moderate brown, dense, well-sorted 6-15" ML clay silt, olive grey with moderate brown streaking, plastic, wet, medium dense-dense, very well sorted Photo
7'					NOT LOGGED
7.5'		2 3 3		18	0-18" CL silty clay, olive grey with moderate brown streaking, moist-dry, medium stiff, very well sorted

Geologist's Signature [signature] Date 2/12/01 | Reviewer _____ Date ___ Pg 1 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-113-I
Facility Kent
Project Well installation

Date: 2/12/01
Field Geologist: Tasya Gray
Location Type: _ Soil Boring Only X Well _ Test Pit
Drilling Method: Limited Access Rig 4SA 14.25"OD & 8.25"OD
Sampling Method: 18" x 2" split spoon 12" x 3" split spoon/6" driver
Total Depth: 18'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
9 0.0'			Breathing Zone: In-Spoon: Headspace:		no recovery, driven
9.5		3 3 2	0	12	0-2" CL silty clay, same as above, olive grey, medium stiff, moist - dry, moderate brown streaking, very well sorted, plastic 2-12" ML silt, wet, olive grey, no streaking, soft - medium stiff, very well sorted, slightly less plastic
10.5		5 7 9	0	14	0-3" CL silty clay, wet, olive grey with moderate brown streaking, soft, very well sorted, plastic 3-18" SM silty sand, very wet, loose, olive black with red & white specks, fine to very fine, well sorted
12'					no recovery
12.5'		14 21 17	0	12	0-12" ML/SM silt with a little sand in middle, sand content decreases towards bottom, as does moisture (wet → moist) medium dense, well sorted, olive grey
15'					

Geologist's Signature [signature] Date 2/12/01 Reviewer _____ Date ____ Pg 2 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-113-T-1
Facility Kent
Project Well installation

Date: 2/12/01
Field Geologist: Tasya Grim / Lou LaRosa
Location Type: _ Soil Boring Only X Well _ Test Pit
Drilling Method: Limited Access Rig, HSA 14.25" OD & 8.25" ID, Hand Hammer
Sampling Method: 12" x 3" split spoon w/ 6" drive, 18" x 2" split spoon
Total Depth: 18'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'		2 4 6	Breathing Zone: In-Spoon: Headspace: 0	18	0-18" ML starts out wet, soft, with some fine sand mixed in, sand content decreases & clay content increases towards bottom as silt becomes more plastic, moisture decreases slightly & silt becomes stiff towards bottom, olive grey, some organic debris, no streaking. well sorted
15'		2 4 5	0	18	0-18" ML same as above, moist silt, a few fine sands mixed in, plastic, soft - medium stiff, some wood debris @ ~ 9", olive grey, well sorted
16.5'		10 6 6	0	14"	0-16" ML same as above (15-16.5') 16-18" SP well sorted sand small amount of silt still mixed in, olive black with red & white specks wet, medium dense, fine-very fine
18'					Total Depth

Geologist's Signature [signature] Date 2/12/01 Reviewer _____ Date ____ Pg 3 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-114-I-4
Facility: Kent
Project: Well Installation

Date: 2/4/01

Field Geologist: Salaniah Macmuson

Location Type: ✓ Soil Boring Only Y Well _ Test Pit

Drilling Method: 4.25" ID / 8.25" OD; 75 CME, 300 lb Hammer

Sampling Method: 2' x 2½" split spoon

Total Depth: 15'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		GM silty, sandy, gravel mixture. Large rocks, cobbles. Very Loose. Poorly sorted. Dry. Moderate brown. @ 2.0' wet. FILL
2.75'			0.0		ML Silt with fine sand and some clay. Sporadic coarse gravel. Poorly sorted wet Soft Dark gray with moderate brown streaking.
5.0		3, 5, 4, 4, 6	0.0	24"	0-12" bentonite 12-24" SM sandy silt, ML and SW stringers throughout, poorly sorted, Tine coarse gravel, olive gray, moist, soft/loose.
7.0'		3, 2, 2, 3	0.2	24"	0-18" Same as 5-7 12-24" no coarse gravel, some greenish gray coarse gravel at 14-16". 18-24" ML silt with some sand med sorted, olive gray, moist, stiff.
9.0'		5, 5, 8, 8	0.2	24"	0-6" same as 5-7' 12-24" 6-9" SP grayish black, med sand, med sorted, moist, loose,

Geologist's Signature [signature] Date 2/4/01 Reviewer ______ Date ____ Pg 1 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-114-I-1
Facility Kent
Project Well Installation

Date 2/4/01

Field Geologist Corey Johnson / Salap / Magnuson

Location Type: __ Soil Boring Only X Well __ Test Pit

Drilling Method 4.25" OD, 3.25" ID 75 CME, 300 lb Hammer

Sampling Method 2' x 2' split spoon

Total Depth 15'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' (9.0' cont.)			Breathing Zone: In-Spoon: Headspace:		9-11" Same as 7-9' 0-18" 11-24" SM silty sands, fine-med sand, med sorted, moist, loose
11		3 4 3 7	0.0	24"	0-4" same as 7-9' 18-24", sand in stringers 4-24" Same as 9-11' 11-24"
13	Photo	4 4 4 7	0.0	24"	0-12" same as 9-11' 11-24" 3-5" wet 12-24" ML silt with few fine sand, olive gray, moist, med stiff, med-well sorted, some sand stringers
15'					Total Depth 15.0

Geologist's Signature [signature] Date 2/4/01 Reviewer ________ Date ____ Pg 2 of 2

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID	MW-17-I-2
Facility	Kent
Project	Well Installation
Location Type:	_ Soil Boring Only X Well _ Test Pit
Date	2/6/01
Field Geologist	Sdawali Magnuson
Drilling Method	CME 75, 300lb Hammer 14.25" OD, 8.25" ID
Sampling Method	18", 2' Split Spoon
Total Depth	19.5' bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 (0.0')			Breathing Zone: In-Spoon: Headspace:		Fill - Not Logged
4		1, 3, 4, 4	0.0	20"	0-10" CL clay with some silt. Well sorted. Dry. medium stiff. Medium to olive gray. 10-20" ML silt with some clay. well sorted. Moist. medium stiff. medium to olive gray.
6		1, 1, 1, 2	0.0	24	0-4.5" Bentonite seal 4.5-24" SM sandy silt, very wet, well sorted, medium stiff, some orange streaking at 22", olive grey
8		2, 5, 12, 14	0.0	22	0-18" ML silt, soft-medium stiff, plastic, wet, very well sorted, olive grey with some orange streaking 18-22" SP well sorted sand, moist, dense, olive black, fine grained, fine red & white specks
10		10, 10, 10, 12	0.0	22	0-10" ML very soft, very wet silt, some very fine sand, well sorted, olive grey 10-22" SP well sorted sand, same as above (18-22", 8-10')
12					

Geologist's Signature [signature] Date 2/6/01 Reviewer ______ Date ____ Pg 1 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-117-E-2
Facility Kent
Project Well Installation

Date 2/6/01

Field Geologist Tasya Gray / Salamah Maynasa

Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method CME 75 300 lb Hammer HSA 14.25"OD, 8.25"OD

Sampling Method 2', 2" split spoon

Total Depth 19.5' bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, Indication of contaminants (odor or sheen), and general stratigraphic description.
12 0.0'		6 4 11 15	Breathing Zone: In-Spoon: Headspace: 0.0	24	0-6" slough of very wet silt 6-24" SP well sorted sand, very wet, medium dense, fine grained, olive black with specks of red & white (very fine), ~~moderately & wet~~
14		4 10 15 10	0.0	24	0-6" SM silty sand, very wet, loose, fine - very fine grained, olive grey, well sorted 6-24" SP same as above well sorted sand (12-14', 6-24")
16		4 7 12 8	0.0	24	0-14" ~~SM~~ ML sandy silt, dense, moist, well sorted, olive grey, fine - very fine, olive grey with some brown streaking 14-23" SM silty sand, sand content is much higher & slightly coarser, moist, medium dense, mostly fine - very fine, moderately sorted, olive black with white & red specks 23-24" OL very organic soil, medium brown, moist, soft, well sorted
18					

Geologist's Signature [signature] Date 2/6/01 Reviewer ______ Date ____ Pg 2 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-117-I-2
Facility ~~SF~~ Kent
Project ~~Supplemental Offsite Char~~

Date 2/6/01

Field Geologist Tasya Gray / Salamah Magliesen

Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method HSA CME 75 ~~Geoprobe~~ 300 lb 14.25" OD, 8.25" ID hammer

Sampling Method 2', ~~5'~~ Split spoon ~~2", 1" diameter acetate liners~~

Total Depth 19.5' bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'		4 10 10	Breathing Zone: In-Spoon: Headspace: 0.0	16	0-4" SM very wet, soupy sandy silt, olive grey, fine-very fine, well sorted, loose. 4-8" SP well sorted sand, wet, olive black with red & white specks, fine grained, medium dense 8-10" OL very organic silt lens, roots, moderate brown, moist, well sorted, 10-16" SP well sorted sand, wet, olive black with red & white specks, medium dense, mostly fine but slightly coarser than above SP
		7 14 20 12	0.0	20	0-3" SM very wet, soupy sandy silt, olive grey, fine-very fine, well sorted, loose. 3-5" OL very organic silt lens, roots moderate brown, moist, well sorted 5-20" SP well sorted sand, wet, olive black w/ red & white specks, loose becoming medium dense, fine grained
					Auger to 19.5' bgs Split Spoon to 21.5' bgs

Geologist's Signature Natasya M Gray Date 2/6/01 Reviewer _____ Date ___ Pg 3 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-11S
Facility Kent
Project ~~Supplemental Offsite Char~~

Date 1/29/01

Field Geologist: Salamah Magnuson

Location Type: ☒ Soil Boring Only ☒ Well ☐ Test Pit

Drilling Method Limited Access Geoprobe/140lb Hammer

Sampling Method 1.5", 2" Split Spoon 2" diameter acetate liners

Total Depth 15.0

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Asphalt, fill
2		50	0.0	little to none	GW medium sand with stones, cobbles and gravel. Dry Loose. Light olive gray. poorly sorted. Fill
2½		47 50	0.0	4"	GW Same as above 2-2½'
3					NOT LOGGED
3½		69 75	0.0	6"	GW Same as above 2-2½'
4½		26-39-41		0	No Recovery
6		45 80	0.0	6"	GW medium sand with gravel and cobbles, some fines. poorly sorted. very wet. Loose. Light olive gray
7		70 80	0.0	9"	0-9" GW ~~sand~~ medium grained sand with some silt, gravel and cobbles. Poorly sorted. wet. Loose. Light olive gray. 0-5" increased fines
8		17 18 20	0.0	6"	0-6" GW medium grain sand with some silt/cobbles/gravel. poorly sorted. very wet. Light olive gray. Loose. @ 0-2" increased fines
9					

Geologist's Signature Salamah Magnuson Date 1/29/01 Reviewer _____ Date ___

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-115-S
Facility: GTT Kent
Project: Supplemental Offsite Char...

Date: 1/29/01

Field Geologist: Salamah Magnuson

Location Type: X Soil Boring Only X Well _ Test Pit

Drilling Method: ~~Geoprobe~~ Limited Access

Sampling Method: 1.5", 2" Diameter Split spoon ~~2.1" diameter acetate liners~~

Total Depth: 15.0

40 lb hammer
8.25"
14.25"

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (Inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' / 9½ – 11		11 15 17	Breathing Zone: In-Spoon: Headspace: 0.0	12"	0-12" GM Same as above S-9 (0-6") Increased fine sand grains.
11 – 12		44 50	0.0	9"	0-5" GM Same as above S-9 (0-6") Increased fine sand grains. 5-9" GM fine sand with silt, coarse sand and gravel smear. Wet. soft. loose. poorly sorted. Dark gray. Little to no gravel in center of sample.
12½ – 13½		24 50	0.0	poor recovery	GM fine sand with coarse and medium sand, silt, and gravel. Poorly sorted. Very wet. Soft, loose Dark gray. Mostle sand and silt.
13½ – 15		10 10 10	0.0	12"	0-4" GM ~~Sm~~ coarse and medium grained sand with gravel, and silt. Poorly sorted. wet. very loose. Dark gray. 4-12" SM silty sand. Fine grain sand. ~~Moderately~~ poorly sorted. 50-50 sand to silt. moist to wet. loose. Dark gray.
					Total Depth = 15.0

Geologist's Signature: Salamah Magnuson Date: 1/29/01 Reviewer: ______ Date: ____ Pg 2 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-11S-I-i
Facility Kent
Project Well Installation

Date 1/30/00

Field Geologist Salamah Magnuson

Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method 14.25" OD x 8.25" ID Limited Access 140 lb. Hammer

Sampling Method 1.5', 2" Split Spoon

Total Depth 17'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		NOT LOGGED Asphalt / Fill
2		100 for 6"		Poor recovery	0-2" GW medium grained sand with few fines, some gravel, and pebbles. Very loose. Dry. poorly sorted. Greyish black Fill
2.5					NOT LOGGED - FILL
6.5-10		12 14 22 18		9"	0-9" Same as above, with GW few cobbles. throughout, ML chunks. Silt with some fine sands and clay. 50-20-30. Moderately sorted. Moist to dry. Medium stiff. Dark gray.
7.5					NOT LOGGED
8.0		5 5 7		12"	0-2" GW Sand (medium grain) with gravel, silt, pebbles. poorly sorted. Dry. Dark gray. Loose. ML chunks throughout. 2-12" ~~MCL~~ clay with some silt and fine sand. Moist. well sorted. Stiff. Dark gray.
9.0 1+ Bottom 12.5					NOT LOGGED
		100 for 6"		12"	~~SC~~ 0-11" SC fine sand with very fine sand and silt. moderately sorted. Moist to wet. Loose to slightly dense

Geologist's Signature Salamah Magnuson Date 1/31/00 Reviewer _____ Date _____ Pg 1 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-118-I-1
Facility: Kent
Project: Well Instal.

Date: 1/30/01

Field Geologist: Salamah Magnuson

Location Type: ✓ Soil Boring Only ✓ Well _ Test Pit

Drilling Method: 14.25" OD, 5.25" ID Limited Access 140lb Hammer

Sampling Method: 1½', 2" PVC Split Spoon

Total Depth: 17'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'	PHOTO		Breathing Zone: In-Spoon: Headspace:		Dark gray. Red and white specs 11-13" ML in shoe, pushed down from...
13		30-50		12"	0-12" SC Same as above. Wet
14					NOT LOGGED
14.5		9-12-14		12"	0-12" SC Same as above wet
15.5					NOT LOGGED
16	PHOTO	10 12 11		12"	0-6" SC Same as above. Wet 6-12" CL Clay with few silt. Well sorted. Wet. Stiff. Dark gray. Woody debris.
17					Total Depth 17' bgs

Geologist's Signature: [signature] Date 1/30/01 Reviewer ________ Date ____ Pg 2 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID	MW-17C-I1
Facility	Kent
Project	Well Install
Location Type:	__ Soil Boring Only X Well __ Test Pit
Total Depth	14'
Date	2/12/01
Field Geologist	Tanya Grey / Salamali Magnuson
Drilling Method	8.25"OD, 11.25"OD 75 CME, 300lb Hammer
Sampling Method	2' x 2.5" Split Spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Fill not logged.
5			0	12"	0-10" GW gravel, cobbles, sand poorly sorted. Dark gray wet. Loose. Fill 10-12" ML CL clay with some silt. Well sorted. Medium gray Dry. Medium stiff. Red streaking throughout.
6			0	24	0-9" Bentonite seal 9-14" CL olive grey, few visable grains, moist, well sorted, dense, not plastic 14-24" CL olive grey with moderate brown streaking, moist-dry, slightly plastic, very well sorted, no visable grains, med dense
8			0	24	0-3" bentonite seal 3-7" CL olive grey with moderate brown streaking, wet, plastic, very well sorted, med dense 7-24" SM sandy silt getting sandier towards bottom, olive grey, fine-very fine, wet, moderately well sorted, med. dense
10					

Geologist's Signature [signature] Date 2/12/01 Reviewer ______ Date ____ Pg 1 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-120-T1
Facility Kent
Project Well Installation
Location Type: Soil Boring Only X Well Test Pit

Date 2/12/01
Field Geologist Tasya Gray / Salamah Alagha
Total Depth 19'
Drilling Method 75 CME 300 lb Hammer
Sampling Method 2" x 2" split spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
10 — 0.0'			Breathing Zone: In-Spoon: Headspace: 0	24	0-14" SM silty sand ~50/50%, wet, medium dense, olive grey, fine-very fine, well sorted 14-24" SP well sorted sand with a little silt content, wet, medium dense, olive grey-black, fine grained
12'			0	21	0-5" SP same as above (10-12', 19-24") 5-6" ML silt lens 6-13" SP same as above (10-12', 19-24") 13-21" ML silt, moist, olive grey, medium dense, very well sorted,
14'		7 12 15 18	.1	24	0-8" SM sandy silt, wet, fine-very fine, olive grey, well sorted, medium dense 8-23" ML medium dense clayey silt, slightly plastic, but still cracks as it's molded, moist, very well sorted 23-24" SM sandy silt/silty sand, olive grey, fine-very fine, moderately well sorted, moist,
16'					

Geologist's Signature [signature] Date 2/12/01 Reviewer _____ Date ____ Pg 2 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-120-I1
Facility Kent
Project well Installation

Date 2/12/01

Field Geologist Tasya Grey / Salamah Magnuson

Location Type: _ Soil Boring Only X Well _ Test Pit

Total Depth 18

Drilling Method 7.5 CME 300lb hammer

Sampling Method 2'x2" split spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
16' 0.0'		7 12 15 18	Breathing Zone: In-Spoon: Headspace: 0	16	0-11" SM silt with a little fine sand, olive grey, well sorted, moist, soft 11-16" ML silt, olive grey, very well sorted, dry-moist, medium dense
18					

Geologist's Signature Tasya N. Grey Date 2/12/01 Reviewer _____ Date ___ Pg 3 of 3

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-120-I2
Facility: GT Kent
Project: Supplemental Offsite Char
Location Type: __ Soil Boring Only X Well __ Test Pit

Date: 2/15/01
Field Geologist: Saloma Magnuson
Drilling Method: ~~Geoprobe~~ 75 CME 3000 Hammer 8.25"OD 14.25"OD
Sampling Method: 2' x 1.5" Split Spoon ~~2', 1" diameter acetate liners~~
Total Depth: 28.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (Inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' (0)			Breathing Zone: In-Spoon: Headspace:		NOT LOGGED
18				24"	0-3" Bentonite 3-15" ML Silt with some clay. 70-30 Moderately Sorted. Dark Medium gray. wet. Medium ~~soft~~ Stiff. 15-17" SP fine sand well sorted wet to moist. Olive black. Medium dense. Red and white specs. 17-22" CL clay with no silt. well sorted. medium olive gray. moist. Medium Stiff. 22-24" ML Silt with very fine Sand. 75 35 Moderately sorted. Dark gray. moist. Medium Stiff.
20				24"	0-24" SP fine Sand with little silt. 90 10 well sorted. Olive black. wet. Loose @ 4-15" slight increase in silt.
22				24"	0-18" Same as above. 18-24" ML Silt with some clay. 65-35 Moderate to poorly sorted. moist. Medium stiff. Medium gray.
24					

pattern of silt

Geologist's Signature: Saloma Magnuson Date 2/15/01 Reviewer ______ Date ____ Pg 1 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-12-T7
Facility GT
Project Supplemental Offsite Char
Location Type: __ Soil Boring Only X Well __ Test Pit

Date 2/15/01
Field Geologist Salamah Magnuson
Drilling Method 7.5 CME 8.25" 14.25" Geoprobe Sampling Method 2' x 2.5" Split Spoon 2,1" ~~diameter acetate liners~~
Total Depth 25.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
24 0.0'			Breathing Zone: In-Spoon: Headspace:	24"	0-11" SP. Same as above 20-22" 22-24" @9-11" increasing silt 11-21" CL clay well sorted. Dry. Very stiff. Medium gray. @ 11-15 increased silt.
26				24"	0-18" ~~SM~~ SW sandy silt with clay. Poorly sorted. Increase in silt with depth. Dark medium gray. Wet. Loose. 18-24" ML silt with some clay. 85-15. Well sorted. Medium gray. Wet
28				24"	0-3" SP fine sand. few silt. well sorted. wet. Loose. Olive black. Red and white specs 3-5" CL Clay. well sorted. wet. Medium stiff. Medium gray. 5-18" SM silt with fine and very fine sand. Poorly sorted. 65-35. Dark medium gray. Moist to wet. Loose. 18-24" ML silt with increasing clay with depth. Moderately sorted. Medium gray. Medium stiff. Moist.
30					

Geologist Signature _____ Date ____ Reviewer _____ Date ____ Pg 2 of 2

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-22-I
Facility Kent
Project Well Installation

Date 2/6/01 Surfaced
Field Geologist Salama Magnuson
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method HSA 14.25" OD 750 CME Safety Hammer
Sampling Method 18" x 2" Split Spoon
Total Depth 21.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (Inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		Fill. NOT Logged.
3.5		2 3 3 4	0.0	20"	ML silt with some clay. Well Sorted. Dry. Medium gray. Very Stiff. Red Brown discoloration on out side of sample. 8-20" CL clay with little to no silt. Well sorted. Dry. Very stiff. Light gray with Red brown discoloration throughout.
5.5		3 3 3 4	0.0	18"	0-18" CL Same as above 3.5-5.5' (8-20"). @ 3-4" Moist. Soft
7.5		3 2 2 5	0.0	14"	0-2" CL Same as above. 3.5-5.5 (8-20") Increase in silt. 2-14" ML silt with some clay. 60-40. Moderately Sorted. Wet. Medium Stiff to soft. Medium gray with light brown discoloration.
9.5		6 6 7 7	0.0	18"	0-16" ML silt with few clay. 75-25. Well sorted. Moist. Medium stiff to soft. Appears Dark yellowish brown, a mix of the light brown and dark gray

Geologist's Signature [signature] Date 2/6/0 / Reviewer _____ Date ____ Pg 1 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-122-I-2
Facility Kent
Project Well Inst

Date 2/7/01

Field Geologist Salomah Magnuson

Location Type: __ Soil Boring Only X Well __ Test Pit

Drilling Method 14.25"OD, 8.25"OD 75 CME, Scalls Hammer

Sampling Method 2'x2" Split Spoon

Total Depth 20.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		16-18" ML Silt with Clay. 60-40, Moderately sorted. wet, Soft. Dark yellowish brown.
11.5		8 9 6 8	0.0	20"	0-12" ML Silt with few clay 80-20 well sorted. ~~wet~~ wet, soft. Dark yellowish brown. 12-20" SM Silty Sand. Fine Sand with some silt. 65-35. ~~Moderately~~ Poorly sorted. wet. soft / Loose. Dark gray. Red and white specs ~~organic woody debris~~
13.5		5 5 12 20	0.0	24"	0-6" SM same as above. 11.5-13.5 (12-20") 6-20" ML Silt with some clay. 65-35 Poorly sorted. Moist to wet. Medium gray. Moderately stiff. 20-24" ML Silt with little to no clay. 80-20. well sorted. Moist. soft to moderately stiff.
15.5		7 14 15 14	0.0	24"	0-7" SM Sandy silt. Silt with very fine sand and some clays. Poorly sorted. very wet very soft. Dark yellowish brown, Stiff? 7-9" ML Silt with some clay. 65-35. Poorly sorted

Geologist's Signature [signature] Date 2/7/01 Reviewer ______ Date ____ Pg 2 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-122-I-2
Facility Kent
Project Well Install

Date 2/7/01

Field Geologist Stomah Magnuson

Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method OD 14.25" ID 8.25" 75CME, 300# Hammer

Sampling Method 2' X 2" Split Spoon

Total Depth 20.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		9-24" SW/SM Silty Sand fine sand with few silt. Moderately sorted. Moist to wet. ~~Soft~~ ~~Loose~~ Medium gray.
17.5		3 3 4 8	0.0	24"	0-11" SM sandy silt and clay. 10-75-15. Poorly sorted. Very wet, soupy. Very soft. Dark yellowish brown. Sluff? 11-18" SW fine sand with silt and clay. Poorly sorted. Very wet. Loose, very soft. Medium gray. Red and white specs. 18-22" ML Silt with some clay. 65-35. Poorly sorted. Dry. Stiff. Medium gray with light brown streaks wood debris. 22-24" SP fine sand with few fines. moist. Loose. Well sorted. Olive black. Red and white specs
19.5		6 5 8 9	0.0	24"	0-8" SM Sandy silt and clay. Poorly sorted. Very wet. Very soft. Dark yellowish brown.

Geologist's Signature [signature] Date 2/7/01 Reviewer ______ Date ____ Pg 3 of 4

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-122-R2
Facility: Kent
Project: Pit/Well Inst.

Date	Field Geologist	Location Type:
2/7/01	Salamah Magnuson	_ Soil Boring Only ✓ Well _ Test Pit

Drilling Method	Sampling Method	Total Depth
14.25" OD, 8.25" OD 75 CME, 300lb Hammer	2' x 2" Split Spoon	29.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		8-24" SW fine sand with some silt. 75-25, medium sorted. Moist to wet. Loose. Olive black. Red and white specs.
29.5					Total Depth = 29.5'

Geologist's Signature: [signature] Date: 2/7/01 Reviewer ____________ Date ____ Pg 4 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-127-S
Facility KENT
Project WELL INSTALLATION

Date 2/01/01

Field Geologist SALAMAH MACARISCIN

Location Type: X Soil Boring Only X Well _ Test Pit

Drilling Method GEOPROBE LAR - HSA, 4 1/4" ID

Sampling Method 1.5 x 2.0 Split Spoon

Total Depth 7.0

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 0.0'			Breathing Zone: In-Spoon: Headspace:		NOT LOGGED - FILL
2.5					NOT LOGGED
3.0		39 30 29	104	12"	0-12" GM SAND + SILT W/GRAVEL + COBBLES. COBBLES ARE SUB-ROUND. POOR/Y SORTED. DRY. GREENISH BROWN WITH SOME GREEN STREAKS. INCREASED FINES TOWARDS THE BOTTOM.
4.0		15-21-39		NO RECOVERY	NOT LOGGED
6		6 9 7	.00	12"	0-7" SM Silty sand. Very fine sand fine sand with silt, few clays. Moderately sorted. Moist to wet. Medium dense. Medium dark gray. Organic matter, roots. 6-12" CL clay with some silt. Well sorted. Dry. Very stiff. cracks open. Light olive gray to medium gray.
7					Total Depth = 7.0

Geologist's Signature [signature] Date 2/1/01 Reviewer _____ Date ___ Pg 1 of 1

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW 123-I-2
Facility: Kent
Project: Well Installation

Date: 1/31/01

Field Geologist: Sabinah Magnuson

Location Type: X Soil Boring Only X Well _ Test Pit

Drilling Method: Limited Access 140 lb Hammer 1425' 07

Sampling Method: 1½", 2" Split Spoon

Total Depth: 26.5'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 — 0.0'			Breathing Zone: In-Spoon: Headspace:		NOT LOGGED FILL
3		17 21 24 24	.02	12"	0-12" GM Sand and silt with gravel and cobbles. Cobbles are round. Poorly sorted. Dry. Very loose. Greenish black with dark gray and dark greenish gray streaks. Increased fines at the bottom
4					NOT LOGGED
4.5	PHOTO	7 10 11	0.0	12"	0-4" GM Same as above. 4-8" SM Sandy silt, 60-40 sand to silt. Moderately sorted. Moist. Soft. Dusky brown. 8-12" SP Fine sand with very fine sand. Moderately sorted. Moist-wet. Loose to medium dense. Olive black very fine red and white specs.
5.5					NOT LOGGED
(cont)		12 13 15	0.02	Poor recovery 4"	0-4" ML Clay with few silt. Well sorted. Soft. Moist. Medium dark gray with moderate brown streaks. Silt (gravel, sand).
7.0					

Geologist's Signature: [signature] Date 1/31/01 Reviewer ____________ Date ____ Pg 1 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: [illegible] MW-123-[illegible]
Facility: Kent
Project: Well Install

Date: 1/31/01
Field Geologist: Salonek/Magnuson
Location Type: Soil Boring Only X Well _ Test Pit

Drilling Method: 4.25"ID, 8.25"OD Limited Access 140 lb Hammer
Sampling Method: 1½, 2" Split Spoon
Total Depth: 26.5'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' – 7.5			Breathing Zone: In-Spoon: Headspace:		NOT LOGGED
7.5 – 8.5	Photo	10 10 10	0.0	12"	0-12" ML Same as above. No silt 10% clay. Orange Streaks.
8.5 – 10		15-15-15		No Recov.	NOT LOGGED
10 – 10.5		60 for 6"	0.0	12"	0-12" SM matrix with ML/CL throughout. SM Sandy silt 70-30% silt to sand. Moderately Sorted. Wet. Soft. Dark gray. Few clay. ML Silty clay. Clay with some silt. Moderately sorted. Soft. wet. Dark gray and moderate brown.
10.5 – 11					NOT LOGGED
11 – 12		19 12 12	0.0	12"	0-12" SM/ML Silt with few very fine sand and clay. Well sorted. Wet. soft-loose. Dark gray.
12 – 15					NOT LOGGED
15 – [illegible].5		5 5 5 5	0.0	12"	0-12" ML Silt with some clay. 60-40 silt to clay. Well sorted. wet. Medium stiff. Dark gray. Black organic matter
[illegible].5		3-4-4-3			NOT LOGGED

Geologist's Signature [signature] Date 1/31/01 Reviewer ______ Date ____ Pg 2 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-123-I-2
Facility Kent
Project Well Install

Date 1/31/01
Field Geologist Salamunic/Magnuson
Location Type: X Soil Boring Only X Well _ Test Pit
Drilling Method 14.25" OD, 8.25" ID Limited Access HSA ID Hammer
Sampling Method 1.5', 2" SPT-1 Spoon
Total Depth 26.5'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
15 — 0.0'			Breathing Zone: In-Spoon: Headspace: 0.02	12"	0-12" CL Clay with little to no silt or very fine sand. well sorted. wet. Stiff. ~~Dark~~ Medium gray. Organic orange and black
16					NOT LOGGED
16.5		2 2 5	0.0	12"	0-12" CL Same as above. Bottom of shoe: SM/ML silt with very fine sand.
17.5					NOT LOGGED
1		PHOTO 5 18 20	0.0	12"	0-8" CL Same as above. very stiff. Dry-moist. 8-12" SM very fine sand with some fine sands and little to no clays. Poorly sorted. wet. Loose to medium dense sand. Grayish black.
Bottom of Silt 19					NOT LOGGED
19.5		12 19 22	0.0	12"	0-12" ~~SM~~ SP fine Sand with little to no Silt. well graded. wet. Loose to medium dense. Grayish black. Red and white specs. CL stiff on top.
20.5					NOT LOGGED
21.0		28 50	0.0	12" (heaving Sands)	0-12" SP Same as above.
21.5					

Geologist's Signature [signature] Date 1/31/01 Reviewer _____ Date _____ Pg 3 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: ML-123-C-2
Facility: Kent
Project: Well Inst

Date: 1/31/01

Field Geologist: Salamah Magnuson

Location Type: ✓ Soil Boring Only ✓ Well _ Test Pit

Drilling Method: Limited Access 140 lb Hmr

Sampling Method: 1.5" 2" Split spoon

Total Depth: 26.5

(margin: 1.5" OD / 2.5" OD)

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
~~5 to~~ 0.0' 22.5	~~Water D25 13 1000~~		Breathing Zone: 0.0 In-Spoon: Headspace:	12"	0-12" SP Same as above.
					NOT LOGGED
23.0		8 10 11	0.0	12"	0-12" SP Same as above. Slight increase in silt.
24.0					NOT LOGGED
24.5	PHOTO	6 6 6	0.0	12"	0-6" SP Same as above. 6-12" CL clay with few to no silt. Well sorted. Moist. Medium stiff. Medium dark gray with brownish gray streaks. Organic woody debris.
25.5					NOT LOGGED
26		16 25 26		12"	0-11" SP fine sand with little to no ~~fine~~ silt, well sorted. Wet. Loose to medium dense. Grayish black. Fine Red and white specs. 11-12" (and shoe) ~~CL~~ SM Silty clay. Clay with some silt. 70-30. Moderately sorted. Very dry. Very stiff. Medium light green with grayish blue green streaks.
~~26.5~~					Total Depth 26.5'

Geologist's Signature: [signature] Date 1/31/01 Reviewer ________ Date ____ Pg 4 of 4

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID ~~MW-702 E5~~ 124-~~I-7~~
Facility Kent
Project Well Install
Location Type: _ Soil Boring Only X Well _ Test Pit

Date 2/5/01
Field Geologist Salamah Magnuson
Total Depth 18'
Drilling Method 14.25" OD, 8.25" OD Limited Access, 140 lb hammer
Sampling Method 2' x 2.5" Split Spoon

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' (0)			Breathing Zone: In-Spoon: Headspace:		Fill not logged
5			0	18"	ML - grading finer to bottom. silt w/ fine sand silt 60%, 25% fine sand 15% clay med gray, mottled at bottom
7			0	Poor recovery	Bentonite chips
9					NOT LOGGED
5			0	12"	0-2" CL Clay with some silt. 75-25. Moderately sorted. Moist to wet. Medium stiff. Medium gray. 2-12" SM sandy silt. Silt with some fine sand. poorly sorted. wet - moist. ~~Loos~~ Medium dense. Dark gray. Organic roots.
10.5					NOT LOGGED
11.0			0	12"	0-12" same as above. Increase in silt. wet.
12.0					NOT LOGGED
12.5			0	12"	~~Silt~~ 0-12" SW fine sand with some silt. Poorly sorted. Very wet. Very loose. ~~Gr~~ Dark gray. Increasing sand.
13.5					

Geologist's Signature [signature] Date 2/8/01 Reviewer [signature] Date 2/12/01 Pg 1 of 2

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID MW-134-2-I
Facility Kent
Project Well Installation

Date 2/8/01
Field Geologist Salamah Magnuson
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method 140lb Hammer Limited Access 1.D. 25"OD 5.25"OD
Sampling Method 1.5'x2" Split Spoon
Total Depth 18'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
13.5 0.0'			Breathing Zone: In-Spoon: Headspace:		NOT Logged
14.0			0	12"	0-12" SW Same as above.
15.0					NOT LOGGED
15.5			0	12"	0-5" SW Same as above. Increase sand. 5-12" ML Silt with some Clay. No Sand. 60-40. Poorly sorted. Dry. Stiff. Dark gray.
16.5					
17.0					NOT LOGGED
			0	12"	0-6" SM Sandy Silt. Silt with some sand. Poorly sorted. Wet. Loose. Dark gray.
18.0					Total Depth 18'

Geologist's Signature Salamah Magnuson Date 2/8/01 Reviewer [illegible] Date 2/12/01 Pg 2 of 7

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-175-I
Facility: Kent
Project: Well Install

Date: 2/13/01
Field Geologist: Salamah Magnuson
Location Type: _ Soil Boring Only X Well _ Test Pit

Drilling Method: CD 1425" OD 5.25" 75 CME, Split Hammer
Sampling Method: 2'x1.5" Split Spoon
Total Depth: 30.5'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
20.5					
0.0'		3	Breathing Zone:	24"	0-3" CL clay. well sorted. very wet. very soft. medium gray.
		4	In-Spoon:		3-8" SM silty sand. Fine sand. Poorly sorted. wet. Loose. Dark medium gray
		4	Headspace:		8"-21" CL/OL clay with woody debris throughout. few silt. well sorted. Moist. Stiff. Medium gray with gray is brown by wood.
		7	0		21-24" SM silty sand. Fine sand with silt 65-35. Poorly sorted. Moist. Medium dense. Dark medium gray
22.5					
		8	0	24"	0-12 SM same as above. wet, very wet. soft.
		11			12-22" SP fine sand little to no silt. well sorted. wet. Loose to medium dense. ~~Dark medium gray~~ SM Olive black. Red and white specs.
		15			22-24" ML silt with some clay and fine sand. Poorly sorted. Moist. Medium Stiff. Dark Medium gray.
		20			
24.5					

Geologist's Signature: [signature] Date ___ Reviewer _____ Date ___ Pg 3 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: MW-125-I'
Facility: Kent
Project: Well Installation

Date: 2/13/01

Field Geologist: Salamah Magnuson

Location Type: _ Soil Boring Only Y Well _ Test Pit

Drilling Method: 4.25"OD, 8.25"OD 7.5 CME, 300lb Hammer

Sampling Method: 2' x 1.5" Split Spoon

Total Depth: 30.5'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (Inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
24.5 0.0'		4 4 4 4	Breathing Zone: In-Spoon: Headspace: 0	20"	0-8" SP fine sand with some to few silt. Moderately sorted. wet. loose. Olive black. 6 8-16" SM/ML Sandy Silt. Silt with some sand, 70-30. Moderately sorted. Moist. Loose. Dark medium gray. 16-20" ML Silt with some clay. well sorted. Moist. Medium stiff. Medium gray.
26.5		2 3 5 6	0	24"	0-6" ML same as above. 6-24" CL Clay with few silt. well sorted. Medium gray/Moist to dry. with greenish gray hue. Organic weedy debris
28.5		3 4 4 5	0	24"	0-20" ML Silt with clay. 50-50. Poorly sorted. wet. Medium stiff. organic woody debris throughout. Dark medium gray. @ 3-5" Greenish gray. 20-24" ML Silt with little clay. 75-25 Moderately sorted. Wet. Dark medium gray. Medium stiff.
30.5					

Geologist's Signature: [signature] Date ___ Reviewer _____ Date ___ Pg 4 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: AW-125-T
Facility: GTK-ALT
Project: Supplemental Offsite Char

Date: 2/13/01
Field Geologist: Salamah Magnuson
Location Type: _ Soil Boring Only ✓ Well _ Test Pit

Drilling Method: ~~Geoprobe~~ 75CME 300 D Hammer
Sampling Method: Split Spoon 2', 1" diameter ~~acetate liners~~
Total Depth: 30.5'

14.25" OD
3.25" OD

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
30.5 0.0'	Photo	4 10 14 20	Breathing Zone: In-Spoon: Headspace: 0	24"	0-20" CL clay with some silt 85-15. well sorted. moist ~~to~~ medium dense. Organic debris throughout. medium @ 12-~~24~~" gray ~~silt with clay~~ an increase in silt. 20-24" SP medium grain sand. no fines. well sorted. loose. Moist to wet. Olive black. Red and white specs.
?.5					Total Depth

Geologist's Signature [signature] Date ____ Reviewer ____________ Date ____ Pg 5 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-126-I
Facility Kent
Project Well Install / RI 2

Date 11/21/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2'x1" acetate liner
Total Depth 28

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 0.0'			Breathing Zone: In-Spoon: Headspace: 0	9	0-2" surface soil GP, sandy gravel 2-2.5" wood debris 2.5-9" GP sandy gravel, dry, loose, very fine sand to coarse gravel 5/2 2.5Y color poorly sorted
2	MW-126-I-2-4-1102			8	geotech sample - appears to be fill material (gravelly sand)
4			0 0.1	4	0-4" SM very fine sand w/ some silt, very loose, dry moderately sorted, root debris, 5/4 10YR color, 4-6" SM same as above but wet, very fine sand w/ some silt 6-8" SM ~~SP~~ silty sand, high organic content, very wet, poorly sorted, lots of wood/twig debris medium dense, 2.5/10Y GLEY 1 color very fine-fine sands ± silt
▽					SM silty sand w/ some mottling in shoe of sample, moist
6					

Geologist's Signature [signature] Date 11/21/02 Reviewer _____ Date _____ Pg 1 of 7

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID: MW-126-I
Facility: Kent
Project: Well Install/RI 2

Date: 11/21/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2'x1" alltate liner
Total Depth: 28

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace: 0 0.2	12	0-1" SP medium-coarse sand, 3/10Y GLEY 1, wet, loose, poorly sorted, few fines 1-3" SM/ silt w/some ~~few~~ fine grained sand, poorly sorted, 4/3 2.5Y, dry-moist, medium dense, 3-4" ~~ML~~ CL clayey silt, moist, medium stiff, well sorted, slight mottling, 4/3 2.5Y color 4-12" CL clay w/ a little silt, stiff, lots of mottling, very well sorted, plastic, moist, little cementations (orange nuggets)
8				14	geotech sample (looks like silt in shoe)
10			0 0	18	0-8" SM sandy silt, wet, very fine sand & silt, 3/5 GY color, soft, moderately well sorted

cont

Geologist's Signature: Tasya Gray Date 11/21/02 Reviewer _____ Date ____ Pg 2 of 7

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-126-I
Facility: Kent
Project: Well Install / RI 2

Date: 11/21/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: ✓ Soil Boring Only _ Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2' x 1" acetate liner
Total Depth: 28

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		8-11" SM silty sand, same as above but higher sand content, soft, loose, wet, moderately sorted 11-16" SM sandy silt, wet, very fine sand & silt, 3/5 GY color, soft, moderately well sorted 16-18" SM silty sand, same as above w/ higher sand content, soft, loose, wet, moderately sorted
12'			0	18	0-2" SP fine & very fine sand, medium dense, wet, moderately sorted, 3/5 GY color, red & white specks 2-10" SP gets finer, still sand though, 10-15" SM silty sand, fine-very fine sand & silt loose, wet-very wet, moderately sorted, 3/5 GY, red & white specks still visable 15- ML Silt w/ little sand, stiff, moist, well sorted 3/5 GY
14'					

Geologist's Signature: Natasya M Gray Date 11/21/02 Reviewer _____ Date ____ Pg 3 of ~~6~~ 7

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-126-I
Facility: Kent
Project: Well Install / RI 2

Date: 11/21/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2' x 1" acetate liner
Total Depth: 28

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
14' 0.0'			Breathing Zone: In-Spoon: Headspace: 0	12	0-6" ML silt w/ little- no sand, moist, ~~stiff~~ medium stiff, well sorted, 3/5 GY color 6-6.5" piece of wood intact 6.5-7.5" ML silt as above moist, little to no sand well sorted, medium stiffness, 5/5 GY 7.5-12" CL grades to silty clay, moist, soft, wetter than above, well sorted, organic material towards bottom, little to no sand 3/5 GY color GLEY 1
16'	MW-126I-16-18-1102				Collected for geotechnical analysis. Appeared to be silt and clay
18'			0 0	20	0-3" CL soft wet clay, uniform color, some organics, very smooth, no sand, very well sorted 3/5 GY GLEY 1 plastic

cont

Geologist's Signature: [signature] Date: 11/21/02 Reviewer _____ Date ____ Pg 4 of 7

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-126-I
Facility: Kent
Project: Well Installation RI2

Date: 11/21/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2'x1" acetate liner
Total Depth: 28

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
cont 0.0'			Breathing Zone: In-Spoon: Headspace:		3-~~4~~" CL medium stiff clay, 14' less wet, white chunks very small - 1cm diameter, very well sorted otherwise, no sand, no mottling decaying organic matter perhaps, as it appears to follow organic matter mostly in 9-14" interval
					~~9-14~~" TG
					14" ~~SM~~ -20" SM very fine-fine silty sand, moderately well sorted, medium dense, wet, 3/10 Y GLEY 1 some red specks visable
20'	MW-126I -20-22- 11.02			24 but compacted liner somewhat	SP fine sand w/ a few very fine & medium grains, dense, very wet, red & white specks, moderately sorted 3/10 BG GLEY 2 color
					Sent for geotechnical analysis, logging from portion in shoe
22'					

Geologist's Signature: Natasya N Gray Date 11/21/02 Reviewer _____ Date ____ Pg 5 of 7

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-126-I
Facility Kent
Project Well Install RI2

Date 11/21/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 28

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
22' 0.0'			Breathing Zone: In-Spoon: Headspace: 6	26	0-12" SP same sand ~~to TG~~ wet, medium dense, fine grained w/ few medium & very fine, little to no silt, 3/10 BG GLEY 2 color moderately sorted (red & white specks) 12-16" SM sandy silt w/ alot of organic matter, soft, wet, sand is very fine, moderately well sorted 16-20" SP sand w/ lots of, organic matter, wood & roots, medium dense wet, moderately sorted, mostly fine grained, red & white specks
24			0 0	20	0-21" SP wet sand, mostly fine grained, medium dense, becoming slightly coarser @ ~12", moderately sorted, 3/10 BG GLEY2 with red & white specks

cont

Geologist's Signature Tasya Gray Date 11/21/02 Reviewer _____ Date ____ Pg 6 of 7

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-126-I
Facility Kent
Project Well Install RI 2
Location Type: X Soil Boring Only _ Well _ Test Pit
Total Depth 28'

Date 11/21/02
Field Geologist Tasya Gray / Amy Sidell
Drilling Method Geoprobe
Sampling Method 2'x1" acetate liner

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' (cont.)			Breathing Zone: In-Spoon: Headspace:		21-24" SM silty sand, wet, medium dense, moderately well sorted, fine - very fine sand & silt, red & white specks still present, 3/10 BG GLEY2
26'			0	19	0-3" ML silt, medium stiff, wet, well sorted, no sand, 3/10g
			0		3-7" ML Clay silt grading to silty clay, moderately well sorted, organic fragments, medium dense 7-19" OH organic silty clay medium dense poorly sorted no sand ton of organic matter, moist (Picture)
28'					bottom of boring

Geologist's Signature Amy Sidell Date 11/21/02 Reviewer _____ Date ___

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-127-S
Facility: Kent
Project: Well Install RI 2

Date: 11/19/02
Field Geologist: Amy Sidell / Tasya Gray
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2'x1" acetate liner
Total Depth: 8'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 0.0'			Breathing Zone: In-Spoon: 0 Headspace:	12"	2" asphalt GP gravel with a little coarse sand, loose, dry, poorly sorted (fill) gravels are coarse
2'			1.1	6"	GP gravelly sand, slightly moist, loose, poorly sorted (fill) (not enough for sample) sands are med-coarse, gravels are coarse
4'					no recovery
6'	MW-127-S 6-8-1102			10"	SM fine sand, moist, well ~~graded~~ sorted 0-10 dense, 2/1 10YR silty clay in shoe; mottles, well sorted, stiff
8'					

Geologist's Signature: Amy Sidell Date 11/19/02 Reviewer _____ Date ____ Pg 1 of 1

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-102-S
Facility Kent
Project Well Install / RI 2

Date 11/19/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 7 ft bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0					
0.0'	MW-102-S 0-2-1102		Breathing Zone: In-Spoon: Headspace: 1.0	12	0-6 GP gravelly sand, organic matter loose, moist, poorly sorted 6-10" grading to larger gravel pieces 10-12" mostly gravel, little sand looks like regular fill, grey loose, dry
2'	MW-102-S 2-4-1102		0	9"	6-9" poor recovery due to gravelly fill GP grading to GM; moist, loose, poorly sorted, 4/2 7.5 YR
4'	MW-102-S 4-6-1102		1.4	13"	0-3 GP sandy gravel 4/2 7.5YR poorly sorted loose moist 3-11" SM silty sand, moist, med. stiff/dense, interbedded with thin layers (<0.5cm) of clay & silt; 3/10G gley2 11-13' ML silt, 3/10G gley2 moist, med. stiff, well sorted (looks like going to start raining - moisture influences PID)
6'			1.3	8"	0-8" ML silt w/clay, med plasticity, 5/10 Y gley 1; moist, med dense, with mottles (small) slight sheen noted in top 2", small fine sand stringer at 8"
7'					

Geologist's Signature Amy Sidell Date 11/19/02 Reviewer _____ Date ____ Pg 1 of 1

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-123-S
Facility Kent
Project Kent well inst. 2002

Date 11/19/02
Field Geologist Amy Sidell / Tasya Gray
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method geoprobe (PSC)
Sampling Method 2' acetate liners 1"d.
Total Depth 2.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:	12"	4" asphalt GP gravel w/a little sand, too rocky to get good recovery or to sample, dry, loose, poorly sorted
1.4"					moved to new hole b/c got refusal
0.5'					GP gravel w/a little sand, dry loose, poorly sorted
2.5				1-10-03	Refusal again. No sample recovery. Unable to sample this location due to fill material. Geoprobe rods cannot penetrate the rocks

Geologist's Signature [signature] Date 11/19/02 Reviewer _____ Date ____ Pg 1 of 1

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID	MW-128-I
Facility	Kent
Project	Well Install RI2
Date	11/21/02
Field Geologist	Tasya Gray / Amy Sidell
Location Type:	X Soil Boring Only _ Well _ Test Pit
Drilling Method	Geoprobe
Sampling Method	2' x 1" acetate liner
Total Depth	29

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 0.0'			Breathing Zone: In-Spoon: Headspace: 0 .6	11	0-3" surface soil GP moist rooty organic matter, fine gravel, dark brown 3-11" GP very fine sand & silt up to gravel (fine-coarse), poorly sorted, dry, loose, 5/3 10YR
2'	MW-128I-2-4-1102		0 1.1	11	Sent for geotechnical analysis. Appears to be dry gravelly sand first 6" & moist-wet brown clay/silt material last 5". Shoe had CL silty clay, moist, well sorted, no sand, mottling, medium stiff, 3/1 10YR
4'					no sample due to seal
5'			~0.2	14	0-5" SM sandy silt, moist, medium stiff, poorly sorted, mostly silt & very fine sand w/some fine sand 4/5GY GLEY1 5-5.5" organic CL w/a little sand, soft, wet, brown

Luis Sebastian La Rosa III 1-10-03

cont -

Geologist's Signature Natasya Gray Date 11/21/02 Reviewer ______ Date ____ Pg 1 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-128-I
Facility Kent
Project Well Install/RI 2

Date 11/21/02
Field Geologist Amy Sidell / Tosya Gray
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2' x 1" diameter acetate liner
Total Depth 29

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
cont 0.0'			Breathing Zone: In-Spoon: Headspace: 0		5.5 - 14" ML silt w/some clay, few sand particles, stiff, dry - moist, poorly sorted, 4/5 GY GLEY 1 color
7'			0.2 1.7	18	0-4" GM gravelly silt, moist, poorly sorted, 4/5 GY GLEY 1 color, medium stiff, ~~very fine~~ IG 4-5" GP gravelly sand, moist, poorly sorted, medium dense, 4/5 GY GLEY 1 5-18" ML silt, little - no sand, dry - moist, stiff, mottles, a little organic matter, 4/5 GY GLEY 1
9'			~.2 1.5	16	0 - 3" SM silty sand, very fine sand w/silt, moist, loose, well sorted, 4/5 GY GLEY 1 3 - 16" ML silt, little to no sand or clay, moist, medium stiff, cementations, mottles, not plastic silty clay in shoe
11'					

Geologist's Signature [signature] Date 11/21/02 Reviewer _____ Date ____ Pg 2 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-128-I
Facility Kent
Project Well Install /RI2

Date 11/21/02
Field Geologist Tasya Gray/Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2'x1" acetate liner
Total Depth 29

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
11' 0.0'	MW-128I-11-13-1102		Breathing Zone: In-Spoon: Headspace:	14"	collected geotechnical sample Appears to be a sand going clay in last 5"
13'			2.1 .8	16"	0-14" SP fine-very fine sand with a little silt, wet, medium loose, moderately sorted, red & white specks 3/5GY GLEY 1 color 14-16" ML grades into silt w/ little sand, very uniform, moist-wet, a little clay (slight ribbons/plasticity), well sorted, 3/5GY GLEY 1 color
15'			0 1.4	18"	0-5" ML silt, no sand, little to no clay, not plastic, moist, medium stiff, well sorted, 3/5 GY GLEY 1 5-18" ML silt w/ clay, stiffer than above, no sand, slight plasticity, moist, tiny mottles, well sorted gets drier @ bottom
17"					

Geologist's Signature Amy Sidell Date 11/21/02 Reviewer _____ Date ___ Pg 3 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-128-I
Facility Kent
Project Well Install

Date 11/21/02
Field Geologist Tasya Gray / Amy Side //
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2'x1" acetate liner
Total Depth 29

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
17' 0.0'			Breathing Zone: In-Spoon: Headspace: 0	18	0-18" ML ~~clay with~~ silt w/ clay, no sand, moist, medium plasticity, some organic chunks, medium stiffness, well sorted, clay content increasing slightly towards bottom
19'			0 .7	20	0-17" CL silty clay, moist, very plastic, organic material, well sorted, soft, 4/5 GY GLEY1 17-20" SM very fine sand w/ silt, white specks, moist, moderately well sorted, medium dense, darker color
21'			0 1.1	20	0-5" SP/SM very fine sand w/ some silt (not much), wet-very wet, moderately well sorted, medium dense, dark grey-black 5-9" organic wood debris 9-20" ML silt, organic, dry, medium stiff, slight plasticity, moderate clay content, no sand, well sorted
23'					

Getting Dark- difficu to see specific colors

Geologist's Signature Natasya M Gray Date 11/21/02 Reviewer _____ Date ____ Pg 4 of 5

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID MW-128-I
Facility Kent
Project Well Install RI 2

Date 11/21/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit

Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 29'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
23					
0.0'			Breathing Zone: In-Spoon: Headspace: 0 1.1	16	0-16" SP fine sand, red & white specks, moist, medium dense, little to no silt, moderately well sorted
25			0 1.3	23	0-2" SP fine sand, red & white specks, moist, med dense, well sorted 2-3" SC fine sand with clay, red & white specks, slightly moist, moderately plastic, moderately stiff 3-23" SP fine sand, little to no silt, moist, loose, well sorted
27			0 1.4	21	0-1" SP fine sand same as above 1-21" ML/CL clayey silt, moist becomes drier towards bottom, slight mottling, some organics, increasing clay content towards bottom, medium stiff becoming very stiff towards bottom, very well sorted, no CL sand, full clay @ bottom
29'					

Geologist's Signature Tasya A Gray Date 11/21/02 Reviewer _____ Date ____ Pg 5 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: MW-130-I
Facility: Kent
Project: Well Install RI II

Date: 11/18/02
Field Geologist: Tasya Gray | Amy Sidell
Location Type: X Soil Boring Only __ Well __ Test Pit
Drilling Method: Geoprobe 2' x 1"
Sampling Method: acetate liner 2'x1"
Total Depth: 22

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace: ~0.4 ~6 above background	11 first 11", rock stuck & could not get the rest	~~0-4"~~ SM silty sand, moist, fine to 0-6" very fine grained, moderately sorted, loose-medium dense, 4/3 10YR color, roots debris 6-11" ~~4-7"~~ TG GM silty gravel, moist, fine-coarse grained, fines up to coarse gravel, poorly sorted, 3/3 10YR color, dense
2'			0 ~200	12 very rocky clogging sampler	0-10" GM silty gravel, slightly moist, fine-coarse grained, fines, fines to coarse gravel, poorly sorted, dense, 4/10Y grey!
4'			0 ~5 above background	16"	0-3" ML silt, ~~fine sand~~, moist, fine grained, mod. well sorted, med dense/stiff 4/2 7.5YR 3"-4" SM silty sand, fine grained, moderately sorted, med. dense moist 4/2 7.5YR 4-16" ML silt w/ little to no sand very wet, not plastic, mottled, small amount organic debris CL grades to silty clay by 14", no sand, med plastic 4/3 10YR with mottles med stiff, dry
6'					

Louis Sebastian La Rosa III 1-10-03

Geologist's Signature: Amy Sidell Date: 11/18/02 Reviewer: _____ Date: ___

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID: MW-130-I
Facility: Kent
Project: Well Install RI II

Date: 11/18/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Total Depth: 22
Drilling Method: Geoprobe
Sampling Method: 2' x 1" acetate liner

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
6' 0.0'			Breathing Zone: In-Spoon: Headspace: 0 0.6	5"	0-3" CL clay, no sand, plastic, with mottles, medium stiff 4/3 10YR color, wet, very well sorted 3-5" ML, CL grades to clayey silt, wet, well sorted, little to no sand, 4/3 10YR, medium dense/stiff
8'			0 0	22	0-2" ML, clayey silt, very wet, well sorted, little to no sand, 4/3 10YR color medium dense/stiff 2-22" SM ~~TR~~ silty sand, very wet, well sorted, fines & very fine sand, loose, there is a medium dense lens @ 19", 3/2 2.5Y color
10'			0 0.8	13	0-2" ~~silt to~~ sandy silt, wet, SM medium dense, well sorted, fines w/very fine sand, 3/2 2.5Y color 2-13" SM silty sand, wet, dense, moderately well sorted, 4/5G grey 1 color, very fine sand w/silt,
12'					

Geologist's Signature: Tasya A Gray Date 11/18/02 Reviewer _____ Date ____

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID MW-130-I
Facility Kent ~~WC~~
Project Well Install RI II

Date 11/18/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only __ Well __ Test Pit
Drilling Method Geoprobe
Sampling Method 2x1" acetate liner
Total Depth 22

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
12' 0.0'			Breathing Zone: In-Spoon: Headspace: 0 0.8	14	0-5" ~~ML~~ SM silty sand, wet, 3/10Y Grey 1 color, medium dense, moderately well sorted, very fine sand, few fine sand, with silt 5-11" SM grades to ML, silt with some very fine sand, ± clay, moist to wet, (silt lens) drier than above, well sorted, 3/10Y Grey 1 color, medium dense 11-14" SM fine sand w/silt, wet, medium dense-loose, moderately well sorted, 3/10Y Grey 1 color
14'			0 1.1	22	0-18" SM silty sand, fine-very fine sand w/some silt, well sorted, very wet, loose-medium dense, 2.5/10Y Grey 1 color 18-22" Grades into ML, ~~wet~~ silt w/some clay, slight plasticity, soft, wet, very well sorted, no sand, 4/10Y Grey 1 color
16'					

Geologist's Signature Natasya M Gray Date 11/18/02 Reviewer _____ Date ____ Pg 3 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-130-I
Facility Kent
Project Well Install RI II

Date 11/18/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only __ Well __ Test Pit
Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 22

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace: 0 1.2	21	0-3" ML silt w/ some clay, wet, soft, no sand, very well sorted, 4/10Y grey/ color 3-9" ML/CL silt clay mixture, wet, soft, no sand, very uniform, very well sorted, feels like clay but does not support itself well enough to be a full clay, 4/10Y grey 1 color, Root hit at 9" ~0.75" 9-20" CL soft clay grading to stiff clay @ 14", wet grading to moist, very well sorted, little silt, ~~medium~~ to medium plasticity, some organic matter, no mottling, 4/10Y grey 1 color 20-21" ML clayey silt, moist, very well sorted, medium stiff, 4/10Y grey 1 color,

16'
18'

Geologist's Signature Natasya Gray Date 11/19/02 Reviewer _____ Date ____ Pg 4 of 5

PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID: ~~TK~~ MW-130-I
Facility: Kent
Project: Well Install RI II

Date: 11/18/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2' x 1" acetate liner
Total Depth: 22

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0' (18')			Breathing Zone: In-Spoon: Headspace: PID Error 2.0	Full 12" – ~15" some heave	0-12" SP moderately well sorted sand, 3/5 BG Grey 2 color, wet, medium dense, black w/red & white specks, very fine-fine sand with little-no silt
(19')			0 0	23 some heave	0-23" SP same as above moderately well sorted sand, 3/5 BG Grey 2 color, wet, medium dense, black w/red & white specks, very fine-fine sand with little-no silt ML lens @ 17" ~ 2" long, mixed w/ ~~silty~~ sand, dense, wet,
(21')			0	sand heaved	0-23" SP same sand as above, very consistant, moderately well sorted, 3/5 BG Grey 2 color, wet, medium dense, black w/red & white specks, very fine-fine sand w/ little +0/ no silt
(22')					

Geologist's Signature: Tasya Gray Date 11/19/02 Reviewer _____ Date ____ Pg 5 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-131-I
Facility Kent
Project Well Instal RI II

Date 11/18/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit
Drilling Method Geoprobe
Sampling Method 2'x1" acetate liner
Total Depth 18.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0' — 0.0'			Breathing Zone: In-Spoon: Headspace:	0	0-24" no sample, too rocky to collect sample
2'				12	sending for geotech analysis but appears to be 6" of gravel + sand then 6" of very stiff, dry, slightly mottled, very well sorted silt or clay, difficult to tell plasticity due to dryness
4				0	Drilled through for seal
4.5			0 0	10	0-10" CL with some silt, moist becoming drier last 3", very well sorted, 4/5 GY grey color, stiff - very stiff, mottling after 5", small amount of organic debris
6.5			0 ~2	21	0-4" CL with some silt, moist to wet, soft to very soft, very well sorted, no mottling, 4/5 GY grey color,

Steve LaRosa EA 1-10-03

Geologist's Signature [signature] Date 11/18/02 Reviewer _____ Date ___

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-131-I
Facility Kent
Project NCI Install RI II

Date 11/18/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit

Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 18.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		4-21" SM sandy silt grading to ~~fine~~ very fine sand with little silt, very wet, very soft, well sorted, 4/5GY grey 1 color
8.5				18"	geotech appears to be sandy grading to finer material
10.5			0	24"	0-24" SP/ fine very sand with SM a little silt, wet, 2.5/10 GY grey 1 color, silty sand fines to SM @ 10" then goes back more SP @ about 21", small amount of organic matter, well sorted, loose ~~but~~ medium dense @ top,
12.5			0	24"	0-20" SM silty sand, very fine sand w/silt, well sorted, wet, loose, 2.5/10 GY grey 1 color,
14.5					20-24" ML silt, no sand, ~~some~~ low clay content, wet, ~~soft to~~ medium stiff, very well sorted, 2.5/10 GY grey 1 color

cont. 8.5-8.5

Geologist's Signature Tasya A Gray Date 11/18/02 Reviewer _____ Date ____ Pg 2 of 3

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-131-I
Facility Kent
Project Well Install RI II

Date 11/18/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only _ Well _ Test Pit

Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 18.5

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
14.5' 0.0'			Breathing Zone: In-Spoon: Headspace: 0 ~0.7	~~14~~ 12	0-4" CL/ML soft, very well sorted, wet, 2.5/10GY grey 1 color, clayey silt 4-12" ML medium ~~soft~~ to stiff silt, no sand, wet, very well sorted 2.5/10 GY grey 1 color
16.5'			0 ~0.9	19	0-13" CL clay with little to no silt, wet, soft, medium plasticity, no sand, very well sorted 13-19" CL grades to ML with little ~~sand~~ CL, silt w/ little clay, wet, soft, very well sorted, 2.5/10 GY grey 1 color
18.5					

Geologist's Signature [signature] Date 11/19/02 Reviewer _____ Date ____ Pg 3 of 3

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID MW-132S
Facility Kent
Project Well Install/RI II

Date 11/19/02
Field Geologist Amy Sickell/Tasya Gray
Location Type: ☒ Soil Boring Only ☐ Well ☐ Test Pit
Drilling Method geoprobe
Sampling Method 2'x1" acetate liner
Total Depth 6'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 — 0.0'			Breathing Zone: In-Spoon: Headspace: ~.2 0	12	0-3" SM silty sand, moist, loose, high OM 2.5/2.5YR, poorly sorted, 3" GP poorly ~~graded~~ sorted gravels, with sand, grey, dry, loose 7.5" GP poorly sorted gravel with sand, moist, loose, 4/2 7.5YR
2'			0 0.5	12"	driller said top 12" fill & recovered 12" from bottom (not recovered) 0-2" GP gravel with sand, poorly sorted, loose, slightly moist organic matter (OM), 4/3 7.5YR 2-12" SM silty sand, fine sands 3/2 7.5YR, slightly moist, mod/slightly dense, some really thin <1cm thick clay at top 2"
4'			0 0.6	16"	0-16" ML Clayey silt becoming CL clay with little to no silt @ ~4", moist becoming wet @ ~14", very well sorted, no sand, mottling well, 4/10GY GLEY 1
6'					

Geologist's Signature Natasya S Gray Date 11/19/02 Reviewer _____ Date ____ Pg 1 of 1

PSC PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID GP-125-I
Facility Kent
Project Well Install / RI 2

Date	Field Geologist	Location Type:
11/22/02	Tasya Gray / Amy Sidell	X Soil Boring Only X Temp Well _ Test Pit

Drilling Method	Sampling Method	Total Depth
Geoprobe	2' x 1" acetate liner	31'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0 — 0.0'			Breathing Zone: In-Spoon: Headspace: 0 0	11	0-2" asphalt; 2-11" GW poorly sorted gravelly sand, fine-coarse sand, some fines (silt), fine-coarse gravel, moist-wet, dense (sampler may have compacted), 4/2 10YR color
2'			0 0	15	0-10" GW same as above poorly sorted gravelly sand, fine-coarse sand, some fines, fine-coarse gravel, moist, dense, 4/2 10YR color; 10-11" wood debris; 11-15" SM sandy silt, dry-moist, medium dense, organic debris, moderately sorted, very fine sand & silt, 3/1 10YR color
4'					

State of Washington Licensed Geologist 1220 Louis Sebastian La Rosa III 1-9-03

Geologist's Signature Tasya Gray Date 11/22/02 Reviewer ______ Date ____ Pg 1 of 6

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-125-I
Facility Kent
Project Well Install RI2

Date 11/22/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only Y Well (pump) _ Test Pit
Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 31'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace: 0 0	15	0-15" ML/CL clayey silt with a few gravel chunks, little to no sand, stiff, moist becoming drier, 4/10 Y GLEY 1 color, medium stiff in upper part, stiff towards bottom, moderately well sorted,
4'					Seal
5'			—	16"	connected geotechnical sample of confining layer. Shoe material was CL clay, moist, very well sorted, no sand, soft - medium stiff, 5/10Y GLEY 1 color
7'			+0 0	18	0-10" ML clayey silt, well sorted, no sand 4/10 GY GLEY 1, moist, soft - medium stiff 10-13" ML silt, wet, well sorted, soupy soft, 4/10 GY GLEY 1 13-16" ML silt, wet, well sorted, medium stiff, cementations, orange mottling,

Geologist's Signature Tasya A Gray Date 11/22/02 Reviewer _____ Date ____ Pg 2 of 6

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-125-I
Facility Kent
Project Well Install/RI 2

Date 11/22/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only X Well (temp) _ Test Pit
Drilling Method Geoprobe
Sampling Method 2' x 1" acetate liner
Total Depth 31'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
cont 0.0'			Breathing Zone: In-Spoon: Headspace:		16-18" ML silt, little clay, no sand, well sorted, soft white chunks present, moist, no mottling
9'			0 0	18	0-15" ML/CL silty clay, very smooth, moist, soft, very well sorted, 4/5 GY GLEY 1 color, 15-18" SM/SW sand with a little silt, very fine sand & silt, 3/10Y GLEY 1 color, red & white specks, well sorted, wet,
V 11'			0 0	15	0-12" SW very fine sand, slightly coarser than above, very wet, 3/10Y GLEY1, well sorted, red & white specks, little to no silt except between 3-4" silt content increased, very loose 12-15" SM silty sand, very fine sand w/silt, wet, soft, 3/10Y GLEY 1, red & white specks, becomes more of a silt ML @ bottom
13'					

Geologist's Signature Tasya Gray Date 11/22/02 Reviewer _____ Date ___ Pg 3 of 6

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-125-I
Facility Kent
Project Well Install RI 2

Date 11/22/02

Field Geologist Tasya Gray / Amy Sidell

Location Type: X Soil Boring Only _ Well (Temp) _ Test Pit

Drilling Method Geoprobe

Sampling Method 2'x1" acetate liner

Total Depth 31'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
13' 0.0'			Breathing Zone: In-Spoon: 0 Headspace: 0	20	0-3" SM silty sand, very wet, very fine sand & silt, very loose, moderate well sorted, red & specks visable, 3/10 Y GLEY1
					3-20" SP moderately sorted v. fine sand, little silt, very wet, very loose, 3/10 Y GLEY1, red & white specks, begins to get coarser towards bottom, more fine sand
15'			0 0	100	0-10" SP moderately sorted, fine-very fine sand, little silt, wet, loose, 3/10 Y GLEY1, red & white specks.
17'			—	20	Collect geotechnical sample. Appears to be ML silt, wet, there is a chunk of wood @ 16"
19'					

Geologist's Signature Nathan O'Gray Date 11/22/02 Reviewer _____ Date ____ Pg 4 of 6

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: GP-125-I
Facility: Kent
Project: Will Tustin RI 2

Date: 11/22/02
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only X Well (temp) _ Test Pit

Drilling Method: Geoprobe
Sampling Method: 2' x 1" acetate liner
Total Depth: 31'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
19' 0.0'			Breathing Zone: In-Spoon: Headspace: 3 0	20	0-14 CL clay with a little silt, no sand, moist, soft → slightly stiff, plastic, leaves & organic debris interspersed throughout 5/10Y gley 1, well sorted 14-20 SP ARS very fine sand, 2.5/10gy gley 1, white specks red specks, mixed w/ abundant woody debris, well sorted wet, moderately ~~loose~~ dense
21'			ARS	21	collected geotech GP-125-I-21-23-1102 (split into 2 samples) 0-10" appears to be silt/clay 10-13" appears to be mix of ① 13-21" appears to be fine sand wet
23			0.2 0	22 (liner got mangled)	0-22 SP ARS well sorted fine sand grading to well sorted very fine sand, little to no silt, 2.5/10 GY gley 1, white specks red specks, moist, moderately dense, no organics ARS matter (OM) visible
25			0 0	24	0-3" SP very fine sand with several silt/clay stringers less than 2mm thick, sand is same as above otherwise 3-24" SP very fine sand, well sorted, little to no silt, white & red specks, no OM visible, moist, moderately dense
27'					

Geologist's Signature: Amy Sidell Date 11/21/02 Reviewer _____ Date ____ Pg 5 of 6

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-125-1
Facility Kent
Project R12 well install

Date 11/22/02
Field Geologist Tasya Gray / Amy Sidell
Location Type: _ Soil Boring Only _ Well _ Test Pit

Drilling Method geoprobe-Cascade
Sampling Method 2' x 1" acetate
Total Depth 31'

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
27 — 0.0'			Breathing Zone: In-Spoon: 0 Headspace:	22	0-10" ML clayey silt, well sorted, wet, soft, a little plastic, 4/10Y gley 1 10-20" OL silt with abundant organic matter (wood debris) 2.5/10Y gley 1 20-22" ML super dense, silt, dry, crumbly, with turquoise dots (looks like blue cheese) may have some clay, well sorted
29				3	0-3" ML silt w/clay, moist, soft med stiff, well sorted, turquoise streaking, little to no sand, slightly plastic nonstaining, 4/5 GY
30'				11'	0-5" ML/CL silty clay, soft, ~~mo~~ grks slightly plastic, mottles, white fungus looking strands (as seen in MW-126) moist, well sorted 5-7" ML silt mixed with yellow crumbles (may be shell particulates), well sorted 8/10Y yellow bits mostly smooth but 1 or 2 fine gravel bits 7-11' ML silt, with a little clay slightly stiff, moist, uniform color 3/10Y, well sorted
31'					end of boring

Geologist's Signature Amy Sidell Date 11/22/02 Reviewer _____ Date ___ Pg 6 of 6

PSC PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID GP-118-D
Facility Kent
Project Supplemental RI

Date 2/8/03

Field Geologist Tasya Gray & Amy Sidell

Location Type: Temp
X Soil Boring Only X Well _ Test Pit

Drilling Method Direct Push/Auger

Sampling Method acetate liner 4'x2" & 2'x1"

Total Depth 48 ft bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:	+	unable to sample; fill material, had to auger through
			0	10	0-10" GM silty gravels with sand, gravel up to 1", dry, loose, poorly sorted,
			0 0	5	0-5" ML clayey silt, no mottles, well sorted, medium stiff, moist, 4/5 GY, Driller said he hit the silt @ 5'
			0 0	38	0-12" ML clayey silt, no mottles, uniform color, well sorted, medium stiff, moist 3/5 GY 12-24" geotech sample GP-118D-3-9-0203 24-28 SM silty sand, lots of mottling, fine-very fine sand, wet, grades to 28-38 ML silt wet, well sorted no mottling 4/10GY, stiff-medium stiff
			0	40	0-12" ML clayey silt grading to sandy silt, wet, fairly soft, 4/10 GY, no mottling well sorted

Geologist's Signature Amy Sidell Date 2/8/03 Reviewer _____ Date ____ Pg 1 of 5

PSC PHILIP SERVICES CORP.

Soil Stratigraphy Field Log

Location ID: GP-118-D
Facility: Kent
Project: Suppl. RI

Date: 2/3/03
Field Geologist: Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only X Well (temp) _ Test Pit
Drilling Method: Direct Push / Auger
Sampling Method: acetate liner 4" x 2" & 2' x 1"
Total Depth: 48 ft bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		12-18" SM silty sand, very fine sand grading to fine sand with white & red specks 2.5/10GY wet, med. dense, well sorted 18-40" SM silty sand, fine sand white & red flecks, 2.5/10GY wet, med. dense, well sorted
14			0.1 0	42	0-17" SM silty sand, fine sand, white & red flecks, 2.5/10GY wet med dense — loose well sorted, grades to finer sand at last 2" 17-30 ML silt with very, very fine sand, med gray, well sorted, 5/5GY, moist 30-42 geotech GP-118-D-17-18-0205
18			0	44	0-3" organic w/ clay piece 3-8" CL clay 4/10Y, moist, soft moderately plastic very well sorted, no mottles 8-10" SW well graded fine - very fine sand, with medium sand size white particles possibly shell fragments 2.5/10GY, wet, med loose/dense some red specks, poorly sorted

Geologist's Signature: Amy Sidell Date: 2/3/03 Reviewer _____ Date ____ Pg 2 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-118-D
Facility Kent
Project Supp RI

Date 2/8/03
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only X Well Temp _ Test Pit
Drilling Method Direct Push / Auger
Sampling Method acetate liner 4'x2" & 2'x1"
Total Depth 48 ft bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		10-12" PT organic, peaty material 12-17" ML clayey silt, grading to CL clay; starting soft grading to stiff, firmly dry 5/10Y, some streaking in color 17-21" peaty organic woody PT material, sulfury smelling, no PID hits though 21-23 SP very fine black sand white & red specks, most, well sorted, 3/10Y, med-dense 23-25 PT woody debris larger (~1" long) wood pieces 25-27" PT woody debris mixed with a little clay, moist-wet 27-44 SP very fine sand, well sorted, red & white flecks 3/10Y, moist, dense, some fine sand also
22					geotech sample GP-118-D-22-24 -0203 appeared to be all sand
24			0	20	0-3 SP very very fine sand, well sorted, red & white flecks, 3/10Y, wet, loose 3-5 ML silt with very little fine sand, wet, med dense, 4/10Y

Geologist's Signature Amy Sidell Date 2/8/03 Reviewer _____ Date ____ Pg 3 of 5

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID GP-118-D
Facility Kent
Project Suppl RI

Date 2/8/03
Field Geologist Tasya Gray / Amy Sidell
Location Type: X Soil Boring Only X temp Well Test Pit
Drilling Method direct push / Auger
Sampling Method acetate liner 4' x 2" & 2' x 1"
Total Depth 48 ft bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
0.0'			Breathing Zone: In-Spoon: Headspace:		5-8 ML silt with no sand otherwise same as above 8-10 ML silt with very fine sand otherwise same as above 10-14 ML clayey silt, well sorted moist, mod plastic, med soft 4/10Y 14-16 organic matter, woody 16-20 CL clay with organic bits that cause streaking when rubbed, mod plastic, med stiff fairly dry, 4/10Y
25				0	no sample recovery
27			0	10	0-10 - SM silty sand / very fine sand, very wet, soupy, well sorted, red & white flecks loose
23				42	0-22 SM silty sand, very fine sand, very wet, soupy, well sorted, loose, red & white flecks 22-27 ML clayey silt, well sorted Salt, moderately plastic loose, wet, 4/10Y 27-42 geotech GP-118-D-31-32 0203
32					

Geologist's Signature Amy Sidell Date 2/8/03 Reviewer _____ Date ____ Pg 4 of 5

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID	GP-118-D
Facility	Kent
Project	Suppl RI
Date	2/8/03
Field Geologist	Tosya Gray / Amy Sidell
Location Type	X Soil Boring Only; X Well (temp); _ Test Pit
Drilling Method	Direct Push / Auger
Sampling Method	acetate liner, 4'x2" & 2'x1"
Total Depth	48' bgs

Depth of Sample (ft bgs)	Sample ID	Blow Counts (per 6")	Total Organics (ppm)	Sample Recovery (inches)	Geological Description: Sample Interval, Unified Soil Class ID, Munsell Color, grain size, sorting, moisture, compaction, indication of contaminants (odor or sheen), and general stratigraphic description.
32 — 0.0' – 36			Breathing Zone: In-Spoon: Headspace:	ms 8C 29	0-25" CL silty clay with bits of wood debris, med stiff moist, no apparent mottling 4/10y, well sorted except for OM; 25-29" SP med sand, well sorted, red & white flecks, wet, med dense 2.5/10Gy
			0	42	0-30 SP fine-med sand, well sorted, red & white flecks, wet med loose grading to dense. 2.5/10Gy, silt lense @ bottom, wood debris @ top; 30-42 Geotech GP-118-D-39-40-0203
40				1	0-1 ML sandy silt, fine sand very soupy (hence poor recovery), 4/10y, mod. sorting very wet uniform color
44				0	very wet, no recovery
46				24	0-14" CL silty clay with organic woody debris 4/10Y, med. stiff, slightly plastic, grading to silt by 14"; 14-24" ML silt / v.v.v. fine sand little clay, well sorted, 4/10Y, med dense, uniform color wet; bottom of boring →

Geologist's Signature Amy Sidell Date 2/8/03 Reviewer ________ Date ____ Pg 5 of 5

PROJECT: Philip Services Corporation Kent, Washington	**Boring No. GP-1**
BORING LOCATION: N 156062.6; E 1292405.8	ELEVATION AND DATUM: 28.45 feet (NAVD 1988)
DRILLING CONTRACTOR: Cascade Drilling, Inc.	DATE STARTED: 6/15/07 / DATE FINISHED: 6/15/07
DRILLING METHOD: Direct push	TOTAL DEPTH (ft.): 8.0 / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 6600	DEPTH TO WATER (ft.) FIRST: ~4.0 / COMPL.: NA
SAMPLING METHOD: Geoprobe macro-core sampler [4' x 2"]	LOGGED BY: Z. Satterwhite
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Z. Satterwhite / REG. NO.: L.G. 2568

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ Foot	OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
					Surface Elevation: 28.45 feet (NAVD 1988)	
0					ASPHALT	
1				0	POORLY GRADED GRAVEL with SAND (GP): dark brown (10YR 3/3), mottled light brown and dark gray, moist, 55% fine to coarse gravel, 45% fine to coarse sand, 5% fines, subangular to rounded [FILL]	
2	GP-1-3.0-0607			0	SILTY SAND (SM): very dark grayish brown (10YR 3/2), mottled brown, moist, 60% fine sand, 40% low plasticity fines	
3						OVM = ThermoEnvironmental Instruments 580B PID calibrated with 100 ppm isobutylene standard.
4					⊤ wet	
5				0	CLAYEY SILT (ML): brown (10YR 4/3), mottled light brown and orange, moist, 95% fines, 5% fine sand, low plasticity, firm	
6				0		
7				0		
8					Bottom of boring at 8.0 feet.	Borehole destroyed using bentonite chips placed from total depth to ground surface.
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PROJECT: Philip Services Corporation Kent, Washington	**Boring No. GP-2**
BORING LOCATION: N 155911.0; E 1292418.1	ELEVATION AND DATUM: 27.16 feet (NAVD 1988)
DRILLING CONTRACTOR: Cascade Drilling, Inc.	DATE STARTED: 6/15/07 / DATE FINISHED: 6/15/07
DRILLING METHOD: Direct push	TOTAL DEPTH (ft.): 8.0 / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 6600	DEPTH TO WATER (ft.) FIRST: ~4.0 / COMPL.: NA
SAMPLING METHOD: Geoprobe macro-core sampler [4' x 2"]	LOGGED BY: Z. Satterwhite
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Z. Satterwhite / REG. NO.: L.G. 2568

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ Foot	OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation: 27.16 feet (NAVD 1988)	REMARKS
					ASPHALT	
1				0	SILTY GRAVEL with SAND (GM): dark grayish brown (10YR 4/2), moist, 45% fine to coarse gravel, 40% fine to coarse sand, 15% low plasticity fines, subangular to rounded, some small brick fragments [FILL]	
2	GP-2-3.0-0607			0	SILT (ML): very dark gray (10YR 3/1), moist, 95% fines, 5% fine sand, low plasticity, firm, rootlets throughout; wood fragments on top	
3						OVM = ThermoEnvironmental Instruments 580B PID calibrated with 100 ppm isobutylene standard.
4					wet; very soft, increasing fine sand	
5				0		
6					iron staining (orange mottles)	
7				0	CLAYEY SILT (ML) (moist, soft) (10YR 4/1)	
					POORLY GRADED SAND with SILT (SP-SM): black (10YR 2/1), wet, 90% fine sand, 10% low plasticity fines	
8					Bottom of boring at 8.0 feet.	Borehole destroyed using bentonite chips placed from total depth to ground surface.
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PROJECT: Philip Services Corporation Kent, Washington	**Boring No. GP-3**
BORING LOCATION: N 155745.0; E 1292421.8	ELEVATION AND DATUM: 26.76 feet (NAVD 1988)
DRILLING CONTRACTOR: Cascade Drilling, Inc.	DATE STARTED: 6/15/07 / DATE FINISHED: 6/15/07
DRILLING METHOD: Direct push	TOTAL DEPTH (ft.): 8.0 / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 6600	DEPTH TO WATER (ft.) FIRST: ~3.8 / COMPL.: NA
SAMPLING METHOD: Geoprobe macro-core sampler [4' x 2"]	LOGGED BY: Z. Satterwhite
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Z. Satterwhite / REG. NO.: L.G. 2568

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/Foot	OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter.	REMARKS
					Surface Elevation: 26.76 feet (NAVD 1988)	
0	GP-3-3.5-0607 and GP-9-3-3.5-0607				ASPHALT	
1				0	POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (10YR 4/2), moist, 55% fine to coarse gravel, 40% fine to coarse sand, 5% fines, subangular to rounded, some small brick fragments [FILL]	
2					SILT (ML): dark gray (10YR 4/1), mottled yellowish orange, moist, 95% fines, 5% fine sand, low plasticity, firm, rootlets throughout	
3						OVM = ThermoEnvironmental Instruments 580B PID calibrated with 100 ppm isobutylene standard.
4				0	wet	
5				0	SILTY SAND (SM): black (10YR 2/1), wet, 55% fine sand, 45% low plasticity fines iron staining	
6					SILT (ML) (very dark gray (10YR 3/1), moist, low plasticity, soft)	
7				0	POORLY GRADED SAND with SILT (SP-SM): black (10YR 2/1), wet, 90% fine sand, 10% low plasticity fines	
8					Bottom of boring at 8.0 feet.	Borehole destroyed using bentonite chips placed from total depth to ground surface.
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PROJECT: Philip Services Corporation Kent, Washington	**Boring No. GP-4**
BORING LOCATION: N 155600.1; E 1292422.8	ELEVATION AND DATUM: 27.76 feet (NAVD 1988)
DRILLING CONTRACTOR: Cascade Drilling, Inc.	DATE STARTED: 6/15/07 / DATE FINISHED: 6/15/07
DRILLING METHOD: Direct push	TOTAL DEPTH (ft.): 8.0 / MEASURING POINT: Ground surface
DRILLING EQUIPMENT: Geoprobe 6600	DEPTH TO WATER (ft.) FIRST: ~2.5 / COMPL.: NA
SAMPLING METHOD: Geoprobe macro-core sampler [4' x 2"]	LOGGED BY: Z. Satterwhite
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Z. Satterwhite / REG. NO.: L.G. 2568

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ Foot	OVM READING (ppm)	DESCRIPTION NAME (USCS): color, moist, % by wt., plast. density, structure, cementation, react. w/HCl, geo. inter. Surface Elevation: 27.76 feet (NAVD 1988)	REMARKS
0					ASPHALT	
1	GP-4-2.5-0607			0	POORLY GRADED GRAVEL with SAND (GP): dark grayish brown (10YR 4/2), moist, 55% fine to coarse gravel, 40% fine to coarse sand, 5% fines, subangular to rounded, some small brick fragments [FILL]	
2				0	SILT (ML): dark gray (10YR 4/1), moist, 95% fines, 5% fine sand, low plasticity, firm, rootlets throughout	
3					SANDY SILT (ML): black (10YR 2/1), wet, 55% fines, 45% fine sand, low plasticity, very soft	
4					SILT (ML)	OVM = ThermoEnvironmental Instruments 580B PID calibrated with 100 ppm isobutylene standard.
5				0		
6						Driller: "like butter from 4 to 8 feet"
7						
8					Bottom of boring at 8.0 feet.	Borehole destroyed using bentonite chips placed from total depth to ground surface.
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OAKBOREV (REV. 3/00)