PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char

Date: 10/5/00
Field Geologist: Helle Gylling
Location Type: X Soil Boring Only & Temp. Well _ Test Pit

Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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'			Breathing Zone: In-Spoon: Headspace:	22"	0-22" SW dusky yellowish brown, mostly medium sand, ~~with~~ poorly sorted, loose, moist, some white & brown grains, from 7-10" it's finer but still medium sand and has wood debris
34'				24"	0-24" SW dusky yellowish brown, fine to medium sand with trace silt, poorly sorted, loose, wet
36'				23"	0-23" SW same as above (34-36') with wood pieces from 11-14"
38'				21"	0-21" SW same as above (34-36')
40'					Collected geotechnical sample F9-40-42-1000
42'	F9-45-1000 water			19"	0-19" SW same as above (34-36') with trace of wood
44'					

Geologist's Signature: [signature] Date 10/9/00 Reviewer _____ Date ___

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char

Date: 10/5/00
Field Geologist: Helle Gylling / Tasya Gray
Location Type: Soil Boring Only / X temp. Well / Test Pit

Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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.
44' 0.0'			Breathing Zone: In-Spoon: Headspace:	24"	0-24" SW dusky yellowish brown, mostly fine sand, poorly sorted, trace wood throughout, very wet, loose
46'				18"	0-3.5" ML, silty clay, well sorted, grayish black, medium stiff, moist 3.5-18" SW dusky yellowish brown, fine-grained sand grading to medium-coarse towards the bottom, poorly sorted, loose, wet
48'				24"	0-4" ML clayey silt, well sorted, greyish black, medium stiff, moist 4-9.5" ML silt to very fine sand, greyish black, well sorted, wet, ~~loose~~ soft 9.5-10.5" ML clayey silt, well sorted, greyish black, medium stiff, moist 10.5-24" ML silt to very fine sand, slightly coarsening towards bottom, greyish black, wet, fairly well sorted, soft, 22.5-30" has medium sand in it, poorly sorted
50'					

Geologist's Signature: Nancy J. Gray Date 10/19/00 Reviewer _____ Date ____

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char

Date: 10/5/00
Field Geologist: Helle Gylling, Tasya Gray
Location Type: ← Soil Boring Only X Well (temp.) _ Test Pit

Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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.
50' 0.0'			Breathing Zone: In-Spoon: Headspace:	24"	0-~~1.5~~" ML Silt to very fine sand greyish black, well sorted, wet, soft 1.5-5.5" ML clayey silt, well sorted, greyish black, medium stiff, moist 5.5-24" ML silt to very fine sand, greyish black, well sorted, wet, soft
52'				16"	0-1" ML clayey silt, well sorted, greyish black, medium stiff, moist 1-16" SW fine sand with minor medium sand, poorly sorted, greyish black, moist, loose
54'				24"	0-24" ML silt to very fine sand, greyish black, well sorted, wet, soft
56'	F9-60-1000 water			24"	0-1" ML clayey silt, well sorted, greyish black, medium stiff, moist 1-24" ML/SW grading from ML to SW fine sand, greyish black, moist, loose, moderately sorted
58'					

Geologist's Signature: Natasya Gray Date: 10/5/00 Reviewer _____ Date ____ Pg 7 of 12

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char.

Date: 10/5/00
Field Geologist: Helle Gylling, Tasya Gray
Location Type: X Soil Boring Only X Temp. Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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.
58' 0.0'			Breathing Zone: In-Spoon: Headspace:	24"	0-24" ML silt to very fine sand, greyish black, well sorted, wet, soft
60'					collected geotechnical Sample F9-60-62-1000
62'				15"	0-15" ML same as above (58-60')
64'				20.5"	0-20.5" ML same as above (58-60')
66'				23"	0-23" ML same as above (58-60')
68'				24"	0-24" ML same as above (58-60')
70'				24"	0-24" ML same as above (58-60')
72'				24"	0-24" ML same as above (58-60') soupy
74'	F9-75-1000 water			23"	0-23" SP very fine sand, well sorted, little to no silt, wet, medium dense, brownish black, some wood debris
76'					

Geologist's Signature: Natasya Gray Date: 10/19/00 Reviewer _____ Date ____ Pg 8 of 12

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char

Date: 10/5/00
Field Geologist: Tasya Gray
Location Type: X Soil Boring Only / Temp. Well / Test Pit
Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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.
76' 0.0'			Breathing Zone: In-Spoon: Headspace:	12"	0-12" SP very fine sand, well sorted, little to no silt, wet, medium dense, brownish black, some wood debris
78'				24"	0-24" SP ~~same as above (76-78')~~ very fine sand, some silt in first 6", wet, medium dense, brownish black, some wood pretty well sorted
80'					Geotechnical Sample collected F9-80-82-1000
82'				22"	0-22" SM very fine sand and some silt, wet medium dense, brownish black, some wood, moderately sorted
84'				24"	0-7" ML silt with some fine sand, medium stiff, wet, well sorted, greyish black 7-24" ML silt with some fine sand, very soft & soupy, very wet, well sorted, greyish black
86'					

Geologist's Signature: Tasya Gray Date: 10/9/00 Reviewer: _____ Date: _____

PHILIP SERVICES

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char

Date: 10/6/00
Field Geologist: Aelle Gylling, Tasya Gray
Location Type: X Soil Boring Only X temp. Well _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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.
86' 0.0'	F9-90-1000 water		Breathing Zone: In-Spoon: Headspace:	23"	0-19.5" ML silt with trace fine sand, stiff, wet, well sorted, greyish black 19.5-23" SM fine sand with some silt, greyish black, wet, medium stiff, poorly sorted
88'				24"	0-24" ML same as above, grading to SM same as above with wood
90'					No sample taken
92'				24"	0-24" SM very fine sand & silt, greyish black, wet, medium dense, trace wood, poorly sorted
94'					No sample taken
96'				4"	0-4" SW fine sand with a little medium sand, greyish black, wet, medium dense, poorly sorted
98'					No sample taken
100'					Geotechnical sample collected F9-100-102-1000
102'					

Geologist's Signature: Natasya K Gray Date: 10/19/00 Reviewer: _____ Date: ____ Pg 10 of 12

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID F9
Facility GT
Project Supplemental Offsite Char

Date 10/6/00

Field Geologist Helle Gylling, Tasya Gray

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

Drilling Method Geoprobe

Sampling Method 2', 1" diameter acetate liners

Total Depth 120'

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.
102' 0.0'			Breathing Zone: In-Spoon: Headspace:		No sample taken
104'				24"	0-21" ML soupy silt with little or no sand at top, grading to a little sand (SM) towards the bottom, very wet, moderately well sorted, greyish black 21-24" SW fine sand with a little medium sand poorly sorted, wet, medium dense
106'					no sample collected
108'				24"	0-22" ML silt with little or no sand at the top gradually increasing to a little sand at the bottom, dark grey, medium stiff, wet, moderately well sorted 22-24" SW fine sand, greyish black, wet, medium dense, moderately poorly sorted
110'					no sample collected
112'					

Geologist's Signature Tasya B Gray Date 10/19/00 Reviewer _____ Date ___ Pg 11 of 12

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID: F9
Facility: GT
Project: Supplemental Offsite Char

Date: 10/6/00
Field Geologist: Helke Gylling, Tasya Gray
Location Type: X Soil Boring Only X Well (+ flap) _ Test Pit
Drilling Method: Geoprobe
Sampling Method: 2', 1" diameter acetate liners
Total Depth: 120'

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.
112' 0.0'			Breathing Zone: In-Spoon: Headspace:	24"	0-22" ML silt, greyish black, stiff, little or no fines, well sorted, moist 22-24" SW fine sand, greyish black, wet, medium dense, ~~poor~~ moderately sorted
114'					no sample taken
116'				24"	0-20" ML medium stiff silt, soupy, a little sand at the top grading to little or no sand at the bottom, dark grey, moderately well sorted 20-24" ML stiffer and drier, but otherwise same as above
118'					Collect Geotechnical sample F9-118-120-1000
120'					looks like 0-14" is soft & soupy silt & 14-24" is stiffer & drier Bottom has ~1" very fine sand SP

Geologist's Signature: Tasya Gray Date 10/6/00 Reviewer _____ Date ____ Pg 12 of 12

PHILIP SERVICES CORP

Soil Stratigraphy Field Log

Location ID FB
Facility GT
Project 2000 Supplemental offsite Char

Date 12/13/00
Field Geologist Tasya Gray
Location Type: X Soil Boring Only X Well (temp?) _ Test Pit

Drilling Method Geoprobe
Sampling Method 2', 1" diameter acetate liner
Total Depth 12-60'

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:		no soil logged
120'				24	0-3" ML silt with some sand, olive grey/black, soft, well sorted, wet 3-5" ML silt with some sand, olive grey/black, very soft, well sorted, wet 5-10" ML same as above (0-3") 10-18" ML same as above (3-5") 18-24" ML same as above (0-5")
122'				24	0-21" ML very soft silt, little to no sand, olive grey, wet, well sorted 21-24" ML stiffens a little to soft silt, otherwise the same
124'				24	0-24" ML soft silt becoming medium stiff, no sand, olive grey, wet, very well sorted
126'					

Geologist's Signature Tasya K Gray Date 12/13/00 Reviewer _____ Date ____ Pg 1 of 1

APPENDIX 3B

GROUNDWATER LEVEL DATA

Groundwater Elevation Data
April 2002 through March 2003
Remedial Investigation
PSC Georgetown

PERIOD: From 04/02/2002 thru 03/18/2003 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
101-S-1	4/2/2002	19.19	11:12	4.73	0.00	14.46	NA	14.46
101-S-1	5/23/2002	19.19	11:17	5.40	0.00	13.79	-0.67	13.79
101-S-1	6/24/2002	19.19	14:45	5.98	0.00	13.21	-0.58	13.21
101-S-1	7/29/2002	19.19	11:05	6.48	0.00	12.71	-0.50	12.71
101-S-1	8/23/2002	19.19	09:45	6.83	0.00	12.36	-0.35	12.36
101-S-1	9/16/2002	19.19	14:14	7.11	0.00	12.08	-0.28	12.08
101-S-1	10/23/2002	19.18	12:45	7.45	0.00	11.73	-0.35	11.73
101-S-1	11/4/2002	19.18	10:06	7.49	0.00	11.69	-0.04	11.69
101-S-1	12/13/2002	19.18	12:20	7.20	0.00	11.98	0.29	11.98
101-S-1	1/31/2003	19.18	10:30	4.41	0.00	14.77	2.79	14.77
101-S-1	2/25/2003	19.18	11:00	5.61	0.00	13.57	-1.20	13.57
101-S-1	3/18/2003	19.18	09:44	5.08	0.00	14.10	0.53	14.10
101-S-2	5/23/2002	18.82	11:21	5.02	0.00	13.80	NA	13.80
101-S-2	6/24/2002	18.82	14:20	5.55	0.00	13.27	-0.53	13.27
101-S-2	7/29/2002	18.82	11:07	6.05	0.00	12.77	-0.50	12.77
101-S-2	8/23/2002	18.82	09:49	6.43	0.00	12.39	-0.38	12.39
101-S-2	9/16/2002	18.82	14:17	6.65	0.00	12.17	-0.22	12.17
101-S-2	10/23/2002	18.81	12:48	7.11	0.00	11.70	-0.47	11.70
101-S-2	11/4/2002	18.81	10:08	7.09	0.00	11.72	0.02	11.72
101-S-2	12/13/2002	18.81	12:23	6.73	0.00	12.08	0.36	12.08
101-S-2	1/31/2003	18.81	10:35	4.82	0.00	13.99	1.91	13.99
101-S-2	2/25/2003	18.81	11:03	5.18	0.00	13.63	-0.36	13.63
101-S-2	3/18/2003	18.81	09:40	4.60	0.00	14.21	0.58	14.21
102-D	4/2/2002	20.44	10:39	8.90	0.00	11.54	NA	11.54
102-D	5/23/2002	20.43	13:01	9.16	0.00	11.27	-0.27	11.27
102-D	6/24/2002	20.43	11:55	9.61	0.00	10.82	-0.45	10.82
102-D	7/29/2002	20.43	10:04	10.14	0.00	10.29	-0.53	10.29
102-D	8/23/2002	20.43	12:11	10.28	0.00	10.15	-0.14	10.15
102-D	9/16/2002	20.43	14:54	10.21	0.00	10.22	0.07	10.22
102-D	10/23/2002	20.43	12:21	10.89	0.00	9.54	-0.68	9.54
102-D	11/4/2002	20.43	11:08	10.91	0.00	9.52	-0.02	9.52
102-D	12/13/2002	20.43	11:05	10.91	0.00	9.52	0.00	9.52
102-D	1/31/2003	20.43	11:07	10.32	0.00	10.11	0.59	10.11
102-D	2/25/2003	20.43	10:00	9.89	0.00	10.54	0.43	10.54
102-D	3/18/2003	20.43	09:10	10.17	0.00	10.26	-0.28	10.26
102-I	4/2/2002	20.50	10:36	7.31	0.00	13.19	NA	13.19

Vertical Datum is based on NAVD1988

Groundwater Elevation Data
April 2002 through March 2003
Remedial Investigation
PSC Georgetown

PERIOD: From 04/02/2002 thru 03/18/2003 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
102-I	5/23/2002	20.50	12:55	7.77	0.00	12.73	-0.46	12.73
102-I	6/24/2002	20.50	12:01	8.25	0.00	12.25	-0.48	12.25
102-I	7/29/2002	20.50	10:15	8.66	0.00	11.84	-0.41	11.84
102-I	8/23/2002	20.50	12:14	8.98	0.00	11.52	-0.32	11.52
102-I	9/16/2002	20.50	14:58	9.24	0.00	11.26	-0.26	11.26
102-I	10/23/2002	20.50	12:18	9.74	0.00	10.76	-0.50	10.76
102-I	11/4/2002	20.50	11:11	9.76	0.00	10.74	-0.02	10.74
102-I	12/13/2002	20.50	11:08	9.72	0.00	10.78	0.04	10.78
102-I	1/31/2003	20.50	11:03	8.41	0.00	12.09	1.31	12.09
102-I	2/25/2003	20.50	09:56	8.33	0.00	12.17	0.08	12.17
102-I	3/18/2003	20.50	09:14	8.14	0.00	12.36	0.19	12.36
102-S-1	4/2/2002	20.58	10:32	7.42	0.00	13.16	NA	13.16
102-S-1	5/23/2002	20.58	12:52	8.05	0.00	12.53	-0.63	12.53
102-S-1	6/24/2002	20.58	12:13	8.57	0.00	12.01	-0.52	12.01
102-S-1	7/29/2002	20.58	10:19	8.91	0.00	11.67	-0.34	11.67
102-S-1	8/23/2002	20.58	12:17	9.22	0.00	11.36	-0.31	11.36
102-S-1	9/16/2002	20.58	15:03	9.50	0.00	11.08	-0.28	11.08
102-S-1	10/23/2002	20.58	12:13	9.89	0.00	10.69	-0.39	10.69
102-S-1	11/4/2002	20.58	11:15	10.01	0.00	10.57	-0.12	10.57
102-S-1	12/13/2002	20.58	11:10	10.00	0.00	10.58	0.01	10.58
102-S-1	1/31/2003	20.58	10:58	8.79	0.00	11.79	1.21	11.79
102-S-1	2/25/2003	20.58	09:50	8.64	0.00	11.94	0.15	11.94
102-S-1	3/18/2003	20.58	09:18	8.45	0.00	12.13	0.19	12.13
102-S-2	4/2/2002	20.64	10:29	7.50	0.00	13.14	NA	13.14
102-S-2	5/23/2002	20.64	12:49	8.11	0.00	12.53	-0.61	12.53
102-S-2	6/24/2002	20.64	12:06	8.51	0.00	12.13	-0.40	12.13
102-S-2	7/29/2002	20.64	10:24	8.98	0.00	11.66	-0.47	11.66
102-S-2	8/23/2002	20.64	12:21	9.26	0.00	11.38	-0.28	11.38
102-S-2	9/16/2002	20.64	15:06	9.59	0.00	11.05	-0.33	11.05
102-S-2	10/23/2002	20.63	12:09	9.97	0.00	10.66	-0.39	10.66
102-S-2	11/4/2002	20.63	11:18	10.08	0.00	10.55	-0.11	10.55
102-S-2	12/13/2002	20.63	11:11	10.06	0.00	10.57	0.02	10.57
102-S-2	1/31/2003	20.63	10:55	8.86	0.00	11.77	1.20	11.77
102-S-2	2/25/2003	20.63	09:53	8.70	0.00	11.93	0.16	11.93
102-S-2	3/18/2003	20.63	09:22	8.53	0.00	12.10	0.17	12.10
103-I	4/2/2002	20.72	09:35	7.82	0.00	12.90	NA	12.90

Vertical Datum is based on NAVD1988

Groundwater Elevation Data
April 2002 through March 2003
Remedial Investigation
PSC Georgetown

PERIOD: From 04/02/2002 thru 03/18/2003 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
103-I	5/23/2002	20.72	12:43	8.27	0.00	12.45	-0.45	12.45
103-I	6/24/2002	20.72	12:20	8.75	0.00	11.97	-0.48	11.97
103-I	7/29/2002	20.72	10:13	9.14	0.00	11.58	-0.39	11.58
103-I	8/23/2002	20.72	11:33	9.41	0.00	11.31	-0.27	11.31
103-I	9/16/2002	20.72	15:11	9.71	0.00	11.01	-0.30	11.01
103-I	10/23/2002	20.72	11:51	10.10	0.00	10.62	-0.39	10.62
103-I	11/4/2002	20.72	10:30	10.19	0.00	10.53	-0.09	10.53
103-I	12/13/2002	20.72	11:16	10.28	0.00	10.44	-0.09	10.44
103-I	1/31/2003	20.72	11:25	9.04	0.00	11.68	1.24	11.68
103-I	2/25/2003	20.72	09:41	8.89	0.00	11.83	0.15	11.83
103-I	3/18/2003	20.72	08:55	8.70	0.00	12.02	0.19	12.02
103-S-1	4/2/2002	20.69	09:26	8.11	0.00	12.58	NA	12.58
103-S-1	5/23/2002	20.68	12:35	8.55	0.00	12.13	-0.45	12.13
103-S-1	6/24/2002	20.68	12:32	9.01	0.00	11.67	-0.46	11.67
103-S-1	7/29/2002	20.68	10:23	9.40	0.00	11.28	-0.39	11.28
103-S-1	8/23/2002	20.68	11:25	9.87	0.00	10.81	-0.47	10.81
103-S-1	9/16/2002	20.68	15:17	9.94	0.00	10.74	-0.07	10.74
103-S-1	10/23/2002	20.68	11:41	10.34	0.00	10.34	-0.40	10.34
103-S-1	11/4/2002	20.68	10:40	10.40	0.00	10.28	-0.06	10.28
103-S-1	12/13/2002	20.68	11:24	10.51	0.00	10.17	-0.11	10.17
103-S-1	1/31/2003	20.68	11:13	9.39	0.00	11.29	1.12	11.29
103-S-1	2/25/2003	20.68	09:35	9.17	0.00	11.51	0.22	11.51
103-S-1	3/18/2003	20.68	09:02	9.02	0.00	11.66	0.15	11.66
103-S-2	4/2/2002	20.78	09:30	8.12	0.00	12.66	NA	12.66
103-S-2	5/23/2002	20.78	12:39	8.61	0.00	12.17	-0.49	12.17
103-S-2	6/24/2002	20.78	12:26	9.05	0.00	11.73	-0.44	11.73
103-S-2	7/29/2002	20.78	10:19	9.44	0.00	11.34	-0.39	11.34
103-S-2	8/23/2002	20.78	11:29	9.73	0.00	11.05	-0.29	11.05
103-S-2	9/16/2002	20.78	15:14	10.00	0.00	10.78	-0.27	10.78
103-S-2	10/23/2002	20.78	11:46	10.37	0.00	10.41	-0.37	10.41
103-S-2	11/4/2002	20.78	10:35	10.44	0.00	10.34	-0.07	10.34
103-S-2	12/13/2002	20.78	11:20	10.58	0.00	10.20	-0.14	10.20
103-S-2	1/31/2003	20.78	11:16	9.45	0.00	11.33	1.13	11.33
103-S-2	2/25/2003	20.78	09:38	9.22	0.00	11.56	0.23	11.56
103-S-2	3/18/2003	20.78	08:59	9.07	0.00	11.71	0.15	11.71
104-D	4/2/2002	20.27	10:01	9.04	0.00	11.23	NA	11.23

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104-D	5/23/2002	20.26	12:06	9.42	0.00	10.84	-0.39	10.84
104-D	6/24/2002	20.26	13:14	9.75	0.00	10.51	-0.33	10.51
104-D	7/29/2002	20.26	11:23	10.16	0.00	10.10	-0.41	10.10
104-D	8/23/2002	20.26	11:10	10.31	0.00	9.95	-0.15	9.95
104-D	9/16/2002	20.26	15:42	10.44	0.00	9.82	-0.13	9.82
104-D	10/23/2002	20.26	11:18	10.81	0.00	9.45	-0.37	9.45
104-D	11/4/2002	20.26	11:25	11.12	0.00	9.14	-0.31	9.14
104-D	12/13/2002	20.26	11:55	10.89	0.00	9.37	0.23	9.37
104-D	1/31/2003	20.26	10:55	10.12	0.00	10.14	0.77	10.14
104-D	2/25/2003	20.26	09:50	10.44	0.00	9.82	-0.32	9.82
104-D	3/18/2003	20.26	09:24	10.28	0.00	9.98	0.16	9.98
104-I	4/2/2002	19.78	09:17	7.37	0.00	12.41	NA	12.41
104-I	5/23/2002	19.78	12:29	7.85	0.00	11.93	-0.48	11.93
104-I	6/24/2002	19.78	13:08	8.28	0.00	11.50	-0.43	11.50
104-I	7/29/2002	19.78	11:18	8.68	0.00	11.10	-0.40	11.10
104-I	8/23/2002	19.78	11:13	8.94	0.00	10.84	-0.26	10.84
104-I	9/16/2002	19.78	15:39	9.19	0.00	10.59	-0.25	10.59
104-I	10/23/2002	19.78	11:03	9.56	0.00	10.22	-0.37	10.22
104-I	11/4/2002	19.78	11:22	9.71	0.00	10.07	-0.15	10.07
104-I	12/13/2002	19.78	11:53	9.77	0.00	10.01	-0.06	10.01
104-I	1/31/2003	19.78	10:42	8.62	0.00	11.16	1.15	11.16
104-I	2/25/2003	19.78	09:55	8.42	0.00	11.36	0.20	11.36
104-I	3/18/2003	19.78	09:20	8.27	0.00	11.51	0.15	11.51
104-S-1	4/2/2002	19.89	09:07	7.46	0.00	12.43	NA	12.43
104-S-1	5/23/2002	19.89	12:02	7.95	0.00	11.94	-0.49	11.94
104-S-1	6/24/2002	19.89	12:57	8.42	0.00	11.47	-0.47	11.47
104-S-1	7/29/2002	19.89	11:07	8.81	0.00	11.08	-0.39	11.08
104-S-1	8/23/2002	19.89	11:20	9.09	0.00	10.80	-0.28	10.80
104-S-1	9/16/2002	19.89	15:35	9.35	0.00	10.54	-0.26	10.54
104-S-1	10/23/2002	19.88	11:12	9.69	0.00	10.19	-0.35	10.19
104-S-1	11/4/2002	19.88	11:16	9.71	0.00	10.17	-0.02	10.17
104-S-1	12/13/2002	19.88	11:48	9.87	0.00	10.01	-0.16	10.01
104-S-1	1/31/2003	19.88	10:49	8.70	0.00	11.18	1.17	11.18
104-S-1	2/25/2003	19.88	10:02	8.48	0.00	11.40	0.22	11.40
104-S-1	3/18/2003	19.88	09:08	8.35	0.00	11.53	0.13	11.53
104-S-2	4/2/2002	19.74	09:12	7.24	0.00	12.50	NA	12.50

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104-S-2	5/23/2002	19.74	11:58	7.75	0.00	11.99	-0.51	11.99
104-S-2	6/24/2002	19.74	13:03	8.20	0.00	11.54	-0.45	11.54
104-S-2	7/29/2002	19.74	11:14	8.97	0.00	10.77	-0.77	10.77
104-S-2	8/23/2002	19.74	11:16	8.86	0.00	10.88	0.11	10.88
104-S-2	9/16/2002	19.74	15:37	9.12	0.00	10.62	-0.26	10.62
104-S-2	10/23/2002	19.73	11:07	9.47	0.00	10.26	-0.36	10.26
104-S-2	11/4/2002	19.73	11:19	9.55	0.00	10.18	-0.08	10.18
104-S-2	12/13/2002	19.73	11:50	9.67	0.00	10.06	-0.12	10.06
104-S-2	1/31/2003	19.73	10:46	8.49	0.00	11.24	1.18	11.24
104-S-2	2/25/2003	19.73	09:58	8.28	0.00	11.45	0.21	11.45
104-S-2	3/18/2003	19.73	09:12	8.14	0.00	11.59	0.14	11.59
105-I	4/2/2002	20.11	10:54	7.36	0.00	12.75	NA	12.75
105-I	5/23/2002	20.11	12:12	7.93	0.00	12.18	-0.57	12.18
105-I	6/24/2002	20.11	13:53	8.34	0.00	11.77	-0.41	11.77
105-I	7/29/2002	20.11	10:55	8.73	0.00	11.38	-0.39	11.38
105-I	8/23/2002	20.11	10:25	9.00	0.00	11.11	-0.27	11.11
105-I	9/16/2002	20.11	15:34	9.40	0.00	10.71	-0.40	10.71
105-I	10/23/2002	20.11	12:04	10.65	0.00	9.46	-1.25	9.46
105-I	11/4/2002	20.11	14:55	9.76	0.00	10.35	0.89	10.35
105-I	12/13/2002	20.11	12:35	9.73	0.00	10.38	0.03	10.38
105-I	1/31/2003	20.11	09:05	8.35	0.00	11.76	1.38	11.76
105-I	2/25/2003	20.11	10:06	8.30	0.00	11.81	0.05	11.81
105-I	3/18/2003	20.11	09:58	8.10	0.00	12.01	0.20	12.01
105-S-1	4/2/2002	20.01	10:46	7.43	0.00	12.58	NA	12.58
105-S-1	5/23/2002	20.01	12:20	8.01	0.00	12.00	-0.58	12.00
105-S-1	6/24/2002	20.01	13:42	8.48	0.00	11.53	-0.47	11.53
105-S-1	7/29/2002	20.01	10:44	8.86	0.00	11.15	-0.38	11.15
105-S-1	8/23/2002	20.01	10:35	9.14	0.00	10.87	-0.28	10.87
105-S-1	9/16/2002	20.01	15:42	9.28	0.00	10.73	-0.14	10.73
105-S-1	10/23/2002	20.00	11:55	9.78	0.00	10.22	-0.51	10.22
105-S-1	11/4/2002	20.00	11:47	9.88	0.00	10.12	-0.10	10.12
105-S-1	12/13/2002	20.00	12:24	9.91	0.00	10.09	-0.03	10.09
105-S-1	1/31/2003	20.00	08:55	8.62	0.00	11.38	1.29	11.38
105-S-1	2/25/2003	20.00	10:12	8.49	0.00	11.51	0.13	11.51
105-S-1	3/18/2003	20.00	10:08	8.31	0.00	11.69	0.18	11.69
105-S-2	4/2/2002	20.06	10:49	7.45	0.00	12.61	NA	12.61

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105-S-2	5/23/2002	20.05	12:15	8.01	0.00	12.04	-0.57	12.04
105-S-2	6/24/2002	20.05	13:49	8.49	0.00	11.56	-0.48	11.56
105-S-2	7/29/2002	20.05	10:50	8.87	0.00	11.18	-0.38	11.18
105-S-2	8/23/2002	20.05	10:30	9.15	0.00	10.90	-0.28	10.90
105-S-2	9/16/2002	20.05	15:38	9.40	0.00	10.65	-0.25	10.65
105-S-2	10/23/2002	20.05	12:00	9.78	0.00	10.27	-0.38	10.27
105-S-2	11/4/2002	20.05	11:49	9.85	0.00	10.20	-0.07	10.20
105-S-2	12/13/2002	20.05	12:32	9.91	0.00	10.14	-0.06	10.14
105-S-2	1/31/2003	20.05	09:00	8.61	0.00	11.44	1.30	11.44
105-S-2	2/25/2003	20.05	10:09	8.50	0.00	11.55	0.11	11.55
105-S-2	3/18/2003	20.05	10:02	8.33	0.00	11.72	0.17	11.72
10-S-1	4/2/2002	18.73	08:58	5.77	0.00	12.96	NA	12.96
10-S-1	5/23/2002	18.73	12:26	6.24	0.00	12.49	-0.47	12.49
10-S-1	6/24/2002	18.73	14:03	6.73	0.00	12.00	-0.49	12.00
10-S-1	7/29/2002	18.73	11:14	7.16	0.00	11.57	-0.43	11.57
10-S-1	8/23/2002	18.73	10:54	7.47	0.00	11.26	-0.31	11.26
10-S-1	9/16/2002	18.73	14:45	7.75	0.00	10.98	-0.28	10.98
10-S-1	10/23/2002	18.73	11:51	8.09	0.00	10.64	-0.34	10.64
10-S-1	11/4/2002	18.73	10:16	8.25	0.00	10.48	-0.16	10.48
10-S-1	12/13/2002	18.73	10:58	8.21	0.00	10.52	0.04	10.52
10-S-1	1/31/2003	18.73	09:17	6.83	0.00	11.90	1.38	11.90
10-S-1	2/25/2003	18.73	09:03	6.77	0.00	11.96	0.06	11.96
10-S-1	3/18/2003	18.73	08:48	6.53	0.00	12.20	0.24	12.20
111-I	4/2/2002	19.89	11:21	6.90	0.00	12.99	NA	12.99
111-I	5/23/2002	19.89	11:24	7.32	0.00	12.57	-0.42	12.57
111-I	6/24/2002	19.88	11:43	7.73	0.00	12.15	-0.42	12.15
111-I	7/29/2002	19.88	10:05	8.20	0.00	11.68	-0.47	11.68
111-I	8/23/2002	19.88	10:15	8.51	0.00	11.37	-0.31	11.37
111-I	9/16/2002	19.88	14:40	8.71	0.00	11.17	-0.20	11.17
111-I	10/23/2002	19.88	12:31	9.09	0.00	10.79	-0.38	10.79
111-I	11/4/2002	19.88	10:20	9.21	0.00	10.67	-0.12	10.67
111-I	12/13/2002	19.88	10:50	9.13	0.00	10.75	0.08	10.75
111-I	1/31/2003	19.88	11:11	7.88	0.00	12.00	1.25	12.00
111-I	2/25/2003	19.88	10:25	7.86	0.00	12.02	0.02	12.02
111-I	3/18/2003	19.88	09:35	7.43	0.00	12.45	0.43	12.45
112-S-1	4/2/2002	20.56	08:07	8.15	0.00	12.41	NA	12.41

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112-S-1	5/23/2002	20.55	11:34	8.61	0.00	11.94	-0.47	11.94
112-S-1	6/24/2002	20.57	12:44	9.05	0.00	11.52	-0.42	11.52
112-S-1	7/29/2002	20.57	10:35	9.44	0.00	11.13	-0.39	11.13
112-S-1	8/23/2002	20.57	10:45	9.71	0.00	10.86	-0.27	10.86
112-S-1	9/16/2002	20.57	15:31	9.97	0.00	10.60	-0.26	10.60
112-S-1	10/23/2002	20.57	12:24	10.32	0.00	10.25	-0.35	10.25
112-S-1	11/4/2002	20.57	11:03	10.42	0.00	10.15	-0.10	10.15
112-S-1	12/13/2002	20.57	12:17	10.53	0.00	10.04	-0.11	10.04
112-S-1	1/31/2003	20.57	11:03	9.43	0.00	11.14	1.10	11.14
112-S-1	2/25/2003	20.57	09:28	9.17	0.00	11.40	0.26	11.40
112-S-1	3/18/2003	20.57	09:34	9.05	0.00	11.52	0.12	11.52
113-S-1	4/2/2002	20.31	08:21	7.97	0.00	12.34	NA	12.34
113-S-1	5/23/2002	20.31	11:39	8.48	0.00	11.83	-0.51	11.83
113-S-1	6/24/2002	20.33	12:50	8.91	0.00	11.42	-0.41	11.42
113-S-1	7/29/2002	20.33	11:03	9.30	0.00	11.03	-0.39	11.03
113-S-1	8/23/2002	20.33	10:51	9.56	0.00	10.77	-0.26	10.77
113-S-1	9/16/2002	20.33	15:20	9.81	0.00	10.52	-0.25	10.52
113-S-1	10/23/2002	20.32	12:30	10.16	0.00	10.16	-0.36	10.16
113-S-1	11/4/2002	20.32	11:07	10.25	0.00	10.07	-0.09	10.07
113-S-1	12/13/2002	20.32	12:13	10.35	0.00	9.97	-0.10	9.97
113-S-1	1/31/2003	20.32	11:00	9.23	0.00	11.09	1.12	11.09
113-S-1	2/25/2003	20.32	09:25	9.00	0.00	11.32	0.23	11.32
113-S-1	3/18/2003	20.32	09:28	8.86	0.00	11.46	0.14	11.46
11-I	4/2/2002	17.27	09:27	4.07	0.00	13.20	NA	13.20
11-I	5/23/2002	17.27	12:49	4.96	0.00	12.31	-0.89	12.31
11-I	6/24/2002	17.27	13:46	5.46	0.00	11.81	-0.50	11.81
11-I	7/29/2002	17.27	11:39	5.85	0.00	11.42	-0.39	11.42
11-I	8/23/2002	17.27	11:15	6.14	0.00	11.13	-0.29	11.13
11-I	9/16/2002	17.27	15:06	6.41	0.00	10.86	-0.27	10.86
11-I	10/23/2002	17.27	11:28	6.75	0.00	10.52	-0.34	10.52
11-I	11/4/2002	17.27	10:41	6.89	0.00	10.38	-0.14	10.38
11-I	12/13/2002	17.27	11:15	6.51	0.00	10.76	0.38	10.76
11-I	1/31/2003	17.27	09:30	4.99	0.00	12.28	1.52	12.28
11-I	2/25/2003	17.27	09:20	5.44	0.00	11.83	-0.45	11.83
11-I	3/18/2003	17.27	09:00	5.22	0.00	12.05	0.22	12.05
11-S-1	4/2/2002	17.19	09:25	4.43	0.00	12.76	NA	12.76

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11-S-1	5/23/2002	17.18	12:45	4.96	0.00	12.22	-0.54	12.22
11-S-1	6/24/2002	17.18	13:42	5.44	0.00	11.74	-0.48	11.74
11-S-1	7/29/2002	17.18	11:36	5.84	0.00	11.34	-0.40	11.34
11-S-1	8/23/2002	17.18	11:18	6.13	0.00	11.05	-0.29	11.05
11-S-1	9/16/2002	17.18	15:03	6.41	0.00	10.77	-0.28	10.77
11-S-1	10/23/2002	17.18	11:30	6.73	0.00	10.45	-0.32	10.45
11-S-1	11/4/2002	17.18	10:38	6.89	0.00	10.29	-0.16	10.29
11-S-1	12/13/2002	17.18	11:12	6.90	0.00	10.28	-0.01	10.28
11-S-1	1/31/2003	17.18	09:28	5.50	0.00	11.68	1.40	11.68
11-S-1	2/25/2003	17.18	09:17	5.05	0.00	12.13	0.45	12.13
11-S-1	3/18/2003	17.18	08:58	4.85	0.00	12.33	0.20	12.33
12-I	4/2/2002	17.06	09:29	3.72	0.00	13.34	NA	13.34
12-I	5/23/2002	17.06	13:08	4.34	0.00	12.72	-0.62	12.72
12-I	6/24/2002	17.06	13:57	4.84	0.00	12.22	-0.50	12.22
12-I	7/29/2002	17.06	11:44	5.21	0.00	11.85	-0.37	11.85
12-I	8/23/2002	17.06	11:12	5.49	0.00	11.57	-0.28	11.57
12-I	9/16/2002	17.06	15:10	5.78	0.00	11.28	-0.29	11.28
12-I	10/23/2002	17.06	11:24	6.21	0.00	10.85	-0.43	10.85
12-I	11/4/2002	17.06	10:45	6.27	0.00	10.79	-0.06	10.79
12-I	12/13/2002	17.06	11:20	6.17	0.00	10.89	0.10	10.89
12-I	1/31/2003	17.06	09:36	4.59	0.00	12.47	1.58	12.47
12-I	2/25/2003	17.06	09:24	4.71	0.00	12.35	-0.12	12.35
12-I	3/18/2003	17.06	09:04	4.50	0.00	12.56	0.21	12.56
1-D	4/2/2002	18.09	09:16	5.31	0.00	12.78	NA	12.78
1-D	5/23/2002	18.09	12:31	5.88	0.00	12.21	-0.57	12.21
1-D	6/24/2002	18.09	00:00	NM	NA	NA	NA	NA
1-D	7/29/2002	18.09	11:21	6.67	0.00	11.42	-6.67	11.42
1-D	8/23/2002	18.09	11:21	6.86	0.00	11.23	-0.19	11.23
1-D	9/16/2002	18.09	14:56	7.04	0.00	11.05	-0.18	11.05
1-D	10/23/2002	18.09	11:43	7.41	0.00	10.68	-0.37	10.68
1-D	11/4/2002	18.09	10:26	7.48	0.00	10.61	-0.07	10.61
1-D	12/13/2002	18.09	11:04	7.35	0.00	10.74	0.13	10.74
1-D	1/31/2003	18.09	09:20	6.26	0.00	11.83	1.09	11.83
1-D	2/25/2003	18.09	09:14	6.23	0.00	11.86	0.03	11.86
1-D	3/18/2003	18.09	08:55	6.31	0.00	11.78	-0.08	11.78
1-I	4/2/2002	17.76	09:22	4.50	0.00	13.26	NA	13.26

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SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
1-I	5/23/2002	17.76	12:39	5.11	0.00	12.65	-0.61	12.65
1-I	6/24/2002	17.76	14:37	5.58	0.00	12.18	-0.47	12.18
1-I	7/29/2002	17.76	11:29	5.95	0.00	11.81	-0.37	11.81
1-I	8/23/2002	17.76	11:08	6.25	0.00	11.51	-0.30	11.51
1-I	9/16/2002	17.76	14:56	6.52	0.00	11.24	-0.27	11.24
1-I	10/23/2002	17.76	11:38	6.88	0.00	10.88	-0.36	10.88
1-I	11/4/2002	17.76	10:28	7.02	0.00	10.74	-0.14	10.74
1-I	12/13/2002	17.76	11:06	6.95	0.00	10.81	0.07	10.81
1-I	1/31/2003	17.76	09:25	5.48	0.00	12.28	1.47	12.28
1-I	2/25/2003	17.76	09:10	5.51	0.00	12.25	-0.03	12.25
1-I	3/18/2003	17.76	08:53	5.32	0.00	12.44	0.19	12.44
1-S-1	4/2/2002	18.02	09:21	5.17	0.00	12.85	NA	12.85
1-S-1	5/23/2002	18.02	12:36	5.70	0.00	12.32	-0.53	12.32
1-S-1	6/24/2002	18.02	13:36	6.13	0.00	11.89	-0.43	11.89
1-S-1	7/29/2002	18.02	11:25	6.58	0.00	11.44	-0.45	11.44
1-S-1	8/23/2002	18.02	11:04	6.87	0.00	11.15	-0.29	11.15
1-S-1	9/16/2002	18.02	14:53	7.15	0.00	10.87	-0.28	10.87
1-S-1	10/23/2002	18.02	11:41	7.48	0.00	10.54	-0.33	10.54
1-S-1	11/4/2002	18.02	10:31	7.63	0.00	10.39	-0.15	10.39
1-S-1	12/13/2002	18.02	11:09	7.59	0.00	10.43	0.04	10.43
1-S-1	1/31/2003	18.02	09:23	6.24	0.00	11.78	1.35	11.78
1-S-1	2/25/2003	18.02	09:07	6.18	0.00	11.84	0.06	11.84
1-S-1	3/18/2003	18.02	08:51	5.97	0.00	12.05	0.21	12.05
2-S-1	4/2/2002	21.58	11:19	8.67	0.00	12.91	NA	12.91
2-S-1	5/23/2002	21.57	12:02	9.14	0.00	12.43	-0.48	12.43
2-S-1	6/24/2002	21.57	14:30	9.57	0.00	12.00	-0.43	12.00
2-S-1	7/29/2002	21.57	10:47	10.01	0.00	11.56	-0.44	11.56
2-S-1	8/23/2002	21.57	11:50	10.32	0.00	11.25	-0.31	11.25
2-S-1	9/16/2002	21.57	14:18	10.59	0.00	10.98	-0.27	10.98
2-S-1	10/23/2002	21.57	12:24	10.89	0.00	10.68	-0.30	10.68
2-S-1	11/4/2002	21.57	09:52	11.06	0.00	10.51	-0.17	10.51
2-S-1	12/13/2002	21.57	11:29	6.51	0.00	15.06	4.55	15.06
2-S-1	1/31/2003	21.57	08:50	9.88	0.00	11.69	-3.37	11.69
2-S-1	2/25/2003	21.57	08:36	9.70	0.00	11.87	0.18	11.87
2-S-1	3/18/2003	21.57	08:00	9.51	0.00	12.06	0.19	12.06
5-D	4/2/2002	20.99	07:48	8.75	0.00	12.24	NA	12.24

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5-D	5/23/2002	20.99	12:58	9.01	0.00	11.98	-0.26	11.98
5-D	6/24/2002	20.99	13:01	8.52	0.00	12.47	0.49	12.47
5-D	7/29/2002	20.99	10:38	9.90	0.00	11.09	-1.38	11.09
5-D	8/23/2002	20.99	10:19	10.13	0.00	10.86	-0.23	10.86
5-D	9/16/2002	20.99	14:01	10.31	0.00	10.68	-0.18	10.68
5-D	10/23/2002	20.99	12:14	10.74	0.00	10.25	-0.43	10.25
5-D	11/4/2002	20.99	09:38	10.67	0.00	10.32	0.07	10.32
5-D	12/13/2002	20.99	10:45	10.59	0.00	10.40	0.08	10.40
5-D	1/31/2003	20.99	09:00	9.98	0.00	11.01	0.61	11.01
5-D	2/25/2003	20.99	08:57	9.61	0.00	11.38	0.37	11.38
5-D	3/18/2003	20.99	08:41	9.58	0.00	11.41	0.03	11.41
5-I	4/2/2002	20.88	09:45	7.70	0.00	13.18	NA	13.18
5-I	5/23/2002	20.88	11:51	8.22	0.00	12.66	-0.52	12.66
5-I	6/24/2002	20.88	13:07	7.82	0.00	13.06	0.40	13.06
5-I	7/29/2002	20.88	10:31	9.10	0.00	11.78	-1.28	11.78
5-I	8/23/2002	20.88	10:31	9.39	0.00	11.49	-0.29	11.49
5-I	9/16/2002	20.88	14:08	9.62	0.00	11.26	-0.23	11.26
5-I	10/23/2002	20.88	12:08	9.99	0.00	10.89	-0.37	10.89
5-I	11/4/2002	20.88	09:44	10.11	0.00	10.77	-0.12	10.77
5-I	12/13/2002	20.88	10:50	10.10	0.00	10.78	0.01	10.78
5-I	1/31/2003	20.88	09:05	7.99	0.00	12.89	2.11	12.89
5-I	2/25/2003	20.88	08:54	8.72	0.00	12.16	-0.73	12.16
5-I	3/18/2003	20.88	08:38	8.71	0.00	12.17	0.01	12.17
5-S-1	4/2/2002	21.05	07:55	7.75	0.00	13.30	NA	13.30
5-S-1	5/23/2002	21.05	11:46	8.24	0.00	12.81	-0.49	12.81
5-S-1	6/24/2002	21.05	00:00	NM	NA	NA	NA	NA
5-S-1	7/29/2002	21.05	10:33	9.17	0.00	11.88	-9.17	11.88
5-S-1	8/23/2002	21.05	10:25	9.51	0.00	11.54	-0.34	11.54
5-S-1	9/16/2002	21.05	14:05	9.81	0.00	11.24	-0.30	11.24
5-S-1	10/23/2002	21.05	12:12	10.13	0.00	10.92	-0.32	10.92
5-S-1	11/4/2002	21.05	09:42	10.29	0.00	10.76	-0.16	10.76
5-S-1	12/13/2002	21.05	10:40	10.25	0.00	10.80	0.04	10.80
5-S-1	1/31/2003	21.05	09:03	8.88	0.00	12.17	1.37	12.17
5-S-1	2/25/2003	21.05	08:51	8.85	0.00	12.20	0.03	12.20
5-S-1	3/18/2003	21.05	08:35	8.61	0.00	12.44	0.24	12.44
6-S-1	4/2/2002	18.20	08:05	5.05	0.00	13.15	NA	13.15

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6-S-1	5/23/2002	18.20	12:21	5.57	0.00	12.63	-0.52	12.63
6-S-1	6/24/2002	18.20	00:00	NM	NA	NA	NA	NA
6-S-1	7/29/2002	18.20	11:09	6.47	0.00	11.73	-6.47	11.73
6-S-1	8/23/2002	18.20	10:37	6.76	0.00	11.44	-0.29	11.44
6-S-1	9/16/2002	18.20	14:39	7.05	0.00	11.15	-0.29	11.15
6-S-1	10/23/2002	18.20	12:02	7.39	0.00	10.81	-0.34	10.81
6-S-1	11/4/2002	18.20	10:11	7.54	0.00	10.66	-0.15	10.66
6-S-1	12/13/2002	18.20	10:55	7.52	0.00	10.68	0.02	10.68
6-S-1	1/31/2003	18.20	09:10	6.15	0.00	12.05	1.37	12.05
6-S-1	2/25/2003	18.20	09:00	6.09	0.00	12.11	0.06	12.11
6-S-1	3/18/2003	18.20	08:44	5.86	0.00	12.34	0.23	12.34
8-S-1	4/2/2002	21.54	10:50	NM	NA	NA	NA	NA
8-S-1	5/23/2002	21.54	12:07	9.26	0.00	12.28	-9.26	12.28
8-S-1	6/24/2002	21.54	00:00	NM	NA	NA	NA	NA
8-S-1	7/29/2002	21.54	10:53	10.12	0.00	11.42	-10.12	11.42
8-S-1	8/23/2002	21.54	11:49	10.43	0.00	11.11	-0.31	11.11
8-S-1	9/16/2002	21.54	14:24	10.70	0.00	10.84	-0.27	10.84
8-S-1	10/23/2002	21.54	12:28	11.03	0.00	10.51	-0.33	10.51
8-S-1	11/4/2002	21.54	09:58	11.18	0.00	10.36	-0.15	10.36
8-S-1	12/13/2002	21.54	00:00	NM	NA	NA	NA	NA
8-S-1	1/31/2003	21.54	08:46	10.02	0.00	11.52	-10.02	11.52
8-S-1	2/25/2003	21.54	08:41	9.82	0.00	11.72	0.20	11.72
8-S-1	3/18/2003	21.54	08:28	9.66	0.00	11.88	0.16	11.88
9-I	4/2/2002	21.79	10:32	8.65	0.00	13.14	NA	13.14
9-I	5/23/2002	21.79	12:12	9.17	0.00	12.62	-0.52	12.62
9-I	6/24/2002	21.79	14:16	9.63	0.00	12.16	-0.46	12.16
9-I	7/29/2002	21.79	11:03	10.04	0.00	11.75	-0.41	11.75
9-I	8/23/2002	21.79	11:42	10.34	0.00	11.45	-0.30	11.45
9-I	9/16/2002	21.79	14:30	10.61	0.00	11.18	-0.27	11.18
9-I	10/23/2002	21.79	12:33	10.95	0.00	10.84	-0.34	10.84
9-I	11/4/2002	21.79	10:02	11.10	0.00	10.69	-0.15	10.69
9-I	12/13/2002	21.79	11:31	11.09	0.00	10.70	0.01	10.70
9-I	1/31/2003	21.79	09:41	9.76	0.00	12.03	1.33	12.03
9-I	2/25/2003	21.79	08:48	9.68	0.00	12.11	0.08	12.11
9-I	3/18/2003	21.79	08:33	9.50	0.00	12.29	0.18	12.29
9-S-1	4/2/2002	21.95	10:30	9.31	0.00	12.64	NA	12.64

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9-S-1	5/23/2002	21.94	12:17	9.80	0.00	12.14	-0.50	12.14
9-S-1	6/24/2002	21.94	14:21	10.23	0.00	11.71	-0.43	11.71
9-S-1	7/29/2002	21.94	11:00	10.64	0.00	11.30	-0.41	11.30
9-S-1	8/23/2002	21.94	11:40	10.94	0.00	11.00	-0.30	11.00
9-S-1	9/16/2002	21.94	14:33	11.21	0.00	10.73	-0.27	10.73
9-S-1	10/23/2002	21.94	12:36	11.52	0.00	10.42	-0.31	10.42
9-S-1	11/4/2002	21.94	10:05	11.69	0.00	10.25	-0.17	10.25
9-S-1	12/13/2002	21.94	11:34	11.78	0.00	10.16	-0.09	10.16
9-S-1	1/31/2003	21.94	09:44	10.53	0.00	11.41	1.25	11.41
9-S-1	2/25/2003	21.94	08:44	10.33	0.00	11.61	0.20	11.61
9-S-1	3/18/2003	21.94	08:30	10.18	0.00	11.76	0.15	11.76
CG-106-D	5/23/2002	19.02	11:32	6.07	0.00	12.95	NA	12.95
CG-106-D	6/24/2002	19.02	14:38	6.49	0.00	12.53	-0.42	12.53
CG-106-D	7/29/2002	19.02	11:57	6.96	0.00	12.06	-0.47	12.06
CG-106-D	8/23/2002	19.02	10:02	7.21	0.00	11.81	-0.25	11.81
CG-106-D	9/16/2002	19.02	14:32	7.42	0.00	11.60	-0.21	11.60
CG-106-D	10/23/2002	19.02	12:55	7.87	0.00	11.15	-0.45	11.15
CG-106-D	11/4/2002	19.02	09:59	7.91	0.00	11.11	-0.04	11.11
CG-106-D	12/13/2002	19.02	12:29	7.66	0.00	11.36	0.25	11.36
CG-106-D	1/31/2003	19.02	10:50	6.26	0.00	12.76	1.40	12.76
CG-106-D	2/25/2003	19.02	11:10	6.41	0.00	12.61	-0.15	12.61
CG-106-D	3/18/2003	19.02	09:50	6.38	0.00	12.64	0.03	12.64
CG-106-I	5/23/2002	18.92	11:25	5.46	0.00	13.46	NA	13.46
CG-106-I	6/24/2002	18.92	14:39	5.97	0.00	12.95	-0.51	12.95
CG-106-I	7/29/2002	18.92	11:50	6.42	0.00	12.50	-0.45	12.50
CG-106-I	8/23/2002	18.92	09:54	6.81	0.00	12.11	-0.39	12.11
CG-106-I	9/16/2002	18.92	14:24	7.07	0.00	11.85	-0.26	11.85
CG-106-I	10/23/2002	18.92	13:04	7.47	0.00	11.45	-0.40	11.45
CG-106-I	11/4/2002	18.92	09:52	7.54	0.00	11.38	-0.07	11.38
CG-106-I	12/13/2002	18.92	12:27	7.35	0.00	11.57	0.19	11.57
CG-106-I	1/31/2003	18.92	10:44	5.33	0.00	13.59	2.02	13.59
CG-106-I	2/25/2003	18.92	11:15	5.80	0.00	13.12	-0.47	13.12
CG-106-I	3/18/2003	18.92	09:59	5.37	0.00	13.55	0.43	13.55
CG-106-WT	5/23/2002	19.16	11:29	5.85	0.00	13.31	NA	13.31
CG-106-WT	6/24/2002	19.16	14:36	6.31	0.00	12.85	-0.46	12.85
CG-106-WT	7/29/2002	19.16	11:53	6.77	0.00	12.39	-0.46	12.39

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CG-106-WT	8/23/2002	19.16	09:57	7.13	0.00	12.03	-0.36	12.03
CG-106-WT	9/16/2002	19.16	14:27	7.41	0.00	11.75	-0.28	11.75
CG-106-WT	10/23/2002	19.16	12:59	7.81	0.00	11.35	-0.40	11.35
CG-106-WT	11/4/2002	19.16	09:54	7.88	0.00	11.28	-0.07	11.28
CG-106-WT	12/13/2002	19.16	12:31	7.95	0.00	11.21	-0.07	11.21
CG-106-WT	1/31/2003	19.16	10:40	5.58	0.00	13.58	2.37	13.58
CG-106-WT	2/25/2003	19.16	11:13	6.23	0.00	12.93	-0.65	12.93
CG-106-WT	3/18/2003	19.16	09:54	5.81	0.00	13.35	0.42	13.35
CG-107-WT	5/23/2002	19.05	11:18	6.35	0.00	12.70	NA	12.70
CG-107-WT	6/24/2002	19.05	11:35	6.84	0.00	12.21	-0.49	12.21
CG-107-WT	7/29/2002	19.05	09:57	7.26	0.00	11.79	-0.42	11.79
CG-107-WT	8/23/2002	19.05	10:09	7.56	0.00	11.49	-0.30	11.49
CG-107-WT	9/16/2002	19.05	14:45	8.85	0.00	10.20	-1.29	10.20
CG-107-WT	10/23/2002	19.05	12:26	8.28	0.00	10.77	0.57	10.77
CG-107-WT	11/4/2002	19.05	10:25	8.31	0.00	10.74	-0.03	10.74
CG-107-WT	12/13/2002	19.05	10:43	8.25	0.00	10.80	0.06	10.80
CG-107-WT	1/31/2003	19.05	11:15	6.90	0.00	12.15	1.35	12.15
CG-107-WT	2/25/2003	19.05	10:28	6.93	0.00	12.12	-0.03	12.12
CG-107-WT	3/18/2003	19.05	09:25	6.70	0.00	12.35	0.23	12.35
CG-114-75	4/2/2002	19.99	07:51	7.57	0.00	12.42	NA	12.42
CG-114-75	5/23/2002	20.00	11:53	8.11	0.00	11.89	-0.53	11.89
CG-114-75	6/24/2002	20.00	13:30	8.55	0.00	11.45	-0.44	11.45
CG-114-75	7/29/2002	20.00	11:37	8.95	0.00	11.05	-0.40	11.05
CG-114-75	8/23/2002	20.00	10:56	9.25	0.00	10.75	-0.30	10.75
CG-114-75	9/16/2002	20.00	15:20	9.48	0.00	10.52	-0.23	10.52
CG-114-75	10/23/2002	20.00	11:35	9.84	0.00	10.16	-0.36	10.16
CG-114-75	11/4/2002	20.00	11:45	9.92	0.00	10.08	-0.08	10.08
CG-114-75	12/13/2002	20.00	12:08	9.99	0.00	10.01	-0.07	10.01
CG-114-75	1/31/2003	20.00	10:32	8.79	0.00	11.21	1.20	11.21
CG-114-75	2/25/2003	20.00	08:40	8.62	0.00	11.38	0.17	11.38
CG-114-75	3/18/2003	20.00	08:32	8.48	0.00	11.52	0.14	11.52
CG-115-75	4/2/2002	20.08	07:56	7.64	0.00	12.44	NA	12.44
CG-115-75	5/23/2002	20.09	11:49	8.18	0.00	11.91	-0.53	11.91
CG-115-75	6/24/2002	20.09	13:26	8.63	0.00	11.46	-0.45	11.46
CG-115-75	7/29/2002	20.09	11:33	9.02	0.00	11.07	-0.39	11.07
CG-115-75	8/23/2002	20.09	11:00	9.29	0.00	10.80	-0.27	10.80

Vertical Datum is based on NAVD1988

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SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-115-75	9/16/2002	20.09	15:00	9.54	0.00	10.55	-0.25	10.55
CG-115-75	10/23/2002	20.09	11:26	9.91	0.00	10.18	-0.37	10.18
CG-115-75	11/4/2002	20.09	11:40	9.99	0.00	10.10	-0.08	10.10
CG-115-75	12/13/2002	20.09	12:03	10.08	0.00	10.01	-0.09	10.01
CG-115-75	1/31/2003	20.09	10:27	8.87	0.00	11.22	1.21	11.22
CG-115-75	2/25/2003	20.09	08:45	8.70	0.00	11.39	0.17	11.39
CG-115-75	3/18/2003	20.09	08:36	8.58	0.00	11.51	0.12	11.51
CG-115-WT	4/2/2002	20.13	08:02	7.82	0.00	12.31	NA	12.31
CG-115-WT	5/23/2002	20.14	11:44	8.36	0.00	11.78	-0.53	11.78
CG-115-WT	6/24/2002	20.14	13:20	9.81	0.00	10.33	-1.45	10.33
CG-115-WT	7/29/2002	20.14	11:28	9.17	0.00	10.97	0.64	10.97
CG-115-WT	8/23/2002	20.14	11:04	9.46	0.00	10.68	-0.29	10.68
CG-115-WT	9/16/2002	20.14	14:56	9.69	0.00	10.45	-0.23	10.45
CG-115-WT	10/23/2002	20.14	11:23	10.07	0.00	10.07	-0.38	10.07
CG-115-WT	11/4/2002	20.14	11:33	10.18	0.00	9.96	-0.11	9.96
CG-115-WT	12/13/2002	20.14	12:05	10.25	0.00	9.89	-0.07	9.89
CG-115-WT	1/31/2003	20.14	10:24	9.02	0.00	11.12	1.23	11.12
CG-115-WT	2/25/2003	20.14	08:43	8.85	0.00	11.29	0.17	11.29
CG-115-WT	3/18/2003	20.14	08:40	8.74	0.00	11.40	0.11	11.40
CG-119-40	4/2/2002	20.34	08:13	7.81	0.00	12.53	NA	12.53
CG-119-40	5/23/2002	20.35	11:30	8.29	0.00	12.06	-0.47	12.06
CG-119-40	6/24/2002	20.35	12:38	8.73	0.00	11.62	-0.44	11.62
CG-119-40	7/29/2002	20.35	10:30	6.12	0.00	14.23	2.61	14.23
CG-119-40	8/23/2002	20.35	11:40	9.39	0.00	10.96	-3.27	10.96
CG-119-40	9/16/2002	20.35	15:23	10.65	0.00	9.70	-1.26	9.70
CG-119-40	10/23/2002	20.35	11:01	9.81	0.00	10.54	0.84	10.54
CG-119-40	11/4/2002	20.35	10:45	10.11	0.00	10.24	-0.30	10.24
CG-119-40	12/13/2002	20.35	11:35	10.23	0.00	10.12	-0.12	10.12
CG-119-40	1/31/2003	20.35	11:40	9.10	0.00	11.25	1.13	11.25
CG-119-40	2/25/2003	20.35	09:03	8.90	0.00	11.45	0.20	11.45
CG-119-40	3/18/2003	20.35	09:08	8.74	0.00	11.61	0.16	11.61
CG-120-75	4/2/2002	19.15	09:20	6.84	0.00	12.31	NA	12.31
CG-120-75	5/23/2002	19.16	11:58	7.34	0.00	11.82	-0.49	11.82
CG-120-75	6/24/2002	19.16	14:02	7.78	0.00	11.38	-0.44	11.38
CG-120-75	7/29/2002	19.16	11:20	8.02	0.00	11.14	-0.24	11.14
CG-120-75	8/23/2002	19.16	11:49	8.43	0.00	10.73	-0.41	10.73

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CG-120-75	9/16/2002	19.16	14:45	8.69	0.00	10.47	-0.26	10.47
CG-120-75	10/23/2002	19.16	11:37	9.05	0.00	10.11	-0.36	10.11
CG-120-75	11/4/2002	19.16	09:45	9.14	0.00	10.02	-0.09	10.02
CG-120-75	12/13/2002	19.16	12:10	9.21	0.00	9.95	-0.07	9.95
CG-120-75	1/31/2003	19.16	11:30	8.02	0.00	11.14	1.19	11.14
CG-120-75	2/25/2003	19.16	08:32	7.87	0.00	11.29	0.15	11.29
CG-120-75	3/18/2003	19.16	08:50	7.71	0.00	11.45	0.16	11.45
CG-121-40	4/2/2002	19.09	09:11	7.01	0.00	12.08	NA	12.08
CG-121-40	5/23/2002	19.10	12:07	7.54	0.00	11.56	-0.52	11.56
CG-121-40	6/24/2002	19.10	13:55	7.93	0.00	11.17	-0.39	11.17
CG-121-40	7/29/2002	19.10	11:14	8.17	0.00	10.93	-0.24	10.93
CG-121-40	8/23/2002	19.10	11:59	8.57	0.00	10.53	-0.40	10.53
CG-121-40	9/16/2002	19.10	15:35	8.66	0.00	10.44	-0.09	10.44
CG-121-40	10/23/2002	19.10	11:45	9.18	0.00	9.92	-0.52	9.92
CG-121-40	11/4/2002	19.10	09:50	9.20	0.00	9.90	-0.02	9.90
CG-121-40	12/13/2002	19.10	11:33	9.37	0.00	9.73	-0.17	9.73
CG-121-40	1/31/2003	19.10	11:35	8.29	0.00	10.81	1.08	10.81
CG-121-40	2/25/2003	19.10	08:39	8.05	0.00	11.05	0.24	11.05
CG-121-40	3/18/2003	19.10	09:02	7.94	0.00	11.16	0.11	11.16
CG-121-70	4/2/2002	19.06	09:14	6.81	0.00	12.25	NA	12.25
CG-121-70	5/23/2002	19.07	12:04	7.33	0.00	11.74	-0.51	11.74
CG-121-70	6/24/2002	19.07	13:52	7.75	0.00	11.32	-0.42	11.32
CG-121-70	7/29/2002	19.07	11:11	7.99	0.00	11.08	-0.24	11.08
CG-121-70	8/23/2002	19.07	11:52	8.40	0.00	10.67	-0.41	10.67
CG-121-70	9/16/2002	19.07	15:37	8.82	0.00	10.25	-0.42	10.25
CG-121-70	10/23/2002	19.07	11:49	8.99	0.00	10.08	-0.17	10.08
CG-121-70	11/4/2002	19.07	09:52	9.14	0.00	9.93	-0.15	9.93
CG-121-70	12/13/2002	19.07	11:30	9.19	0.00	9.88	-0.05	9.88
CG-121-70	1/31/2003	19.07	11:36	8.07	0.00	11.00	1.12	11.00
CG-121-70	2/25/2003	19.07	08:44	7.87	0.00	11.20	0.20	11.20
CG-121-70	3/18/2003	19.07	09:00	8.73	0.00	10.34	-0.86	10.34
CG-122-60	4/2/2002	19.72	10:08	7.65	0.00	12.07	NA	12.07
CG-122-60	5/23/2002	19.73	12:14	8.14	0.00	11.59	-0.48	11.59
CG-122-60	6/24/2002	19.73	13:39	8.57	0.00	11.16	-0.43	11.16
CG-122-60	7/29/2002	19.73	11:29	8.86	0.00	10.87	-0.29	10.87
CG-122-60	8/23/2002	19.73	11:47	9.18	0.00	10.55	-0.32	10.55

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CG-122-60	9/16/2002	19.73	15:39	9.42	0.00	10.31	-0.24	10.31
CG-122-60	10/23/2002	19.73	11:54	7.75	0.00	11.98	1.67	11.98
CG-122-60	11/4/2002	19.73	09:57	9.89	0.00	9.84	-2.14	9.84
CG-122-60	12/13/2002	19.73	13:10	9.97	0.00	9.76	-0.08	9.76
CG-122-60	1/31/2003	19.73	11:55	8.96	0.00	10.77	1.01	10.77
CG-122-60	2/25/2003	19.73	08:53	8.71	0.00	11.02	0.25	11.02
CG-122-60	3/18/2003	19.73	09:13	8.61	0.00	11.12	0.10	11.12
CG-122-WT	4/2/2002	19.58	10:11	7.71	0.00	11.87	NA	11.87
CG-122-WT	5/23/2002	19.59	12:16	8.20	0.00	11.39	-0.48	11.39
CG-122-WT	6/24/2002	19.59	13:30	8.60	0.00	10.99	-0.40	10.99
CG-122-WT	7/29/2002	19.59	11:26	8.82	0.00	10.77	-0.22	10.77
CG-122-WT	8/23/2002	19.59	11:43	9.19	0.00	10.40	-0.37	10.40
CG-122-WT	9/16/2002	19.59	15:46	9.44	0.00	10.15	-0.25	10.15
CG-122-WT	10/23/2002	19.59	11:59	9.78	0.00	9.81	-0.34	9.81
CG-122-WT	11/4/2002	19.59	10:00	9.87	0.00	9.72	-0.09	9.72
CG-122-WT	12/13/2002	19.59	13:06	9.99	0.00	9.60	-0.12	9.60
CG-122-WT	1/31/2003	19.59	11:51	9.03	0.00	10.56	0.96	10.56
CG-122-WT	2/25/2003	19.59	08:49	8.74	0.00	10.85	0.29	10.85
CG-122-WT	3/18/2003	19.59	09:15	8.66	0.00	10.93	0.08	10.93
CG-123-90	4/2/2002	20.32	10:17	7.73	0.00	12.59	NA	12.59
CG-123-90	5/23/2002	20.33	12:21	8.24	0.00	12.09	-0.50	12.09
CG-123-90	6/24/2002	20.33	13:45	8.65	0.00	11.68	-0.41	11.68
CG-123-90	7/29/2002	20.33	11:52	8.87	0.00	11.46	-0.22	11.46
CG-123-90	8/23/2002	20.33	11:35	9.30	0.00	11.03	-0.43	11.03
CG-123-90	9/16/2002	20.33	15:33	9.56	0.00	10.77	-0.26	10.77
CG-123-90	10/23/2002	20.33	12:04	9.91	0.00	10.42	-0.35	10.42
CG-123-90	11/4/2002	20.33	10:04	10.04	0.00	10.29	-0.13	10.29
CG-123-90	12/13/2002	20.33	13:16	10.03	0.00	10.30	0.01	10.30
CG-123-90	1/31/2003	20.33	11:34	9.01	0.00	11.32	1.02	11.32
CG-123-90	2/25/2003	20.33	10:20	8.77	0.00	11.56	0.24	11.56
CG-123-90	3/18/2003	20.33	09:36	8.68	0.00	11.65	0.09	11.65
CG-124-40	4/2/2002	20.86	08:59	8.46	0.00	12.40	NA	12.40
CG-124-40	5/23/2002	20.87	12:28	8.93	0.00	11.94	-0.46	11.94
CG-124-40	6/24/2002	20.87	13:40	9.31	0.00	11.56	-0.38	11.56
CG-124-40	7/29/2002	20.87	11:43	9.59	0.00	11.28	-0.28	11.28
CG-124-40	8/23/2002	20.87	11:25	10.00	0.00	10.87	-0.41	10.87

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CG-124-40	9/16/2002	20.87	15:12	10.25	0.00	10.62	-0.25	10.62
CG-124-40	10/23/2002	20.87	12:11	10.61	0.00	10.26	-0.36	10.26
CG-124-40	11/4/2002	20.87	10:55	10.72	0.00	10.15	-0.11	10.15
CG-124-40	12/13/2002	20.87	13:12	10.82	0.00	10.05	-0.10	10.05
CG-124-40	1/31/2003	20.87	10:11	9.79	0.00	11.08	1.03	11.08
CG-124-40	2/25/2003	20.87	09:38	9.50	0.00	11.37	0.29	11.37
CG-124-40	3/18/2003	20.87	09:46	9.39	0.00	11.48	0.11	11.48
CG-124-70	4/2/2002	20.83	08:57	8.37	0.00	12.46	NA	12.46
CG-124-70	5/23/2002	20.84	12:25	8.82	0.00	12.02	-0.44	12.02
CG-124-70	6/24/2002	20.84	13:46	9.21	0.00	11.63	-0.39	11.63
CG-124-70	7/29/2002	20.84	11:39	9.49	0.00	11.35	-0.28	11.35
CG-124-70	8/23/2002	20.84	11:30	9.90	0.00	10.94	-0.41	10.94
CG-124-70	9/16/2002	20.84	15:15	10.16	0.00	10.68	-0.26	10.68
CG-124-70	10/23/2002	20.84	12:08	10.51	0.00	10.33	-0.35	10.33
CG-124-70	11/4/2002	20.84	11:00	10.61	0.00	10.23	-0.10	10.23
CG-124-70	12/13/2002	20.84	13:18	10.73	0.00	10.11	-0.12	10.11
CG-124-70	1/31/2003	20.84	10:05	9.67	0.00	11.17	1.06	11.17
CG-124-70	2/25/2003	20.84	09:35	9.40	0.00	11.44	0.27	11.44
CG-124-70	3/18/2003	20.84	09:42	9.30	0.00	11.54	0.10	11.54
CG-124-WT	4/2/2002	20.95	09:02	8.57	0.00	12.38	NA	12.38
CG-124-WT	5/23/2002	20.96	12:30	9.04	0.00	11.92	-0.46	11.92
CG-124-WT	6/24/2002	20.96	13:44	9.44	0.00	11.52	-0.40	11.52
CG-124-WT	7/29/2002	20.96	11:46	9.70	0.00	11.26	-0.26	11.26
CG-124-WT	8/23/2002	20.96	11:20	10.09	0.00	10.87	-0.39	10.87
CG-124-WT	9/16/2002	20.96	16:18	10.38	0.00	10.58	-0.29	10.58
CG-124-WT	10/23/2002	20.96	12:20	10.71	0.00	10.25	-0.33	10.25
CG-124-WT	11/4/2002	20.96	10:50	D	NA	NA	NA	NA
CG-124-WT	12/13/2002	20.96	13:09	D	NA	NA	NA	NA
CG-124-WT	1/31/2003	20.96	10:15	9.90	0.00	11.06	-9.90	11.06
CG-124-WT	2/25/2003	20.96	09:42	9.60	0.00	11.36	0.30	11.36
CG-124-WT	3/18/2003	20.96	09:49	9.51	0.00	11.45	0.09	11.45
CG-125-40	4/2/2002	20.35	09:56	8.63	0.00	11.72	NA	11.72
CG-125-40	5/23/2002	20.36	11:42	9.01	0.00	11.35	-0.37	11.35
CG-125-40	6/24/2002	20.36	13:14	9.40	0.00	10.96	-0.39	10.96
CG-125-40	7/29/2002	20.36	09:55	9.58	0.00	10.78	-0.18	10.78
CG-125-40	8/23/2002	20.36	10:38	9.98	0.00	10.38	-0.40	10.38

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CG-125-40	9/16/2002	20.36	15:48	10.22	0.00	10.14	-0.24	10.14
CG-125-40	10/23/2002	20.36	11:40	10.54	0.00	9.82	-0.32	9.82
CG-125-40	11/4/2002	20.36	10:18	10.65	0.00	9.71	-0.11	9.71
CG-125-40	12/13/2002	20.36	11:48	10.79	0.00	9.57	-0.14	9.57
CG-125-40	1/31/2003	20.36	12:05	9.97	0.00	10.39	0.82	10.39
CG-125-40	2/25/2003	20.36	09:04	9.34	0.00	11.02	0.63	11.02
CG-125-40	3/18/2003	20.36	09:27	9.57	0.00	10.79	-0.23	10.79
CG-126-WT	4/2/2002	20.29	10:02	8.57	0.00	11.72	NA	11.72
CG-126-WT	5/23/2002	20.30	11:50	8.98	0.00	11.32	-0.40	11.32
CG-126-WT	6/24/2002	20.30	13:19	9.57	0.00	10.73	-0.59	10.73
CG-126-WT	7/29/2002	20.30	10:00	9.56	0.00	10.74	0.01	10.74
CG-126-WT	8/23/2002	20.30	10:39	9.96	0.00	10.34	-0.40	10.34
CG-126-WT	9/16/2002	20.30	15:44	10.20	0.00	10.10	-0.24	10.10
CG-126-WT	10/23/2002	20.30	11:36	10.52	0.00	9.78	-0.32	9.78
CG-126-WT	11/4/2002	20.30	10:14	10.63	0.00	9.67	-0.11	9.67
CG-126-WT	12/13/2002	20.30	11:42	10.74	0.00	9.56	-0.11	9.56
CG-126-WT	1/31/2003	20.30	12:00	9.91	0.00	10.39	0.83	10.39
CG-126-WT	2/25/2003	20.30	08:59	9.59	0.00	10.71	0.32	10.71
CG-126-WT	3/18/2003	20.30	09:18	9.52	0.00	10.78	0.07	10.78
CG-127-40	4/2/2002	20.19	08:35	9.20	0.00	10.99	NA	10.99
CG-127-40	5/23/2002	20.20	12:13	9.58	0.00	10.62	-0.37	10.62
CG-127-40	6/24/2002	20.20	12:09	9.94	0.00	10.26	-0.36	10.26
CG-127-40	7/29/2002	20.20	09:48	10.10	0.00	10.10	-0.16	10.10
CG-127-40	8/23/2002	20.20	10:21	10.47	0.00	9.73	-0.37	9.73
CG-127-40	9/16/2002	20.20	15:55	10.69	0.00	9.51	-0.22	9.51
CG-127-40	10/23/2002	20.20	12:14	10.98	0.00	9.22	-0.29	9.22
CG-127-40	11/4/2002	20.20	10:28	11.08	0.00	9.12	-0.10	9.12
CG-127-40	12/13/2002	20.20	12:18	11.19	0.00	9.01	-0.11	9.01
CG-127-40	1/31/2003	20.20	09:00	10.39	0.00	9.81	0.80	9.81
CG-127-40	2/25/2003	20.20	09:16	10.11	0.00	10.09	0.28	10.09
CG-127-40	3/18/2003	20.20	08:24	10.05	0.00	10.15	0.06	10.15
CG-127-WT	4/2/2002	20.31	08:39	9.34	0.00	10.97	NA	10.97
CG-127-WT	5/23/2002	20.32	12:08	9.71	0.00	10.61	-0.36	10.61
CG-127-WT	6/24/2002	20.32	12:04	10.07	0.00	10.25	-0.36	10.25
CG-127-WT	7/29/2002	20.32	09:45	10.25	0.00	10.07	-0.18	10.07
CG-127-WT	8/23/2002	20.32	10:27	10.61	0.00	9.71	-0.36	9.71

Vertical Datum is based on NAVD1988

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SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-127-WT	9/16/2002	20.32	15:58	10.81	0.00	9.51	-0.20	9.51
CG-127-WT	10/23/2002	20.32	12:18	11.12	0.00	9.20	-0.31	9.20
CG-127-WT	11/4/2002	20.32	10:25	11.21	0.00	9.11	-0.09	9.11
CG-127-WT	12/13/2002	20.32	12:22	11.33	0.00	8.99	-0.12	8.99
CG-127-WT	1/31/2003	20.32	09:00	10.57	0.00	9.75	0.76	9.75
CG-127-WT	2/25/2003	20.32	09:11	10.24	0.00	10.08	0.33	10.08
CG-127-WT	3/18/2003	20.32	08:26	10.18	0.00	10.14	0.06	10.14
CG-128-70	4/2/2002	18.34	09:44	6.82	0.00	11.52	NA	11.52
CG-128-70	5/23/2002	18.35	12:26	7.26	0.00	11.09	-0.43	11.09
CG-128-70	6/24/2002	18.35	13:03	7.65	0.00	10.70	-0.39	10.70
CG-128-70	7/29/2002	18.35	10:50	7.82	0.00	10.53	-0.17	10.53
CG-128-70	8/23/2002	18.35	10:59	8.23	0.00	10.12	-0.41	10.12
CG-128-70	9/16/2002	18.35	16:00	8.47	0.00	9.88	-0.24	9.88
CG-128-70	10/23/2002	18.35	12:05	8.77	0.00	9.58	-0.30	9.58
CG-128-70	11/4/2002	18.35	10:46	8.88	0.00	9.47	-0.11	9.47
CG-128-70	12/13/2002	18.35	12:08	8.98	0.00	9.37	-0.10	9.37
CG-128-70	1/31/2003	18.35	08:41	8.05	0.00	10.30	0.93	10.30
CG-128-70	2/25/2003	18.35	10:03	7.79	0.00	10.56	0.26	10.56
CG-128-70	3/18/2003	18.35	09:33	7.71	0.00	10.64	0.08	10.64
CG-128-WT	4/2/2002	18.35	09:48	7.15	0.00	11.20	NA	11.20
CG-128-WT	5/23/2002	18.36	12:21	7.57	0.00	10.79	-0.41	10.79
CG-128-WT	6/24/2002	18.36	13:00	7.98	0.00	10.38	-0.41	10.38
CG-128-WT	7/29/2002	18.36	10:54	8.16	0.00	10.20	-0.18	10.20
CG-128-WT	8/23/2002	18.36	11:05	8.52	0.00	9.84	-0.36	9.84
CG-128-WT	9/16/2002	18.36	15:54	8.76	0.00	9.60	-0.24	9.60
CG-128-WT	10/23/2002	18.36	12:00	9.04	0.00	9.32	-0.28	9.32
CG-128-WT	11/4/2002	18.36	10:43	9.15	0.00	9.21	-0.11	9.21
CG-128-WT	12/13/2002	18.36	12:05	9.25	0.00	9.11	-0.10	9.11
CG-128-WT	1/31/2003	18.36	09:45	8.03	0.00	10.33	1.22	10.33
CG-128-WT	2/25/2003	18.36	09:57	8.07	0.00	10.29	-0.04	10.29
CG-128-WT	3/18/2003	18.36	09:30	7.99	0.00	10.37	0.08	10.37
CG-129-40	4/2/2002	18.34	09:27	6.92	0.00	11.42	NA	11.42
CG-129-40	5/23/2002	18.35	12:36	7.47	0.00	10.88	-0.54	10.88
CG-129-40	6/24/2002	18.35	13:57	7.90	0.00	10.45	-0.43	10.45
CG-129-40	7/29/2002	18.35	11:00	8.03	0.00	10.32	-0.13	10.32
CG-129-40	8/23/2002	18.35	12:05	8.42	0.00	9.93	-0.39	9.93

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CG-129-40	9/16/2002	18.35	14:36	8.35	0.00	10.00	0.07	10.00
CG-129-40	10/23/2002	18.35	11:52	8.98	0.00	9.37	-0.63	9.37
CG-129-40	11/4/2002	18.35	10:59	9.06	0.00	9.29	-0.08	9.29
CG-129-40	12/13/2002	18.35	11:58	9.13	0.00	9.22	-0.07	9.22
CG-129-40	1/31/2003	18.35	11:09	8.07	0.00	10.28	1.06	10.28
CG-129-40	2/25/2003	18.35	09:50	7.87	0.00	10.48	0.20	10.48
CG-129-40	3/18/2003	18.35	08:50	7.76	0.00	10.59	0.11	10.59
CG-129-WT	4/2/2002	18.45	09:30	7.17	0.00	11.28	NA	11.28
CG-129-WT	5/23/2002	18.46	12:32	7.74	0.00	10.72	-0.56	10.72
CG-129-WT	6/24/2002	18.46	13:53	8.16	0.00	10.30	-0.42	10.30
CG-129-WT	7/29/2002	18.46	11:03	8.28	0.00	10.18	-0.12	10.18
CG-129-WT	8/23/2002	18.46	12:12	8.65	0.00	9.81	-0.37	9.81
CG-129-WT	9/16/2002	18.46	14:33	8.85	0.00	9.61	-0.20	9.61
CG-129-WT	10/23/2002	18.46	11:48	9.20	0.00	9.26	-0.35	9.26
CG-129-WT	11/4/2002	18.46	11:02	9.31	0.00	9.15	-0.11	9.15
CG-129-WT	12/13/2002	18.46	11:54	9.37	0.00	9.09	-0.06	9.09
CG-129-WT	1/31/2003	18.46	11:05	8.27	0.00	10.19	1.10	10.19
CG-129-WT	2/25/2003	18.46	09:45	8.08	0.00	10.38	0.19	10.38
CG-129-WT	3/18/2003	18.46	08:47	7.97	0.00	10.49	0.11	10.49
CG-130-WT	4/2/2002	17.27	09:38	6.64	0.00	10.63	NA	10.63
CG-130-WT	5/23/2002	17.28	12:50	7.11	0.00	10.17	-0.46	10.17
CG-130-WT	6/24/2002	17.28	12:51	7.49	0.00	9.79	-0.38	9.79
CG-130-WT	7/29/2002	17.28	10:42	7.62	0.00	9.66	-0.13	9.66
CG-130-WT	8/23/2002	17.28	10:48	7.99	0.00	9.29	-0.37	9.29
CG-130-WT	9/16/2002	17.28	16:06	8.21	0.00	9.07	-0.22	9.07
CG-130-WT	10/23/2002	17.28	13:19	8.46	0.00	8.82	-0.25	8.82
CG-130-WT	11/4/2002	17.28	11:08	8.60	0.00	8.68	-0.14	8.68
CG-130-WT	12/13/2002	17.28	12:58	8.60	0.00	8.68	0.00	8.68
CG-130-WT	1/31/2003	17.28	08:30	7.52	0.00	9.76	1.08	9.76
CG-130-WT	2/25/2003	17.28	09:38	7.41	0.00	9.87	0.11	9.87
CG-130-WT	3/18/2003	17.28	08:42	7.27	0.00	10.01	0.14	10.01
CG-131-40	5/23/2002	17.57	13:02	7.49	0.00	10.08	NA	10.08
CG-131-40	7/29/2002	17.57	10:28	7.95	0.00	9.62	-0.46	9.62
CG-131-40	8/23/2002	17.57	10:14	8.33	0.00	9.24	-0.38	9.24
CG-131-40	9/16/2002	17.57	15:58	8.51	0.00	9.06	-0.18	9.06
CG-131-40	10/23/2002	17.57	13:17	8.64	0.00	8.93	-0.13	8.93

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CG-131-40	11/4/2002	17.57	11:18	8.86	0.00	8.71	-0.22	8.71
CG-131-40	12/13/2002	17.57	12:50	8.93	0.00	8.64	-0.07	8.64
CG-131-40	1/31/2003	17.57	08:22	8.05	0.00	9.52	0.88	9.52
CG-131-40	2/25/2003	17.57	10:24	7.87	0.00	9.70	0.18	9.70
CG-131-40	3/18/2003	17.57	11:20	7.82	0.00	9.75	0.05	9.75
CG-131-WT	5/23/2002	17.52	12:58	7.52	0.00	10.00	NA	10.00
CG-131-WT	6/24/2002	17.52	12:43	7.84	0.00	9.68	-0.32	9.68
CG-131-WT	7/29/2002	17.52	10:23	7.58	0.00	9.94	0.26	9.94
CG-131-WT	8/23/2002	17.52	10:07	8.33	0.00	9.19	-0.75	9.19
CG-131-WT	9/16/2002	17.52	15:55	8.53	0.00	8.99	-0.20	8.99
CG-131-WT	10/23/2002	17.52	13:15	8.80	0.00	8.72	-0.27	8.72
CG-131-WT	11/4/2002	17.52	11:15	8.88	0.00	8.64	-0.08	8.64
CG-131-WT	12/13/2002	17.52	12:47	8.94	0.00	8.58	-0.06	8.58
CG-131-WT	1/31/2003	17.52	08:20	8.03	0.00	9.49	0.91	9.49
CG-131-WT	2/25/2003	17.52	10:17	7.88	0.00	9.64	0.15	9.64
CG-131-WT	3/18/2003	17.52	08:40	7.78	0.00	9.74	0.10	9.74
CG-132-40	4/2/2002	18.30	08:50	8.34	0.00	9.96	NA	9.96
CG-132-40	5/23/2002	18.31	11:58	8.64	0.00	9.67	-0.29	9.67
CG-132-40	6/24/2002	18.31	12:21	8.94	0.00	9.37	-0.30	9.37
CG-132-40	7/29/2002	18.31	10:16	9.04	0.00	9.27	-0.10	9.27
CG-132-40	8/23/2002	18.31	10:00	9.35	0.00	8.96	-0.31	8.96
CG-132-40	9/16/2002	18.31	16:06	9.57	0.00	8.74	-0.22	8.74
CG-132-40	10/23/2002	18.31	12:25	9.81	0.00	8.50	-0.24	8.50
CG-132-40	11/4/2002	18.31	10:37	9.93	0.00	8.38	-0.12	8.38
CG-132-40	12/13/2002	18.31	12:30	9.88	0.00	8.43	0.05	8.43
CG-132-40	1/31/2003	18.31	09:41	9.21	0.00	9.10	0.67	9.10
CG-132-40	2/25/2003	18.31	09:25	9.07	0.00	9.24	0.14	9.24
CG-132-40	3/18/2003	18.31	08:20	8.99	0.00	9.32	0.08	9.32
CG-132-WT	4/2/2002	18.49	08:46	7.97	0.00	10.52	NA	10.52
CG-132-WT	5/23/2002	18.50	12:03	8.31	0.00	10.19	-0.33	10.19
CG-132-WT	6/24/2002	18.50	12:18	8.61	0.00	9.89	-0.30	9.89
CG-132-WT	7/29/2002	18.50	10:14	8.76	0.00	9.74	-0.15	9.74
CG-132-WT	8/23/2002	18.50	09:55	9.10	0.00	9.40	-0.34	9.40
CG-132-WT	9/16/2002	18.50	16:02	9.31	0.00	9.19	-0.21	9.19
CG-132-WT	10/23/2002	18.50	12:30	9.58	0.00	8.92	-0.27	8.92
CG-132-WT	11/4/2002	18.50	10:34	9.67	0.00	8.83	-0.09	8.83

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CG-132-WT	12/13/2002	18.50	12:36	9.76	0.00	8.74	-0.09	8.74
CG-132-WT	1/31/2003	18.50	09:40	9.07	0.00	9.43	0.69	9.43
CG-132-WT	2/25/2003	18.50	09:22	8.81	0.00	9.69	0.26	9.69
CG-132-WT	3/18/2003	18.50	08:17	8.75	0.00	9.75	0.06	9.75
CG-133-40	5/23/2002	16.45	13:09	8.82	0.00	7.63	NA	7.63
CG-133-40	6/24/2002	16.45	12:33	9.04	0.00	7.41	-0.22	7.41
CG-133-40	7/29/2002	16.45	09:40	9.11	0.00	7.34	-0.07	7.34
CG-133-40	8/23/2002	16.45	09:56	9.19	0.00	7.26	-0.08	7.26
CG-133-40	9/16/2002	16.45	16:10	9.36	0.00	7.09	-0.17	7.09
CG-133-40	10/23/2002	16.45	12:35	9.55	0.00	6.90	-0.19	6.90
CG-133-40	11/4/2002	16.45	11:26	10.65	0.00	5.80	-1.10	5.80
CG-133-40	12/13/2002	16.45	12:41	9.24	0.00	7.21	1.41	7.21
CG-133-40	1/31/2003	16.45	12:00	8.60	0.00	7.85	0.64	7.85
CG-133-40	2/25/2003	16.45	11:00	8.79	0.00	7.66	-0.19	7.66
CG-133-40	3/18/2003	16.45	10:08	8.66	0.00	7.79	0.13	7.79
CG-134-40	5/23/2002	17.37	13:23	8.08	0.00	9.29	NA	9.29
CG-134-40	7/29/2002	17.37	11:50	8.62	0.00	8.75	-0.54	8.75
CG-134-40	8/23/2002	17.37	10:01	8.78	0.00	8.59	-0.16	8.59
CG-134-40	9/16/2002	17.37	16:14	9.00	0.00	8.37	-0.22	8.37
CG-134-40	10/23/2002	17.37	12:51	9.25	0.00	8.12	-0.25	8.12
CG-134-40	11/4/2002	17.37	11:32	9.31	0.00	8.06	-0.06	8.06
CG-134-40	12/13/2002	17.37	12:25	9.26	0.00	8.11	0.05	8.11
CG-134-40	1/31/2003	17.37	10:00	8.32	0.00	9.05	0.94	9.05
CG-134-40	2/25/2003	17.37	10:41	8.31	0.00	9.06	0.01	9.06
CG-134-40	3/18/2003	17.37	09:43	8.13	0.00	9.24	0.18	9.24
CG-134-WT	5/23/2002	17.54	13:18	8.27	0.00	9.27	NA	9.27
CG-134-WT	7/29/2002	17.54	09:52	8.80	0.00	8.74	-0.53	8.74
CG-134-WT	8/23/2002	17.54	10:02	8.98	0.00	8.56	-0.18	8.56
CG-134-WT	9/16/2002	17.54	16:12	D	NA	NA	NA	NA
CG-134-WT	10/23/2002	17.54	13:00	9.41	0.00	8.13	5.59	8.13
CG-134-WT	11/4/2002	17.54	11:30	9.49	0.00	8.05	-0.08	8.05
CG-134-WT	12/13/2002	17.54	12:21	D	NA	NA	NA	NA
CG-134-WT	1/31/2003	17.54	10:02	8.47	0.00	9.07	-8.79	9.07
CG-134-WT	2/25/2003	17.54	10:27	8.39	0.00	9.15	0.08	9.15
CG-134-WT	3/18/2003	17.54	09:45	8.31	0.00	9.23	0.08	9.23
CG-135-40	4/2/2002	16.98	10:14	6.71	0.00	10.27	NA	10.27

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CG-135-40	5/23/2002	16.99	13:32	7.21	0.00	9.78	-0.49	9.78
CG-135-40	6/24/2002	16.99	11:27	7.58	0.00	9.41	-0.37	9.41
CG-135-40	7/29/2002	16.99	10:01	7.83	0.00	9.16	-0.25	9.16
CG-135-40	8/23/2002	16.99	10:17	8.02	0.00	8.97	-0.19	8.97
CG-135-40	9/16/2002	16.99	14:21	8.24	0.00	8.75	-0.22	8.75
CG-135-40	10/23/2002	16.99	13:22	8.51	0.00	8.48	-0.27	8.48
CG-135-40	11/4/2002	16.99	09:34	8.60	0.00	8.39	-0.09	8.39
CG-135-40	12/13/2002	16.99	10:55	8.53	0.00	8.46	0.07	8.46
CG-135-40	1/31/2003	16.99	07:23	7.34	0.00	9.65	1.19	9.65
CG-135-40	2/25/2003	16.99	08:20	7.39	0.00	9.60	-0.05	9.60
CG-135-40	3/18/2003	16.99	10:30	8.03	0.00	8.96	-0.64	8.96
CG-135-50	4/2/2002	16.94	10:10	6.65	0.00	10.29	NA	10.29
CG-135-50	5/23/2002	16.95	13:27	7.16	0.00	9.79	-0.50	9.79
CG-135-50	6/24/2002	16.95	11:32	7.50	0.00	9.45	-0.34	9.45
CG-135-50	7/29/2002	16.95	10:06	7.78	0.00	9.17	-0.28	9.17
CG-135-50	8/23/2002	16.95	10:19	7.99	0.00	8.96	-0.21	8.96
CG-135-50	9/16/2002	16.95	14:19	8.20	0.00	8.75	-0.21	8.75
CG-135-50	10/23/2002	16.95	13:31	8.46	0.00	8.49	-0.26	8.49
CG-135-50	11/4/2002	16.95	09:31	8.52	0.00	8.43	-0.06	8.43
CG-135-50	12/13/2002	16.95	10:51	8.47	0.00	8.48	0.05	8.48
CG-135-50	1/31/2003	16.95	07:22	7.30	0.00	9.65	1.17	9.65
CG-135-50	2/25/2003	16.95	08:25	7.35	0.00	9.60	-0.05	9.60
CG-135-50	3/18/2003	16.95	10:34	7.97	0.00	8.98	-0.62	8.98
CG-136-40	4/2/2002	14.33	09:01	5.22	0.00	9.11	NA	9.11
CG-136-40	5/23/2002	14.34	11:45	5.66	0.00	8.68	-0.43	8.68
CG-136-40	6/24/2002	14.34	11:58	5.93	0.00	8.41	-0.27	8.41
CG-136-40	7/29/2002	14.34	10:22	6.51	0.00	7.83	-0.58	7.83
CG-136-40	8/23/2002	14.34	10:43	6.33	0.00	8.01	0.18	8.01
CG-136-40	9/16/2002	14.34	13:56	6.52	0.00	7.82	-0.19	7.82
CG-136-40	10/23/2002	14.34	11:33	6.75	0.00	7.59	-0.23	7.59
CG-136-40	11/4/2002	14.34	10:01	6.90	0.00	7.44	-0.15	7.44
CG-136-40	12/13/2002	14.34	12:34	6.54	0.00	7.80	0.36	7.80
CG-136-40	1/31/2003	14.34	12:42	5.79	0.00	8.55	0.75	8.55
CG-136-40	2/25/2003	14.34	10:51	5.74	0.00	8.60	0.05	8.60
CG-136-40	3/18/2003	14.34	10:20	5.49	0.00	8.85	0.25	8.85
CG-136-WT	4/2/2002	14.66	08:59	5.60	0.00	9.06	NA	9.06

Vertical Datum is based on NAVD1988

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SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-136-WT	5/23/2002	14.67	11:42	6.05	0.00	8.62	-0.44	8.62
CG-136-WT	6/24/2002	14.67	11:55	6.33	0.00	8.34	-0.28	8.34
CG-136-WT	7/29/2002	14.67	10:20	6.83	0.00	7.84	-0.50	7.84
CG-136-WT	8/23/2002	14.67	10:45	6.71	0.00	7.96	0.12	7.96
CG-136-WT	9/16/2002	14.67	13:54	6.88	0.00	7.79	-0.17	7.79
CG-136-WT	10/23/2002	14.67	11:29	7.10	0.00	7.57	-0.22	7.57
CG-136-WT	11/4/2002	14.67	09:58	7.16	0.00	7.51	-0.06	7.51
CG-136-WT	12/13/2002	14.67	12:30	6.87	0.00	7.80	0.29	7.80
CG-136-WT	1/31/2003	14.67	12:40	5.81	0.00	8.86	1.06	8.86
CG-136-WT	2/25/2003	14.67	10:45	6.09	0.00	8.58	-0.28	8.58
CG-136-WT	3/18/2003	14.67	10:23	5.84	0.00	8.83	0.25	8.83
CG-137-40	4/2/2002	15.41	08:51	7.21	0.00	8.20	NA	8.20
CG-137-40	5/23/2002	15.42	11:30	7.62	0.00	7.80	-0.40	7.80
CG-137-40	6/24/2002	15.42	12:04	8.82	0.00	6.60	-1.20	6.60
CG-137-40	7/29/2002	15.42	11:43	7.99	0.00	7.43	0.83	7.43
CG-137-40	8/23/2002	15.42	11:55	8.11	0.00	7.31	-0.12	7.31
CG-137-40	9/16/2002	15.42	14:29	8.28	0.00	7.14	-0.17	7.14
CG-137-40	10/23/2002	15.43	11:41	8.52	0.00	6.91	-0.23	6.91
CG-137-40	11/4/2002	15.43	10:09	8.57	0.00	6.86	-0.05	6.86
CG-137-40	12/13/2002	15.43	11:16	8.27	0.00	7.16	0.30	7.16
CG-137-40	1/31/2003	15.43	12:07	7.17	0.00	8.26	1.10	8.26
CG-137-40	2/25/2003	15.43	10:20	7.55	0.00	7.88	-0.38	7.88
CG-137-40	3/18/2003	15.43	10:05	7.29	0.00	8.14	0.26	8.14
CG-137-WT	4/2/2002	15.37	08:49	7.21	0.00	8.16	NA	8.16
CG-137-WT	5/23/2002	15.38	11:33	7.62	0.00	7.76	-0.40	7.76
CG-137-WT	6/24/2002	15.38	12:07	7.82	0.00	7.56	-0.20	7.56
CG-137-WT	7/29/2002	15.38	11:39	7.98	0.00	7.40	-0.16	7.40
CG-137-WT	8/23/2002	15.38	11:53	8.10	0.00	7.28	-0.12	7.28
CG-137-WT	9/16/2002	15.38	14:27	8.27	0.00	7.11	-0.17	7.11
CG-137-WT	10/23/2002	15.39	11:38	8.50	0.00	6.89	-0.22	6.89
CG-137-WT	11/4/2002	15.39	10:06	8.56	0.00	6.83	-0.06	6.83
CG-137-WT	12/13/2002	15.39	11:22	8.25	0.00	7.14	0.31	7.14
CG-137-WT	1/31/2003	15.39	12:12	7.19	0.00	8.20	1.06	8.20
CG-137-WT	2/25/2003	15.39	10:19	7.55	0.00	7.84	-0.36	7.84
CG-137-WT	3/18/2003	15.39	10:00	7.27	0.00	8.12	0.28	8.12
CG-138-40	4/2/2002	16.31	10:38	7.34	0.00	8.97	NA	8.97

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SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-138-40	5/23/2002	16.32	11:20	7.87	0.00	8.45	-0.52	8.45
CG-138-40	6/24/2002	16.32	11:49	8.16	0.00	8.16	-0.29	8.16
CG-138-40	7/29/2002	16.32	10:37	8.35	0.00	7.97	-0.19	7.97
CG-138-40	8/23/2002	16.32	10:34	8.53	0.00	7.79	-0.18	7.79
CG-138-40	9/16/2002	16.32	13:48	8.70	0.00	7.62	-0.17	7.62
CG-138-40	10/23/2002	16.32	11:21	8.92	0.00	7.40	-0.22	7.40
CG-138-40	11/4/2002	16.32	09:50	8.99	0.00	7.33	-0.07	7.33
CG-138-40	12/13/2002	16.32	11:11	8.70	0.00	7.62	0.29	7.62
CG-138-40	1/31/2003	16.32	10:07	7.30	0.00	9.02	1.40	9.02
CG-138-40	2/25/2003	16.32	10:40	7.76	0.00	8.56	-0.46	8.56
CG-138-40	3/18/2003	16.32	10:15	7.44	0.00	8.88	0.32	8.88
CG-138-70	4/2/2002	16.28	10:35	7.29	0.00	8.99	NA	8.99
CG-138-70	5/23/2002	16.29	11:16	7.84	0.00	8.45	-0.54	8.45
CG-138-70	6/24/2002	16.29	11:46	8.11	0.00	8.18	-0.27	8.18
CG-138-70	7/29/2002	16.29	10:35	8.31	0.00	7.98	-0.20	7.98
CG-138-70	8/23/2002	16.29	10:32	8.49	0.00	7.80	-0.18	7.80
CG-138-70	9/16/2002	16.29	13:47	8.65	0.00	7.64	-0.16	7.64
CG-138-70	10/23/2002	16.29	11:18	8.90	0.00	7.39	-0.25	7.39
CG-138-70	11/4/2002	16.29	09:47	8.95	0.00	7.34	-0.05	7.34
CG-138-70	12/13/2002	16.29	11:09	8.65	0.00	7.64	0.30	7.64
CG-138-70	1/31/2003	16.29	10:05	7.31	0.00	8.98	1.34	8.98
CG-138-70	2/25/2003	16.29	10:41	7.72	0.00	8.57	-0.41	8.57
CG-138-70	3/18/2003	16.29	10:20	7.41	0.00	8.88	0.31	8.88
CG-138-WT	4/2/2002	16.27	10:41	7.29	0.00	8.98	NA	8.98
CG-138-WT	5/23/2002	16.28	11:23	7.86	0.00	8.42	-0.56	8.42
CG-138-WT	6/24/2002	16.28	11:52	8.11	0.00	8.17	-0.25	8.17
CG-138-WT	7/29/2002	16.28	10:39	8.31	0.00	7.97	-0.20	7.97
CG-138-WT	8/23/2002	16.28	10:36	8.50	0.00	7.78	-0.19	7.78
CG-138-WT	9/16/2002	16.28	13:50	8.65	0.00	7.63	-0.15	7.63
CG-138-WT	10/23/2002	16.28	11:24	8.89	0.00	7.39	-0.24	7.39
CG-138-WT	11/4/2002	16.28	09:52	8.94	0.00	7.34	-0.05	7.34
CG-138-WT	12/13/2002	16.28	11:14	8.64	0.00	7.64	0.30	7.64
CG-138-WT	1/31/2003	16.28	10:10	7.25	0.00	9.03	1.39	9.03
CG-138-WT	2/25/2003	16.28	10:39	7.40	0.00	8.88	-0.15	8.88
CG-138-WT	3/18/2003	16.28	10:10	7.40	0.00	8.88	0.00	8.88
CG-139-40	4/2/2002	16.35	10:25	6.92	0.00	9.43	NA	9.43

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CG-139-40	5/23/2002	16.36	11:09	7.50	0.00	8.86	-0.57	8.86
CG-139-40	6/24/2002	16.36	11:40	7.81	0.00	8.55	-0.31	8.55
CG-139-40	7/29/2002	16.36	10:30	8.03	0.00	8.33	-0.22	8.33
CG-139-40	8/23/2002	16.36	10:26	8.20	0.00	8.16	-0.17	8.16
CG-139-40	9/16/2002	16.36	13:42	8.39	0.00	7.97	-0.19	7.97
CG-139-40	10/23/2002	16.36	11:13	8.63	0.00	7.73	-0.24	7.73
CG-139-40	11/4/2002	16.36	09:40	8.69	0.00	7.67	-0.06	7.67
CG-139-40	12/13/2002	16.36	11:02	8.48	0.00	7.88	0.21	7.88
CG-139-40	1/31/2003	16.36	09:58	7.10	0.00	9.26	1.38	9.26
CG-139-40	2/25/2003	16.36	10:49	7.41	0.00	8.95	-0.31	8.95
CG-139-40	3/18/2003	16.36	10:30	7.11	0.00	9.25	0.30	9.25
CG-140-40	4/2/2002	14.86	09:49	8.28	0.00	6.58	NA	6.58
CG-140-40	5/23/2002	14.87	12:04	9.20	0.00	5.67	-0.91	5.67
CG-140-40	6/24/2002	14.87	12:36	9.40	0.00	5.47	-0.20	5.47
CG-140-40	7/29/2002	14.87	11:17	8.90	0.00	5.97	0.50	5.97
CG-140-40	8/23/2002	14.87	11:12	9.50	0.00	5.37	-0.60	5.37
CG-140-40	9/16/2002	14.87	14:48	9.15	0.00	5.72	0.35	5.72
CG-140-40	10/23/2002	14.87	12:03	9.22	0.00	5.65	-0.07	5.65
CG-140-40	11/4/2002	14.87	10:29	9.41	0.00	5.46	-0.19	5.46
CG-140-40	12/13/2002	14.87	11:41	8.59	0.00	6.28	0.82	6.28
CG-140-40	1/31/2003	14.87	10:50	7.79	0.00	7.08	0.80	7.08
CG-140-40	2/25/2003	14.87	09:27	8.37	0.00	6.50	-0.58	6.50
CG-140-40	3/18/2003	14.87	09:15	8.20	0.00	6.67	0.17	6.67
CG-140-WT	4/2/2002	15.01	09:47	8.04	0.00	6.97	NA	6.97
CG-140-WT	5/23/2002	15.02	12:02	8.19	0.00	6.83	-0.14	6.83
CG-140-WT	6/24/2002	15.02	12:33	8.28	0.00	6.74	-0.09	6.74
CG-140-WT	7/29/2002	15.02	11:21	8.22	0.00	6.80	0.06	6.80
CG-140-WT	8/23/2002	15.02	11:09	9.28	0.00	5.74	-1.06	5.74
CG-140-WT	9/16/2002	15.02	14:46	8.37	0.00	6.65	0.91	6.65
CG-140-WT	10/23/2002	15.02	11:59	8.46	0.00	6.56	-0.09	6.56
CG-140-WT	11/4/2002	15.02	10:26	8.48	0.00	6.54	-0.02	6.54
CG-140-WT	12/13/2002	15.02	11:38	8.48	0.00	6.54	0.00	6.54
CG-140-WT	1/31/2003	15.02	10:47	8.14	0.00	6.88	0.34	6.88
CG-140-WT	2/25/2003	15.02	09:30	7.80	0.00	7.22	0.34	7.22
CG-140-WT	3/18/2003	15.02	09:10	7.90	0.00	7.12	-0.10	7.12
CG-141-40	4/2/2002	16.65	09:13	9.20	0.00	7.45	NA	7.45

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CG-141-40	5/23/2002	16.66	12:33	9.65	0.00	7.01	-0.44	7.01
CG-141-40	6/24/2002	16.66	12:59	8.01	0.00	8.65	1.64	8.65
CG-141-40	7/29/2002	16.66	11:01	9.83	0.00	6.83	-1.82	6.83
CG-141-40	8/23/2002	16.66	10:59	9.95	0.00	6.71	-0.12	6.71
CG-141-40	9/16/2002	16.66	14:38	10.10	0.00	6.56	-0.15	6.56
CG-141-40	10/23/2002	16.66	11:50	10.34	0.00	6.32	-0.24	6.32
CG-141-40	11/4/2002	16.66	10:18	10.40	0.00	6.26	-0.06	6.26
CG-141-40	12/13/2002	16.66	11:30	9.98	0.00	6.68	0.42	6.68
CG-141-40	1/31/2003	16.66	10:36	8.97	0.00	7.69	1.01	7.69
CG-141-40	2/25/2003	16.66	10:04	9.41	0.00	7.25	-0.44	7.25
CG-141-40	3/18/2003	16.66	09:45	9.16	0.00	7.50	0.25	7.50
CG-141-50	4/2/2002	16.67	09:15	9.23	0.00	7.44	NA	7.44
CG-141-50	5/23/2002	16.68	12:31	9.65	0.00	7.03	-0.41	7.03
CG-141-50	6/24/2002	16.68	12:57	9.80	0.00	6.88	-0.15	6.88
CG-141-50	7/29/2002	16.68	11:03	9.85	0.00	6.83	-0.05	6.83
CG-141-50	8/23/2002	16.68	10:57	9.97	0.00	6.71	-0.12	6.71
CG-141-50	9/16/2002	16.68	14:36	10.13	0.00	6.55	-0.16	6.55
CG-141-50	10/23/2002	16.68	11:48	10.35	0.00	6.33	-0.22	6.33
CG-141-50	11/4/2002	16.68	10:20	10.42	0.00	6.26	-0.07	6.26
CG-141-50	12/13/2002	16.68	11:28	9.99	0.00	6.69	0.43	6.69
CG-141-50	1/31/2003	16.68	10:32	9.02	0.00	7.66	0.97	7.66
CG-141-50	2/25/2003	16.68	10:05	9.44	0.00	7.24	-0.42	7.24
CG-141-50	3/18/2003	16.68	09:50	9.18	0.00	7.50	0.26	7.50
CG-141-WT	4/2/2002	16.60	09:10	9.12	0.00	7.48	NA	7.48
CG-141-WT	5/23/2002	16.61	12:36	9.58	0.00	7.03	-0.45	7.03
CG-141-WT	6/24/2002	16.61	13:01	9.67	0.00	6.94	-0.09	6.94
CG-141-WT	7/29/2002	16.61	10:57	9.78	0.00	6.83	-0.11	6.83
CG-141-WT	8/23/2002	16.61	11:02	9.87	0.00	6.74	-0.09	6.74
CG-141-WT	9/16/2002	16.61	14:40	10.04	0.00	6.57	-0.17	6.57
CG-141-WT	10/23/2002	16.61	11:53	D	NA	NA	NA	NA
CG-141-WT	11/4/2002	16.61	10:16	D	NA	NA	NA	NA
CG-141-WT	12/13/2002	16.61	11:35	9.93	0.00	6.68	-10.25	6.68
CG-141-WT	1/31/2003	16.61	10:41	D	NA	NA	NA	NA
CG-141-WT	2/25/2003	16.61	10:03	9.33	0.00	7.28	-9.65	7.28
CG-141-WT	3/18/2003	16.61	09:40	D	NA	NA	NA	NA
CG-142-40	4/2/2002	16.25	09:27	9.39	0.00	6.86	NA	6.86

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SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-142-40	5/23/2002	16.26	12:15	9.90	0.00	6.36	-0.50	6.36
CG-142-40	6/24/2002	16.26	12:48	10.01	0.00	6.25	-0.11	6.25
CG-142-40	7/29/2002	16.26	11:09	9.88	0.00	6.38	0.13	6.38
CG-142-40	8/23/2002	16.26	11:43	10.07	0.00	6.19	-0.19	6.19
CG-142-40	9/16/2002	16.26	15:09	10.16	0.00	6.10	-0.09	6.10
CG-142-40	10/23/2002	16.26	12:33	10.34	0.00	5.92	-0.18	5.92
CG-142-40	11/4/2002	16.26	11:05	10.45	0.00	5.81	-0.11	5.81
CG-142-40	12/13/2002	16.26	12:11	9.84	0.00	6.42	0.61	6.42
CG-142-40	1/31/2003	16.26	10:21	8.98	0.00	7.28	0.86	7.28
CG-142-40	2/25/2003	16.26	09:50	9.41	0.00	6.85	-0.43	6.85
CG-142-40	3/18/2003	16.26	09:30	9.18	0.00	7.08	0.23	7.08
CG-142-WT	4/2/2002	16.37	09:24	8.40	0.00	7.97	NA	7.97
CG-142-WT	5/23/2002	16.38	12:12	8.80	0.00	7.58	-0.39	7.58
CG-142-WT	6/24/2002	16.38	12:52	9.02	0.00	7.36	-0.22	7.36
CG-142-WT	7/29/2002	16.38	11:11	9.17	0.00	7.21	-0.15	7.21
CG-142-WT	8/23/2002	16.38	11:45	9.29	0.00	7.09	-0.12	7.09
CG-142-WT	9/16/2002	16.38	15:06	9.41	0.00	6.97	-0.12	6.97
CG-142-WT	10/23/2002	16.38	12:36	9.64	0.00	6.74	-0.23	6.74
CG-142-WT	11/4/2002	16.38	11:07	9.70	0.00	6.68	-0.06	6.68
CG-142-WT	12/13/2002	16.38	12:06	9.55	0.00	6.83	0.15	6.83
CG-142-WT	1/31/2003	16.38	10:23	8.31	0.00	8.07	1.24	8.07
CG-142-WT	2/25/2003	16.38	09:51	8.47	0.00	7.91	-0.16	7.91
CG-142-WT	3/18/2003	16.38	09:25	8.30	0.00	8.08	0.17	8.08
CG-143-40	4/2/2002	15.23	09:38	8.39	0.00	6.84	NA	6.84
CG-143-40	5/23/2002	15.24	12:23	8.84	0.00	6.40	-0.44	6.40
CG-143-40	6/24/2002	15.24	12:07	8.96	0.00	6.28	-0.12	6.28
CG-143-40	7/29/2002	15.24	10:50	8.90	0.00	6.34	0.06	6.34
CG-143-40	8/23/2002	15.24	11:37	9.06	0.00	6.18	-0.16	6.18
CG-143-40	9/16/2002	15.24	14:06	9.14	0.00	6.10	-0.08	6.10
CG-143-40	10/23/2002	15.24	12:27	9.34	0.00	5.90	-0.20	5.90
CG-143-40	11/4/2002	15.24	10:59	9.41	0.00	5.83	-0.07	5.83
CG-143-40	12/13/2002	15.24	12:00	8.88	0.00	6.36	0.53	6.36
CG-143-40	1/31/2003	15.24	00:00	NM	NA	NA	NA	NA
CG-143-40	2/25/2003	15.24	09:39	8.42	0.00	6.82	-8.42	6.82
CG-143-40	3/18/2003	15.24	14:42	8.18	0.00	7.06	0.24	7.06
CG-143-WT	4/2/2002	15.42	09:36	6.93	0.00	8.49	NA	8.49

Vertical Datum is based on NAVD1988

Groundwater Elevation Data
April 2002 through March 2003
Remedial Investigation
PSC Georgetown

PERIOD: From 04/02/2002 thru 03/18/2003 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-143-WT	5/23/2002	15.43	12:26	7.28	0.00	8.15	-0.34	8.15
CG-143-WT	6/24/2002	15.43	12:24	7.48	0.00	7.95	-0.20	7.95
CG-143-WT	7/29/2002	15.43	10:48	7.68	0.00	7.75	-0.20	7.75
CG-143-WT	8/23/2002	15.43	11:34	7.83	0.00	7.60	-0.15	7.60
CG-143-WT	9/16/2002	15.43	14:04	7.99	0.00	7.44	-0.16	7.44
CG-143-WT	10/23/2002	15.43	12:24	8.17	0.00	7.26	-0.18	7.26
CG-143-WT	11/4/2002	15.43	10:56	8.21	0.00	7.22	-0.04	7.22
CG-143-WT	12/13/2002	15.43	11:56	7.85	0.00	7.58	0.36	7.58
CG-143-WT	1/31/2003	15.43	00:00	NM	NA	NA	NA	NA
CG-143-WT	2/25/2003	15.43	09:40	7.08	0.00	8.35	-7.08	8.35
CG-143-WT	3/18/2003	15.43	14:38	6.76	0.00	8.67	0.32	8.67
CG-144-35	5/23/2002	15.18	11:50	10.12	0.00	5.06	NA	5.06
CG-144-35	6/24/2002	15.18	13:18	10.14	0.00	5.04	-0.02	5.04
CG-144-35	7/29/2002	15.18	11:32	9.84	0.00	5.34	0.30	5.34
CG-144-35	8/23/2002	15.18	11:19	10.02	0.00	5.16	-0.18	5.16
CG-144-35	9/16/2002	15.18	14:54	9.91	0.00	5.27	0.11	5.27
CG-144-35	10/23/2002	15.18	12:10	10.10	0.00	5.08	-0.19	5.08
CG-144-35	11/4/2002	15.18	10:37	10.26	0.00	4.92	-0.16	4.92
CG-144-35	12/13/2002	15.18	11:46	9.30	0.00	5.88	0.96	5.88
CG-144-35	1/31/2003	15.18	11:05	8.89	0.00	6.29	0.41	6.29
CG-144-35	2/25/2003	15.18	09:12	9.35	0.00	5.83	-0.46	5.83
CG-144-35	3/18/2003	15.18	08:50	9.11	0.00	6.07	0.24	6.07
CG-145-35	5/23/2002	15.11	11:55	10.09	0.00	5.02	NA	5.02
CG-145-35	6/24/2002	15.11	13:12	10.15	0.00	4.96	-0.06	4.96
CG-145-35	7/29/2002	15.11	11:29	9.80	0.00	5.31	0.35	5.31
CG-145-35	8/23/2002	15.11	11:24	10.04	0.00	5.07	-0.24	5.07
CG-145-35	9/16/2002	15.11	14:58	9.81	0.00	5.30	0.23	5.30
CG-145-35	10/23/2002	15.11	12:14	10.08	0.00	5.03	-0.27	5.03
CG-145-35	11/4/2002	15.11	10:42	10.26	0.00	4.85	-0.18	4.85
CG-145-35	12/13/2002	15.11	11:51	9.18	0.00	5.93	1.08	5.93
CG-145-35	1/31/2003	15.11	11:00	8.81	0.00	6.30	0.37	6.30
CG-145-35	2/25/2003	15.11	09:17	9.27	0.00	5.84	-0.46	5.84
CG-145-35	3/18/2003	15.11	08:55	9.04	0.00	6.07	0.23	6.07
CG-3	4/2/2002	18.00	11:28	4.50	0.00	13.50	NA	13.50
CG-3	5/23/2002	18.00	13:22	4.83	0.00	13.17	-0.33	13.17
CG-3	6/24/2002	18.00	14:50	5.38	0.00	12.62	-0.55	12.62

Vertical Datum is based on NAVD1988

Groundwater Elevation Data
April 2002 through March 2003
Remedial Investigation
PSC Georgetown

PERIOD: From 04/02/2002 thru 03/18/2003 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV. (feet)	DELTA WATER ELEV (feet)	EQUIV. FRESH WATER HEAD (feet)
CG-3	7/29/2002	18.00	11:52	5.82	0.00	12.18	-0.44	12.18
CG-3	8/23/2002	18.00	09:38	6.16	0.00	11.84	-0.34	11.84
CG-3	9/16/2002	18.00	14:07	6.42	0.00	11.58	-0.26	11.58
CG-3	10/23/2002	17.99	12:38	6.81	0.00	11.18	-0.40	11.18
CG-3	11/4/2002	17.99	10:53	6.92	0.00	11.07	-0.11	11.07
CG-3	12/13/2002	17.99	12:10	6.75	0.00	11.24	0.17	11.24
CG-3	1/31/2003	17.99	10:25	4.28	0.00	13.71	2.47	13.71
CG-3	2/25/2003	17.99	11:00	5.28	0.00	12.71	-1.00	12.71
CG-3	3/18/2003	17.99	10:16	4.92	0.00	13.07	0.36	13.07
V-1	10/23/2002	17.32	11:47	11.10	0.00	6.22	NA	6.22
V-1	11/4/2002	17.32	10:21	11.27	0.00	6.05	-0.17	6.05
V-1	12/13/2002	17.32	11:02	11.27	0.00	6.05	0.00	6.05
V-1	1/31/2003	17.32	09:18	9.84	0.00	7.48	1.43	7.48
V-1	2/25/2003	17.32	09:06	9.81	0.00	7.51	0.03	7.51

Vertical Datum is based on NAVD1988

APPENDIX 4-A

WELL CONSTRUCTION DIAGRAMS

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT Chempro, Georgetown

Location See Figure 2.1

Boring No. CG-1

Surface Elevation Unknown

Drilling Method Cable Tool

Total Depth 109'

Drilled By Holt Drilling Company

Date Completed 11/28/87

Logged By R. Bunker

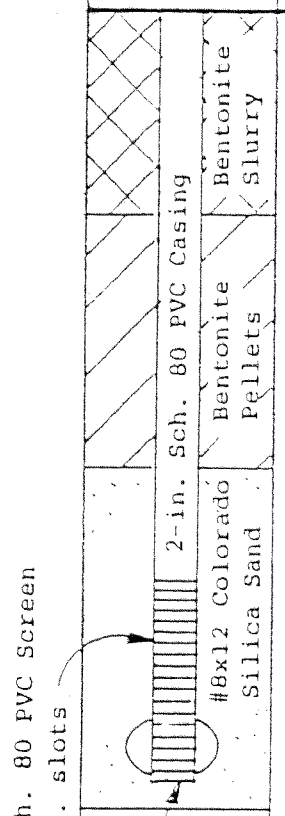
WELL DETAILS	PENE-TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE	WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	GEOLOGIC UNIT
Hydrated Bentonite Powder (placed in dry lifts); Bentonite Slurry; 2" Sch 80 PVC Casing; Bentonite Slurry		10	S1A,B	W1A,B		0-2' Concrete slabs separated by 1-2" of fine gravel.	
		20	S2A,B	W2A,B	SM	2-25' SAND, 20% medium sand, 60% fine sand, 20% silt, gray, saturated below about 3', medium dense to dense, massive, strong sweet solvent-like odor.	
		30	S3A,B	W3A,B			
		40	S4A,B	W4B,B	SM/ SC/ ML	2-74' INTERBEDDED SILT, 5-30% fine sand, 5-30% clay, and SAND, 5-15% clay. gray to gray black, saturated, silts firm to stiff. Sands medium dense to dense, thinly (0.3 to greater than 1') bedded.	
		50	S5A,B	W5A,B			
		60	S6A,B	W6A,B			
		70	S7A,B				

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT Chempro, Georgetown

Boring No. CG-1

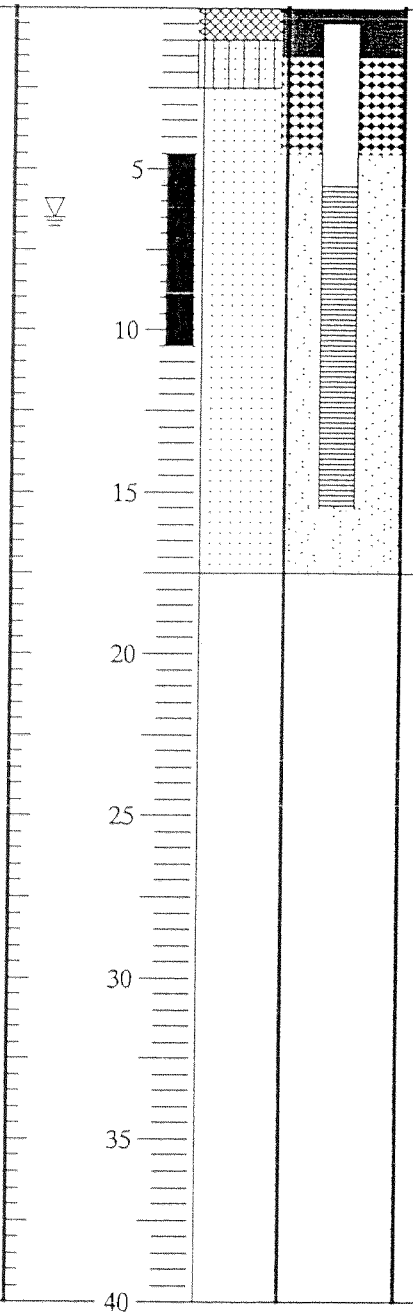


WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SOIL SAMPLE	WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	FIELD SCREEN
		70				See page 1 for description	
				W7A,B	ML/CL, MH	74-88' SILT, 5-10% fine sand in local layers, 60-80% silt, 10-30% clay, gray-black, saturated, soft to stiff, massive, scattered wood fragments	
			S8A,B				
		80		W8A,B			
			S9A,B	W9A,B	SM	88-92' SAND 15-20% medium sand, 40% fine sand, 5-20% silt, 5-10% clay, gray - green, saturated, wood fragments, clam shells.	
		90					
			S10A,B		GM	92-106' FINE TO COARSE GRAVEL AND SMALL COBBLES, 15-20% fine to coarse sand, 5-20% silt, gray - green, saturated, clam shells.	
		100			SM/GM		
		110				106-109' SILTY FINE TO COARSE SAND, gray - green, saturated.	
						Terminate boring at 109' 11/28/87	

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-1-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill Corp.	REFERENCE ELEV.	7.38' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	17.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/18/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	3/9
2	SS	3/10
3	SS	4/11
4	SS	3/14



LITHOLOGIC DESCRIPTION

Geologic details are similar to those recorded for boring CG-1-D, located 6 feet south.

Boring completed at 17.5 ft bgs July 18, 1989.

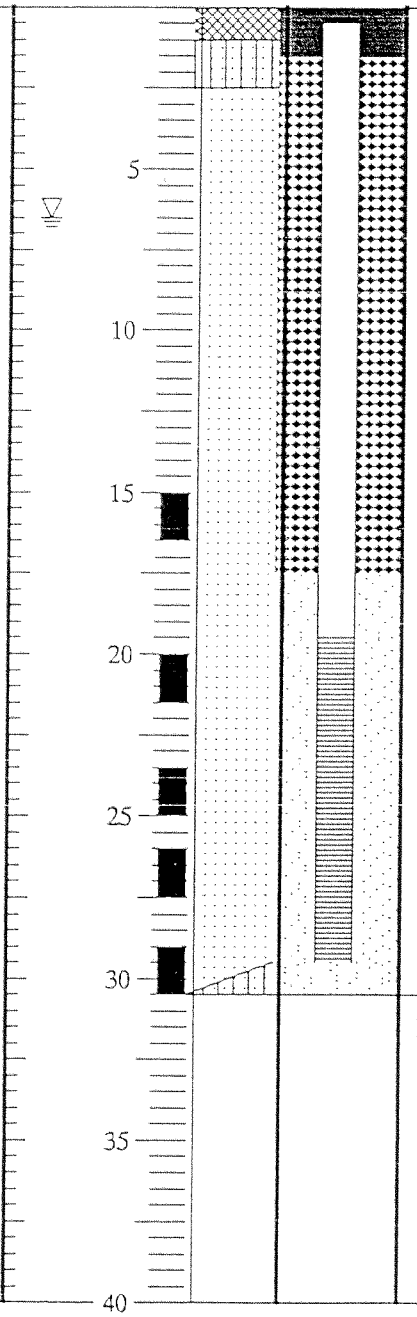
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-1-S2
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill Corp.	REFERENCE ELEV.	7.53' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	30.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/19/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	2/10
2	SS	3/12
3	SS	5/20
4	SS	5/22
5	SS	3/6



LITHOLOGIC DESCRIPTION

Geologic details are similar to those recorded for boring CG- 1D, located 10 feet south.

Boring completed at 30.5 feet BGS on 7-19-89.

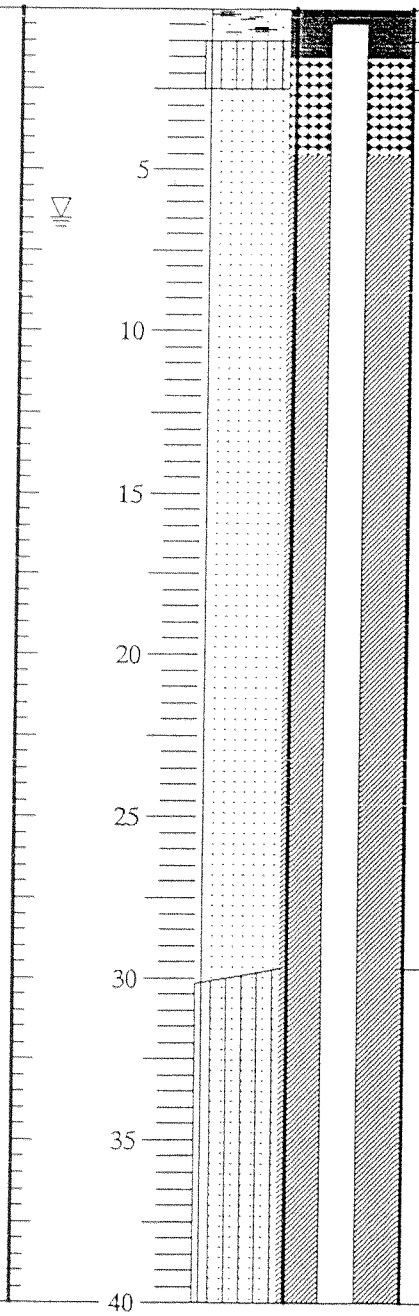
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-1-I
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill Corp.	REFERENCE ELEV.	7.28' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	66.00'
LOGGED BY	S. Nelson	DATE COMPLETED	8/30/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION



0 - 1 foot: CONCRETE

1 - 2.5 feet: SILTY SAND, brownish olive, fine to medium, loose, dry. (FILL) (SM)

2.5 - 29.8 feet: SAND, brownish olive to dark gray olive, fine to medium, trace fine gravel, medium, wet below 6.5 feet. (SP)

29.8 - 63 feet: SILTY SAND, olive gray, fine, and SANDY SILT, olive gray, low plasticity fines, fine sand, trace wood debris, medium, wet. Stratified layers 1/2 to 6 inches thick. (SP-SM)

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-1-I
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill Corp.	REFERENCE ELEV.	7.28' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	66.00'
LOGGED BY	S. Nelson	DATE COMPLETED	8/30/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
1	SS	4/29	
2	ST		
3	SS	2/5	
4	SS	4/10	
			63 - 66 feet: SILT, brown, low plasticity fines, some very fine sand, trace wood debris, firm, wet. (ML)
			Boring completed at 66 feet BGS on 8-30-89.

GROUND WATER LEVELS | DEPTH IN FT. | SAMPLES | LITHO-LOGIC COLUMN | WELL DETAILS

45 50 55 60 65 70 75 80

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT Chempro, Georgetown

Location See Figure 2.1

Boring No. CG-2

Surface Elevation Unknown

Drilling Method Cable Tool

Total Depth 128.5'

Drilled By Holt Drilling Company

Date Completed 12/2/87

Logged By R. Bunker

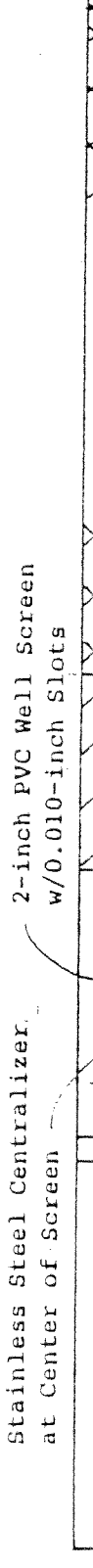
WELL DETAILS	PENE-TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE	WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	FIELD SCREEN
Hydrated Bentonite Powder (placed in dry lifts); Bentonite Slurry; 2-in. Sch. 80 PVC Casing		10			SM	0-28' SAND, 5-10% medium sand, 80% fine sand, 5-20% silt, black, saturated below about 5', medium dense to dense, massive.	
		20	S1A,B	W1A,B		crushed rock fill top 14".	
		30		W2A,B	SM/SC/ ML	28-78' INTERBEDDED SILT, 5-30% fine sand, 5-30% clay and FINE SAND, 10 - 30% clay, gray - black. All saturated, silt firm to stiff, sands medium dense to dense. Beds of sand are less than 1' thick, and capped by thin 1-2" clayey silts. Broken coarse-sand-size shell fragments.	
		40	S2A,B				
		50					
		60	S3A,B	W3A,B			
		70					

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT Chempro, Georgetown

Boring No. CG-2

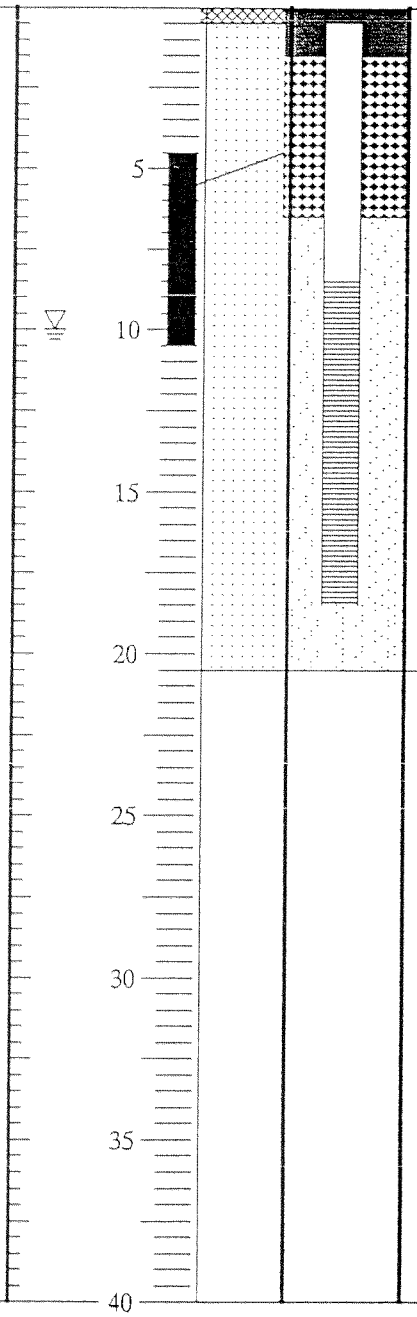


WELL DETAILS	PENE-TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE	WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	FIELD SCREEN
		70				See page 1 for description	
		80	S4A,B	W4A,B	ML/CL	78-108' SILT, 5-20% fine sand, 60% 5-30% dry, brown to brown black, saturated, firm to very stiff, vague clay - rich layers 0.5 to 2 inches thick. Drilled open hole.	
		90					
		100					
		110			ML/CL	108-128.5' SILT, less than 5% to 20% fine sand, 60-80% silt, 10-30% clay, saturated, firm to very stiff, common broken and whole clam shells,	
		120					
		130				Terminate boring at 128.5' 12/2/87	

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-2-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.32' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	20.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/31/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
1	SS	5/11	
2	SS	4/12	
3	SS	3/12	
4	SS	6/16	
			Geologic information is similar to that recorded on boring log for CG-2-I, located 16 feet north.
			Boring completed at 20.5 feet BGS on 7-31-89.



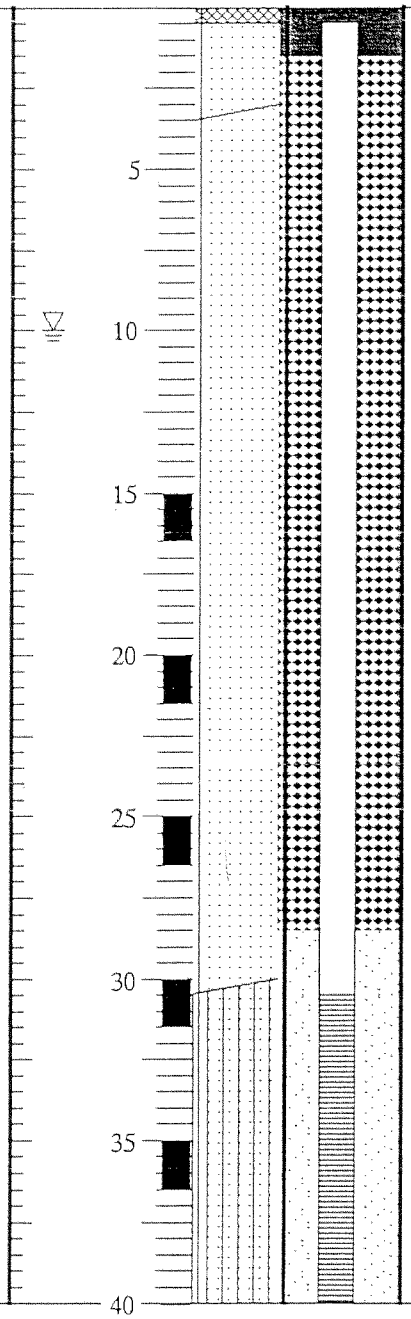
REMARKS

Elevations are City of Seattle Datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-2-S2
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.98' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	51.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/28/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	3/25
2	SS	3/7
3	SS	3/15
4	SS	5/22
5	SS	3/7



LITHOLOGIC DESCRIPTION

Geological details are similar to those recorded on boring log for CG-2-I, located 12 feet north.

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-2-S2
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.98' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	51.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/28/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
6	SS	10/37						
7	SS	1/29						
8	SS	7/20		45				
9	SS	3/15						
10	SS	3/19		50				
								Boring completed at 51.5 feet BGS on 7-28-89.
				55				
				60				
				65				
				70				
				75				
				80				

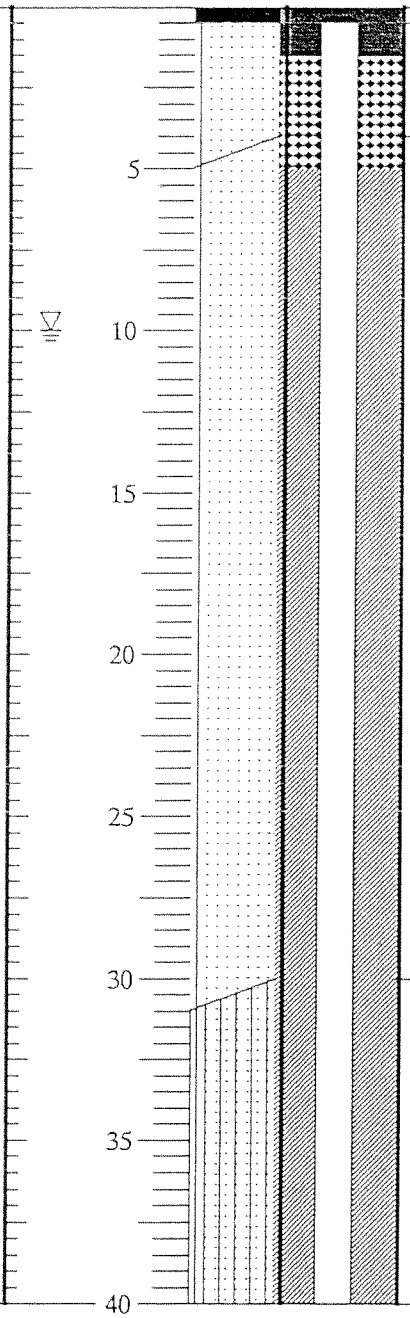
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-2-I
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.36' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	70.50'
LOGGED BY	Steve Nelson	DATE COMPLETED	8/22/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION



0 - 0.5 foot: ASPHALT

0.5 - 4 feet: SAND, olive brown, fine to medium, fine gravel, loose, dry. (FILL) (SP)

4 - 30 feet: SAND, dark olive gray, fine to medium, trace fine gravel, medium, wet below 10 feet. (SP)

30 - 70.5 feet: SILTY SAND, gray olive, fine to medium and sandy silt olive gray, low plasticity fines, fine sand; trace wood debris; medium wet. Stratified in layers 1 inch to several feet thick. (SP-SM)

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-2-I
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.36' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	70.50'
LOGGED BY	Steve Nelson	DATE COMPLETED	8/22/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	ST			45				
				50				
2	SS	7/18		55				
				60				
3	SS	3/7		65				
				70				Boring completed at 70.5 feet BGS on 8-22-89.
				75				
				80				

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

BORING LOG

Sweet-Edwards / EMCON, Inc.

PROJECT CHEMPRO, Georgetown

Location See Figure 2.1

Boring No. CG-3

Surface Elevation Unknown

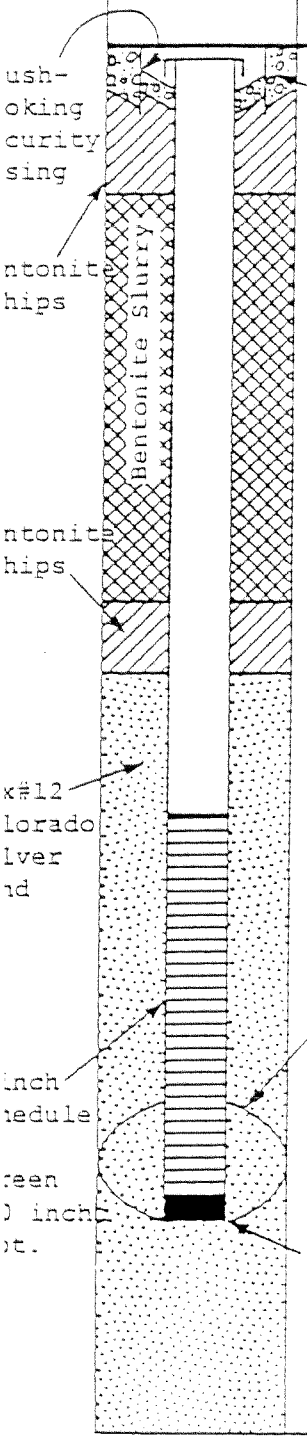
Drilling Method HSA

Total Depth 31.5

Drilled By Tacoma Pump and Drilling

Date Completed 12/23/87

Logged By S.R. Sagstad

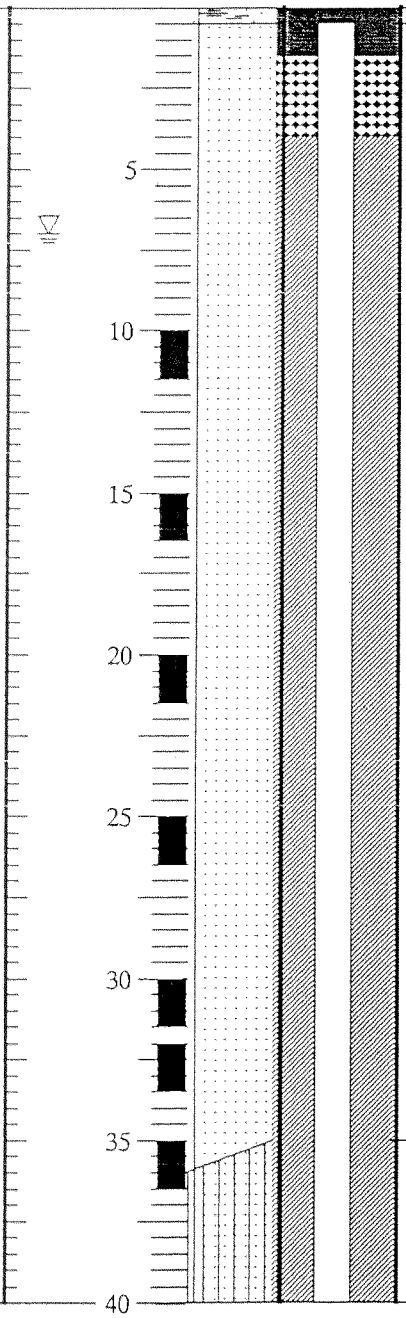


WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
							0-1.5' Asphalt	
		5	S-1 2			SW	1.5-5.5 Sand, black, fine to coarse, trace silt; slightly moist; no odor.	
		10	S-3			SP	5.5-30.2' Sand, gray brown, fine, scattered medium, saturated below 10 feet; no odor.	
		15	S-4					
		20	S-5				---- with interbeds of fibrous organic material (bark) ----	
		25	S-6					
		30	S-7			ML	30.2-31.5' Silt, gray, with trace fine sand.	
		35					BOTTOM of Boring at 31.5' 12/23/87	

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-4-D
LOCATION	Georgetown	PAGE	1 OF 3
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.13' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	109.50'
LOGGED BY	S. Nelson	DATE COMPLETED	6/16/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	8/33
2	SS	4/20
3	SS	7/37
4	SS	7/27
5	SS	6/32
6	SS	8/30
7	SS	4/25



LITHOLOGIC DESCRIPTION

0 - 0.8 foot: CONCRETE

0.8 - 35 feet: SAND, olive gray, fine to medium, some coarse sand, trace fine subrounded gravel, trace wood debris, medium, wet below 7 feet. (SP)

35 - 64 feet: SAND, olive gray, fine, SILTY SAND and SANDY SILT, olive gray, low plasticity fines, fine sand, scattered wood debris, medium, wet. Stratified in layers 1/4 to 3 inches thick. (SP-SM)

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-4-D
LOCATION	Georgetown	PAGE	2 OF 3
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.13' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	109.50'
LOGGED BY	S. Nelson	DATE COMPLETED	6/16/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
8	SS	10/25						
9	SS	14/41		45				
10	SS	9/18		50				
11	SS	8/21		55				
12	SS	5/14		60				
13	SS	5/10		65				64 - 84 feet: SILT, brown olive, low plasticity fines, fine to very fine sand, trace wood debris, firm, wet. (ML)
14	SS	3/4		70				
15	ST			75				
				80				

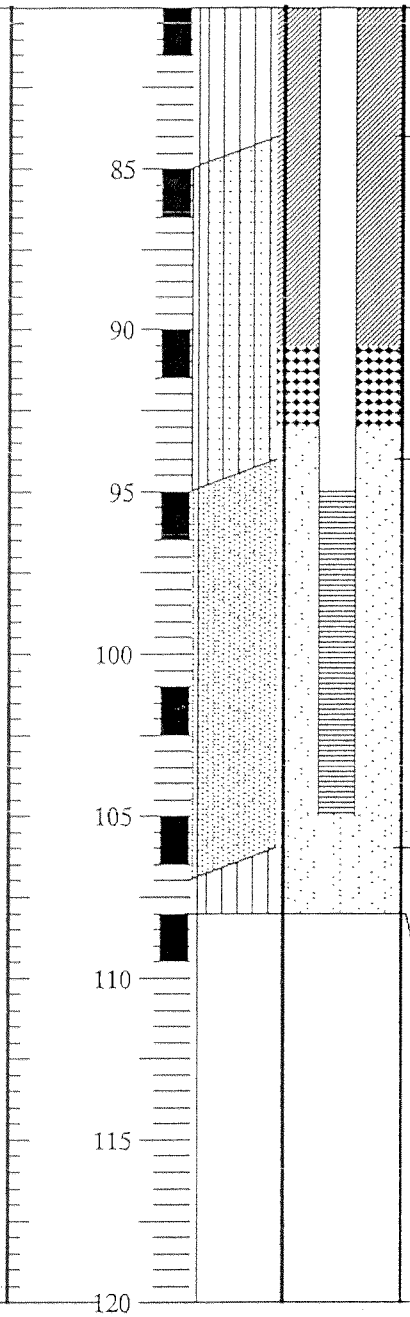
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-4-D
LOCATION	Georgetown	PAGE	3 OF 3
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.13' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	109.50'
LOGGED BY	S. Nelson	DATE COMPLETED	6/16/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
16	SS	3/11
17	SS	4/14
18	SS	17/71
19	SS	7/26
20	SS	34 50/4
21	SS	30 50/3
22	SS	3/49



LITHOLOGIC DESCRIPTION

84 - 94 feet: SILTY SAND, olive gray, low plasticity fines, fine to medium, trace fine gravel and shell debris, dense, wet. (SM)

94 - 106 feet: SILTY SAND with GRAVEL, olive green to gray, medium to coarse, fine gravel, dense, wet. (SW-SM)

106 - 108 feet: SANDY SILT with GRAVEL, olive grayish green, medium plasticity fines, fine to medium, medium gravel, dense, wet. (ML)

Boring completed at 109.5 feet BGS on 6-16-89.

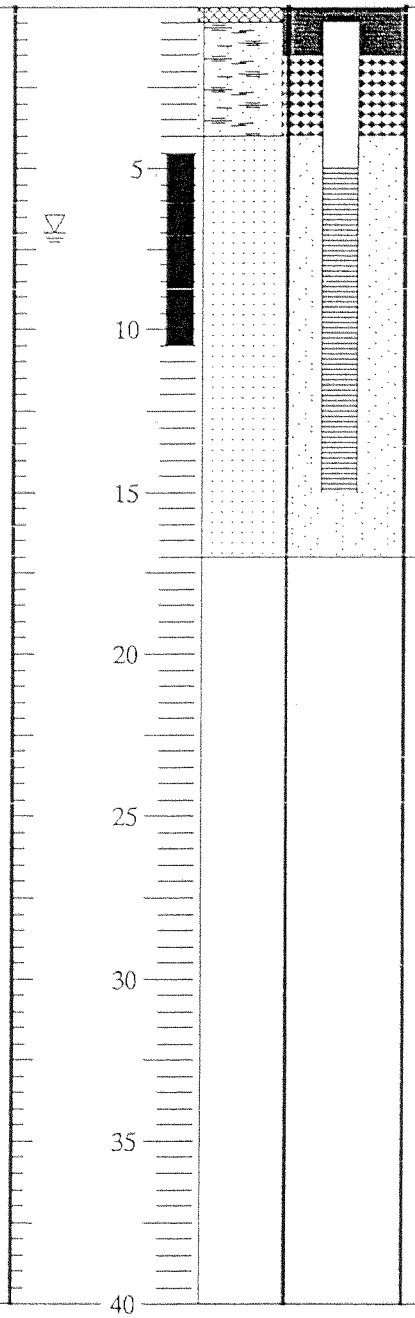
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.06' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	17.00'
LOGGED BY	S. Nelson	DATE COMPLETED	7/5/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	1/9
2	SS	1/8
3	SS	1/8
4	SS	1/9



LITHOLOGIC DESCRIPTION

Geological information is similar to that recorded on boring log for CG-5-D, located 10 feet south.

Boring completed at 17 feet BGS on 7-5-89.

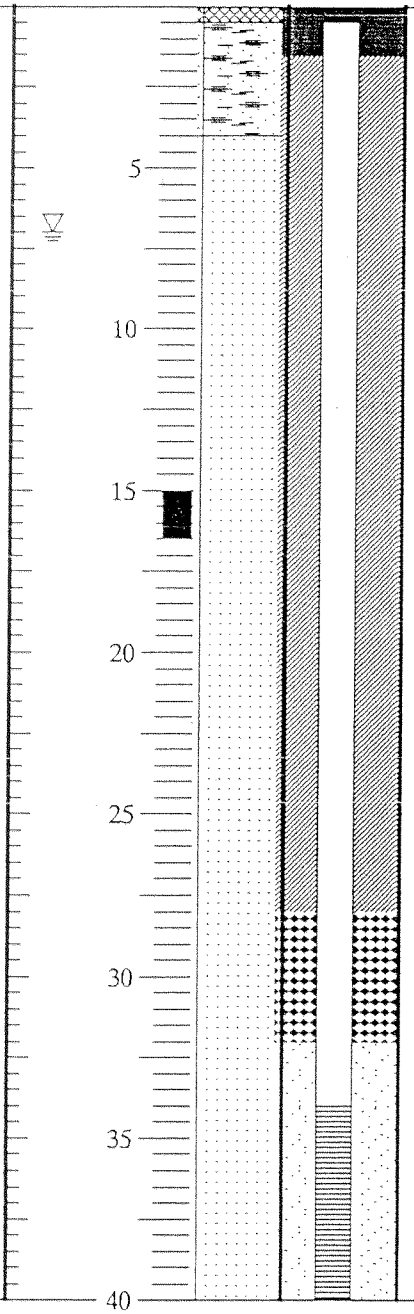
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-S2
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.19' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	45.00'
LOGGED BY	S. Nelson	DATE COMPLETED	7/7/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
1	SS	1/11	Geological information is similar to that recorded on boring log for CG-5-D, located 6 feet south.



REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-S2
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.19' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	45.00'
LOGGED BY	S. Nelson	DATE COMPLETED	7/7/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				45				Boring completed at 45 feet BGS on 7-7-89.
				50				
				55				
				60				
				65				
				70				
				75				
				80				

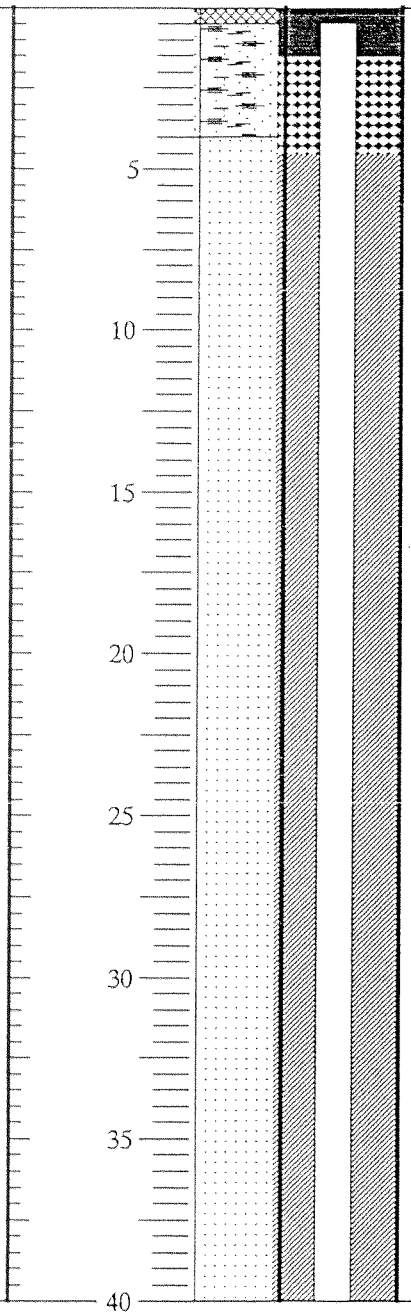
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-I
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	9.86' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	64.50'
LOGGED BY	S. Nelson	DATE COMPLETED	8/17/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION



Geological information similar to that recorded on boring log for CG-5-D, located 15 feet south.

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-I
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	9.86' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	64.50'
LOGGED BY	S. Nelson	DATE COMPLETED	8/17/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	ST			45, 50, 55, 60, 65, 70, 75, 80				Boring completed at 64.5 feet BGS on 8-17-89.

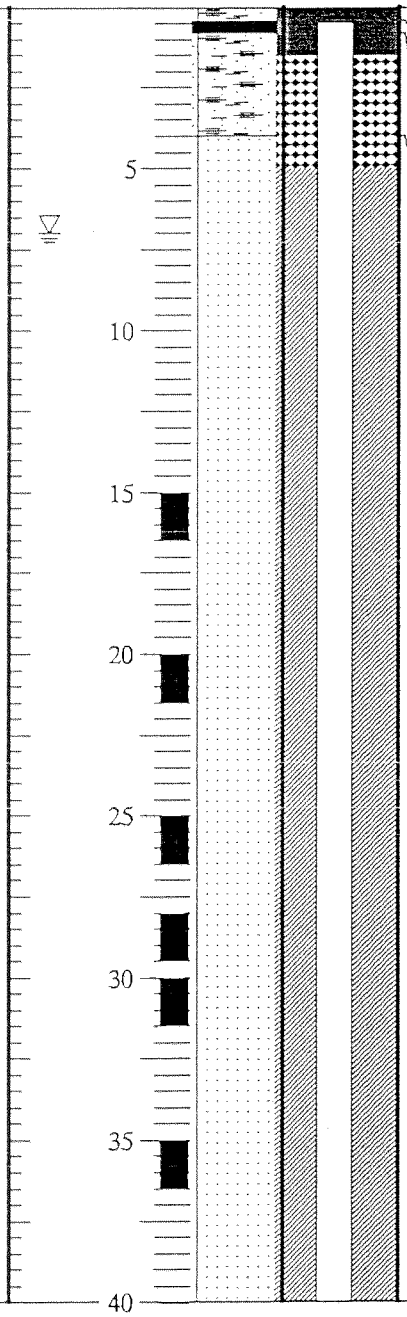
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-D
LOCATION	Georgetown	PAGE	1 OF 4
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.33' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	123.00'
LOGGED BY	S. Nelson	DATE COMPLETED	6/29/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	5/13
2	SS	4/16
3	SS	6/10
4	SS	8/29
5	SS	7/23
6	SS	7/29



LITHOLOGIC DESCRIPTION

0 - 0.4 foot: CONCRETE

0.4 - 0.7 foot: ASPHALT

0.7 - 4 feet: SAND, oliv brown, fine to medium, fine gravel, medium dry. (FILL) (SP)

4 - 44 feet: SAND, dark gray olive, fine to medium, trace fine gravel, medium, wet below 7 feet. (SP)

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-D
LOCATION	Georgetown	PAGE	2 OF 4
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.33' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	123.00'
LOGGED BY	S. Nelson	DATE COMPLETED	6/29/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
7	SS	5/19						
8	SS	6/49		45				44 - 69 feet: SANDY SILT, olive gray, low plasticity fines, fine sand; and SILTY SAND, olive gray, fine, trace wood debris, medium, wet. Stratified lenses 1 to 3 inches thick. (SM-ML)
9	SS	1/3						
10	SS	2/2		50				
11	SS	2/3		55				
12	SS	6/16		60				
13	SS	6/22		65				
14	SS	5/13						
15	SS	3/5		70				69 - 89 feet: SILT, olive brown, low plasticity fines, some fine to very fine sand, trace shell and wood debris, firm, wet. (ML)
16	ST			75				
				80				

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-D
LOCATION	Georgetown	PAGE	3 OF 4
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.33' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	123.00'
LOGGED BY	S. Nelson	DATE COMPLETED	6/29/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
17	SS	6/14						
18	SS	5/12		85				
19	SS	3/8		90				89 - 118 feet: SANDY SILT, greenish to brownish olive, low plasticity fines, fine sand, trace shell debris; and SILTY SAND, fine, medium, wet. Stratified in layers of 1 to 6 inches. (SM-SP)
20	SS	3/8		95				
21	SS	3/7		100				
22	SS	5/31		105				
23	SS	2/10		110				
24	SS	6/28		115				
				120				118 - 123 feet: SILTY SAND, olive gray, fine to coarse, fine gravel, hard, wet to moist. (SM)

REMARKS

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LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-5-D
LOCATION	Georgetown	PAGE	4 OF 4
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.33' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	123.00'
LOGGED BY	S. Nelson	DATE COMPLETED	6/29/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
25	SS	15 50/6						Boring completed at 123 feet BGS on 6-29-89.

125
130
135
140
145
150
155
160

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-6-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.86' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	16.80'
LOGGED BY	S. Nelson	DATE COMPLETED	7/12/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	SS	3/11	▽	5				Geological information similar to that recorded on boring log for CG-S-2, located 6 feet northwest.
2	SS	2/9						
3	SS	2/7		10				
4	SS	4/11		15				
				20				Boring completed at 16.8 feet BGS on 7-12-89.
				25				
				30				
				35				
				40				

REMARKS

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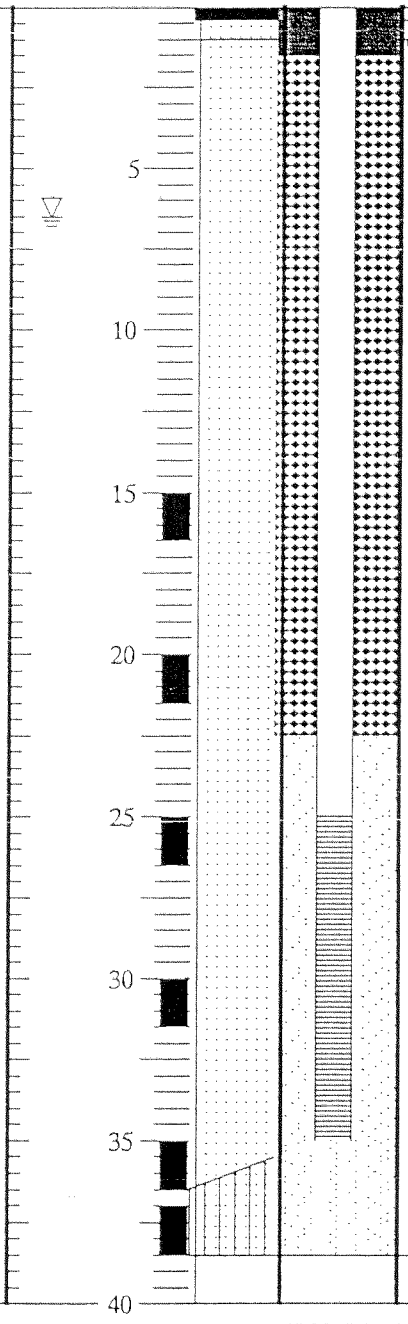
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-6-S2
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.91' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	38.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/10/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	1/4
2	SS	2/10
3	SS	5/14
4	SS	6/42
5	SS	6/32
6	SS	13/55



LITHOLOGIC DESCRIPTION

0 - 0.25 feet: ASPHALT

0.25 - 1 foot: GRAVELLY SAND, olive black, fine to medium, some medium gravel, loose, moist. (SP)

1 - 35.5 feet: SAND, gray olive, fine to medium, trace fine gravel, medium, wet below 6.5 feet. (SP)

35.5 - 38.5 feet: SILTY SAND, gray olive, fine, and SANDY SILT, gray olive, low plasticity fines, fine sand, dense, wet. Stratified lenses 1/2 to 3 inches thick. (SP-SM)

Boring completed at 38.5 feet BGS on 7-10-89.

REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-7-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	8.25' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	17.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/14/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	SS	5/17	▽	5				Geologic information similar to that recorded on boring log for CG-7-S2, located 6 feet southeast.
2	SS	3/12						
3	SS	2/12		10				
4	SS	3/16		15				
				20				Boring completed at 17.5 feet BGS on 7-14-89.
				25				
				30				
				35				
				40				

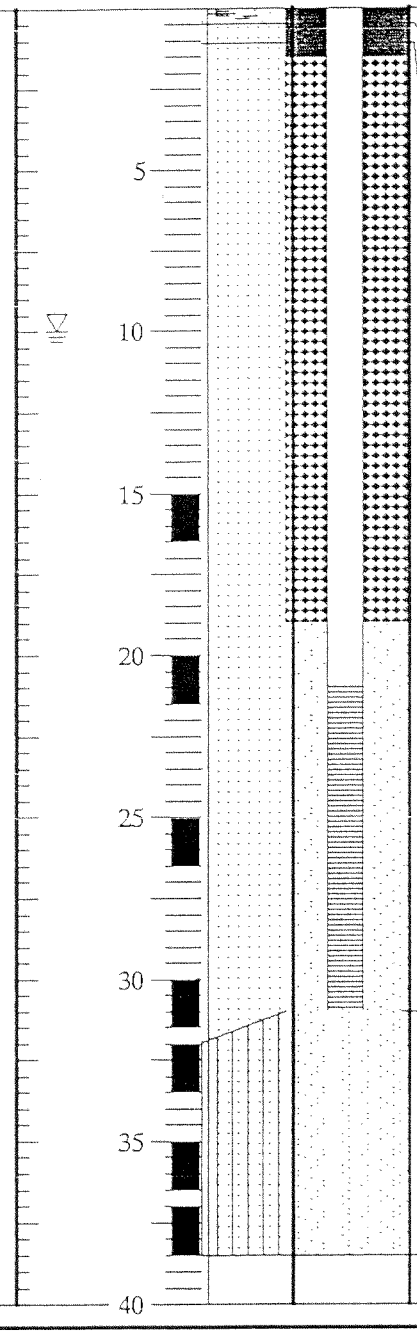
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-7-S2
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	8.14' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	38.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/13/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
			0 - 0.33 foot: CONCRETE
			0.33 - 1.0 foot: GRAVELLY SAND, brownish dark olive, fine to medium, some medium gravel, loose, moist. (FILL) (SP)
			1 - 31 feet: SAND, dark olive, fine to medium, trace fine to medium gravel, medium, wet. (SP)
1	SS	2/18	
2	SS	4/25	
3	SS	5/24	
4	SS	1/10	
5	SS	6/25	31 - 38.5 feet: SAND, dark olive, fine, SILTY SAND and SANDY SILT, olive gray low plasticity fines, fine sand, scattered wood debris, medium, wet, stratified lenses of 1/2 inch to 6 inches thick.
6	SS	14/58	
7	SS	19/52	
			Boring completed at 38.5 feet BGS on 7-13-89.



REMARKS

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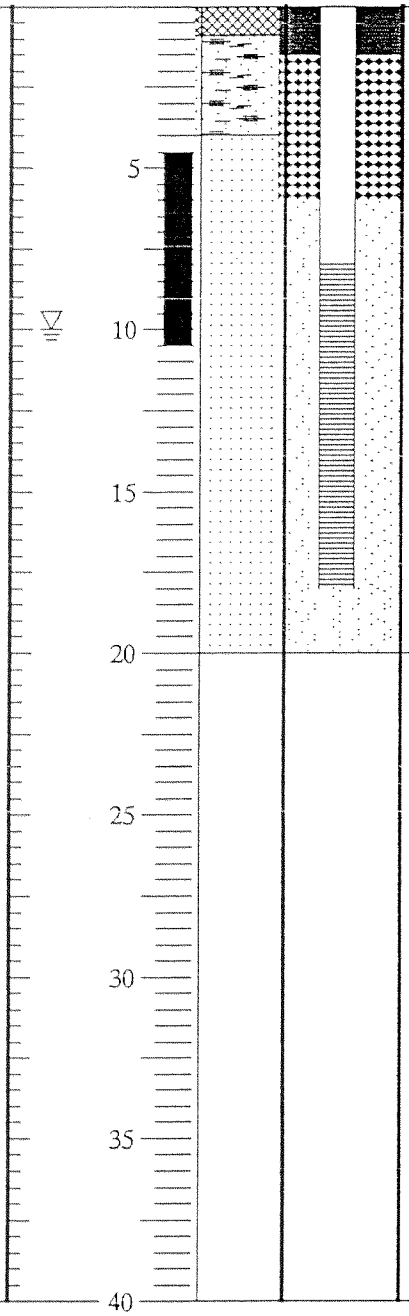
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-8-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.47' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	20.00'
LOGGED BY	S. Nelson	DATE COMPLETED	7/27/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	2/4
2	SS	1/11
3	SS	3/10
4	SS	4/13



LITHOLOGIC DESCRIPTION

Geologic information similar to that recorded in boring log for CG-8-S2, located 6 feet north.

Boring completed on 7-27-89.

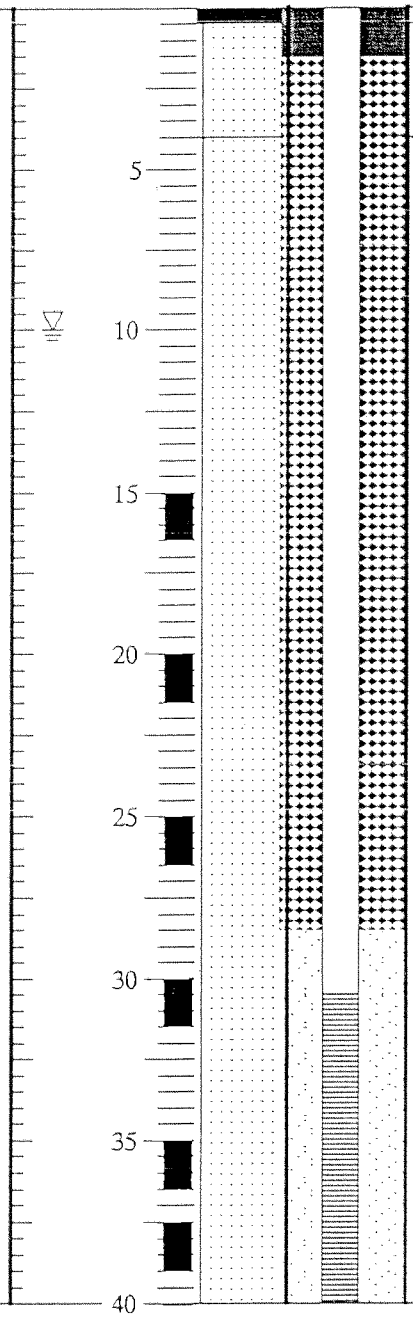
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-8-S2
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.99' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	41.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/26/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	5/32
2	SS	1/14
3	SS	4/27
4	SS	7/33
5	SS	3/22
6	SS	4/14



LITHOLOGIC DESCRIPTION

0 - 0.5 foot: ASPHALT

0.5 - 4 feet: SAND, brown olive, fine to medium, fine gravel, wood debris, medium, dry.

4 - 40.5 feet: SAND, dark brown olive to dark gray olive, fine to medium, trace fine gravel, trace scattered wood debris, medium, wet below 10 feet. (SP)

REMARKS

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LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-8-S2
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	10.99' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	41.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/26/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
7	SS	5/16		45				40.5 - 41.5 feet: SILTY SAND, olive gray, fine, and SANDY SILT, olive gray to brown olive, low plasticity fines, fine sand, trace wood debris, medium wet, stratified layers 1 to 3 inches thick. (SP-SM)
				50				Boring completed at 41.5 feet BGS on 7-26-89.
				55				
				60				
				65				
				70				
				75				
				80				

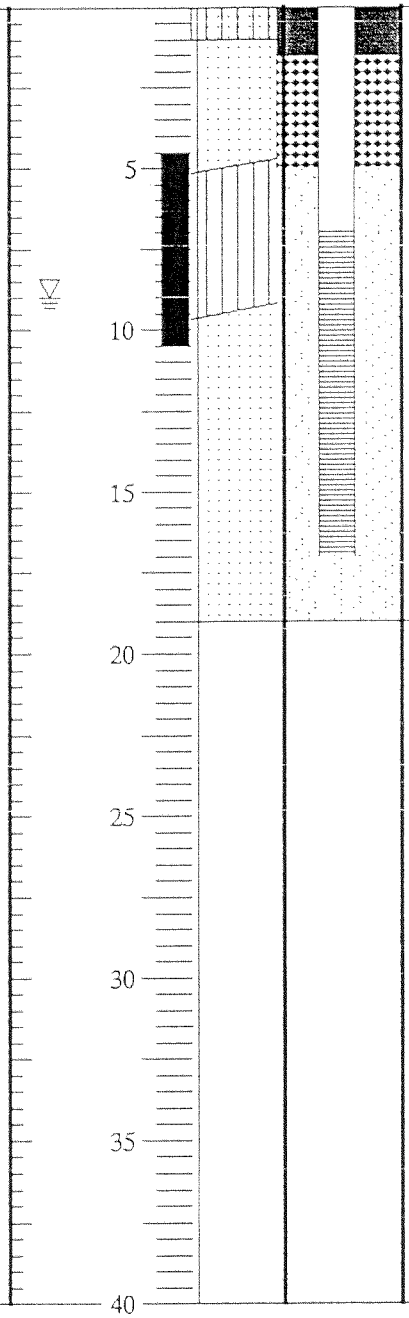
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-9-S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.16' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	19.00'
LOGGED BY	S. Nelson	DATE COMPLETED	7/25/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
1	SS	3/6	Geologic information similar to that recorded on boring log for CG-9-I, located 6 feet south.
2	SS	4/8	
3	SS	3/11	
4	SS	2/4	
			Boring completed at 19 feet BGS on 7-25-89.



REMARKS

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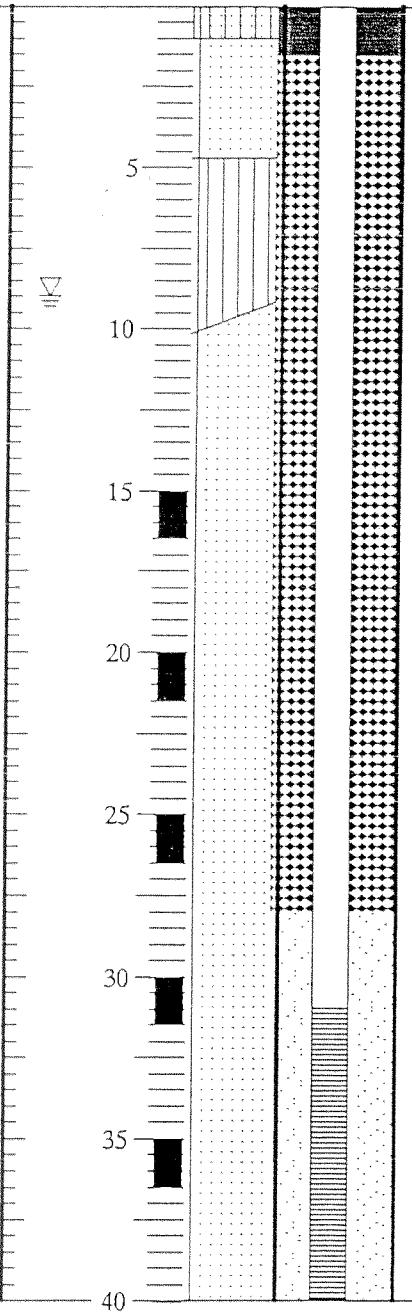
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-9-S2
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.04' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	41.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/24/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	3/21
2	SS	4/20
4	SS	1/7
3	SS	1/13
5	SS	5/24



LITHOLOGIC DESCRIPTION

Geologic information similar to that recorded on boring log for CG-9-I, located 10 feet south.

REMARKS

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LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-9-S2
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.04' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	41.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/24/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
6	SS	1/5						Boring completed at 41.5 feet BGS on 7-24-89.

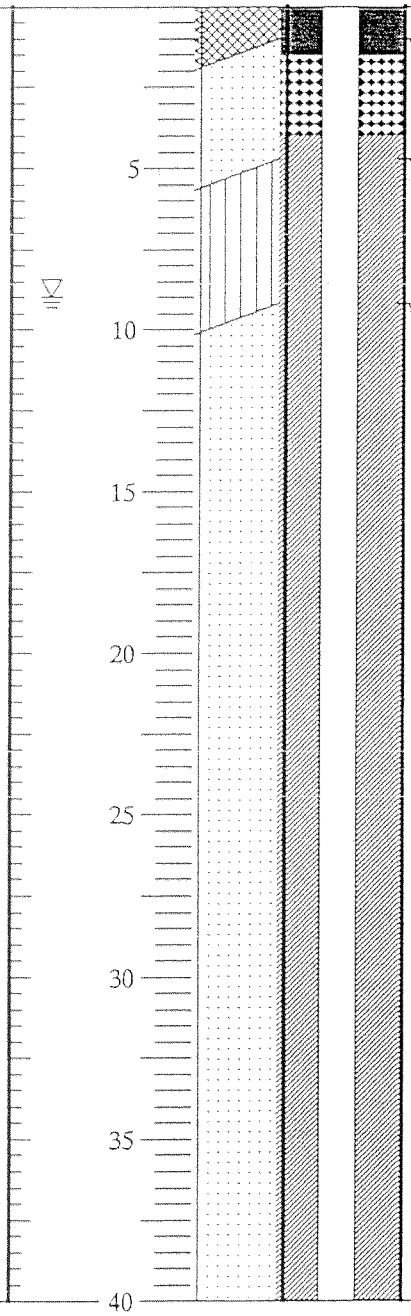
45
50
55
60
65
70
75
80

REMARKS
Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-9-I
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.01' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	75.00'
LOGGED BY	S. Nelson	DATE COMPLETED	8/25/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION



0 - 1 foot: SILTY SAND, dark brown, fine to medium, trace medium to coarse gravel, loose, dry. (SM) (Topsoil)

1 - 4.7 feet: SAND, dark gray brown, fine to medium, loose, dry. (SP) (FILL)

4.7 - 9.2 feet: SANDY SILT, brown, low plasticity fines, fine to medium; with SAND, olive brown, fine to medium, firm, dry. Stratified layers to 2 inches. (ML-SP) (FILL)

9.2 - 41 feet: SAND, dark gray olive, fine to medium, trace gravel, trace wood debris, medium, wet below 9 feet. (SP)

REMARKS

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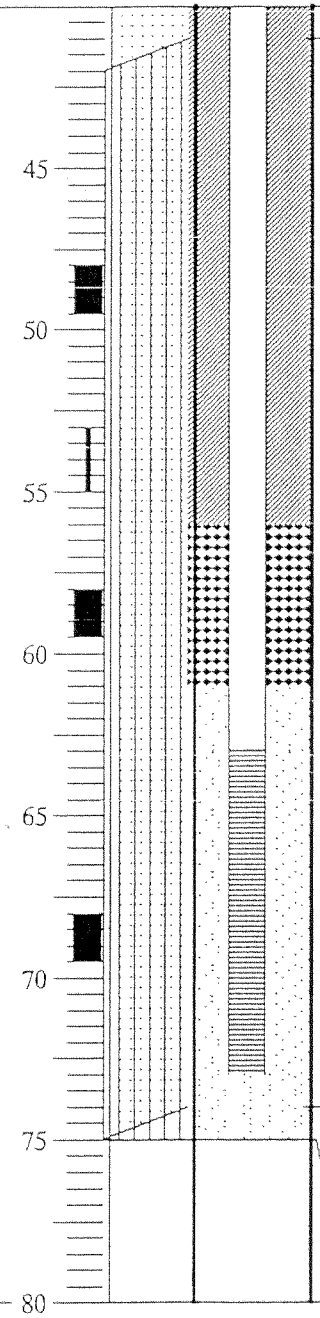
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-9-I
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	11.01' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	75.00'
LOGGED BY	S. Nelson	DATE COMPLETED	8/25/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
			41 - 74 feet: SILTY SAND, olive gray, fine, and SANDY SILT, olive gray, low plasticity fines, fine sand, scattered wood debris, medium, wet, stratified layers 1 to 6 inches thick. (SP-SM)
1	SS	10/34	
2	ST		
3	SS	7/17	
4	SS	3/7	
			74 - 75 feet: SILT, olive brown, low plasticity fines, some fine to very fine sand, firm, wet.
			Boring completed at 75 feet BGS on 8-25-89.



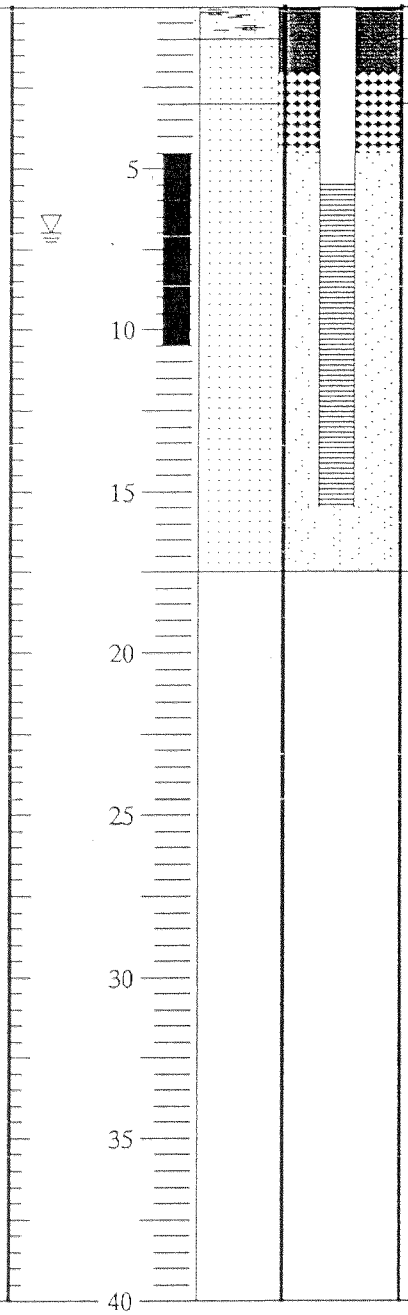
REMARKS

Elevations are City of Seattle datum (-6.05 feet MSL). TOC = Top of Casing. 6 inch I.D./12 inch O.D. Hollow Stem Auger. BGS = Below Ground Surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-10S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill Corp.	REFERENCE ELEV.	8.84' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	17.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/18/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
1	SS	2/6	Geological information similar to that recorded on boring log for CG-10S2, located 4 feet north.
2	SS	3/10	
3	SS	5/13	
4	SS	5/14	
			Boring completed at 17.5 feet BGS on 7-18-89.



REMARKS

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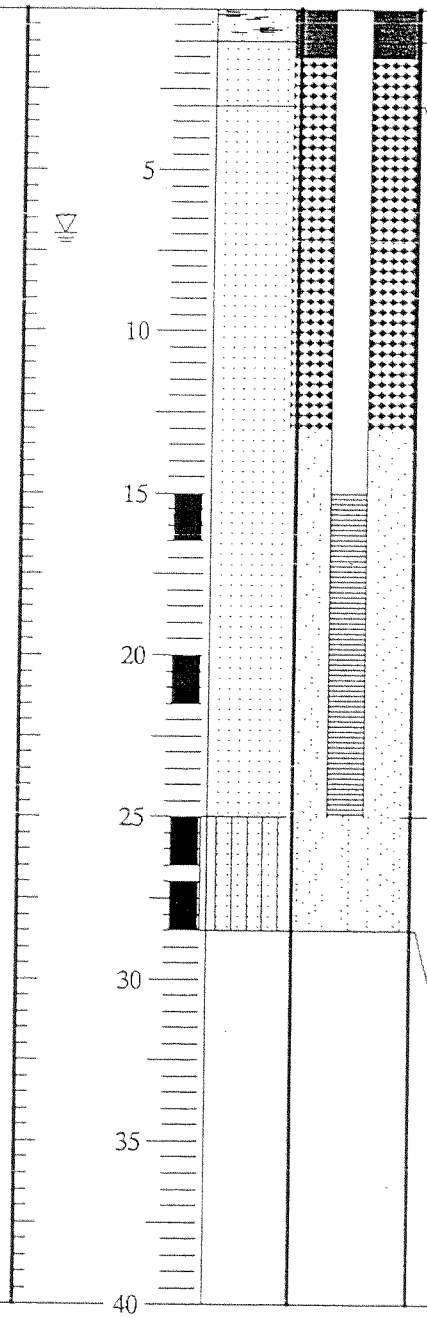
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-10S2
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill Corp.	REFERENCE ELEV.	8.54' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	28.50'
LOGGED BY	S. Nelson	DATE COMPLETED	7/15/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
			0 - 1 foot: CONCRETE
			1 - 3 feet: SAND, brown, fine to medium, trace fine gravel, trace organic debris, loose, dry. (SP) (FILL)
			3 - 25 feet: SAND, dark grayish olive, fine to medium, trace fine gravel, medium, wet below 7 feet. (SP)
1	SS	3/15	
2	SS	9/59	
3	SS	1/3	25 - 28.5 feet: SILTY SAND, olive gray, fine, and SANDY SILT, light grayish olive, low plasticity fines, fine sand, trace wood debris, medium, wet. Stratified 1-6 inch layers. (SP-SM)
4	SS	4/17	
			Boring completed at 28.5 feet BGS on 7-15-89.



REMARKS

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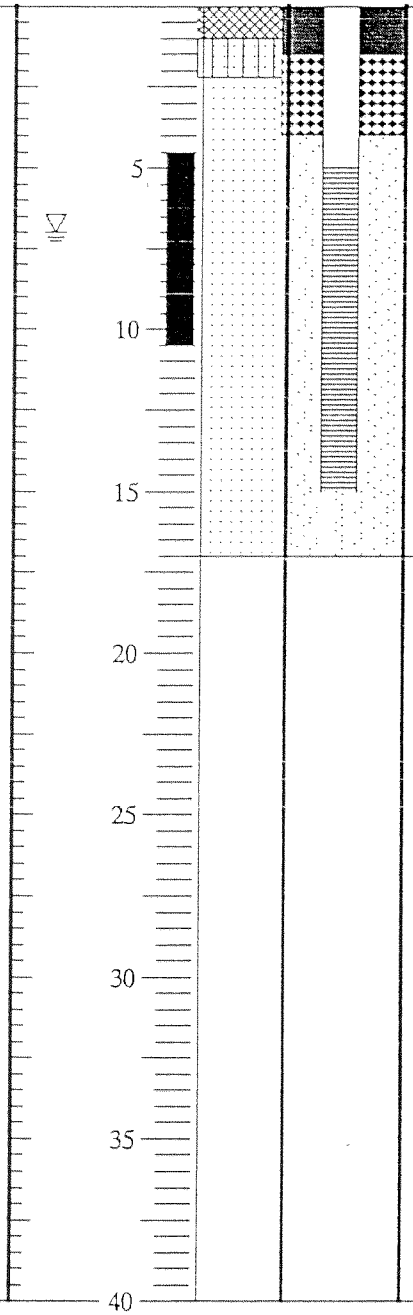
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-11S1
LOCATION	Georgetown	PAGE	1 OF 1
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.11' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	17.00'
LOGGED BY	Steve Nelson	DATE COMPLETED	7/21/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	LITHOLOGIC DESCRIPTION
1	SS	4/11	Geologic information similar to that recorded on boring log for CG-11S2, located 5 feet north.
2	SS	3/13	
3	SS	4/22	
4	SS	6/23	
			Boring completed at 17 feet BGS on 7-21-89.



REMARKS

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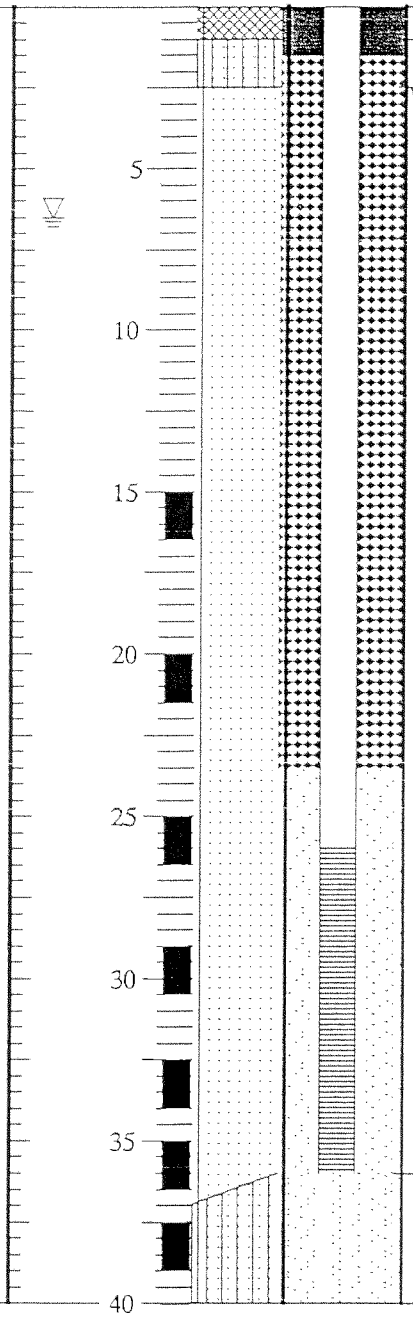
LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-11S2
LOCATION	Georgetown	PAGE	1 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.14' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	41.50'
LOGGED BY	Steve Nelson	DATE COMPLETED	7/20/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT
1	SS	4/24
2	SS	5/22
3	SS	4/21
4	SS	3/32
5	SS	5/27
6	SS	6/51
7	SS	5/21



LITHOLOGIC DESCRIPTION

0 - 1 foot: CONCRETE

1 - 2.5 feet: SILTY SAND, dark brown, fine to medium, medium gravel, abundant organic debris, loose, dry. (FILL) (SM)

2.5 - 36 feet: SAND, dark brownish olive to olive gray, fine to medium, trace fine gravel, medium, wet below 6.5 feet. (SP)

36 - 41.5 feet: SILTY SAND dark olive gray, fine, and SANDY SILT, olive gray, low plasticity fines, fine sand, medium, wet, stratified 1/2 to 4 inch lenses. (SP-SM)

REMARKS

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LOG OF EXPLORATORY BORING

PROJECT NAME	Chemical Processors, Inc.	BORING NO.	CG-11S2
LOCATION	Georgetown	PAGE	2 OF 2
DRILLED BY	Hokkaido Drill, Inc.	REFERENCE ELEV.	7.14' TOC
DRILL METHOD	H.S. Auger	TOTAL DEPTH	41.50'
LOGGED BY	Steve Nelson	DATE COMPLETED	7/20/89

SAMPLE NUMBER	SAMPLE TYPE	BLOWS PER FOOT	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
8	SS	7/14						Boring completed at 41.5 feet BGS on 7-20-89.

45
50
55
60
65
70
75
80

REMARKS

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PHILIP SERVICES CORP.

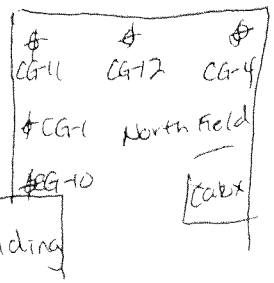
Monitoring Well Construction

Well ID CG-11-I

te Start 9/8/98
te Complete 9/5/98
ring Depth 68'
rehole Diameter 15"
ll Diameter 2"

Contractor PSC
Drillers Cascade
Geologist Carolyn Mayer
Chris Minton
Depth to Water (bgs)

Location Diagram



erence Elevation _____

DEPTH (feet bgs)

ound Surface _____

Bottom of Surface Casing 3'

Top of Seal _____

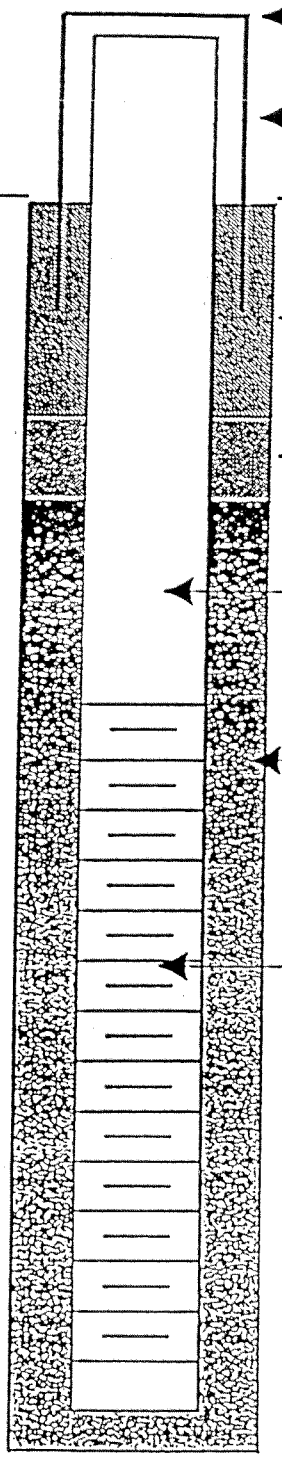
p of Sand Pack 54'

Top of Screen 56'

Bottom of Well 66'

tom of Boring 68'

Bore Hole Diameter 15"



Locking Cap

Steel Protective Surface Casing
Diameter: 8" Diameter Flush Mount w/ 18" skirt

Grout Type: Quickcrete from 3'-1.5' Special Grade, High Density 1.5'-0'

Annular Seal Type: Gold Seal Medium size Bentonite chips

Riser Casing Type:
Diameter:

Well Packing Material
Type: Sand 20/40

Screen Type: ~~40~~ Schedule 40 PVC
Slot Width: .01"
Diameter: 2"

Notes

PHILIP SERVICES CORP.

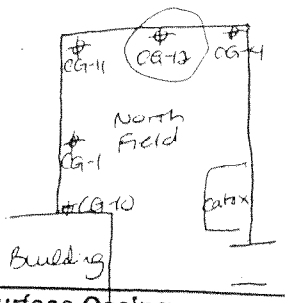
Monitoring Well Construction

Well ID CG-12-I

Date Start 9/4/98
Date Complete
Boring Depth 65' bgs
Borehole Diameter 15" to 35' / 8" to 65'
Well Diameter 2"

Contractor Cascade Drilling Inc
Drillers Scott
Geologist C. Mayer
Depth to Water (bgs) ~6'

Location Diagram



Reference Elevation

DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing 18"

Seal
Piezometer
Sand pack to 5'

Top of Seal 18'

Top of Sand Pack 51'

Top of Screen 53'

Bottom of Well 63'

Bottom of Boring 65'

Bore Hole Diameter 15" OD from 0'-35'
8" OD from 35'-65'

Locking Cap

Steel Protective Surface Casing
Diameter: 12"

Flush mount

Only grouting to 18" bgs w/ quick-crete, then top 18" will be special concrete

1.5-3'

Grout Type: Quickcrete

Bentonite Chips

Annular Seal Type:

Riser Casing Type: Sched. 40
Diameter: 2"

Well Packing Material Sand
Type: 20/40

Screen Type: Sched 40
Slot Width: .010"
Diameter: 2"

} sand

Notes
Prepack Screen, Slot Size .010"
Sand - 20/40

WCR -

Well Completion Report

Site #: BEI Georgetown County King Well # CG-101-S-1

Site Name: 623188 Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: BEI Date Drilled Start: 5-5-92

Driller: Gary Gauf Geologist: Ken Watter Date Completed: 5-6-92

Drilling Method: HSA Diedrich D-50 Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Ready-mix concrete

Type of Annular Sealant: cement/5% bent

Amount of cement: # of bags 5 lbs. per bag 100

Amount of bentonite: # of bags 1 lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Baroid chips

Amount of bentonite: # of Bags 2 lbs. per bag 50

Type of Sand Pack: 10-20 Silica Sand

Source of Sand: CSST

Amount of Sand: # of bags 3 lbs. per bag 100

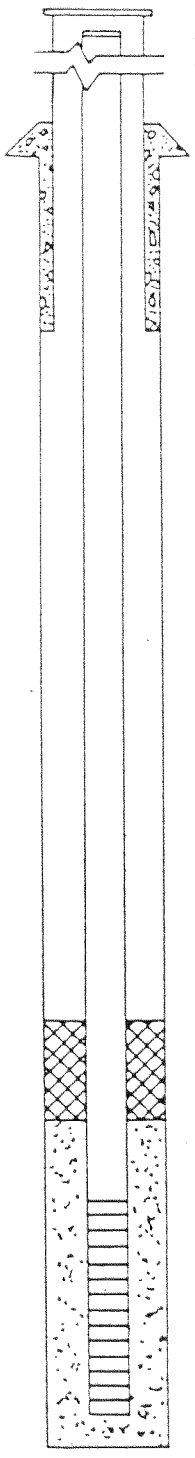
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			sch 40	
Riser pipe above w.t.			sch 40	
Riser pipe below w.t.			~~sch 40~~	
Screen			wire wrapped	
Coupling joint screen to riser			sch 40	
Protective casing			NA	

Measurements to .01 ft. (where applicable)

Riser pipe length	
Protective casing length	
Screen length	10'
Bottom of screen to end cap	
Top of screen to first joint	0.4'
Total length of casing	
Screen slot size	0.020
% of openings in screen	
Diameter of borehole (in)	6.25 I.D. 10.00 OD
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

1 .00 ft. Top of annular sealant

screen; Johnson 'V'-wire continuous wrap

2.0' ft. Top of Seal

3.0' ft. Total Seal Interval

5.0' ft. Top of Sand

7.0 ft. Top of Screen

10.0' ft. Total Screen Interval

17.0 ft. Bottom of Screen

17.5' ft. Bottom of Borehole

Completed by: J Peale Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

Site #: BEI Georgetown — Seattle WA — County: King — Well #: CG-101-S-2

Site Name: Ecology 223188 — Grid Coordinate: Northing ____ Easting ____

Drilling Contractor: BEI Technical services — Date Drilled Start: 5-6-92

Driller: Gary Gauf — Geologist: Ken Walter — Date Completed: 5-7-92

Drilling Method: HSA Diedrich D-50 — Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: concrete

Type of Annular Sealant: Portland cement 5% bentonite

Amount of cement: # of bags 10 lbs. per bag 100

Amount of bentonite: # of bags 2 lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Baroid Chips

Amount of bentonite: # of Bags 2 lbs. per bag 50

Type of Sand Pack: 20-40 Silica Sand

Source of Sand: CSSI

Amount of Sand: # of bags 5 lbs. per bag 100

Well Construction Materials

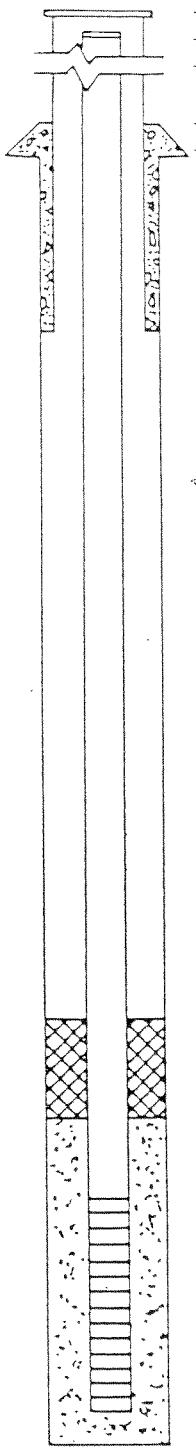
	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.			Sch 40	
Riser pipe below w.t.			Sch 40	
Screen			Sch 40 Wire wrapped	
Coupling joint screen to riser			Sch 40	
Protective casing			NA	

Measurements

to .01 ft. (where applicable)

Riser pipe length	20'
Protective casing length	NA
Screen length	10'
Bottom of screen to end cap	
Top of screen to first joint	
Total length of casing	30'
Screen slot size	0.010"
% of openings in screen	
Diameter of borehole (in)	6"
ID of riser pipe (in)	2"

Elevations — .01 ft.



____ ____ MSL Top of Protective Casing

____ ____ MSL Top of Riser Pipe

____ ____ ft. Casing Stickup

____ ____ MSL Ground Surface

____ 1.0 ft. Top of annular sealant

Screen: Johnson V-Wire

____ 1.0 ft. Top of Seal

1.0 18.5 ft. Total Seal Interval

____ 18.5 ft. Top of Sand

____ 20.5 ft. Top of Screen

20.5 30.5 ft. Total Screen Interval

____ 30.5 ft. Bottom of Screen

____ 32 ft. Bottom of Borehole

Completed by: Ken Walter — Surveyed by: ____ Ill. registration # ____

WCR -

Well Completion Report

#: 623188 County KING Well # KC-101-I

Site Name: BP CHEMICALS CORPORATION Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Holt Drilling Date Drilled Start: 5-26

Driller: Wade Iverson Geologist: J. Pearce Date Completed: 5-29

Drilling Method: CABLE TOOL Drilling Fluids (type): _____

Annular Space Details

Type of Surface Seal: CONCRETE, FM.

Type of Annular Sealant: 5% BENTONITE - CEMENT GROUT

Amount of cement: # of bags 17 lbs. per bag 100

Amount of bentonite: # of bags _____ lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): PELLET

Amount of bentonite: # of Bags 3 lbs. per bag _____

Type of Sand Pack: 20/40, 12' 6"

Source of Sand: CSS,

Amount of Sand: # of bags 7 lbs. per bag 50

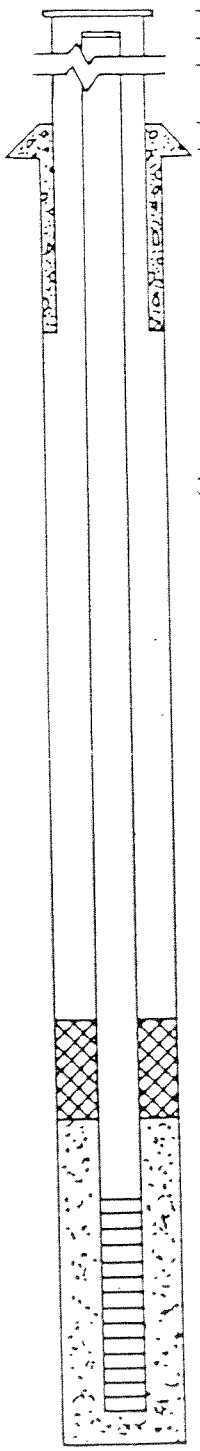
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			sch 40	
Riser pipe above w.t.			"	
Riser pipe below w.t.			"	
Screen			"	
Coupling joint screen to riser			n/a	
Protective casing			sch 40	

Measurements to .01 ft. (where applicable)

Riser pipe length	
Protective casing length	-
Screen length	10
Bottom of screen to end cap	
Top of screen to first joint	
Total length of casing	-
Screen slot size	.010
% of openings in screen	
Diameter of borehole (in)	6-3"
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

[illegible] _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

screen: Johnson V-Wire

36 _____ ft. Top of Seal

3 _____ ft. Total Seal Interval

39 _____ ft. Top of Sand

41 _____ ft. Top of Screen

10 _____ ft. Total Screen Interval

51 _____ ft. Bottom of Screen

_____ _____ ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____ Ill. registration # _____

WCR –

Well Completion Report

Site #: Chevron Georgetown County: King Well #: CG-107-5-9

Site Name: 67348 Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Env. Date Drilled Start: 5-20-92

Driller: Gary Gauf Geologist: Ken Walter Date Completed: 5-20-92

Drilling Method: HSA Drilling Fluids (type): Water

Annular Space Details

Type of Surface Seal: concrete

Type of Annular Sealant: cement @ 5% bentonite

Amount of cement: # of bags 4 lbs. per bag 100

Amount of bentonite: # of bags .5 lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): Baroid chips

Amount of bentonite: # of Bags 1 lbs. per bag 50

Type of Sand Pack: Silica 10-20

Source of Sand: CSSI

Amount of Sand: # of bags 5 lbs. per bag 100

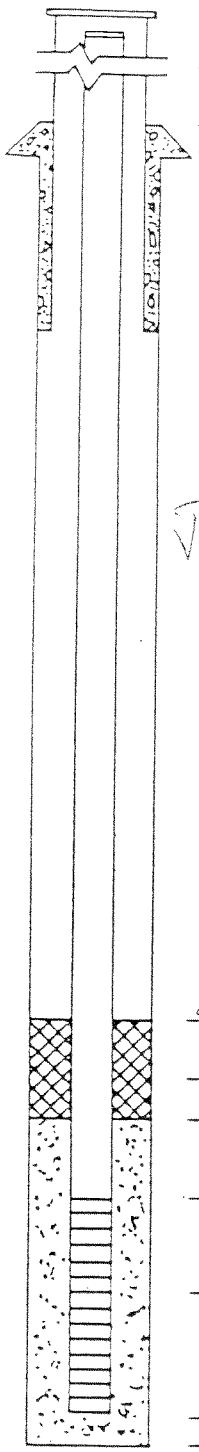
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements to .01 ft. (where applicable)

Riser pipe length	7.3
Protective casing length	
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	17.3
Screen slot size	20 slot 0.020
% of openings in screen	N/A continuous
Diameter of borehole (in)	8.5"
ID of riser pipe (in)	2"

Elevations – .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

2.3 5.3 ft. Top of Seal

_____ 2.3 ft. Total Seal Interval

_____ 5.3 ft. Top of Sand

_____ 7.3 ft. Top of Screen

_____ _____ ft. Total Screen Interval

_____ 17.3 ft. Bottom of Screen

_____ 17.8 ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____ Ill. registration # _____

5-22-92

WCR -

Well Completion Report

Site #: 623188 County King Well # CG-102-S-2

Site Name: Chempro Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Holt Exp BEI Date Drilled Start: 5/22/92

Driller: Wade Juersen Gary Gant Geologist: Ken Walter/James Peale Date Completed: 5-22-92

Drilling Method: HSA Hollow Stem Auger Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete, F.M.

Type of Annular Sealant: 5% Bent. cement grout

Amount of cement: # of bags _____ lbs. per bag _____

Amount of bentonite: # of bags _____ lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): Pellets

Amount of bentonite: # of Bags 3 lbs. per bag _____

Type of Sand Pack: 20/40

Source of Sand: CSSI

Amount of Sand: # of bags 6 1/2 lbs. per bag _____

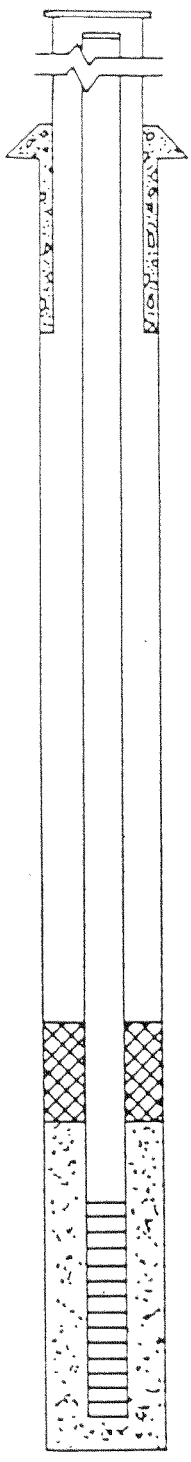
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing			n/a	

Measurements to .01 ft. (where applicable)

Riser pipe length	20'
Protective casing length	
Screen length	10'
Bottom of screen to end cap	
Top of screen to first joint	
Total length of casing	
Screen slot size	.010"
% of openings in screen	
Diameter of borehole (in)	10 1/4
ID of riser pipe (in)	2"

Elevations — .01 ft.



____	____	MSL Top of Protective Casing
____	____	MSL Top of Riser Pipe
____	____	ft. Casing Stickup
____	____	MSL Ground Surface
0	0	ft. Top of annular sealant
15	00	ft. Top of Seal
3	00	ft. Total Seal Interval
18	00	ft. Top of Sand
20	00	ft. Top of Screen
10	00	ft. Total Screen Interval
30	—	ft. Bottom of Screen
~~30~~ 31	.5	ft. Bottom of Borehole

Completed by: _____ Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

#: 473198 County King Well # CA-102-I

Site Name: Chemtron Corporation Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Pat - Skillen Date Drilled Start: 6-15-92 1000

Driller: Wade Iverson Geologist: Ken Walters Date Completed: 6-17-92

Drilling Method: Cable Tool Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: Cement & 5% Bentonite

Amount of cement: # of bags _____ lbs. per bag _____

Amount of bentonite: # of bags _____ lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): chips

Amount of bentonite: # of Bags _____ lbs. per bag _____

Type of Sand Pack: 20-40 Sand (Silica)

Source of Sand: CSSI

Amount of Sand: # of bags 6 lbs. per bag 100

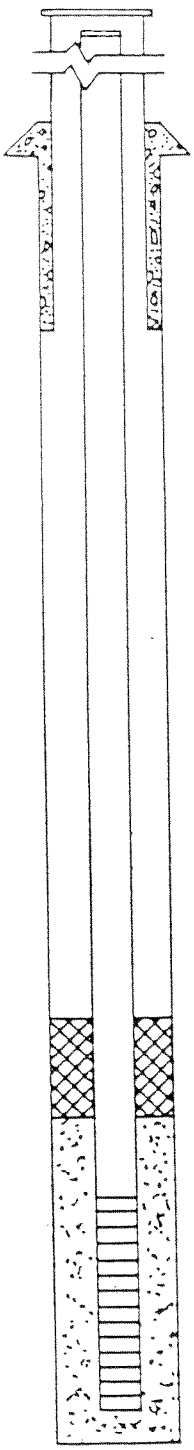
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements to .01 ft. (where applicable)

Riser pipe length	53
Protective casing length	N/A
Screen length	10
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	63'
Screen slot size	0.010
% of openings in screen	N/A
Diameter of borehole (in)	6 - 5" - 9.25
ID of riser pipe (in)	4 2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

Johnson V-Wire screen used

_____ 47 ft. Top of Seal

47 50 ft. Total Seal Interval

_____ 50 ft. Top of Sand

_____ 53 ft. Top of Screen

53 63 ft. Total Screen Interval

_____ 63 ft. Bottom of Screen

_____ 70 ft. Bottom of Borehole

Completed by: _____ Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

#: 623188 County King Well # CG-102-D

Site Name: Chempro Georgetown Grid Coordinate: Northing Easting

Drilling Contractor: Holt Drilling Date Drilled Start: 7-7-92

Driller: Wade Iversen Geologist: Ken Walter Date Completed: 7-

Drilling Method: Cable Tool Drilling Fluids (type):

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: Portland cement/5% bentonite

Amount of cement: # of bags 19 lbs. per bag 94

Amount of bentonite: # of bags 4 lbs. per bag 60

Type of Bentonite Seal (Granular, Pellet): Bannt chips

Amount of bentonite: # of Bags 3 lbs. per bag 60

Type of Sand Pack: 20-40 Silica Sand

Source of Sand: Colorado

Amount of Sand: # of bags 4 lbs. per bag 100

Well Construction Materials

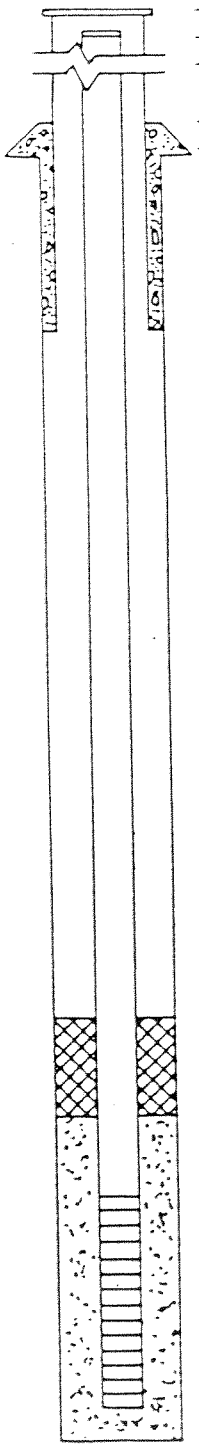
	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements

to .01 ft. (where applicable)

Riser pipe length	101.5
Protective casing length	N/A
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	111.5'
Screen slot size	0.010
% of openings in screen	continuous
Diameter of borehole (in)	12/8/6
ID of riser pipe (in)	2.0

Elevations – .01 ft.



___ ___ MSL Top of Protective Casing

___ ___ MSL Top of Riser Pipe

___ ___ ft. Casing Stickup

Concrete MSL Ground Surface

5 ft. Top of annular sealant

96.5 ft. Top of Seal

96.5 99.5 ft. Total Seal Interval

99.5 ft. Top of Sand

101.5 ft. Top of Screen

101.5 111.5 ft. Total Screen Interval

111.5 ft. Bottom of Screen

130 ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: Ill. registration #

WCR -

Well Completion Report

Site #: 623188 County King Well # CB-103-5-1

Site Name: Chempro Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: BEI Tech services Date Drilled Start: 5-8-92

Driller: Gary Gauf Geologist: Ken Wafer Date Completed: 5-8-92

Drilling Method: HSA Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: Baroid Lolepluq

Amount of cement: # of bags N/A lbs. per bag ____

Amount of bentonite: # of bags ____ lbs. per bag ____

Type of Bentonite Seal (Granular, Pellet): Chips

Amount of bentonite: # of Bags ____ lbs. per bag 50

Type of Sand Pack: Colorado silica Sand 10-20

Source of Sand: CSSI

Amount of Sand: # of bags 5 lbs. per bag 100

Well Construction Materials

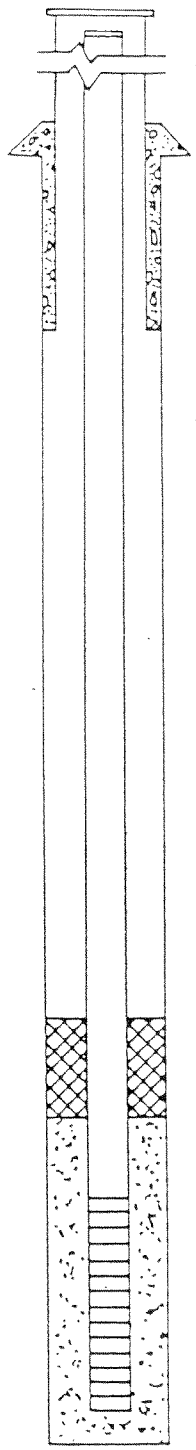
	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing			N/A	

Measurements

to .01 ft. (where applicable)

Riser pipe length	10'
Protective casing length	N/A
Screen length	10'
Bottom of screen to end cap	0.5'
Top of screen to first joint	0.4'
Total length of casing	20'
Screen slot size	0.020"
% of openings in screen	
Diameter of borehole (in)	6.25
ID of riser pipe (in)	2"

Elevations — .01 ft.



____ ____ MSL Top of Protective Casing

____ ____ MSL Top of Riser Pipe

____ ____ ft. Casing Stickup

____ ____ MSL Ground Surface

____ ____ ft. Top of annular sealant

screen
Johnson V wire
10-20 size sand

____ 1 ft. Top of Seal

1 5. ft. Total Seal Interval

____ 5.5 ft. Top of Sand

____ 7.5' ft. Top of Screen

7.5' 17.5' ft. Total Screen Interval

____ 17.5 ft. Bottom of Screen

____ 20' ft. Bottom of Borehole

Completed by: Ken Wafer Surveyed by: _____ Ill. registration # _____

WCR –

Well Completion Report

Site #: BEI - CHEMPRO GTN County: Kings Well #: CG-103-I

Site Name: 623185 - 6355 Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: HOLT DRILLING Date Drilled Start: 6-1-92

Driller: ~~HOLT~~ W. EVERSON Geologist: J. DEALE Date Completed: 6-5-92

Drilling Method: CABLE TOOL Drilling Fluids (type): _____

Annular Space Details

Type of Surface Seal: _____

Type of Annular Sealant: 5% BENT/CEMENT GROUT

Amount of cement: # of bags 30 lbs. per bag 94

Amount of bentonite: # of bags ~3 lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): CHIPS

Amount of bentonite: # of Bags 3 lbs. per bag ~~50~~ 50 (GW)

Type of Sand Pack: 20/40 SILICA SAND

Source of Sand: CSSI

Amount of Sand: # of bags 7 lbs. per bag #100

Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements to .01 ft. (where applicable)

Riser pipe length	
Protective casing length	
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	71'
Screen slot size	~~0.10~~ 0.010
% of openings in screen	N/A (continuous)
Diameter of borehole (in)	6.5"
ID of riser pipe (in)	2"

Elevations – .01 ft.

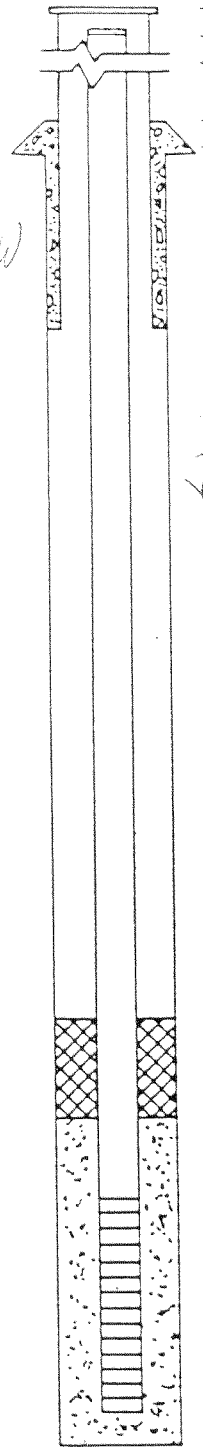
N/A MSL Top of Protective Casing

N/A MSL Top of Riser Pipe

ft. Casing Stickup

MSL Ground Surface

0 ft. Top of annular sealant



screen

Johnson 'V' wire

56 ft. Top of Seal

3 ft. Total Seal Interval

59 ft. Top of Sand

61 ft. Top of Screen

10 ft. Total Screen Interval

71 ft. Bottom of Screen

80 ft. Bottom of Borehole

Completed by: Ken Witter Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

Site #: ~~[illegible]~~ 57 GEORGETOWN County KING Well # CG-105-3-2

Site Name: CHEMPRO GEORGETOWN/623184 Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: _____ Date Drilled Start: 5-4-92

Driller: C. OAKS Geologist: J. PEALE Date Completed: 5-4-92

Drilling Method: HSA Drilling Fluids (type): _____

Annular Space Details

Type of Surface Seal: ~~NA~~ CONCRETE

Type of Annular Sealant: 5% BENT / CEMENT

Amount of cement: # of bags 10 lbs. per bag ~~100~~ 94

Amount of bentonite: # of bags 1/2 lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): GRANULAR

Amount of bentonite: # of Bags 2 lbs. per bag 50

Type of Sand Pack: 10 x 20

Source of Sand: ~~LONESTAR~~ CSSI

Amount of Sand: # of bags 7 lbs. per bag 100

Well Construction Materials

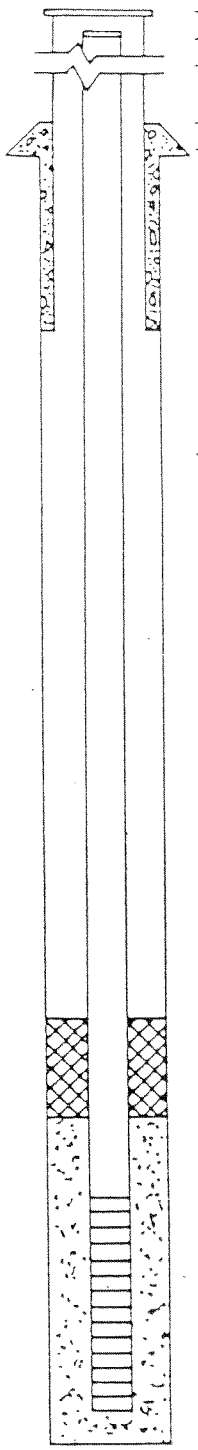
	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.			Sch 40	
Riser pipe below w.t.			Sch 40	
Screen			Wirewrapped	
Coupling joint screen to riser			Sch 40	
Protective casing			n/a	

Measurements

to .01 ft. (where applicable)

Riser pipe length	25
Protective casing length	
Screen length	10
Bottom of screen to end cap	
Top of screen to first joint	
Total length of casing	
Screen slot size	20 SLOT
% of openings in screen	N/A CONTINUOUS
Diameter of borehole (in)	6.25" (6.5")
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

screen - Johnson Vitre 20 slot

19 _____ ft. Top of Seal

3 _____ ft. Total Seal Interval

22 _____ ft. Top of Sand

25 00 ft. Top of Screen

10 00 ft. Total Screen Interval

35 _____ ft. Bottom of Screen

35 5 ft. Bottom of Borehole

Completed by: J. PEALE Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

Site #: 622188 County King Well # CS-104-S-1

Site Name: Chemtrol Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Env. Date Drilled Start: _____

Driller: Gary Gant Geologist: Ken Walter Date Completed: _____

Drilling Method: HSA Drilling Fluids (type): _____

Annular Space Details

Type of Surface Seal: concrete

Type of Annular Sealant: cement / 5% bentonite

Amount of cement: # of bags 3 lbs. per bag 40

Amount of bentonite: # of bags 5 lbs. per bag 60

Type of Bentonite Seal (Granular, Pellet): Baroid chips

Amount of bentonite: # of Bags 1 lbs. per bag 60

Type of Sand Pack: 10-20 silica

Source of Sand: CSSI

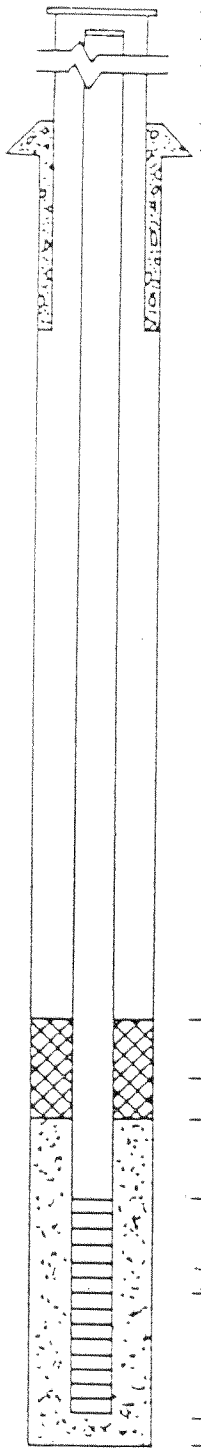
Amount of Sand: # of bags 5 lbs. per bag 100

Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements to .01 ft. (where applicable)

Riser pipe length	7.5
Protective casing length	
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	
Screen slot size	0.020
% of openings in screen	N/A continuous
Diameter of borehole (in)	8.5"
ID of riser pipe (in)	2"



Elevations — .01 ft.

_____ _____ MSL Top of Protective Casing
_____ _____ MSL Top of Riser Pipe
_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface
_____ _____ ft. Top of annular sealant

screen: Johnson V wire
0.020 continuous
PVC wirewrap

_____ 2.5 ft. Top of Seal
_____ _____ ft. Total Seal Interval
_____ 5.5 ft. Top of Sand

_____ 7.5 ft. Top of Screen

7.5 17.5 ft. Total Screen Interval

_____ 17.5 ft. Bottom of Screen
_____ 18 ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

#: 623188 County King Well # CG-104-S-2

Site Name: Chempro Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Env. Date Drilled Start: 5-13-92

Driller: Gary Gauff Geologist: Ken Walter Date Completed: 5-13-92

Drilling Method: ~~Ken~~ Cable tool Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: concrete

Type of Annular Sealant: Portland cement/5% bentonite

Amount of cement: # of bags 5 lbs. per bag 100

Amount of bentonite: # of bags 2 lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Baroid chips

Amount of bentonite: # of Bags 3 lbs. per bag 60

Type of Sand Pack: Silica 10-20 #70

Source of Sand: CSSI

Amount of Sand: # of bags 5 lbs. per bag 100

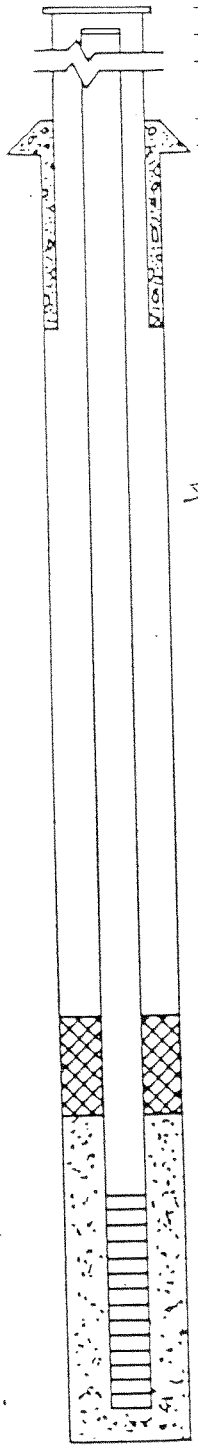
ell Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements to .01 ft. (where applicable)

Riser pipe length	
Protective casing length	
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	
creen slot size	0.020
% of openings in screen	N/A (continuous)
Diameter of borehole (in)	8.5"
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ MSL Ground Surface

0.5 ft. Top of annular sealant

screen: Johnson 'V' wire 20 slot

15.5 ft. Top of Seal

15.5 ft. Total Seal Interval

18.5 ft. Top of Sand

20.5 ft. Top of Screen

20.5 30.5 ft. Total Screen Interval

30.5 ft. Bottom of Screen

_____ _____ ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____ Ill. registration # _____

WCR -

mpletion Report

CG-104-S-2

Easting

5-13-92

te Completed: 5-13-92

N/A

ons — .01 ft.

MSL Top of Protective Casing

MSL Top of Riser Pipe

ft. Casing Stickup

MSL Ground Surface

5 ft. Top of annular sealant

en: Johnson 'V' wire

0 slot

5 ft. Top of Seal

15.5 ft. Total Seal Interval

5 ft. Top of Sand

5 ft. Top of Screen

5 30.5 ft. Total Screen Interval

5 ft. Bottom of Screen

ft. Bottom of Borehole

WCR -

Well Completion Report

town County King Well # CG-104-I

Grid Coordinate: Northing Easting

Drilling Date Drilled Start: 6-1-92 1300

Geologist: Ken Walter Date Completed: 6-14-92 1130

Drilling Fluids (type): N/A

Elevations — .01 ft.

MSL Top of Protective Casing

MSL Top of Riser Pipe

ft. Casing Stickup

MSL Ground Surface

ft. Top of annular sealant

Cement & 5% Bentonite

lbs. per bag 100

lbs. per bag 60 X

#1 .05 3/4"

lbs. per bag

#2 20-40

#3 SC 20-C

lbs. per bag 100

screen:

Johnson V-Wire

Specify Type	PVC Specify Type	Other Specify Type
	Sch 40	

ft. (where applicable)

55

4

0'

.3'

.3'

55'

.010

1/4

2

"

ft. Top of Seal

1 52.5 ft. Total Seal Interval

52.5 ft. Top of Sand

55.5 ft. Top of Screen

55.5 65.5 ft. Total Screen Interval

65.5 ft. Bottom of Screen

70 ft. Bottom of Borehole

Surveyed by: Ill. registration #

WCR -

Well Completion Report

Site #: 623188 County King Well # CG-104-D

Site Name: Clemons GT Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Holt Date Drilled Start: 7-14-92

Driller: Wade Iverson Geologist: Ken Walter Date Completed: 7-20-92

Drilling Method: Cable Tool Drilling Fluids (type): _____

Annular Space Details

Type of Surface Seal: concrete

Type of Annular Sealant: cement/5% bentonite

Amount of cement: # of bags 20 (25 KGW) lbs. per bag 100

Amount of bentonite: # of bags 5 KGW lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Bag of chips

Amount of bentonite: # of Bags 3 lbs. per bag 50

Type of Sand Pack: 20-40 Silica Sand

Source of Sand: CSS

Amount of Sand: # of bags 4 lbs. per bag 100

Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing			N/A surface mount	

Measurements to .01 ft. (where applicable)

Riser pipe length	
Protective casing length	
Screen length	10'
Bottom of screen to end cap	2.3'
Top of screen to first joint	0.3'
Total length of casing	113'
Screen slot size	~~2.3~~ KGW 0.010
% of openings in screen	N/A continuous wrap
Diameter of borehole (in)	~~3~~ KGW 6.0"
ID of riser pipe (in)	3"

Elevations — .01 ft.

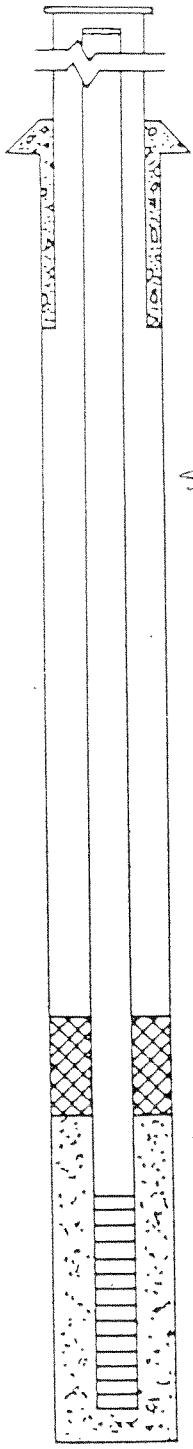
_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant



screen - Johnson 'V' wire

_____ 105 ft. Top of Seal

_____ _____ ft. Total Seal Interval

_____ 111 ft. Top of Sand

_____ 113 ft. Top of Screen

113 123 ft. Total Screen Interval

_____ 123 ft. Bottom of Screen

_____ ~~123~~ KGW ft. Bottom of Borehole

127 T.D

Completed by: K. Walter Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

#: 623188 County: King Well #: CG-105-S-1

Site Name: Chempro Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: BE Inc. Date Drilled Start: 5-14-92

Driller: Gary Gauf Geologist: K. Walter Date Completed: 5-14-92

Drilling Method: HSA D-50 Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: concrete

Type of Annular Sealant: Bent chips.

Amount of cement: # of bags N/A lbs. per bag ____

Amount of bentonite: # of bags N/A lbs. per bag ____

Type of Bentonite Seal (Granular, Pellet): Granular Baroid

Amount of bentonite: # of Bags 3 lbs. per bag 50

Type of Sand Pack: Colorado Silica Sand

Source of Sand: 10-20 sand

Amount of Sand: # of bags 6 lbs. per bag 100

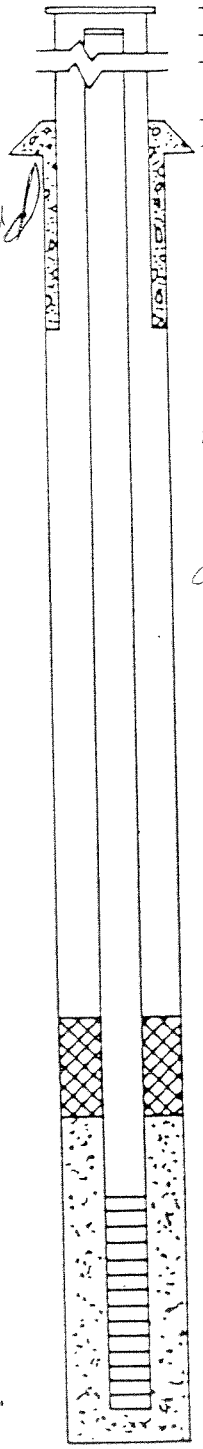
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing			N/A	

Measurements to .01 ft. (where applicable)

Riser pipe length	7'
Protective casing length	
Screen length	10'
Bottom of screen to end cap	0.4'
Top of screen to first joint	0.4'
Total length of casing	
Screen slot size	0.020
% of openings in screen	
Diameter of borehole (in)	5.25"
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ 1 ft. Top of annular sealant

screen: Johnson 'V' wire 0.020 continuous wrap screen

4 1 ft. Top of Seal

1 5 ft. Total Seal Interval

_____ 5 ft. Top of Sand

_____ 7 ft. Top of Screen

7 17 ft. Total Screen Interval

_____ 17 ft. Bottom of Screen

_____ 19 ft. Bottom of Borehole

Completed by: _____ Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

Site #: Chemprd Georgetown 623148 County: Kane Well #: CG-105-S-Z

Site Name: Grid Coordinate: Northing Easting

Drilling Contractor: RE Inc. Date Drilled Start: 5/15/92

Driller: Gary Gauf Geologist: K. Walter Date Completed: 5/15/92

Drilling Method: HSA Bedrock D-50 Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: Portland cement 5% Bent 100 Gel

Amount of cement: # of bags 8 lbs. per bag 100

Amount of bentonite: # of bags 1/2 lbs. per bag 100

Type of Bentonite Seal (Granular, Pellet): Baroid Chips

Amount of bentonite: # of Bags lbs. per bag

Type of Sand Pack: Colorado Silica Sand 10-20

Source of Sand: /

Amount of Sand: # of bags 6 lbs. per bag 100

Elevations — .01 ft.

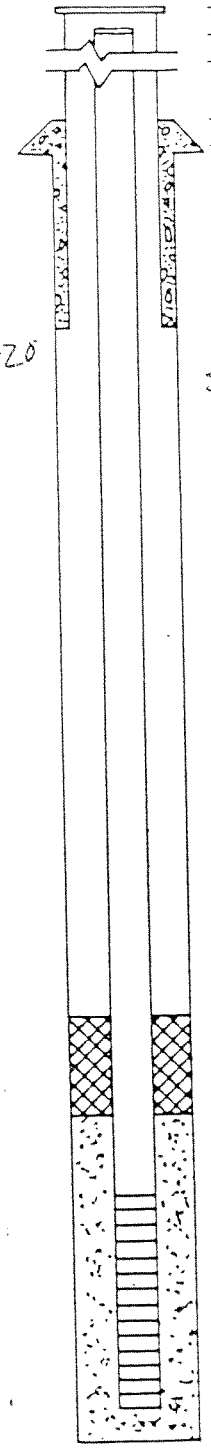
MSL Top of Protective Casing

MSL Top of Riser Pipe

ft. Casing Stickup

MSL Ground Surface

2 ft. Top of annular sealant



screen: Johnson Vitre 0.020 - sand - 10-20

19 ft. Top of Seal

19 22 ft. Total Seal Interval

22 ft. Top of Sand

25 ft. Top of Screen

25 35 ft. Total Screen Interval

35 ft. Bottom of Screen

ft. Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			SCL40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements

to .01 ft. (where applicable)

Riser pipe length	
Protective casing length	N/A
Screen length	10'
Bottom of screen to end cap	0.4'
Top of screen to first joint	0.4'
Total length of casing	
Screen slot size	0.020
% of openings in screen	
Diameter of borehole (in)	6.25"
ID of riser pipe (in)	2"

Completed by: K. Walter Surveyed by: Ill. registration #

WCR -

Well Completion Report

#: 673188 County: King Well #: CG-105-I

Site Name: Chempro Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Holt Drilling Date Drilled Start: 6-6-92

Driller: Wade Iverson Geologist: Ken Walter Date Completed: 6-11-92

Drilling Method: Cable tool Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Ready mix

Type of Annular Sealant: Portland Cement 5% Bent.

Amount of cement: # of bags _____ lbs. per bag _____

Amount of bentonite: # of bags _____ lbs. per bag _____

Type of Bentonite Seal (Granular, Pellet): Baroid chips

Amount of bentonite: # of Bags 2 lbs. per bag 50

Type of Sand Pack: Colorado Silica 20-40

Source of Sand: CSSI

Amount of Sand: # of bags 5 lbs. per bag 100

Elevations — .01 ft.

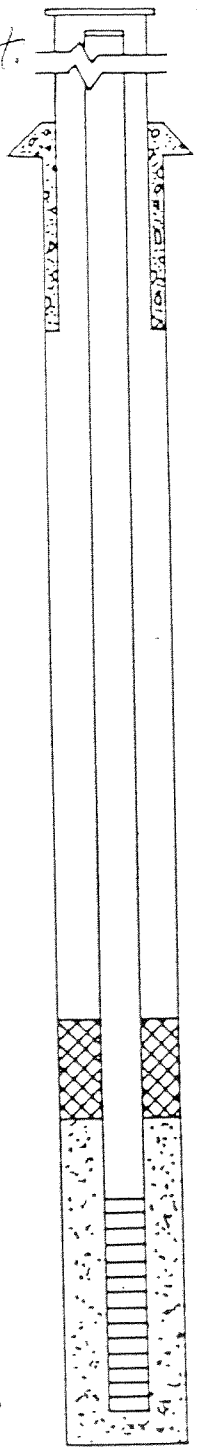
_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant



well screen: Johnson Vee-Wire

50 _____ ft. Top of Seal

50 53.2 ft. Total Seal Interval

53.2 _____ ft. Top of Sand

56.2 _____ ft. Top of Screen

56.2 66.2 ft. Total Screen Interval

_____ 66.2 ft. Bottom of Screen

_____ 75 ft. Bottom of Borehole

well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			sch 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements

to .01 ft. (where applicable)

Riser pipe length	56'
Protective casing length	N/A
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	66.2'
Screen slot size	0.010
% of openings in screen	N/A
Diameter of borehole (in)	6.25
ID of riser pipe (in)	1 7/8"

Completed by: (C. J.) Walter Surveyed by: _____ Ill. registration # _____

WCR -

Well Completion Report

#: 623188 County King Well # CG-111-I

Site Name: Chemco Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Holt Drilling Date Drilled Start: 7-2-92

Driller: Wade Iversen Geologist: Ken Walter Date Completed: 7-6-92

Drilling Method: Cable tool Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: cement/5% bentonite

Amount of cement: # of bags 9 lbs. per bag 94

Amount of bentonite: # of bags 1 lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Rasord chips

Amount of bentonite: # of Bags 5 lbs. per bag 50

Type of Sand Pack: Colorado Silica sand 20-40

Source of Sand: CSST

Amount of Sand: # of bags 3 lbs. per bag 100

Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch. 40	
Riser pipe above w.t.				
Riser pipe below w.t.				
Screen				
Coupling joint screen to riser				
Protective casing				

Measurements

to .01 ft. (where applicable)

Riser pipe length	~~42'~~ 47'
Protective casing length	N/A
Screen length	10'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	52
Screen slot size	0.010
% of openings in screen	N/A (continuous wire)
Diameter of borehole (in)	6"
ID of riser pipe (in)	2"

Elevations — .01 ft.

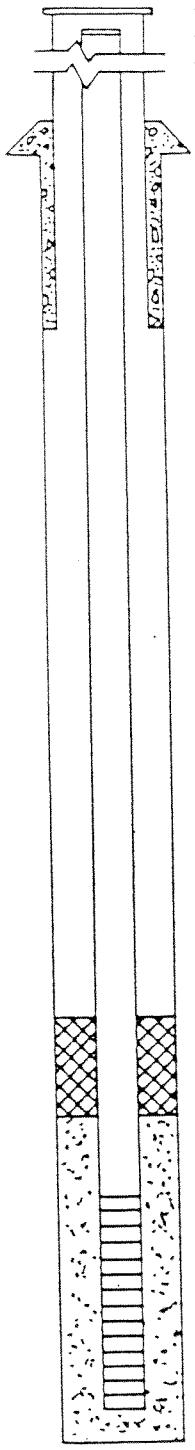
_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant



All measurements in feet below surface

screen: Johnson V-wire

_____ 36 ft. Top of Seal

36 39 ft. Total Seal Interval

_____ 39 ft. Top of Sand

_____ 42 ft. Top of Screen

42 52 ft. Total Screen Interval

_____ 52 ft. Bottom of Screen

_____ 60 ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____ III. registration # _____

PHILIP SERVICES CORP

Monitoring Well Construction

Well ID CG-113-S1

Date Start 11/20/00

Date Complete 11/20/00

Boring Depth 15'

Borehole Diameter 8.25"

Well Diameter 2"

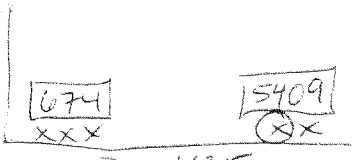
Contractor Cascade Drilling

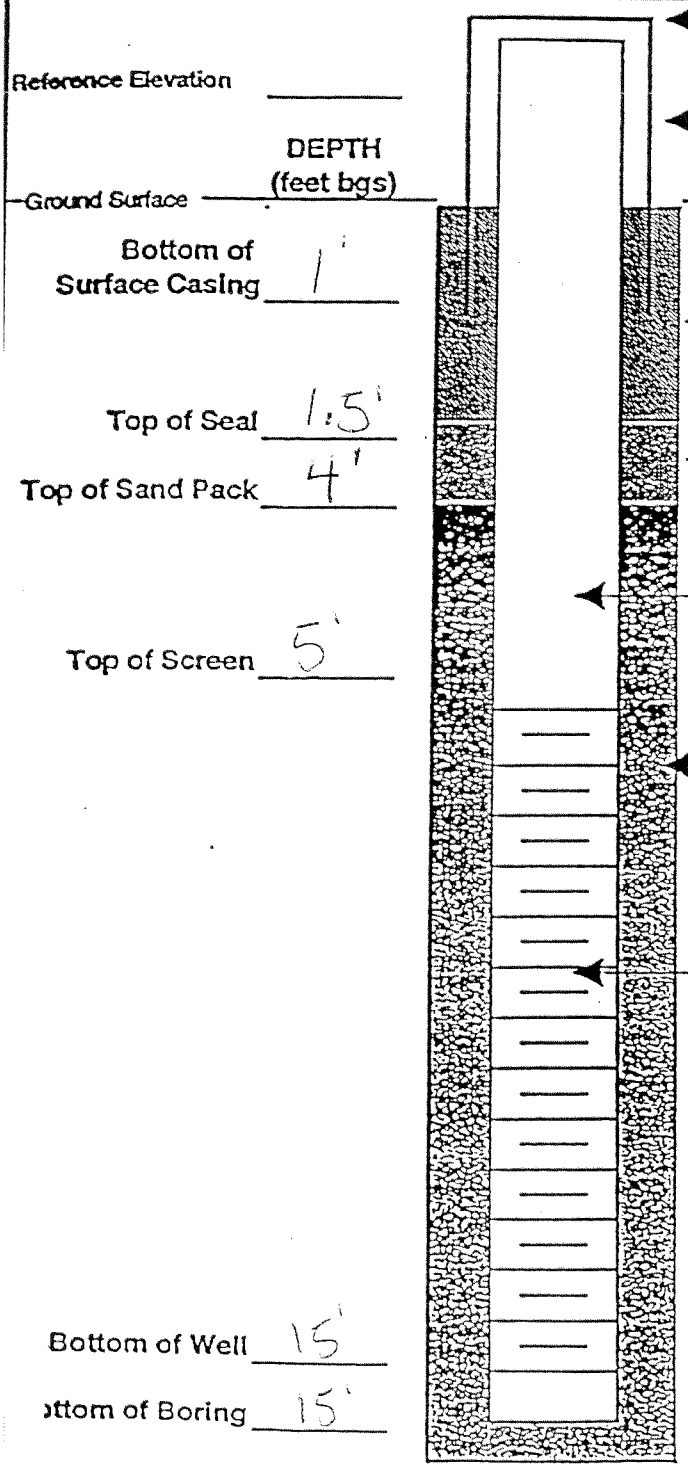
Drillers

Geologist Tasya Gray
Salamah Magnuson

Depth to Water (bgs)

Location Diagram





Reference Elevation _____

DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing 1'

Top of Seal 1.5'

Top of Sand Pack 4'

Top of Screen 5'

Bottom of Well 15'

Bottom of Boring 15'

Bore Hole Diameter 8.25"

Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout Type: Jet Set & Lonestar Cement

Annular Seal Type: Pure Gold Med Bentonite Chips

Riser Casing Type: PVC
Diameter: 2"

Well Packing Material
Type:
Monterey 2/12 Sand

Screen Type: PVC
Slot Width: .010"
Diameter: 2"

Notes

PHILIP SERVICES CORP.

Monitoring Well Construction

Well ID CG-112-S1

Date Start 11/20/00

Date Complete 11/20/00

Boring Depth 15.5'

Borehole Diameter 8.25"

Well Diameter 2"

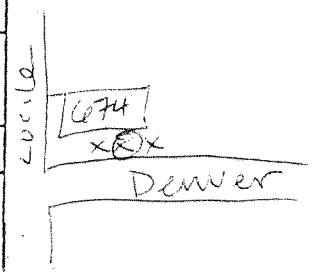
Contractor Cascade Drilling

Drillers

Geologist Tasya Gray
Salamah Magnuson

Depth to Water (bgs)

Location Diagram



Reference Elevation _____

DEPTH (feet bgs)

Ground Surface 0

Bottom of Surface Casing 1'

Top of Seal 1.5'

Top of Sand Pack 3.5'

Top of Screen 5'

Bottom of Well 15'

Bottom of Boring 15.5'

Bore Hole Diameter 8.25"

Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout
Type: Jet Set & Lonestar Cement

Annular Seal
Type: Pure Gold med. Bentonite Chips

Riser Casing
Type: PVC
Diameter: 2"

Well Packing Material
Type: Monterey 212 sand

Screen
Type: PVC
Slot Width: .010"
Diameter: 2"

Notes

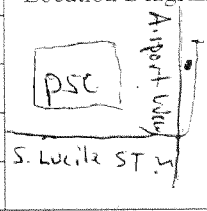
PHILIP SERVICES

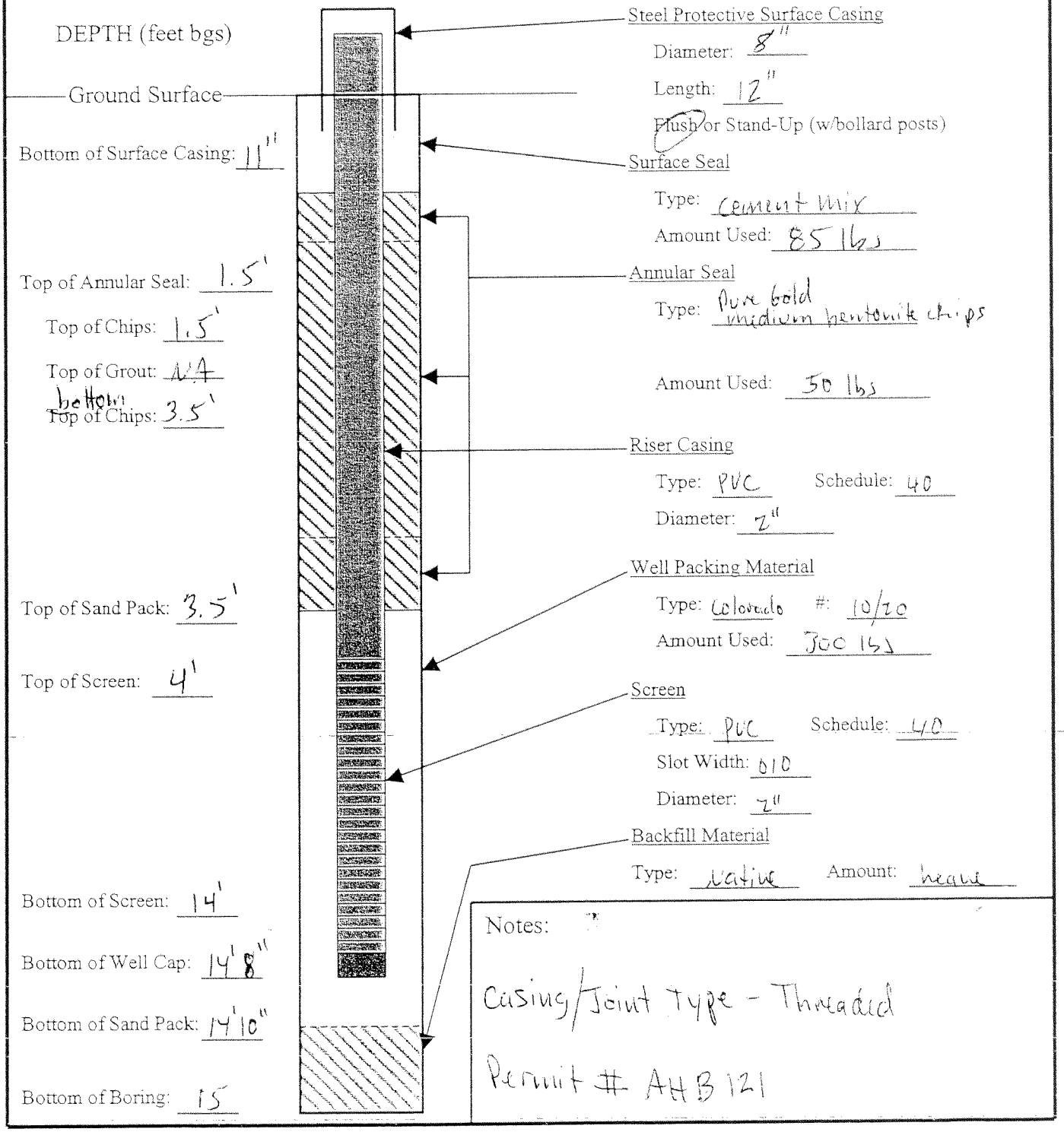
Monitoring Well Construction

Well ID: CT-106-GWT

Facility: Georgetown

Date Start: 4/25/02	Contractor: Cascade Drilling Inc.	Location Diagram
Date Complete: 4/25/02	Drillers: James Gobel	
Total Boring Depth: 15'	Drill Rig: Limited Access	
Borehole Diameter: 8.25	Geologist: Corey Johnson	
	Well Diameter: 2"	





Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: cement mix
Amount Used: 85 lbs

Annular Seal
Type: Pure Gold medium bentonite chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 300 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: heave

Notes:

Casing/Joint Type - Threaded

Permit # AHB 121

PSC PHILIP SERVICES

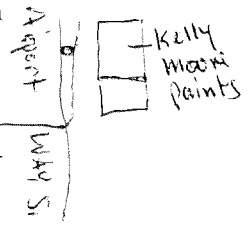
Monitoring Well Construction

Well ID: C6-106-I

Facility: Georgetown

Date Start: 5/7/02	Contractor: Cascade Drilling Inc
Date Complete: 5/7/02	Drillers: James Bobel
Total Boring Depth: 38'	Drill Rig: Limited Access
Borehole Diameter: 8¼	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11'

Top of Annular Seal: 3'

Top of Chips: 3'

Top of Grout: NA

bottom
~~Top~~ of Chips: 23'

Top of Sand Pack: 23'

Top of Screen: 26'

Bottom of Screen: 36'

Bottom of Well Cap: 36' 8"

Bottom of Sand Pack: 37' 2"

Bottom of Boring: 38'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac Mix Concrete Mix

Amount Used: 200 lbs

Annular Seal

Type: Pure Gold Medium bentonite chips

Amount Used: 300 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 325 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: native Amount: NA

Notes:

Joint/Casing Type - Threaded

permit # AHB 158

CG-106-D

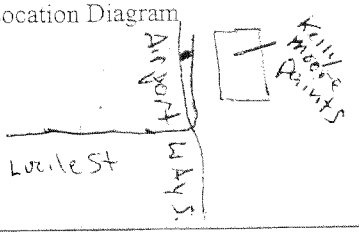
PSC PHILIP SERVICES

Monitoring Well Construction

Well ID: CG-106-D

Facility: Georgetown

Date Start: 5/6/02	Contractor: Cascade Drilling Inc.	Location Diagram
Date Complete: 5/6/02	Drillers: James Bobel	
Total Boring Depth: 72'	Drill Rig: Limited Access	
Borehole Diameter: 15" to 41' / 8¼" to 72'	Geologist: Corey Johnson	
	Well Diameter: 2"	



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'11"

Top of Annular Seal: 4'

Top of Chips: 4'

Top of Grout: N/A

bottom
~~top~~ of Chips: 57'

10¼ ID } Augers to
15 OD } 41'

Top of Sand Pack: 657

Top of Screen: 60'

Bottom of Screen: 70'

Bottom of Well Cap: 70' 8"

Bottom of Sand Pack: 68'

Bottom of Boring: 72'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pakmix cement Mix

Amount Used: 420 lbs

Annular Seal

Type: Pure Gold medium Bentonite chips 40 bags

Amount Used: 2000 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado Silica ~~sand~~ #: 10/20

Amount Used: 250 lbs

Pre-Pack

Screen Colorado #10/20

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 3"

Backfill Material

Type: NATIVE to 68' Amount: NA

Notes:

Casing/Joint Type - Threaded

Permit # AHB116

PSC PHILIP SERVICES

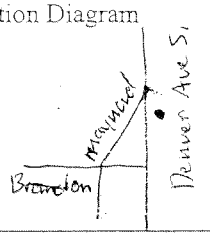
Monitoring Well Construction

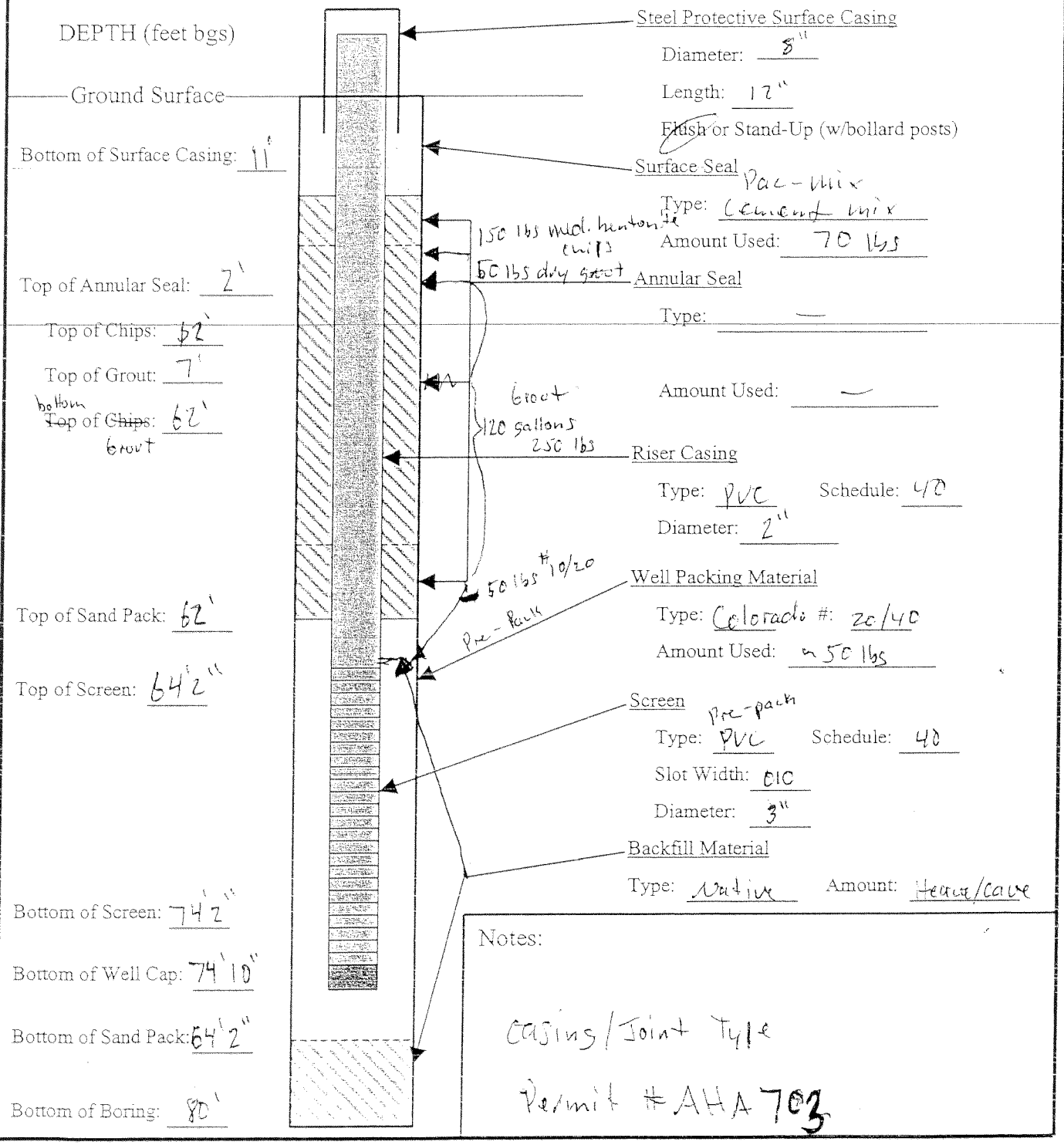
Well ID: CG-114-75

Facility: Georgetown

Date Start: 3/20/02	Contractor: Cascade Drilling Inc
Date Complete: 3/20/02	Drillers: Brian Gose
Total Boring Depth: 80'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing

Diameter: 8"

Length: 12"

~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal Pac-Mix

Type: Cement mix

Amount Used: 70 lbs

Annular Seal

Type: —

Amount Used: —

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 20/40

Amount Used: ~50 lbs

Screen Pre-pack

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 3"

Backfill Material

Type: native Amount: Heave/cave

Notes:

casing/joint Tyle

Permit #AHA703

PHILIP SERVICES

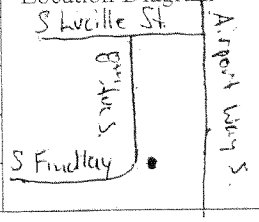
Monitoring Well Construction

Well ID: CB-107-GWT

Facility: Georgetown

Date Start: 4/24/02	Contractor: Cascade Drilling
Date Complete: 4/24/02	Drillers: James Gobiel
Total Boring Depth: 15'2"	Drill Rig: Limited Access
Borehole Diameter: 8.25	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Bottom Top of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15'2"

Bottom of Sand Pack: 15'2"

Bottom of Boring: 15'2"

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Concrete Mix

Amount Used: 70 lbs

Annular Seal

Type: Pure Gold Medium Bentonite chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 300 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: NA Amount: NA

Notes:

Casing/Joint Type - Threaded

Permit # AHB120

PSC PHILIP SERVICES

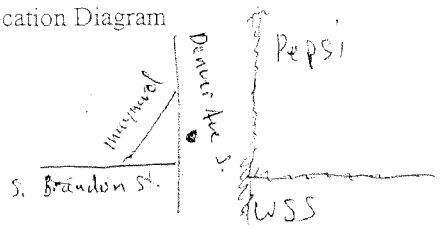
Monitoring Well Construction

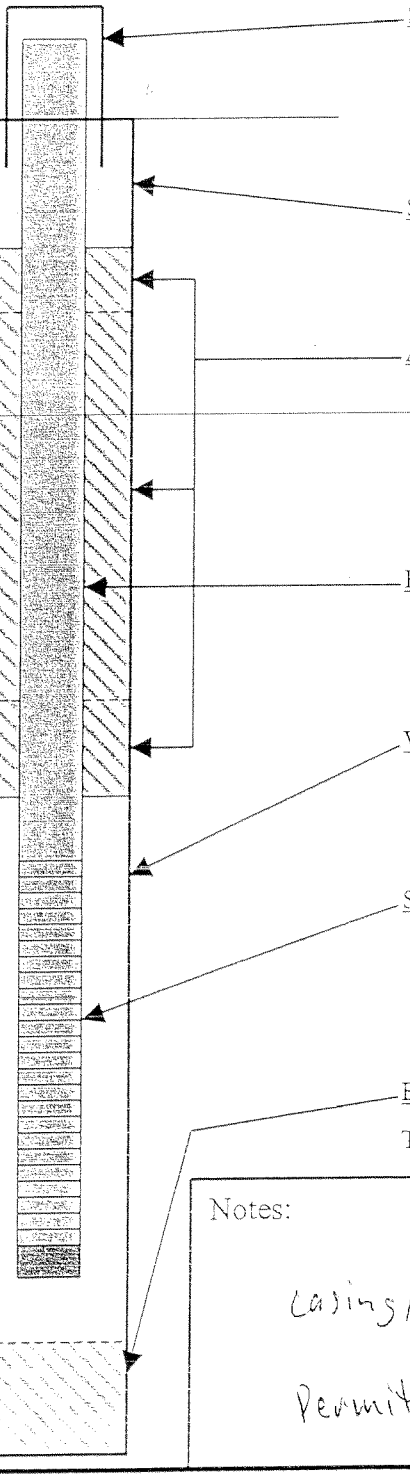
Well ID: CG-115-WT

Facility: Georgetown

Date Start: 3/20/02	Contractor: Cascade Drilling
Date Complete: 3/20/02	Drillers: Brian Bose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 4.5'

Top of Sand Pack: 4.5'

Top of Screen: 5'

Bottom of Screen: 15'

Bottom of Well Cap: 15' 8"

Bottom of Sand Pack: 16'

Bottom of Boring: 16'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac Mix Concrete Mix

Amount Used: 70 lbs

Annular Seal

Type: ~~Pure~~ Pure Gold ~~Medium bentonite~~ Chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 350 lbs

Screen

Type: PVC Schedule: ~~10/20~~ 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: NA Amount: —

Notes:

Casing/Joint Type - Threaded

Permit # ~~AGT~~ AHA 701

PSC PHILIP SERVICES

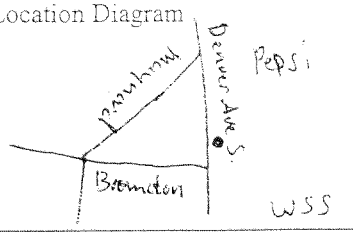
Monitoring Well Construction

Well ID: G-115-75

Facility: Georgetown

Date Start: 3/20/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/20/02	Drillers: Brian Bose
Total Boring Depth: 80'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnsen
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11'

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: 7'

bottom Top of ~~Chips~~ grout: 62'

Top of Sand Pack: 62'

Top of Screen: 65'

Bottom of Screen: 75'

Bottom of Well Cap: 75' 8"

Bottom of Sand Pack: 65'

Bottom of Boring: 80'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac-mix cement mix

Amount Used: 70 lbs

medium bentonite chips 150 lbs

Annular Seal

powder grout (50 lbs)

Type: ~~Quik-grout~~

grout — Amount Used: 130 gallons (250 lbs)

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Pre-packed

Type: Colorado #: 20/40

Amount Used: ~50 lbs

Screen

Type: Pre-pack PVC Schedule: 40

Slot Width: 010

Diameter: 3"

Backfill Material

Type: Native Amount: Heave/cave

Notes:

casing/Joint Type - Threaded

Permit # ~~467~~ 4H,J 702

PSC PHILIP SERVICES

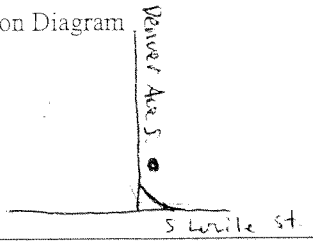
Monitoring Well Construction

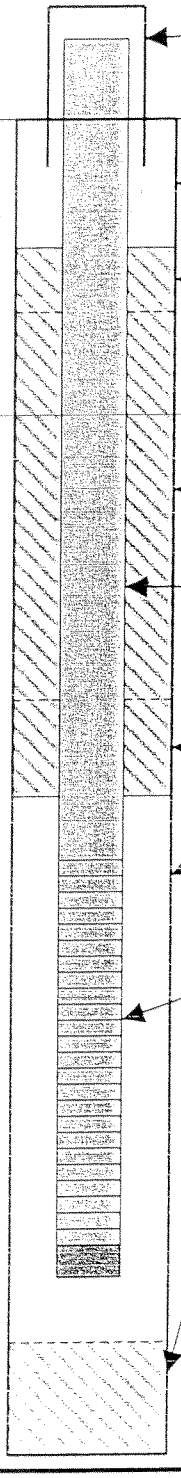
Well ID: CB-119-40

Facility: Georgetown

Date Start: 3/21/02	Contractor: Cascade Drilling
Date Complete: 3/21/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 42'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Hot Mix Cement Mix

Amount Used: 70 lbs

Annular Seal Pure Gold

Type: Medium bentonite chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 300 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Cuttings Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA 706

PHILIP SERVICES

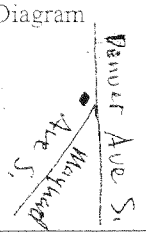
Monitoring Well Construction

Well ID: C6-120-75

Facility: Georgetown

Date Start: 3/19/02	Contractor: Cascade Drilling Inc
Date Complete: 3/19/02	Drillers: Brian Gore
Total Boring Depth: 80'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1' 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: 7'

Bottom of ~~Top of Chips~~ Grout: 62'

Top of Sand Pack: 62'

Top of Screen: 65'

Bottom of Screen: 75'

Bottom of Well Cap: 75' 8"

Bottom of Sand Pack: 65'

Bottom of Boring: 80'

mud

Bentonite 7'-2'

Chips

1 50lb bag dry grout

Grout

Pre-Pack

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac-mix Concrete Mix

Amount Used: 70 lbs

Annular Seal

Type: grout / Medium bentonite chips

Amount Used: 100 gal. 150 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 20/40

Amount Used: ~50 lbs

Screen

Type: pvc Schedule: 40

Slot Width: 010

Diameter: 3" OD

Backfill Material

Type: Native Amount: heave/cave

Notes:

Casing/Joint Type - Threaded

Permit # AGT771

PSC PHILIP SERVICES

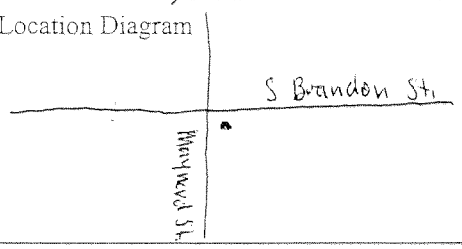
Monitoring Well Construction

Well ID: C6-121-40

Facility: Georgetown

Date Start: 3/19/02	Contractor: Cascade Drilling Inc
Date Complete: 3/19/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

bottom
~~Top~~ of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 42'

Steel Protective Surface Casing
- Diameter: 8"
- Length: 12"
- Flush or Stand-Up (w/bollard posts)

Surface Seal — Pac Mix
- Type: Cement Mix
- Amount Used: 70 lbs

Annular Seal — Pure Gold
- Type: Medium bentonite chips
- Amount Used: 500 lbs

Riser Casing
- Type: PVC Schedule: 40
- Diameter: 2"

Well Packing Material
- Type: Colorado #: 10/20
- Amount Used: 300 lbs

Screen
- Type: PVC Schedule: 40
- Slot Width: 010
- Diameter: 2"

Backfill Material
- Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # A6T 769

PSC PHILIP SERVICES

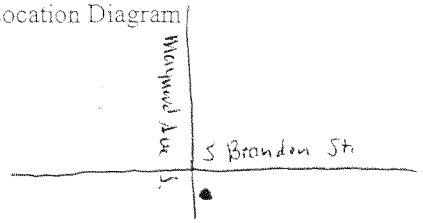
Monitoring Well Construction

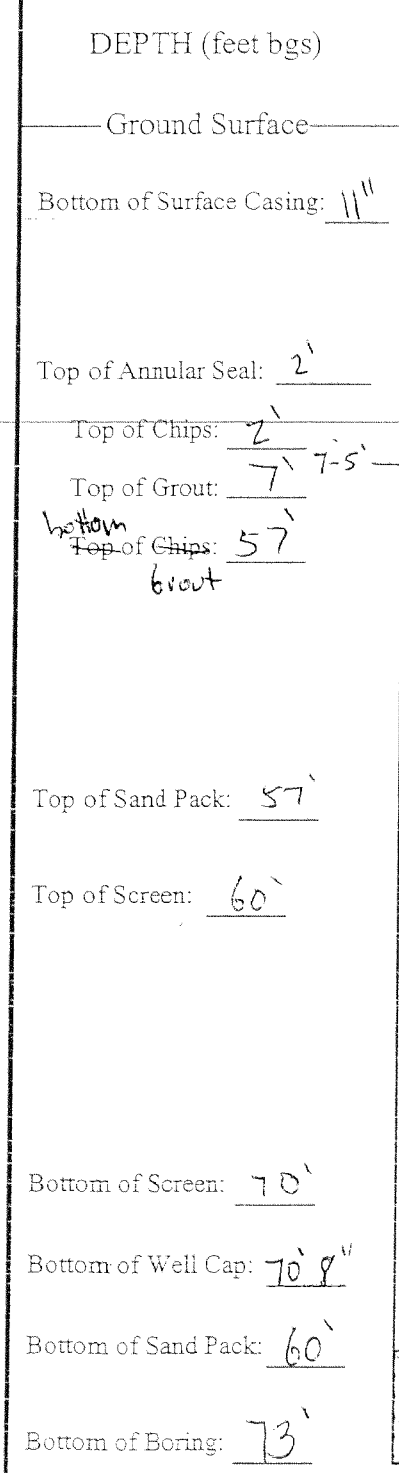
Well ID: CB-121-70

Facility: George town

Date Start: 7/19/02	Contractor: Cascade Drilling Inc.
Date Complete: 7/19/02	Drillers: Brian Rose
Total Boring Depth: 73'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement Mix (Pac-Mix)

Amount Used: 70 lbs

Annular Seal

Type: Quik-Grout 100 Gallons 150 lbs

Amount Used: 150 lbs Pure Gold Medium bentonite chips

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado Silica #: #2 20/40

Amount Used: ~50 lbs

Screen Pre-Packed

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 3" OD

Backfill Material

Type: native Amount: heave/cave

Notes:

casing/Joint Type Threaded

Permit # AGT770

PSC PHILIP SERVICES

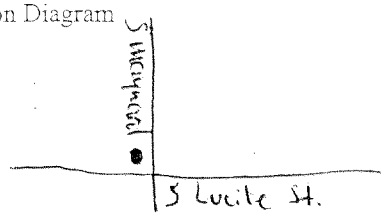
Monitoring Well Construction

Well ID: C6-122-WT

Facility: Georgetown

Date Start: 3/5/02	Contractor: CASCADE Drilling Inc
Date Complete: 3/5/02	Drillers: Brian Gose
Total Boring Depth: 16.5'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

bottom of ~~Top of~~ Chips: 4.5'

Top of Sand Pack: 4.5'

Top of Screen: 5'

Bottom of Screen: 15"

Bottom of Well Cap: 15' 8"

Bottom of Sand Pack: 16'

Bottom of Boring: 16.5

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

(Flush) or Stand-Up (w/bollard posts)

Surface Seal

Type: cement mix

Amount Used: 100 lbs

Annular Seal

Type: Pure Gold Medium bentonite chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado silica #: 8/12

Amount Used: 300 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: Native Amount: none

Notes:

Casing/Joint type - threaded

Permit # A67-744

PHILIP SERVICES

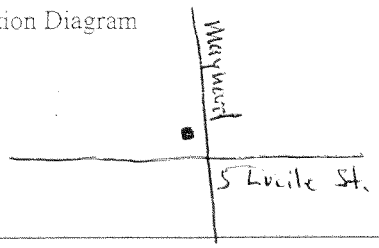
Monitoring Well Construction

Well ID: CG-122-60

Facility: 6T

Date Start: 3/5/02	Contractor: CASCADE Drilling Inc
Date Complete: 3/5/02	Drillers: Brian Gose
Total Boring Depth: 63'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: 8'

~~Top of Chips~~: 47' bottom of screen

Top of Sand Pack: 47'

Top of Screen: 50'

Bottom of Screen: 60'

Bottom of Well Cap: 60.8'

Bottom of Sand Pack: NA (50')

Bottom of Boring: 63'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement mix

Amount Used: 90 #lbs

Annular Seal

Type: Quik-grout

Amount Used: 150 lbs (w/water 7.5 gal)

Riser Casing

Type: ~~PRE-packed~~ PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: native #: NA

Amount Used: NA

Colorado #10/20 100163

Screen

Type: Pre-packed PVC Schedule: 40

Slot Width: 10

Diameter: 3"

Backfill Material

Type: native Amount: heave

Notes:

Casing/Joint type - threaded

Permit # AGT-745

PSC PHILIP SERVICES

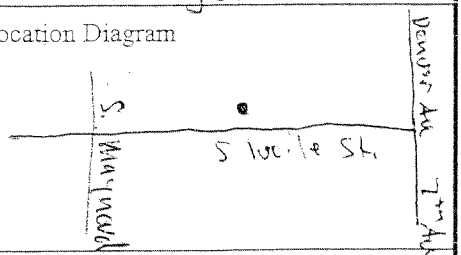
Monitoring Well Construction

Well ID: CB-123-90

Facility: Georgetown

Date Start: 3/22/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/22/02	Drillers: Brian Gose
Total Boring Depth: 95	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: ~~62'~~

Top of Grout: 7

~~Top~~ bottom of ~~Chips~~ grout: 77

Top of Sand Pack: 77'

Top of Screen: 79' 10"

Bottom of Screen: 89' 10"

Bottom of Well Cap: 90' 6"

Bottom of Sand Pack: 90' 6"

Bottom of Boring: 95'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Concrete (Pacmix)

Amount Used: 70 lbs

Annular Seal

Type: Quik Hiv Grout/Pure Gold med. Chips

Amount Used: 135 gal, 300 lbs / 150 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 250 lbs

Screen

Type: Pre-Pac PVC Schedule: 40

Slot Width: 010

Diameter: 3"

Backfill Material

Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA-707

PSC PHILIP SERVICES

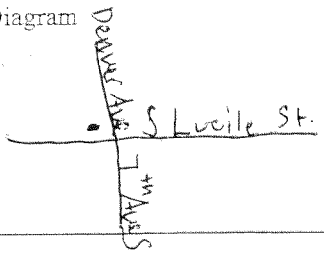
Monitoring Well Construction

Well ID: CG-124-WT

Facility: Georgetown

Date Start: 3/27/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/27/02	Drillers: Brian Gose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom
~~Top~~ of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15'2"

Bottom of Sand Pack: 15'6"

Bottom of Boring: 16'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac Mix Concrete mix

Amount Used: 70 lbs

Annular Seal Pure Gold medium bentonite

Type: ~~450 lbs~~ chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # 44.1715

PSC PHILIP SERVICES

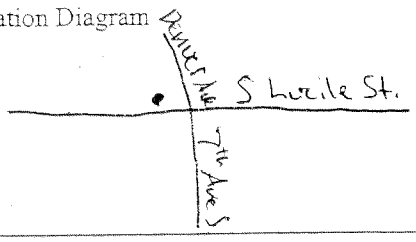
Monitoring Well Construction

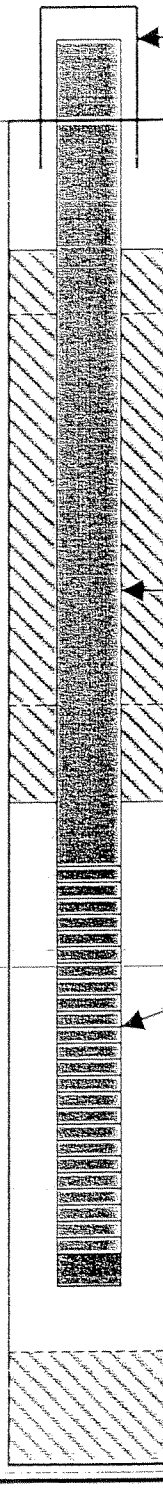
Well ID: CB-124-40

Facility: Georgetown

Date Start: 3/27/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/27/02	Drillers: Brian Gose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 42'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal Pac Mix

Type: Concrete Mix

Amount Used: 70 lbs

Annular Seal Pure Gold

Type: Medium bentonite chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 550 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA714

PSC PHILIP SERVICES

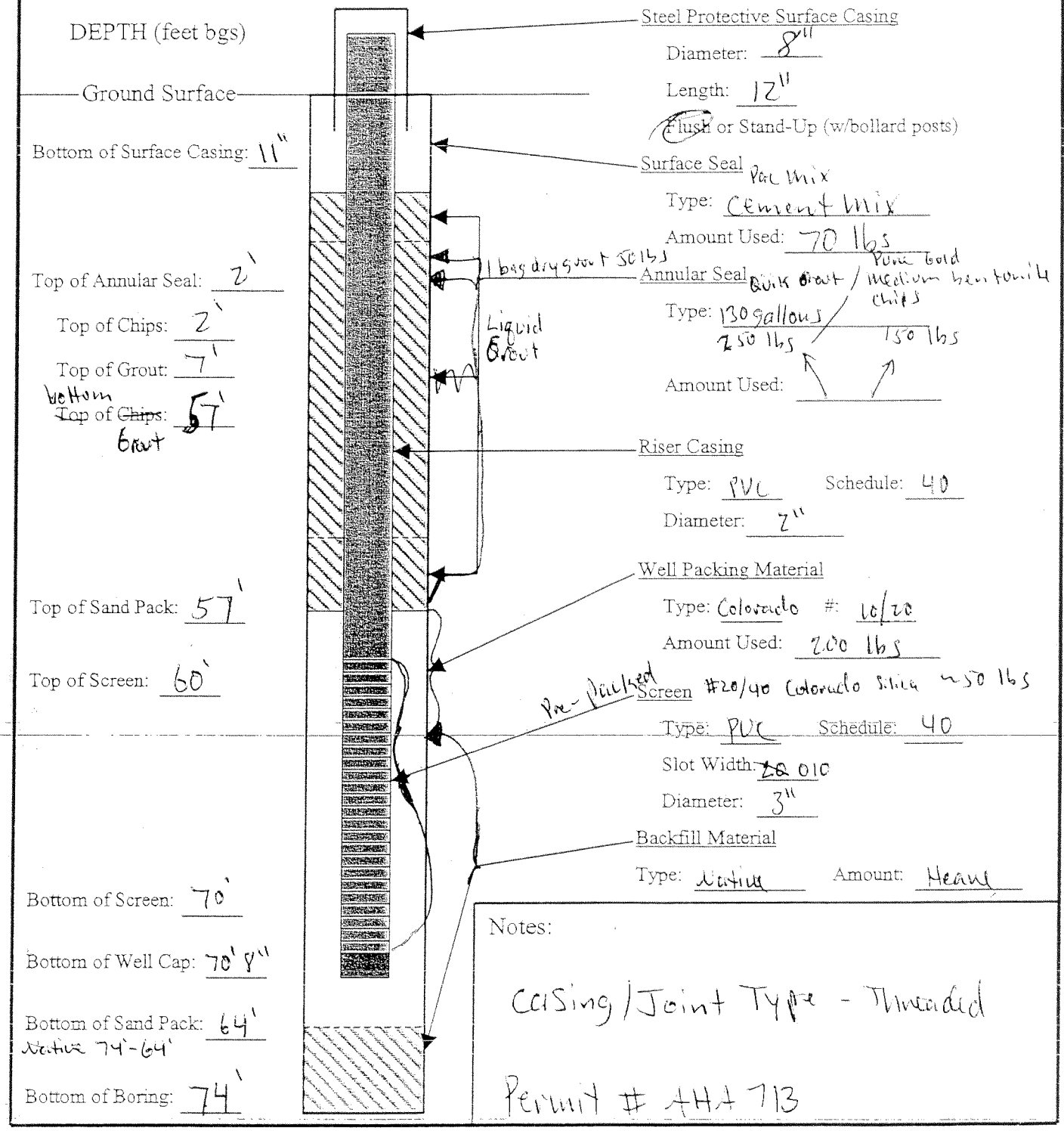
Monitoring Well Construction

Well ID: G-124-70

Facility: Georgetown

Date Start: 3/27/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/27/02	Drillers: Brian Gose
Total Boring Depth: 74'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram: Denver Ave S, Lucile St, 7th Ave S.



Steel Protective Surface Casing
Diameter: 8"
Length: 12"
~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal Pac Mix
Type: Cement Mix
Amount Used: 70 lbs

Annular Seal Bulk Grout / Pure Gold Medium bentonite chips
Type: 130 gallons / 250 lbs / 150 lbs
Amount Used:

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 200 lbs

Pre-Packed Screen #20/40 Colorado Silica ~50 lbs
Type: PVC Schedule: 40
Slot Width: ~~20~~ 010
Diameter: 3"

Backfill Material
Type: Native Amount: Heavy

Notes:

Casing/Joint Type - Threaded

Permit # AHA 713

PHILIP SERVICES

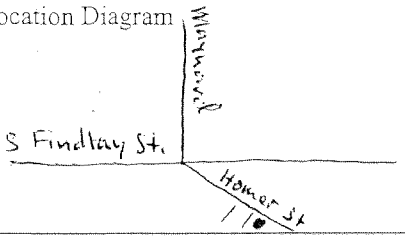
Monitoring Well Construction

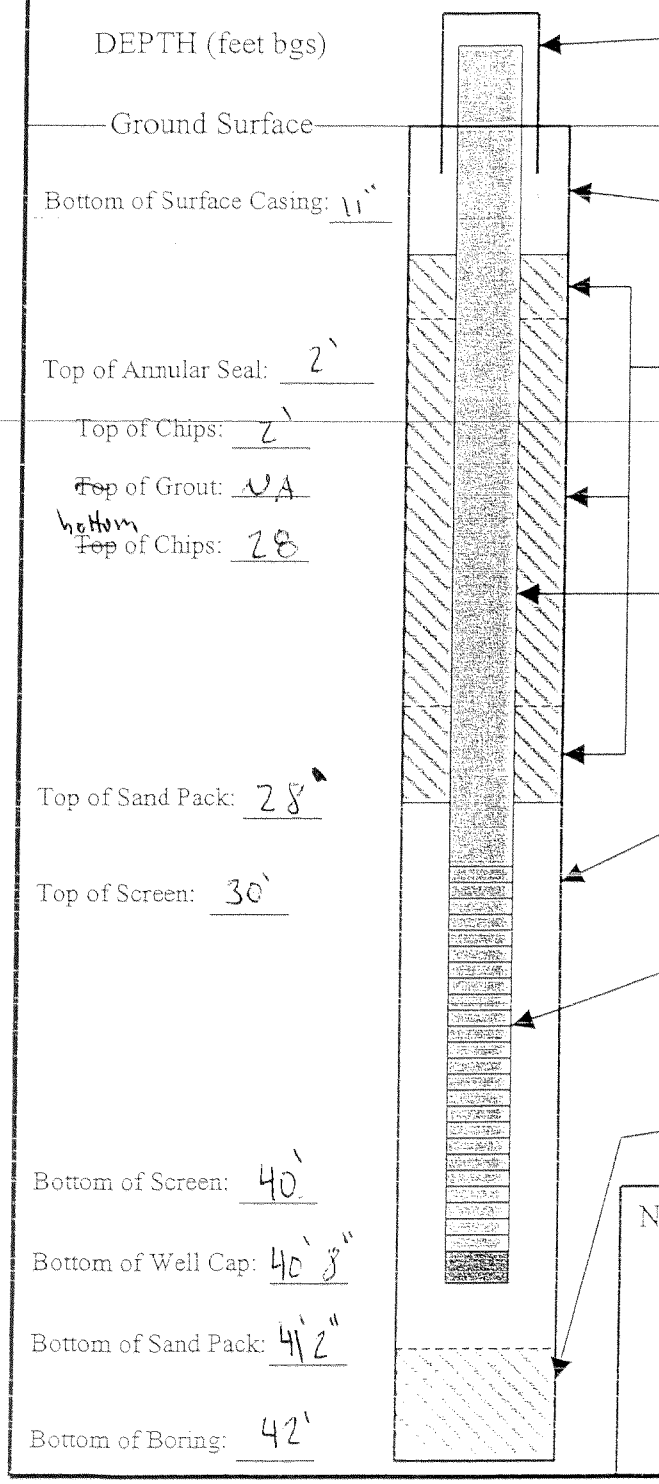
Well ID: C6-125-40

Facility: Georgetown

Date Start: 3/18/02	Contractor: Cascade Drilling Inc
Date Complete: 3/18/02	Drillers: Brian Gose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: Pure-mix Cement Mix ~~medium bentonite chips~~
Amount Used: 70 lbs

Annular Seal
Type: Pure Gold ~~medium bentonite chips~~
Amount Used: 450 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 300 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: none

Notes:

Joint/casing Type - Threaded

Permit # A6T 766

PSC PHILIP SERVICES

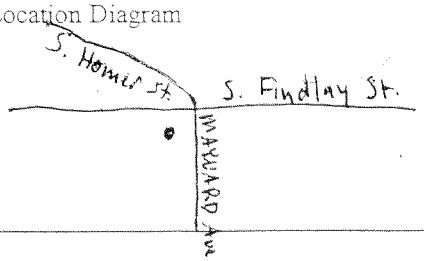
Monitoring Well Construction

Well ID: CB-126-WT

Facility: Georgetown

Date Start: 3/11/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/11/02	Drillers: Frank Scott
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15.2"

Bottom of Sand Pack: 15.3"

Bottom of Boring: 16

Steel Protective Surface Casing

Diameter: ~~8~~ 12"

Length: 12"

(Flush) or Stand-Up (w/bollard posts)

Surface Seal

Type: PacMix Cement mix

Amount Used: 65 lbs

Annular Seal

Type: Pure Gold Medium bentonite chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: native Amount: leave

Notes:

Casing/Joint type - threaded

Permit # ABT 753

PSC PHILIP SERVICES

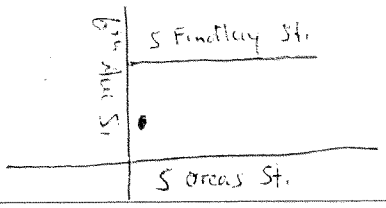
Monitoring Well Construction

Well ID: C6-127-WT

Facility: Georgetown

Date Start: 3/21/12	Contractor: Cascade Drilling Inc.
Date Complete: 3/21/02	Drillers: Brian Bose
Total Boring Depth: 17.5'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'1"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 5'

Top of Sand Pack: 5'

Top of Screen: 6'

Bottom of Screen: 16'

Bottom of Well Cap: 16'8"

Bottom of Sand Pack: 17'2"

Bottom of Boring: 17.5'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac Mix Cement Mix

Amount Used: 70 lbs

Annular Seal PVC Gold

Type: Medium bentonite chips

Amount Used: 100 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 16/20

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA704

PSC PHILIP SERVICES

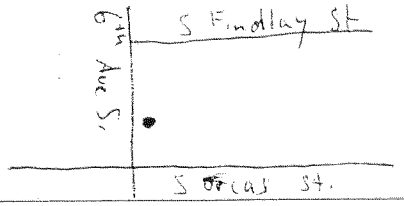
Monitoring Well Construction

Well ID: C6-127-40

Facility: Georgetown

Date Start: 3/21/02	Contractor: Cascade Drilling Inc
Date Complete: 3/21/02	Drillers: Brian Cost
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist:
	Well Diameter:

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 42'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac Mix Cement mix

Amount Used: 70 lbs

Annular Seal

Type: Pure Gold ~~Medium bentonite~~ chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA 705

PSC PHILIP SERVICES

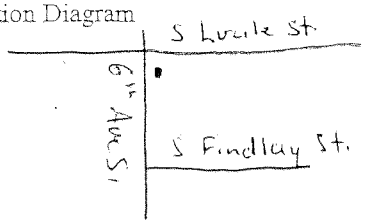
Monitoring Well Construction

Well ID: CE-128-WT

Facility: Georgetown

Date Start: 3/26/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/26/02	Drillers: Brian Gose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Top of Chips: 4' (bottom)

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15'2"

Bottom of Sand Pack: 15'8"

Bottom of Boring: 16'

Steel Protective Surface Casing
Diameter: 9"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal Pac mix
Type: Cement Mix
Amount Used: 70 lbs

Annular Seal Pure Gold
Type: Medium bentonite chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # HA 712

PSC PHILIP SERVICES

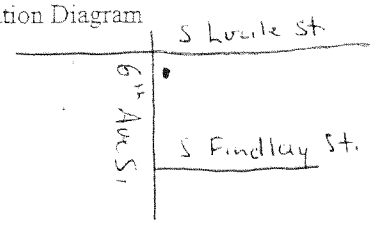
Monitoring Well Construction

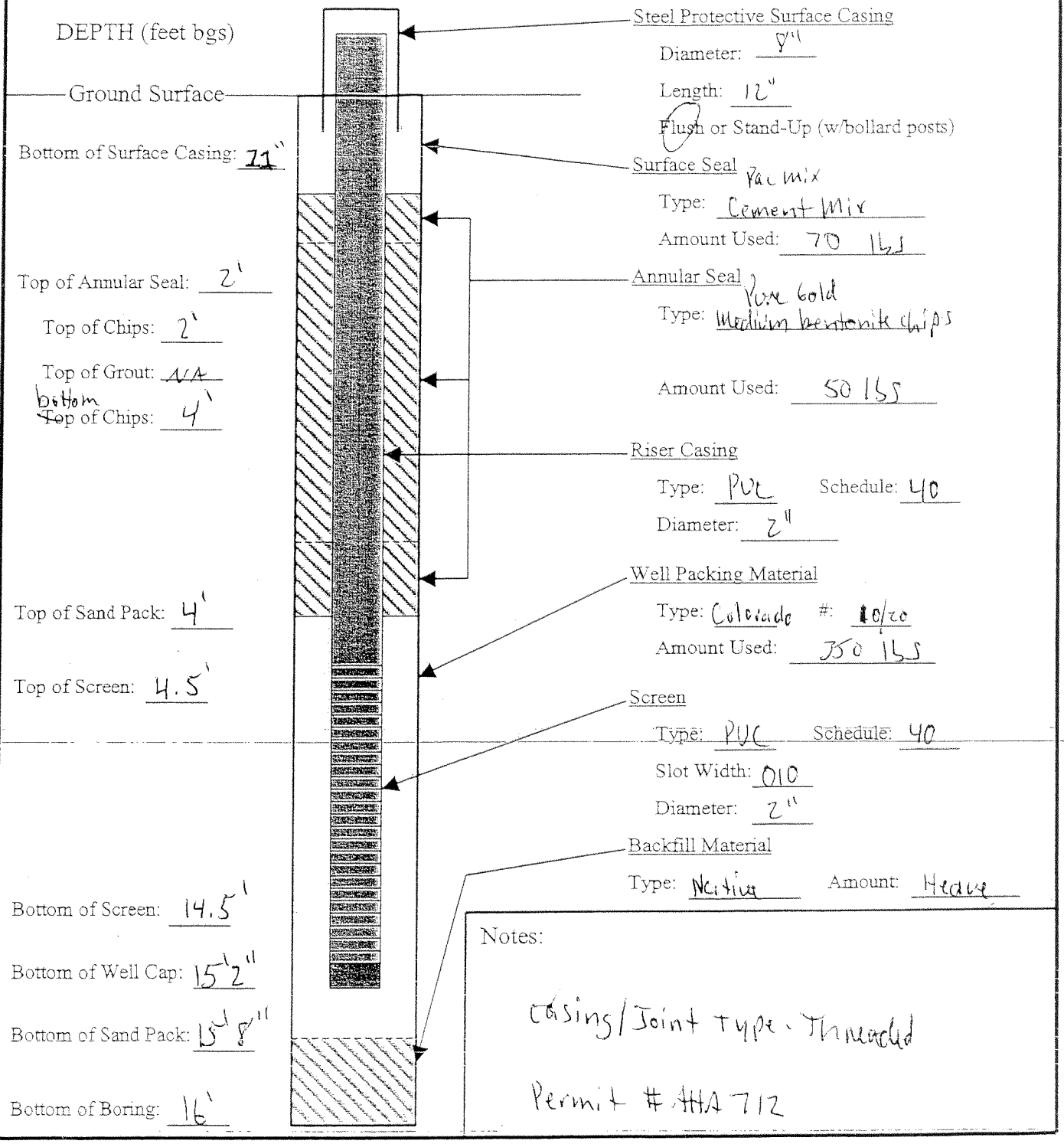
Well ID: CE-128-WT

Facility: Georgetown

Date Start: 3/26/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/26/02	Drillers: Brian Gose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing
Diameter: 9"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal Pac mix
Type: Cement Mix
Amount Used: 70 lbs

Annular Seal Pure Gold
Type: Medium bentonite chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # HA 712

PSC PHILIP SERVICES

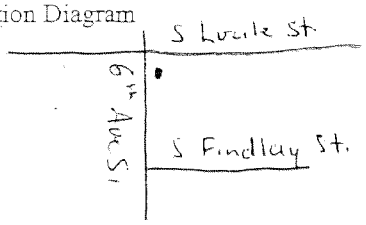
Monitoring Well Construction

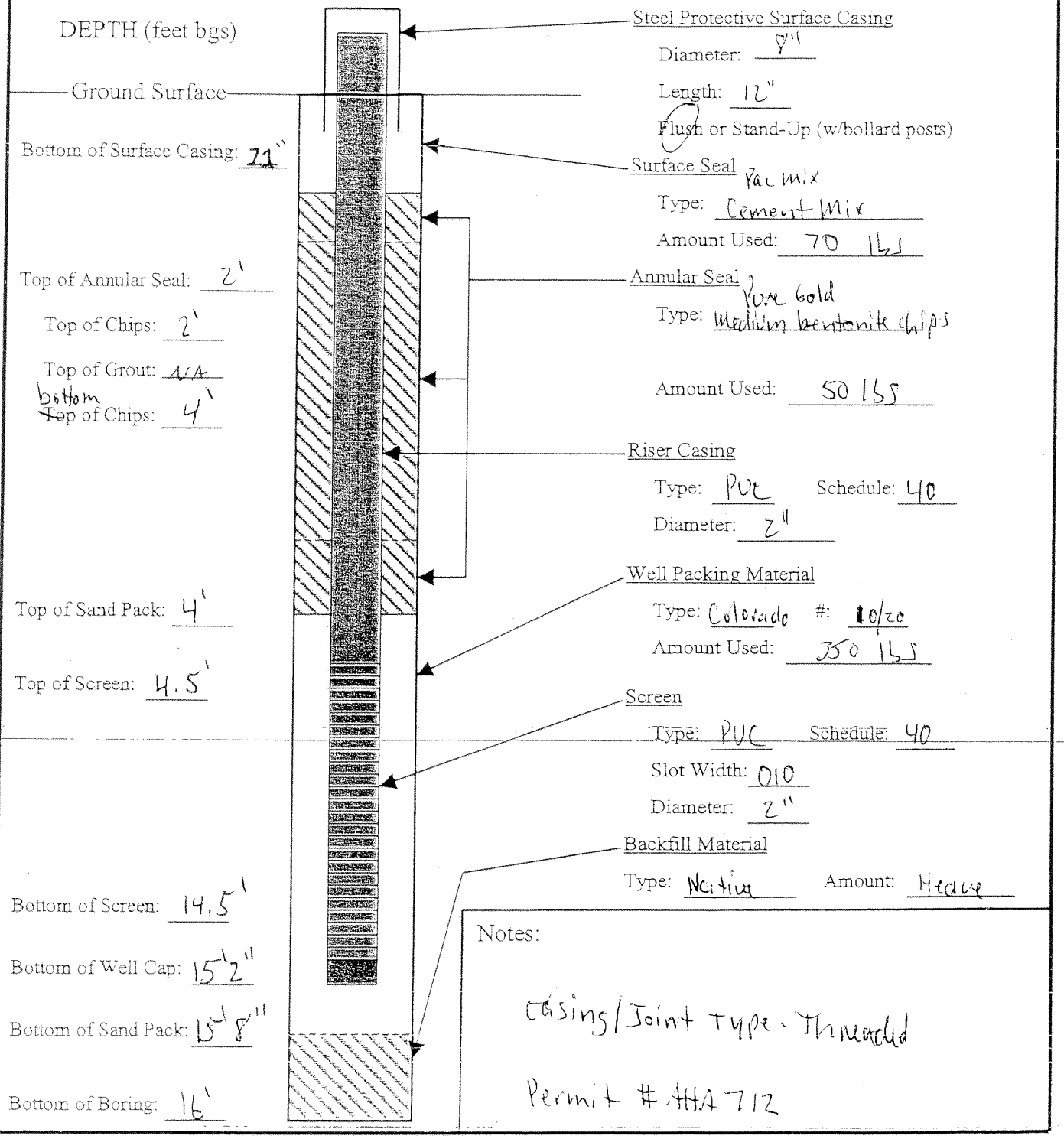
Well ID: CE-128-MT

Facility: Georgetown

Date Start: 3/26/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/26/02	Drillers: Brian Gose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Notes:

Casing/Joint Type - Threaded

Permit # HA 712

PSC PHILIP SERVICES

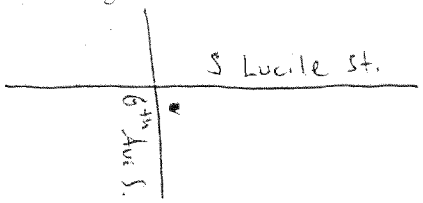
Monitoring Well Construction

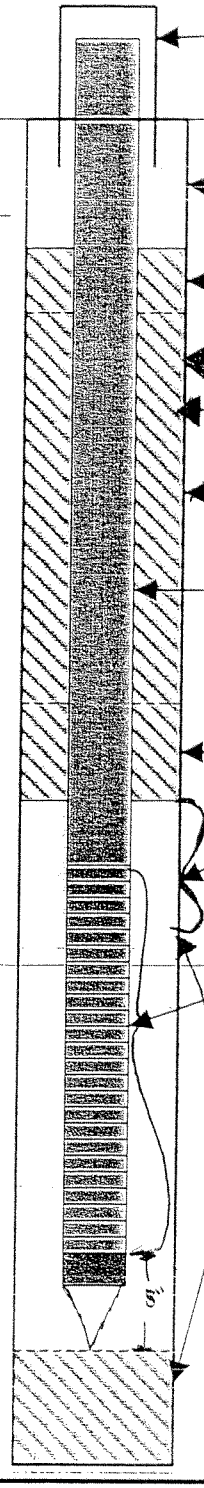
Well ID: 66-128-70

Facility: Georgetown

Date Start: 3/26/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/26/02	Drillers: Brian Gose
Total Boring Depth: 74'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing

Diameter: 8'

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal Pac mix

Type: Cement mix

Amount Used: 70 lbs

Annular Seal Quik Grout / medium chips

Type: grout mix / Pure Gold

Amount Used: 110 gallons / 200 lbs
175 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 100 lbs

Screen # 20/40 Colorado, 010 Slot

Type: PVC Schedule: 40

Slot Width: 010 ~50 lbs

Diameter: 3"

Backfill Material

Type: Native Amount: Heave

Notes: 8' Native Sand only caved to 63'

Casing/Joint Type - Threaded

Permit # 4144 710

PSC PHILIP SERVICES

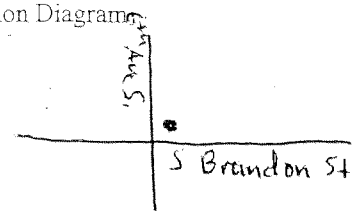
Monitoring Well Construction

Well ID: C6-12G-WT

Facility: Georgetown

Date Start: 3/5/02	Contractor: CASCADE
Date Complete: 3/5/02	Drillers: Brian Gose
Total Boring Depth: 16.5'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter:

Location Diagram:



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'1"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom ~~Top~~ of Chips: 4.5'

Top of Sand Pack: 4.5'

Top of Screen: 5'

Bottom of Screen: 15'

Bottom of Well Cap: 15'8"

Bottom of Sand Pack: 16'2"

Bottom of Boring: 16.5'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

(Flush or ~~Stand-Up~~ (w/bollard posts)

Surface Seal

Type: Concrete mix

Amount Used: 100 lbs

Annular Seal

Type: ~~Medium bentonite~~ Pure Gold chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado Silica #: 8/12

Amount Used: 250 lbs

Screen

Type: PVC Schedule: 40

Slot Width: .20

Diameter: 2"

Backfill Material

Type: native Amount: from heave

Notes:

Casing/Joint Type- threaded

Permit # A6T742

PSC PHILIP SERVICES

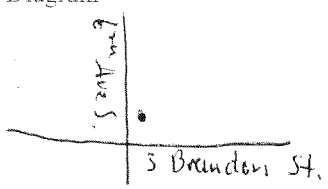
Monitoring Well Construction

Well ID: CE-129-40

Facility: GT

Date Start: 3/5/02	Contractor: CASCADE Drilling Inc
Date Complete: 3/5/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 29'

Top of Sand Pack: 29'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41'

Bottom of Boring: 42'

Steel Protective Surface Casing

Diameter: 8"

Length: 12

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Concrete mix

Amount Used: 100 lbs

Annular Seal

Type: Pure Gold Medium bentonite chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado Silica Sand #: 8/12

Amount Used: 250 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: native Amount: from hand

Notes:

Casing/Joint type - threaded

Permit # AET 743

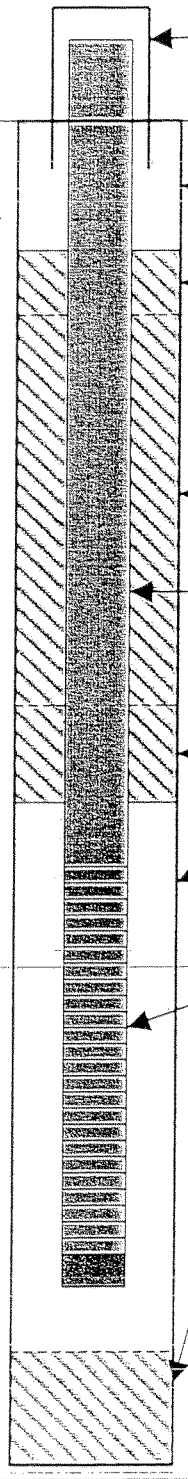
PHILIP SERVICES

Monitoring Well Construction

Well ID: C6-130-WT

Facility: Georgetown

Date Start: 3/25/02	Contractor: Cascade Drilling Inc.	Location Diagram: S Lucile St. / S Findlay St / S. Orcas St. / 5th Ave S.
Date Complete: 3/25/02	Drillers: Brian Gose	
Total Boring Depth: 16	Drill Rig: CME 75	
Borehole Diameter: 8"	Geologist: Corey Johnson	
	Well Diameter: 2"	



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'1"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Bottom of Chips: 3.5'

Top of Sand Pack: 3.5'

Top of Screen: 4'

Bottom of Screen: 14'

Bottom of Well Cap: 14' 8"

Bottom of Sand Pack: 15' 6"

Bottom of Boring: 16'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: Pac Mix Concrete Mix
Amount Used: 70 lbs

Annular Seal
Type: Pure Gold Medium bentonite chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 300 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: Native Amount: Heave

Notes:

Casing / Joint Type - Threaded

Permit # AHA 710

PSC PHILIP SERVICES

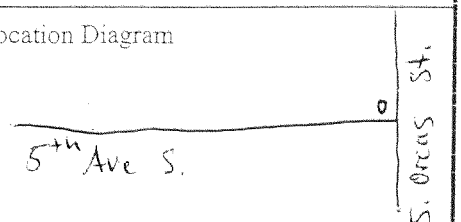
Monitoring Well Construction

Well ID: C6-131-WT

Facility:

Date Start: 3/6/02	Contractor: Cascade Drilling Inc
Date Complete: 3/6/02	Drillers: Brian Gose
Total Boring Depth: 16.5'	Drill Rig: CME 75
Borehole Diameter: 0-16.5' 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'1"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Bottom Top of Chips: 4.5'

Top of Sand Pack: 4.5'

Top of Screen: 5'

Bottom of Screen: 15'

Bottom of Well Cap: 15'5"

Bottom of Sand Pack: 16'1"

Bottom of Boring: 16.5'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: concrete

Amount Used: 80 lbs

Annular Seal Pure Gold

Type: ~~Medium bentonite~~ chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: colorado #: 8/12

Amount Used: 250 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: native Amount: beam

Notes:

casing / Joint Type - threaded

Permit # A6T 746

PSC PHILIP SERVICES

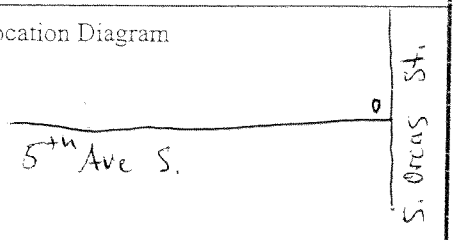
Monitoring Well Construction

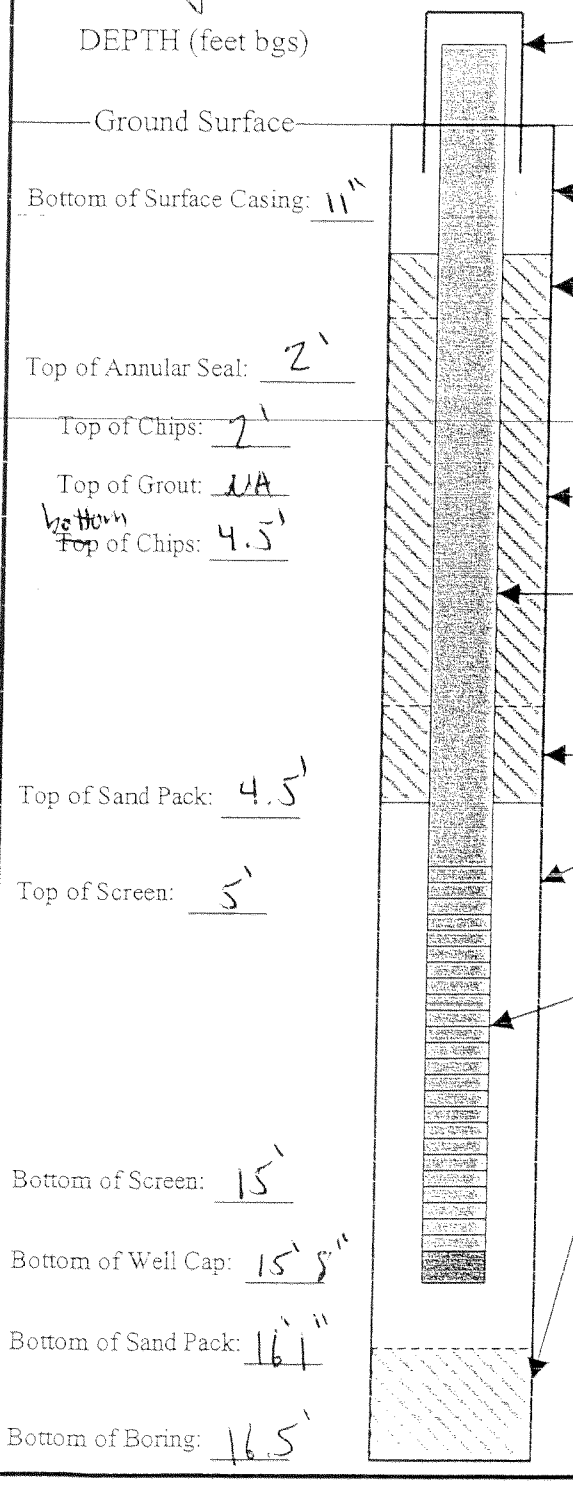
Well ID: C6-131-WT

Facility:

Date Start: 3/6/02	Contractor: Cascade Drilling Inc
Date Complete: 3/6/02	Drillers: Brian Goose
Total Boring Depth: 16.5'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: concrete
Amount Used: 80 lbs

Annular Seal
Type: Medium bentonite chips Pure Gold
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 250 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 20
Diameter: 2"

Backfill Material
Type: native Amount: none

Notes:

casing / Joint Type - threaded

Permit # A6T 746

PSC PHILIP SERVICES

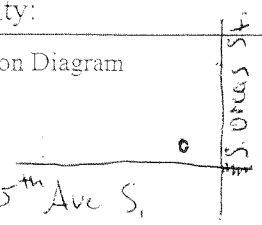
Monitoring Well Construction

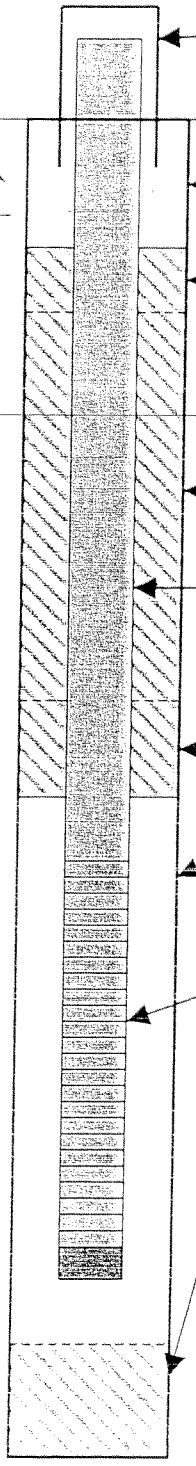
Well ID: CL-131-40

Facility:

Date Start: 3/6/02	Contractor: Cascade Drilling Inc
Date Complete: 3/6/02	Drillers: Brian Bose
Total Boring Depth: 42	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11'

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 27'

Top of Sand Pack: 27'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41'

Bottom of Boring: 42'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement Mix

Amount Used: 85 lbs

Annular Seal Pure Gold

Type: ~~Medium bentonite~~ chips

Amount Used: 600 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 330 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: native Amount: heave

Notes:

Casing/Joint type

Permit # 46T 747

PHILIP SERVICES

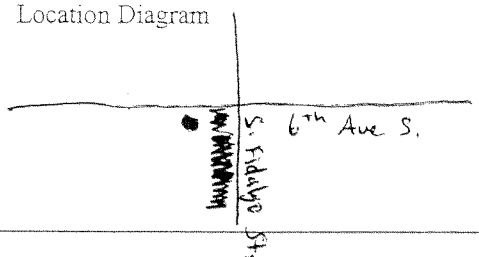
Monitoring Well Construction

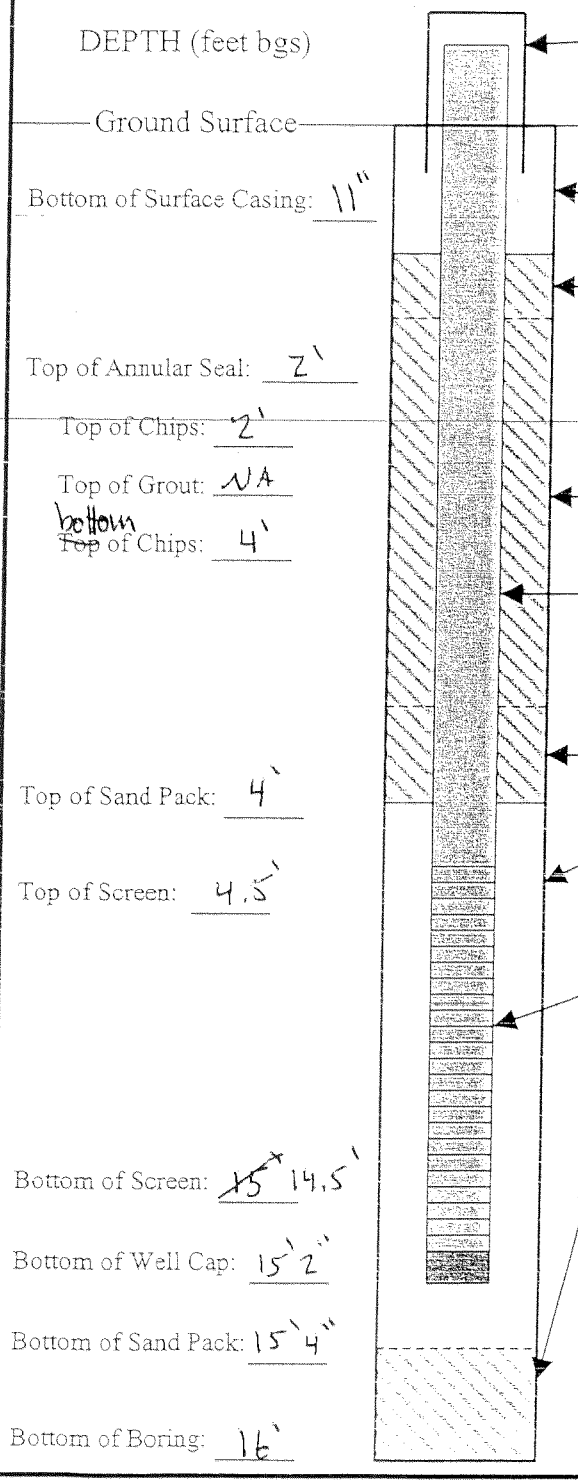
Well ID: C6-132-WT

Facility: Georgetown

Date Start: 3/11/02	Contractor: Cascade Drilling Inc
Date Complete: 3/11/02	Drillers: Frank Scott
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: ~~15'~~ 14.5'

Bottom of Well Cap: 15' 2"

Bottom of Sand Pack: 15' 4"

Bottom of Boring: 16'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal Pac-Mix
Type: cement mix
Amount Used: 65 lbs

Annular Seal Pure Gold
Type: Medium bentonite chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 20
Diameter: 2"

Backfill Material
Type: native Amount: none

Notes:

Casing/Joint type

Permit # AGT 755

PHILIP SERVICES

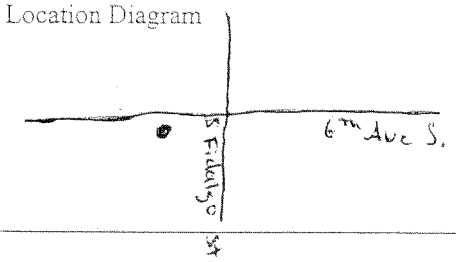
Monitoring Well Construction

Well ID: CG-132-40

Facility: Georgetown

Date Start: 3/11/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/11/02	Drillers: Frank Scott
Total Boring Depth: 43'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom Top of Chips: 28'

Top of Sand Pack: 28'

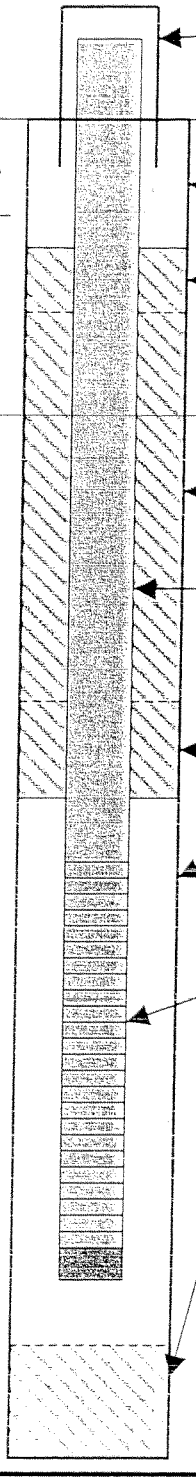
Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 43'



Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac mix cement mix

Amount Used:

Annular Seal

Type: Pure Gold medium bentonite chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: native Amount: heave

Notes:

Casing/Joint type - threaded

Permit # AGT 754

PSC PHILIP SERVICES

Monitoring Well Construction

Well ID: C6-133-40

Facility: Georgetown

Date Start: 4/1/02	Contractor: Cascade Drilling Inc
Date Complete: 4/1/02	Drillers: James Gobel
Total Boring Depth: 41'	Drill Rig: Limited Access
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram: Fidalgo St. & Hwy Ave S.

DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2.5'

Top of Chips: 2.5'

Top of Grout: NA

Bottom ~~Top~~ of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 40' 8"

Bottom of Boring: 41'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal Pre Mix
Type: Cement Mix
Amount Used: 100 lbs

Annular Seal Pure Gold
Type: medium bentonite chips
Amount Used: 450 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: ~~6 x 5~~ 300 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: Native Amount: Heavy

Notes:

Casing/Joint Type - Threaded

Permit # AHA740

PSC PHILIP SERVICES

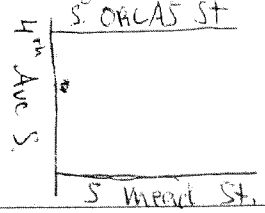
Monitoring Well Construction

Well ID: CB-134-MW

Facility: Georgetown

Date Start: 4/24/02	Contractor: Cascade Drilling
Date Complete: 4/24/02	Drillers: James Kobel
Total Boring Depth: 15'	Drill Rig: Limited Access
Borehole Diameter: 8	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 3' 10"

Top of Sand Pack: 3' 10"

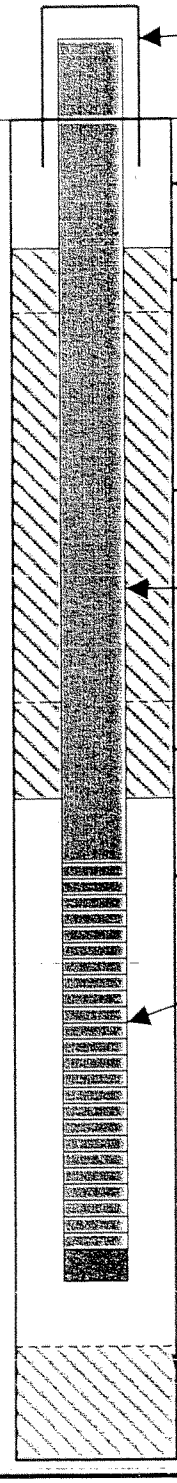
Top of Screen: 4' 4"

Bottom of Screen: 14' 4"

Bottom of Well Cap: 15'

Bottom of Sand Pack: 15'

Bottom of Boring: 15'



Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Concrete Mix

Amount Used: 70 lbs

Annular Seal

Type: Pure Gold medium bentonite chips

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 300 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: NA Amount: NA

Notes:

Casing/Joint Type - Threaded

Permit # AHB 119

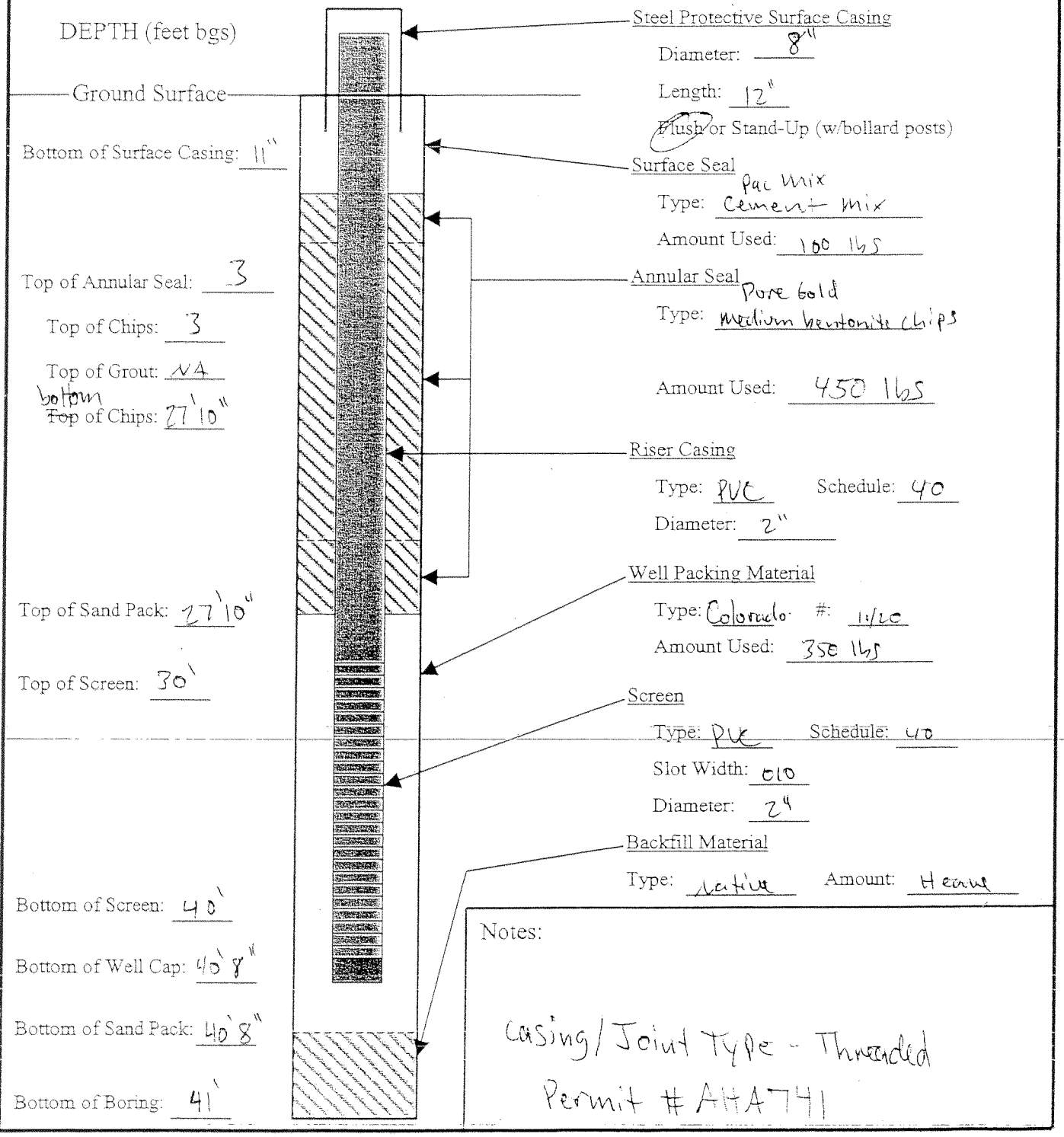
PSC PHILIP SERVICES

Monitoring Well Construction

Well ID: CG-134-40

Facility: Georgetown

Date Start: 4/1/02	Contractor: Cascade Drilling Inc.	Location Diagram: S Orcas St. / 4th Ave S / S Mead St.
Date Complete: 4/1/02	Drillers: ~~Brian Gore~~ James Gobel	
Total Boring Depth: 41'	Drill Rig: ~~CME 75~~ Limited Access	
Borehole Diameter: 8"	Geologist: Corey Johnson	
	Well Diameter: 2"	



Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: Cement mix (Pac Mix)
Amount Used: 100 lbs

Annular Seal
Type: Medium bentonite chips (Pure Gold)
Amount Used: 450 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 1/20
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: Heavy

Notes:

Casing/Joint Type - Threaded

Permit # AHA741

PSC PHILIP SERVICES

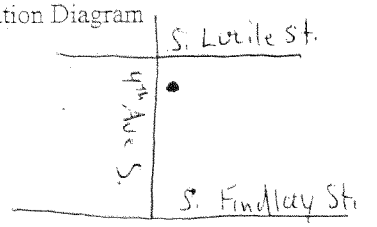
Monitoring Well Construction

Well ID: C6-135-40

Facility: Georgetown

Date Start: 3/25/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/25/02	Drillers: Brian Gose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom ~~top~~ of Chips: 28'

Top of Sand Pack: 28'

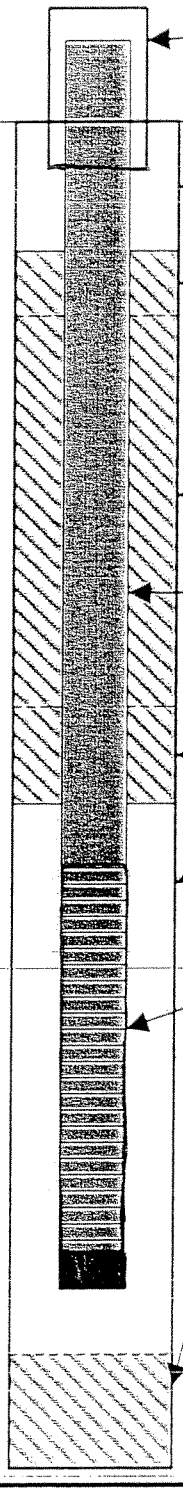
Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 4"

Bottom of Boring: 42'



Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac-mix Cement Mix

Amount Used: 70 lbs

Annular Seal

Type: Pure Gold Medium bentonite chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 400 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA 709

PSC PHILIP SERVICES

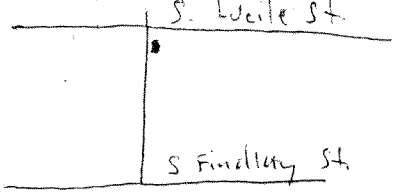
Monitoring Well Construction

Well ID: C6-135-50

Facility: Georgetown

Date Start: 3/25/02	Contractor: Cascade Drilling Inc
Date Complete: 3/25/02	Drillers: Brian Gose
Total Boring Depth: 52'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 38'

Top of Sand Pack: 38'

Top of Screen: 40'

Bottom of Screen: 50'

Bottom of Well Cap: 50' 8"

Bottom of Sand Pack: 51' 4"

Bottom of Boring: 52'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement + Mix Par Mix

Amount Used: 70 lbs

Annular Seal

Type: medium bentonite chips Pure Gold

Amount Used: 750 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 325 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # AHA 708

PSC PHILIP SERVICES

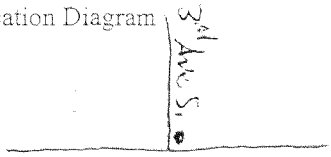
Monitoring Well Construction

Well ID: 66-136-MW

Facility: Georgetown

Date Start: 3/18/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/18/02	Drillers: Brian Lose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Top of Chips: 3.5'

Top of Sand Pack: 3.5'

Top of Screen: 4'

Bottom of Screen: 14'

Bottom of Well Cap: 14' 5"

Bottom of Sand Pack: 15' 4"

Bottom of Boring: 16'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal Bac-mix

Type: Cement mix

Amount Used: 65 lbs

Annular Seal Pure Gold

Type: ~~medium bentonite chips~~

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 300 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: native Amount: heavy

Notes:

Casing Joint Type - Threaded

Permit # A6T 767

PSC PHILIP SERVICES

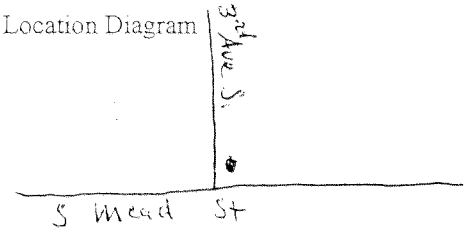
Monitoring Well Construction

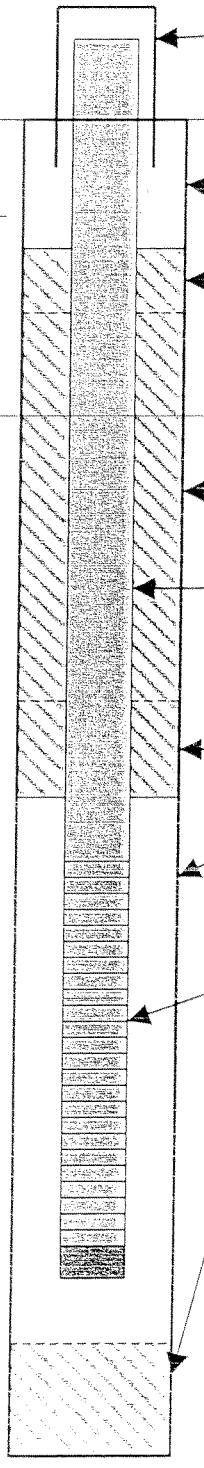
Well ID: C6 - 136 - 40

Facility: Georgetown

Date Start: 3/18/02	Contractor: Cascade Drilling Inc
Date Complete: 3/18/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME-75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Top of Chips: 28' (bottom)

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 4"

Bottom of Boring: 42'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal Pac mix
Type: cement mix
Amount Used: 70 lbs

Annular Seal Pure Gold
Type: Medium bentonite chips
Amount Used: 350 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 500 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: Heave

Notes:

Casing / Joint Type - Threaded

Permit # AGT 768

PSC PHILIP SERVICES

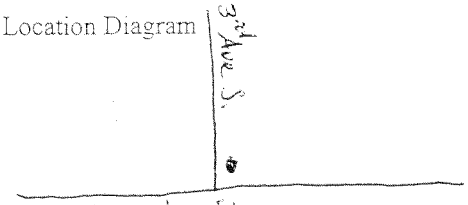
Monitoring Well Construction

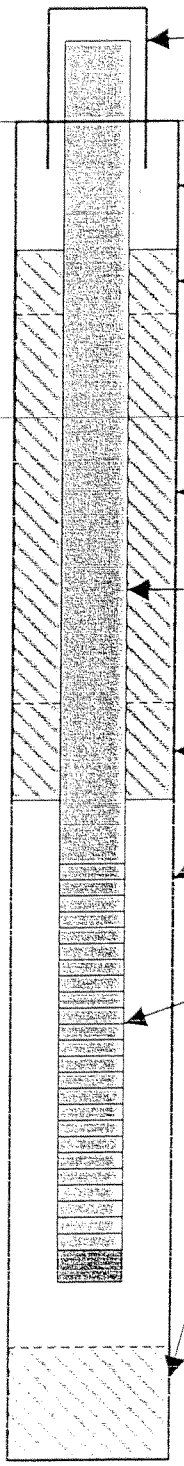
Well ID: C6 - 136 - 40

Facility: Georgetown

Date Start: 3/18/02	Contractor: Cascade Drilling Inc
Date Complete: 3/18/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME-75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Top of Chips: 28' (bottom)

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 4"

Bottom of Boring: 42'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal Pac Mix
Type: cement mix
Amount Used: 70 lbs

Annular Seal Pure Gold
Type: ~~Medium bentonite~~ chips
Amount Used: 350 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 500 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: None

Notes:

Casing / Joint Type - Threaded

Permit # AGT 768

PSC PHILIP SERVICES

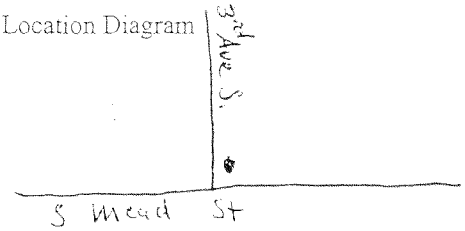
Monitoring Well Construction

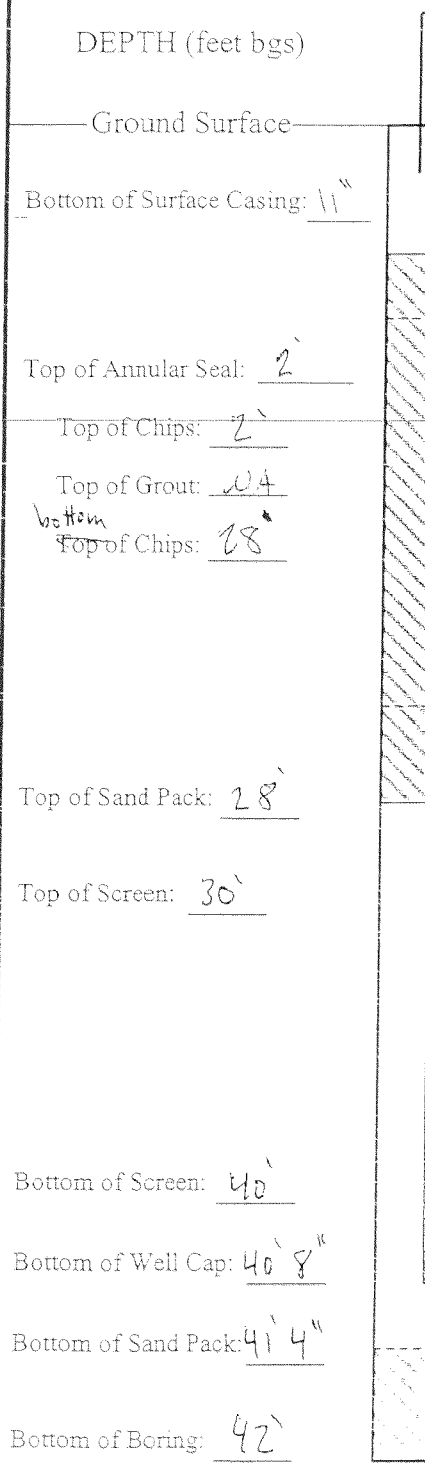
Well ID: C6 - 136 - 40

Facility: Georgetown

Date Start: 3/18/02	Contractor: Cascade Drilling Inc
Date Complete: 3/18/02	Drillers: Brian Rose
Total Boring Depth: 42'	Drill Rig: CME-75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal Pac mix
Type: cement mix
Amount Used: 70 lbs

Annular Seal Pure Gold
Type: Medium bentonite chips
Amount Used: 350 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 500 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: Heavy

Notes:

Casing / Joint Type - Threaded

Permit # AGT 768

PSC PHILIP SERVICES

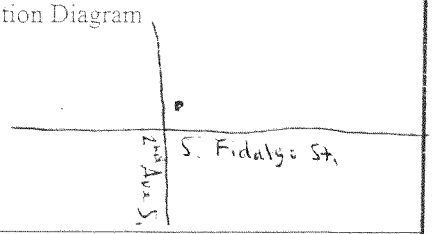
Monitoring Well Construction

Well ID: CB-137-WT

Facility: Georgetown

Date Start: 3/13/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/13/02	Drillers: Brian Bose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 4 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom
~~Top~~ of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15' 2"

Bottom of Sand Pack: 15' 8"

Bottom of Boring: 16'

Steel Protective Surface Casing
Diameter: 10"
Length: 12"
(Flush) or Stand-Up (w/bollard posts)

Surface Seal Pac-Mix
Type: Cement Mix
Amount Used: 65 lbs

Annular Seal Pure Gold
Type: Medium bentonite chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 300 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 020
Diameter: 2"

Backfill Material
Type: Native Amount: Leave

Notes:

Casing / Joint Type - Threaded

Permit # AbT 5759

PSC PHILIP SERVICES

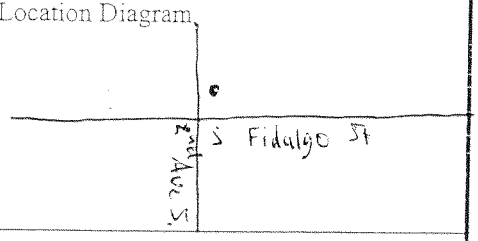
Monitoring Well Construction

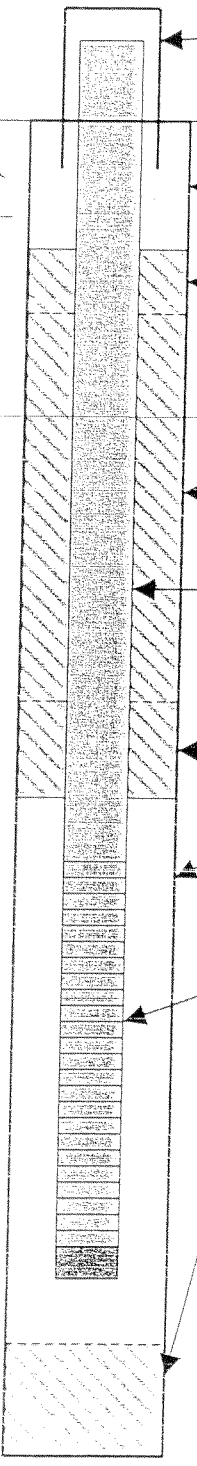
Well ID: C6-137-40

Facility: Georgetown

Date Start: 3/13/02	Contractor: Cascade Drilling Inc
Date Complete: 3/13/02	Drillers: Brian Goose
Total Boring Depth: 43'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Top of Chips: 28' (bottom)

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 43'

Steel Protective Surface Casing
Diameter: 10"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: cement mix
Amount Used: 70 lbs

Annular Seal
Type: Pure Gold ~~medium bentonite chips~~
Amount Used: 500 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 400 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 020
Diameter: 2"

Backfill Material
Type: Native Amount: heave

Notes:

Casing/Joint Type threaded

Permit # AGT 760

PHILIP SERVICES

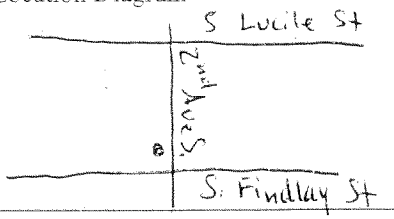
Monitoring Well Construction

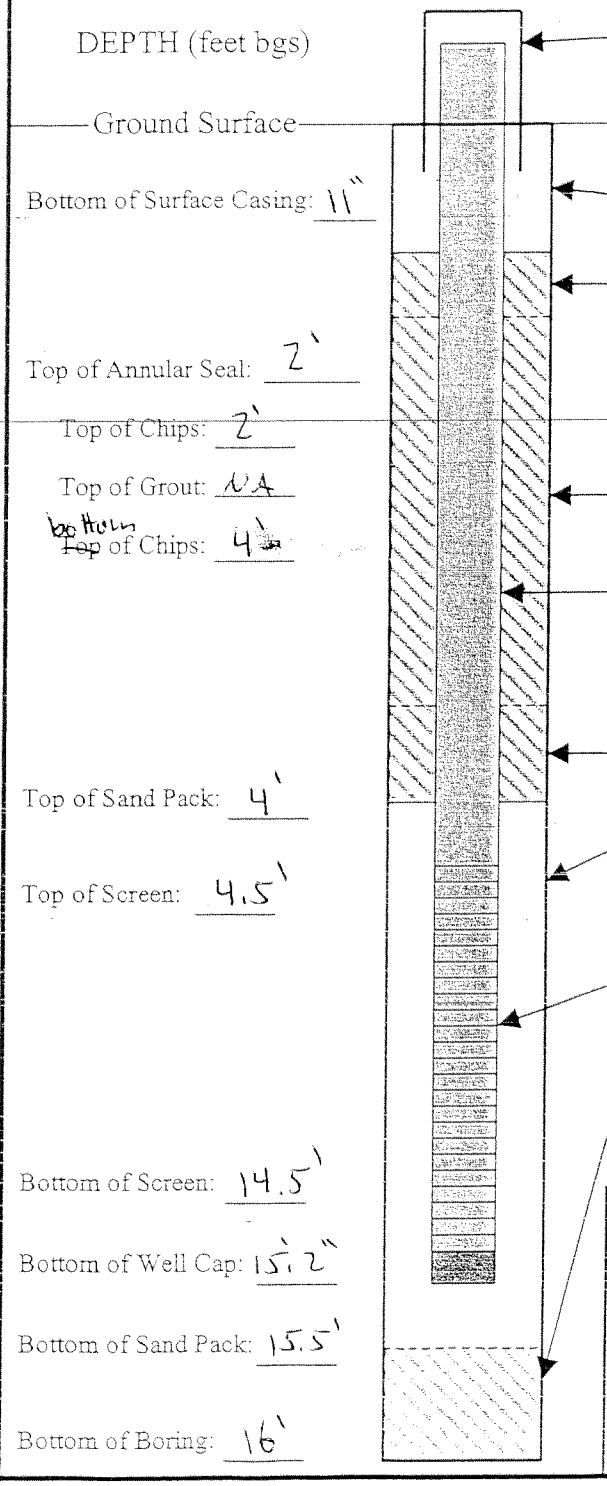
Well ID: C6-138-LWT

Facility: Georgetown

Date Start: 3/7/02	Contractor: CASCADE Drilling Inc
Date Complete: 3/7/02	Drillers: Frank Scott
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom ~~Top~~ of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15.2"

Bottom of Sand Pack: 15.5'

Bottom of Boring: 16'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

(Flush) or Stand-Up (w/bollard posts)

Surface Seal

Type: cement mix pacmix

Amount Used: 70 lbs

Annular Seal Pure Gold

Type: ~~Medium~~ bentonite chips

Amount Used: 100 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 300 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 20

Diameter: 2"

Backfill Material

Type: native Amount: leave

Notes:

Casing/Joint Type - Threaded

Permit # A6T 752

PSC PHILIP SERVICES

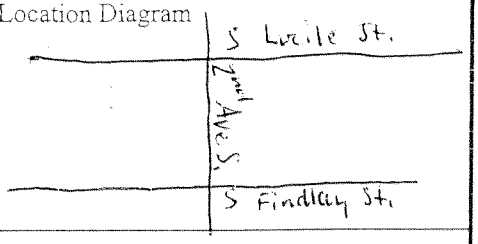
Monitoring Well Construction

Well ID: CB-138-40

Facility: Georgetown

Date Start: 3/7/02	Contractor: Cascade Drilling Inc
Date Complete: 3/7/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Bottom Top of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 29' 11"

Bottom of Screen: 39.11"

Bottom of Well Cap: 40.7"

Bottom of Sand Pack: 40.7"

Bottom of Boring: 42'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
(Flush) or Stand-Up (w/bollard posts)

Surface Seal
Type: Cement mix (Pan Mix)
Amount Used: 65 lbs

Annular Seal
Type: ~~medium bentonite chips~~ (Pure Gold)
Amount Used: 500 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 300 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 20
Diameter: 2"

Backfill Material
Type: Native Amount: heave

Notes:

Casing Joint Type - Threaded

Permit # ABT 751

PSC PHILIP SERVICES

Monitoring Well Construction

Well ID: CB-138-70

Facility: Georgetown

Date Start: 3/7/02

Date Complete: 3/7/02

Total Boring Depth: 73'

Borehole Diameter: 8"

Contractor: CASCADE Drilling Inc.

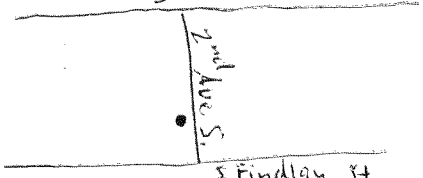
Drillers: Brian Bosc

Drill Rig: CME 75

Geologist: Corey Johnson

Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 1'

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: 7'

~~Top of Chips~~: 57' bottom of grout

Top of Sand Pack: 57'

Top of Screen: 60'

Bottom of Screen: 70'

Bottom of Well Cap: 70'6"

Bottom of Sand Pack: 60'

Bottom of Boring: 73'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

(Flush) or Stand-Up (w/bollard posts)

Surface Seal Pour mix

Type: Cement mix

Amount Used: 65 lbs

Annular Seal

Type: Quik grout

Amount Used: 110 gallons

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material #10/20 Colorado

Type: Native #: N/A

Amount Used: N/A

Screen pre-packed #20/40

Type: PVC Schedule: 40

Slot Width: 10

Diameter: 2"

Backfill Material

Type: Native Amount: heavy

Notes:

Casing/Joint type - threaded

Permit # ABT 750

PSC PHILIP SERVICES

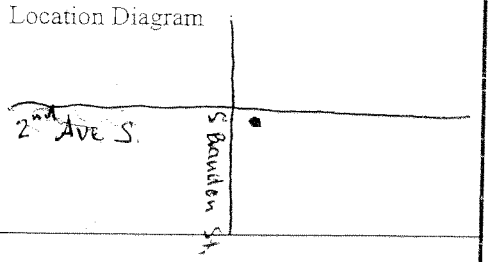
Monitoring Well Construction

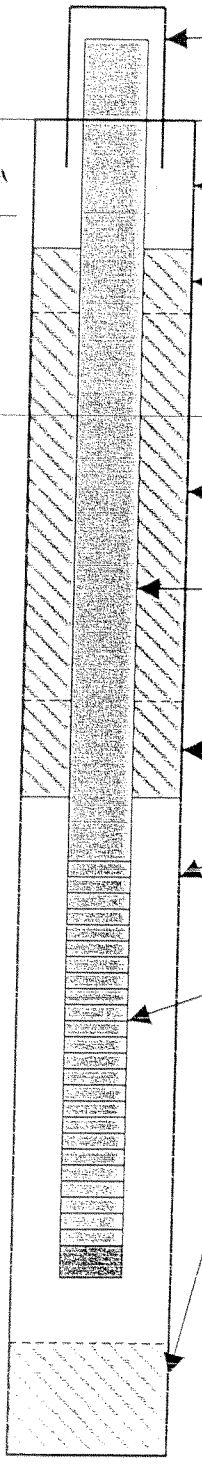
Well ID: CB-139-40

Facility: Georgetown

Date Start: 3/11/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/11/02	Drillers: Frank Scott
Total Boring Depth: 43'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Top of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 1"

Bottom of Boring: 43'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
(Flush) or Stand-Up (w/bollard posts)

Surface Seal
Type: Cement mix (Pac-mix)
Amount Used: 70 lbs

Annular Seal
Type: medium bentonite chips (Pure Gold)
Amount Used: 500 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: PVC #: 8/12
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 20
Diameter: 2"

Backfill Material
Type: native Amount: none

Notes:

casing / joint type - threaded

Permit # A6T-756

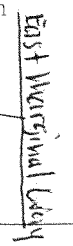
PSC PHILIP SERVICES

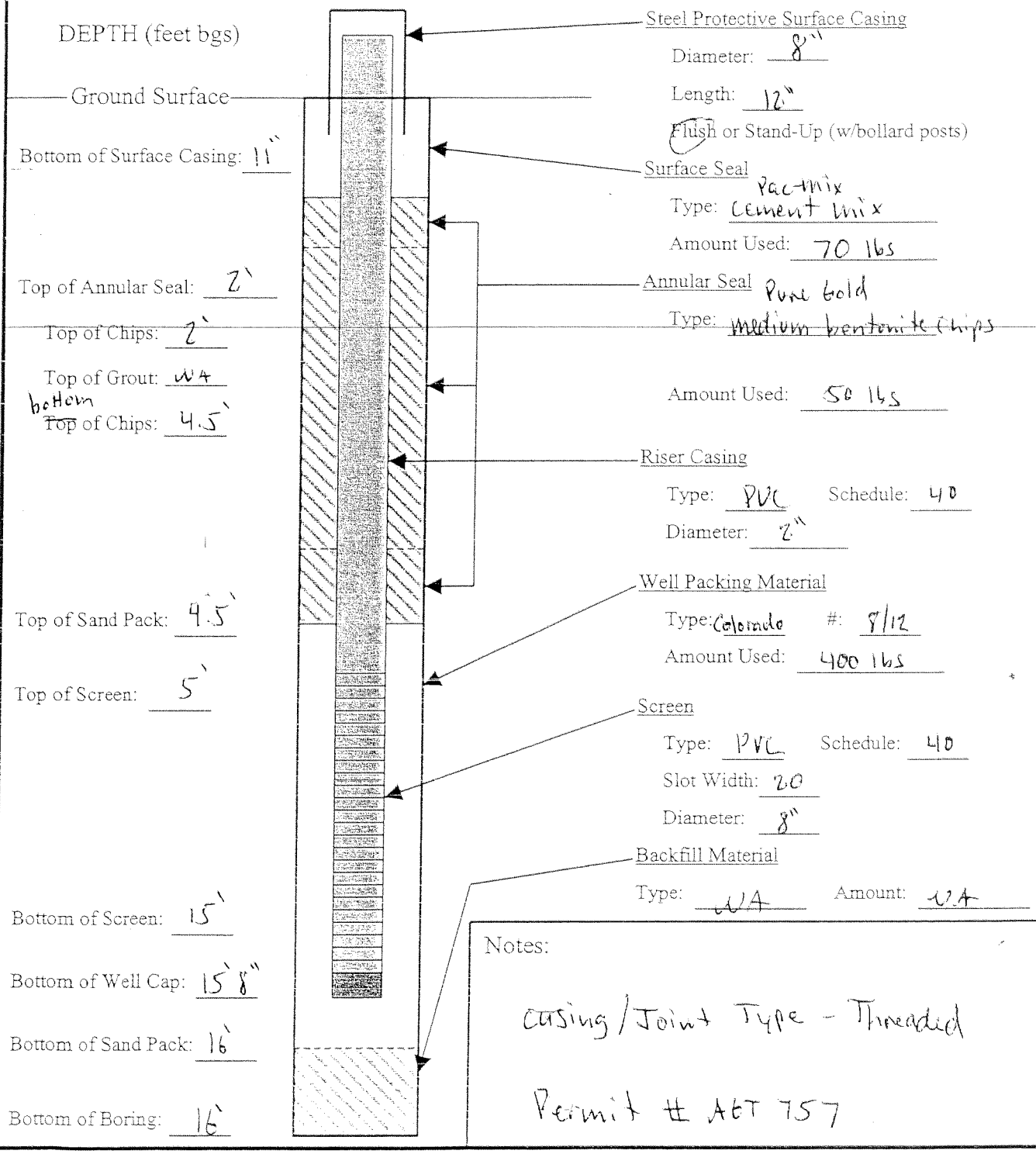
Monitoring Well Construction

Well ID: 66-140-WT

Facility: Georgetown

Date Start: 3/12/02	Contractor: Cascade Drilling Inc.	Location Diagram
Date Complete: 3/12/02	Drillers: Brian Gose	
Total Boring Depth: 16'	Drill Rig: CME 75	
Borehole Diameter: 8"	Geologist: Corey Johnson	
	Well Diameter: 2"	





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

bottom
~~Top~~ of Chips: 4.5'

Top of Sand Pack: 4.5'

Top of Screen: 5'

Bottom of Screen: 15'

Bottom of Well Cap: 15' 8"

Bottom of Sand Pack: 16'

Bottom of Boring: 16'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
Flush or Stand-Up (w/bollard posts)

Surface Seal
Type: Pac-mix Cement Mix
Amount Used: 70 lbs

Annular Seal Pure Gold
Type: ~~medium bentonite~~ chips
Amount Used: 50 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 400 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 20
Diameter: 8"

Backfill Material
Type: NA Amount: NA

Notes:

casing/Joint Type - Threaded

Permit # ABT 757

PSC
PHILIP SERVICES

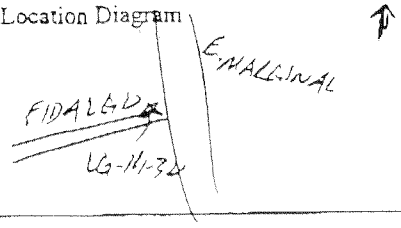
Typical Monitoring Well Construction

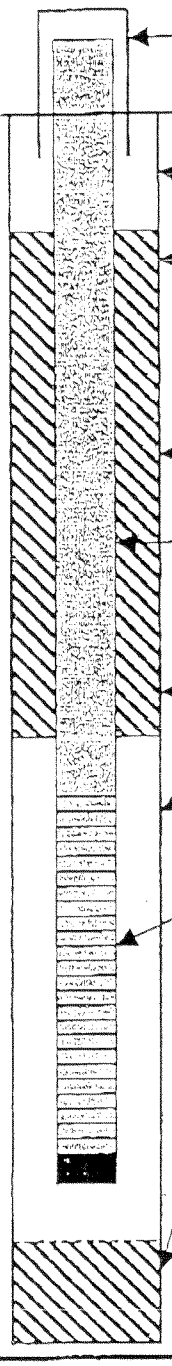
Well ID: Shallow & Intermediate Wells CG-14D-3D

Facility: Georgetown

Date Start: 7/25/03	Contractor: CASCADE
Date Complete: 7/25/03	Drillers: BRIAN, ELI, JASON
Total Boring Depth: ~31.0	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: GREG LISH
	Well Diameter: 2-inch

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: ____

Surface Seal: 4' minimum thickness ~2.0'

Top of Annular Seal: 2' bgs minimum 2' above top of sand pack

Top of Sand Pack: minimum 6" above top of screen ~18' bgs

Top of Screen: 10' above the bottom of screen ~20' bgs

Bottom of Screen: Designated depth for each well

Bottom of Well Cap: ~30' bgs

Bottom of Sand Pack: ~1.0' below screen bottom

Bottom of Boring: ~31.0 bgs

Steel Protective Surface Casing

Diameter: 14" O.D.

Length: ____

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement

Annular Seal

Type: Medium Bentonite Chips and/or Grout

RULE GOLD

Riser Casing

Type: PVC Schedule: 40

Diameter: 2-inch

Well Packing Material

Type: Sand #: Determined in field

14/20 COLORADO SPRINGS FLA. OGLEBAY NORTON

Screen

Type: PVC Schedule: 40

Slot Width: Determined in field

Diameter: 2-inch

Backfill Material

Type: Medium Bentonite Chips

Notes:

Not to scale.

All depths are estimates that may have to be altered due to field conditions.

Fig. 3-2

PSC PHILIP SERVICES

Monitoring Well Construction

Well ID: CG-140-40

Facility: Georgetown

Date Start: 3/12/02	Contractor: Cascade Drilling Inc
Date Complete: 3/12/02	Drillers: Brian Gose
Total Boring Depth: 43	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram

DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40'8"

Bottom of Sand Pack: 41'7"

Bottom of Boring: 43'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal Pac-mix

Type: Cement mix

Amount Used: 65 lbs

Annular Seal Pure Gold

Type: Medium bentonite chips

Amount Used: 550 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: PVC #: 8/12

Amount Used: 400 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 020

Diameter: 2"

Backfill Material

Type: native Amount: Unknown

Notes:

Casing/Joint type - threaded

Permit # AGT 758

PHILIP SERVICES

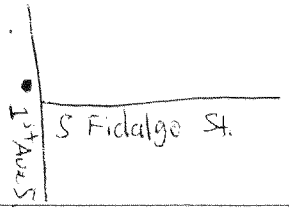
Monitoring Well Construction

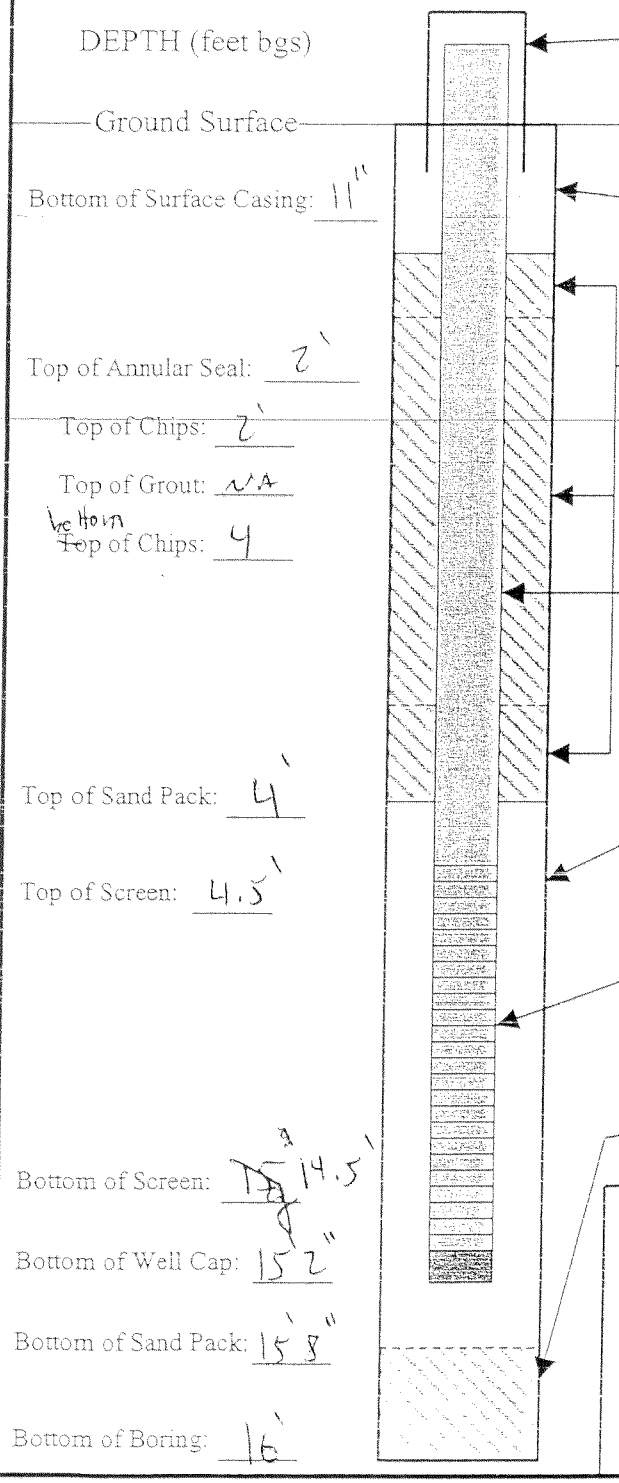
Well ID: Cb-141-WT

Facility: Georgetown

Date Start: 3/14/02	Contractor: Cascade Drilling Inc
Date Complete: 3/14/02	Drillers: Brian Goose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Top of Chips: 4' bentonite

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15' 2"

Bottom of Sand Pack: 15' 8"

Bottom of Boring: 16'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement mix (Pac Mix)

Amount Used: 70 lbs

Annular Seal

Type: Medium bentonite chips (Pure Gold)

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 020

Diameter: 2"

Backfill Material

Type: Native Amount: none

Notes:

Casing/Joint Type - Threaded

Permit # A6T763

PSC PHILIP SERVICES

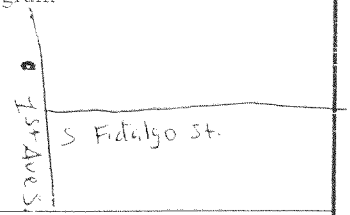
Monitoring Well Construction

Well ID: C6-141-40

Facility: Georgetown

Date Start: 3/14/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/14/02	Drillers: Brian Bose
Total Boring Depth: 42'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Top of Chips: 28' (bottom)

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 2"

Bottom of Boring: 42'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal
Type: Pac-mix cement mix
Amount Used: 70 lbs

Annular Seal
Type: ~~Medium bentonit chips~~ Pure Gold
Amount Used: 550 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 8/12
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 020
Diameter: 2"

Backfill Material
Type: Native Amount: Heave

Notes:

Casing/Joint Type - Threaded

Permit # A6T-764

PSC PHILIP SERVICES

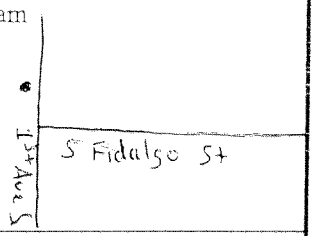
Monitoring Well Construction

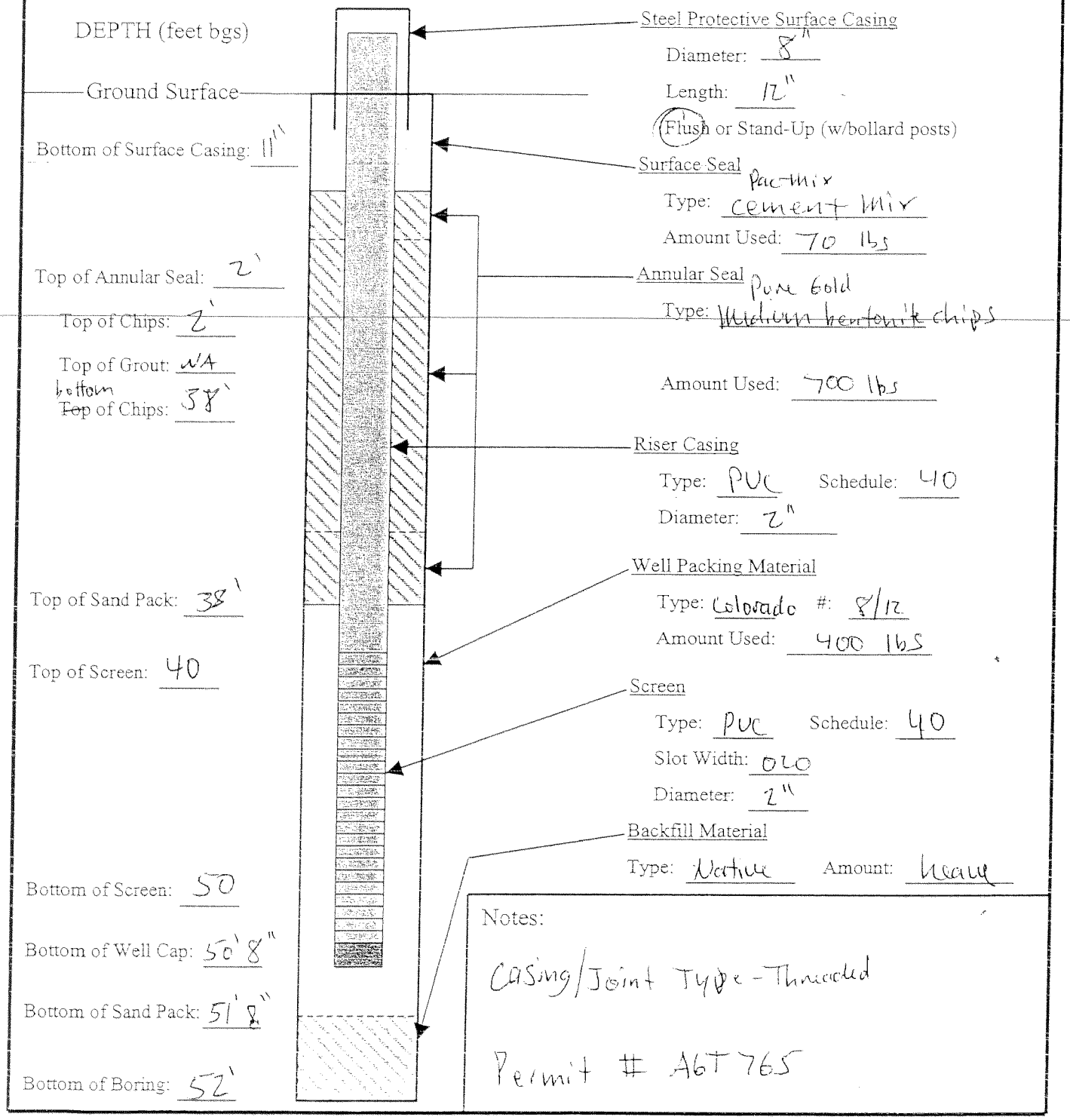
Well ID: C6-141-50

Facility: Georgetown

Date Start: 3/14/02	Contractor: Cascade Drilling Inc
Date Complete: 3/14/02	Drillers: ~~Corey J~~ Brian Bose
Total Boring Depth: 52'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





Notes:

Casing/Joint Type - Threaded

Permit # AGT765

PSC PHILIP SERVICES

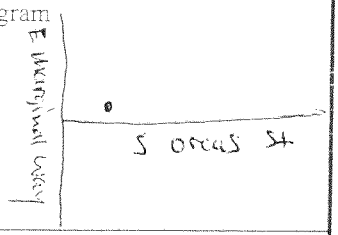
Monitoring Well Construction

Well ID: CE-142-WT

Facility: Georgetown

Date Start: 3/13/02	Contractor: Cascade Drilling Inc
Date Complete: 3/13/02	Drillers: Brian-Gose
Total Boring Depth: 16'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 4.5'

Top of Sand Pack: 4.5'

Top of Screen: 5

Bottom of Screen: 15'

Bottom of Well Cap: 15' 8"

Bottom of Sand Pack: 16'

Bottom of Boring: 16'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement-Mix

Amount Used: 65 lbs

Annular Seal

Type: ~~Medium bentonite chips~~ Pure Gold

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 020

Diameter: 2"

Backfill Material

Type: native Amount: none

Notes:

Joint/Casing Type - Threaded

Permit # A6T762

PSC PHILIP SERVICES

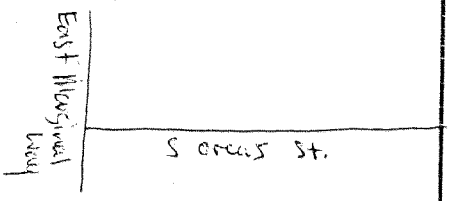
Monitoring Well Construction

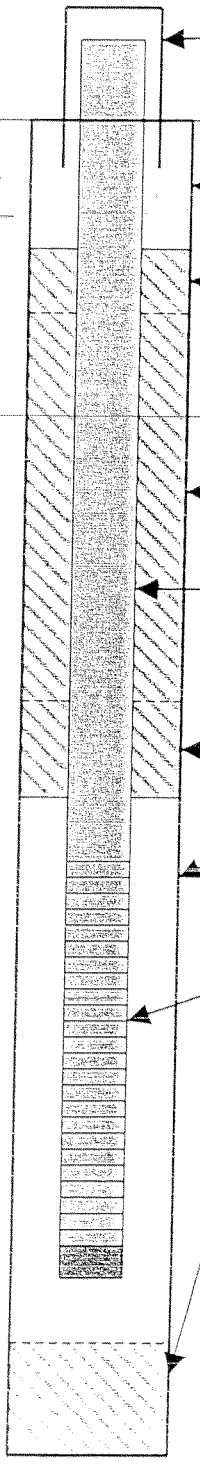
Well ID: CB-142-40

Facility: Georgetown

Date Start: 3/13/02	Contractor: Cascade Drilling Inc
Date Complete: 3/13/02	Drillers: Brad Gose
Total Boring Depth: 42	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: N/A

Bottom of Chips: 28'

Top of Sand Pack: 28'

Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 8"

Bottom of Boring: 42'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

(Flush) or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement mix

Amount Used: 65 lbs

Annular Seal

Type: Pure Gold ~~Hydrum bentonite ch.~~

Amount Used: 550 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 020

Diameter: 2"

Backfill Material

Type: native Amount: none

Notes:

casing/joint type - Threaded

Permit # Abt 761

PSC PHILIP SERVICES

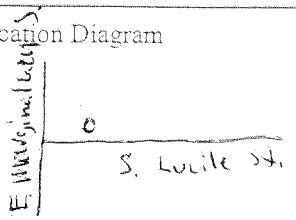
Monitoring Well Construction

Well ID: C6-143-LWT

Facility: 6T

Date Start: 3/6/02	Contractor: Cascade Drilling Inc
Date Complete: 3/6/02	Drillers: Brian Gose
Total Boring Depth: 15.5'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom Top of Chips: 4'

Top of Sand Pack: 4'

Top of Screen: 4.5'

Bottom of Screen: 14.5'

Bottom of Well Cap: 15'2"

Bottom of Sand Pack: 15.3"

Bottom of Boring: 16.8'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement Mix

Amount Used: 65 lbs

Annular Seal Pure Gold

Type: ~~Medium bentonite chips~~

Amount Used: 50 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 200 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 0.0

Diameter: 2"

Backfill Material

Type: Native Amount: heave

Notes:

Casing/Joint Type - threaded

Permit # A6T748

PSC PHILIP SERVICES

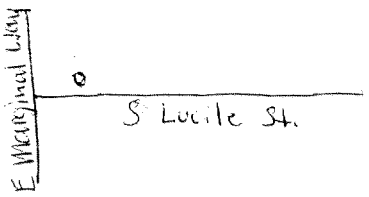
Monitoring Well Construction

Well ID: C6-143-40

Facility: Georgetown

Date Start: 3/6/02	Contractor: Cascade Drilling Inc.
Date Complete: 3/6/02	Drillers: Brian Bose
Total Boring Depth: 42	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: 2'

Top of Grout: NA

Bottom ~~Top~~ of Chips: 27'

Top of Sand Pack: 27'

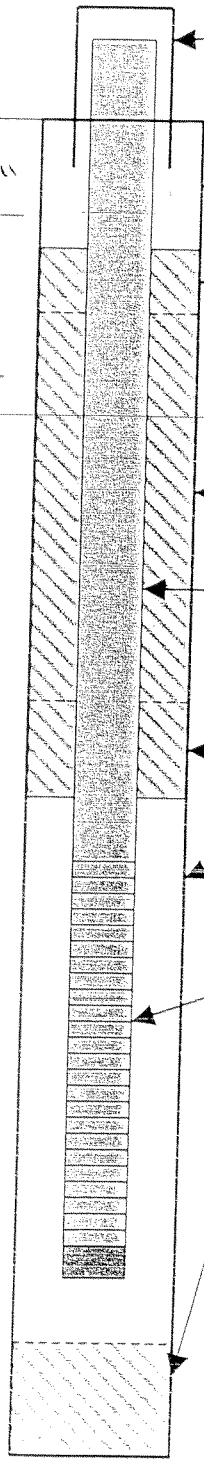
Top of Screen: 30'

Bottom of Screen: 40'

Bottom of Well Cap: 40' 8"

Bottom of Sand Pack: 41' 4"

Bottom of Boring: 42'



Steel Protective Surface Casing

Diameter: 8"

Length: 12"

~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal

Type: cement mix

Amount Used: 65 lbs

Annular Seal

Type: Medium bentonite chips

Amount Used: 500 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 8/12

Amount Used: 350 lbs

Screen

Type: PVC Schedule: 40

Slot Width: .20

Diameter: 2"

Backfill Material

Type: native Amount: cream

Notes:

Casing/Joint type - threaded

Permit # AGT 749

PSC PHILIP SERVICES

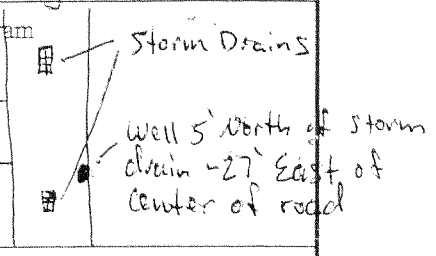
Monitoring Well Construction

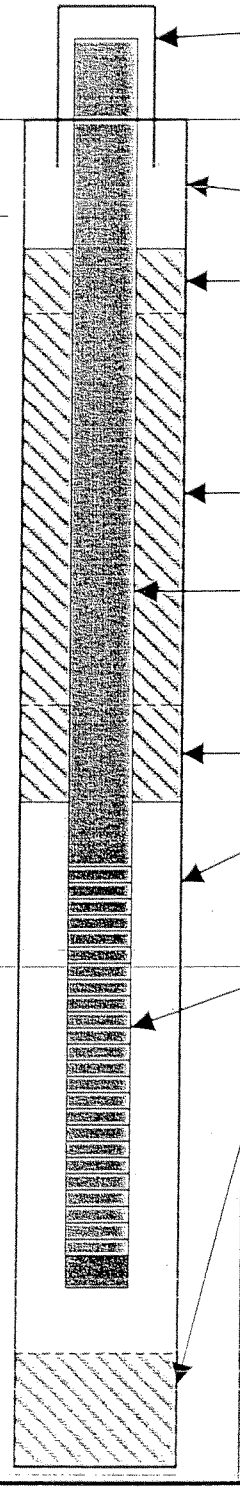
Well ID: C6-144-35

Facility: Georgetown

Date Start: 5/8/02	Contractor: Cascade Drilling Inc.
Date Complete: 5/8/02	Drillers: Brian Gose
Total Boring Depth: 37'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram





DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 2'

Top of Chips: ~~2~~ 2'

Top of Grout: NA

Top of Chips: 23' (bottom)

Top of Sand Pack: 23'

Top of Screen: 25'

Bottom of Screen: 35'

Bottom of Well Cap: 35' 8"

Bottom of Sand Pack: 36' 2"

Bottom of Boring: 37'

Steel Protective Surface Casing
Diameter: 8"
Length: 12"
~~Flush~~ or Stand-Up (w/bollard posts)

Surface Seal
Type: Pac mix Cement mix
Amount Used: 80 lbs

Annular Seal Pure Gold
Type: medium bentonite chips
Amount Used: 300 lbs

Riser Casing
Type: PVC Schedule: 40
Diameter: 2"

Well Packing Material
Type: Colorado #: 10/20
Amount Used: 350 lbs

Screen
Type: PVC Schedule: 40
Slot Width: 010
Diameter: 2"

Backfill Material
Type: native Amount: NA

Notes:

Casing/Joint type - Threaded

Permit #HB 184

PSC PHILIP SERVICES

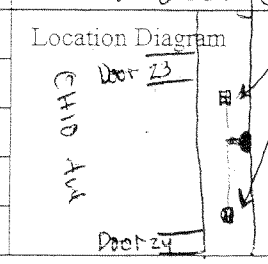
Monitoring Well Construction

Well ID: CE-145-35

Facility: Georgetown

Date Start: 5/8/02	Contractor: Cascade Drilling Inc.
Date Complete: 5/8/02	Drillers: Brian Gose
Total Boring Depth: 37'	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: Corey Johnson
	Well Diameter: 2"

Location Diagram



DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: 11"

Top of Annular Seal: 3'

Top of Chips: 3'

Top of Grout: N/A

~~Top~~ bottom of Chips: 23'

Top of Sand Pack: 23'

Top of Screen: 25'

Bottom of Screen: 35'

Bottom of Well Cap: 35' 8"

Bottom of Sand Pack: 36' 2"

Bottom of Boring: 37'

Steel Protective Surface Casing

Diameter: 8"

Length: 12"

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Pac mix concrete mix

Amount Used:

Annular Seal

Type: Pure Gold 4 medium bentonite chips

Amount Used: 300 lbs

Riser Casing

Type: PVC Schedule: 40

Diameter: 2"

Well Packing Material

Type: Colorado #: 10/20

Amount Used: 400 lbs

Screen

Type: PVC Schedule: 40

Slot Width: 010

Diameter: 2"

Backfill Material

Type: Native Amount: NA

Notes:

Joint/casing type - Threaded

Permit # AHB 183

PHILIP SERVICES

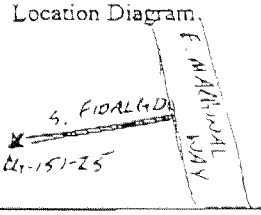
Typical Monitoring Well Construction

CG-151-25

Well ID: Shallow & Intermediate Wells

Facility: Georgetown

Date Start: 7/25/03	Contractor: CASCADE
Date Complete: 7/25/03	Drillers: BRIAN
Total Boring Depth: 25.5	Drill Rig: CME 75
Borehole Diameter: 8"	Geologist: GREG LISH
	Well Diameter: 2-inch

Location Diagram: 

DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing: —

Surface Seal: 1' minimum thickness

Top of Annular Seal: 2' bgs, minimum 2' above top of sand pack

Top of Sand Pack: minimum 6" above top of screen ~13.0' bgs

Top of Screen: 10' above the bottom of screen ~15.0' bgs

Bottom of Screen: Designated depth for each well

Bottom of Well Cap: 25.0' bgs

Bottom of Sand Pack: 6" below screen bottom

Bottom of Boring: ~25.5' bgs

Steel Protective Surface Casing

Diameter: 14" O.D.

Length: —

Flush or Stand-Up (w/bollard posts)

Surface Seal

Type: Cement

Annular Seal

Type: Medium Bentonite Chips and/or Grout

PURE GOLD MEDIUM CHIPS

Riser Casing

Type: PVC Schedule: 40

Diameter: 2-inch

Well Packing Material

Type: Sand #: Determined in field

1420 COLORADO SPRINGS PLANT

OGLE BAY NORTON

Screen

Type: PVC Schedule: 40

Slot Width: Determined in field

Diameter: 2-inch

Backfill Material

Type: Medium Bentonite Chips

Notes:

Not to scale.

All depths are estimates that may have to be altered due to field conditions.

Fig. 3-2

APPENDIX 4-B

STANDARD OPERATING PROCEDURES

Collection and Handling of Surface Soil Samples

Written By:	Approved By:	Date:	QA Concurrence:	Date:
Carolyn Mayer	Carolyn Mayer		Chris Minton	11/1/98

This SOP Contains 8 Sections:

1.0 Purpose
2.0 Application
3.0 References
4.0 Associated SOPs
5.0 Equipment
6.0 Procedure
7.0 Chain of Custody Forms and Sample Labels
8.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is provide a set of guidelines to filed sampling personnel responsible for the collection and handling of surface soil samples.

2.0 Application

This SOP provides step by step guidelines to be followed by field personnel responsible for the collection and handling of surface soil samples.

3.0 References

A Compendium of Superfund Field Operations Methods, Office of Emergency and Remedial Response, Office of Waste Programs Enforcement, U.S. Environmental Protection Agency, EPA/540/P-87/001, December 1987.

Refer to specific Survey Plans or Quality Assurance/Work Plans for the scope of work associated with individual surface soil sampling programs.

4.0 Associated SOPs

PSC-102
PSC-103
PSC-200
PSC-300
PSC-400
PSC-106

5.0 Equipment

The following equipment is required to perform the collection of sediment samples:

- stainless steel bowl and spoon
- stainless steel hand auger
- chemical resistant gloves;
- stainless steel knife
- position locationing equipment including, Brunton compass, stainless steel rods, wooden stakes, flagging, and a camera;
- decontamination equipment and supplies;

- coolers and duct tape to ship samples;
- bubble wrap, ziploc bags, and garbage bags to ship samples;
- all required documentation includine a sufficient supply of the appropriate field forms, field log books, a field sampling notebook, and chain of custody forms;
- a copy of the Field Operations Plan, including, at a minimum, the Field Sampling Plan, the Health and Safety Plan, and the Quality Assurance Plan; and

6.0 Procedure

6.1 Sampling Criteria

Surface soil samples will be collected from 0-4' below ground surface. All loose organic debris will be removed from the soil surface prior to sampling. Large stones are to be removed from the samples after the relative percent of the stones has been recorded.

All sampling equipment will be decontaminated prior to use following in the procedure outlined in SOP PSC-200.

Surface soil samples collected between 0-6" can be collected using a stainless steel spoon. Samples between 6" and 4' below ground surface should be collected using a stainless-steel hand auger.

All samples intended for volatile organic analyses will be collected as grab samples (i.e., directly from the sampling device). Soil for all other analyses will be homogenized in a stainless steel bowl. Distribution of the homogenized soil sample into the various sample bottles will not occur until a volume of soil sufficient to fill all bottles from the location has been collected.

Following collection and distribution, each sample container will be wiped dry and placed on ice in cooler for the remainder of the day's sampling activities.

The position of the sample location will be noted. All documentation regarding the sample collection will be made in the field notebook.

7.0 Chain of Custody Forms and Sample Labels

SOP PSC-400 describes in detail the procedures for filling out sample labels and the Chain of Custody documentation. Sample containers should be prelabeled if possible and the corresponding Chain of Custody Form will be completed before the samples are shipped to the analytical laboratory.

8.0 Measure of Proficiency

Field staff will demonstrate proficiency on this SOP by successfully completing Sections 6.0 and 7.0 a minimum of twice under the direct supervision of the Corrective Actions Manager or his/her designee.

Standard Penetration Tests and Split Spoon Sampling

Written By:	Approved By:	Date:	QA Concurrence:	Date:
Carolyn Mayer	Carolyn Mayer	7/1/98	Laurel Muselwhite	7/1/98

This SOP contains ten sections:

1.0 Purpose
1.0 Application
1.0 References
1.0 Associated SOPs
1.0 Equipment
1.0 Decontamination
1.0 Standard Penetration Test Procedures
1.0 Split Spoon Sampling Procedures
1.0 Documentation
1.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide geotechnical field personnel with an outline of the specific information needed to conduct and document standard penetration tests and split spoon sampling. The required equipment and field forms are also outlined for each of these procedures.

1.0 Application

This SOP provides a step-by-step guideline to be followed by the site geologist when obtaining split spoon samples during drilling operations.

1.0 References

None

1.0 Associated SOPs

PSC-101	PSC-200
PSC-102	PSC-300
PSC-104	PSC-400
PSC-106	PSC-202

1.0 Equipment

The following equipment is required to properly conduct split spoon sampling and standard penetration tests from soil borings:

- a 24 inch or 60 inch split spoon sampler, including sample traps;
- sample characterization equipment such as a Geological Society of America Rock-Color Chart (Munsell System), a 10x (minimum) hand lens, a rigid two foot ruler (accurate to a hundredth of a foot), the Unified Soil Classification System, and an organic vapor analyzer (e.g. a photoionization detector, HNU PI-101, or a flume ionization detector, OVA)
- a stainless steel bowl and scoop;
- sample bottles, including labels, and;
- all personal protective and decontamination equipment required in the project sampling plan and Standard Operating Procedure PSC-200 and PSC-202

1.0 Decontamination

All equipment which will come in contact with the subsurface and/or be used to acquire a sample will be decontaminated prior to arrival on site, between samples, and site exit. Standard Operating Procedure PSC-200 shall be followed.

1.0 Standard Penetration Test

Engineering and physical properties of soil may be of interest should site construction activities be planned. Soil types, bearing strength, compressibility, permeability, plasticity, and moisture content are some of the physical characteristics that may be determined on soil samples. The ASTM Standard Penetration Test (SPT) is an important component in identifying some of these characteristics (e.g., relative density,

compactness, and cohesiveness). The following procedure must be followed in order to conducted the SPT:

- Attach a decontaminated 24 inch split spoon sampler to the appropriate length of drill rods and gently lower the sampler to the bottom of the bore hole (the spoon should only be handled while wearing a clean pair of Latex gloves in order to reduce the risk of contamination). The spoon should be resting on undisturbed soil at the upper boundary of the soil interval to be sampled;

- mark 6 inch increments on the drill rod upward from a rigid surface datum (e.g., ground surface or hollow stem auger drill casing), for a length of 24 inches;

- drive the split spoon into the soil using a certified 140 lb. Hammer dropped consistently from a height of 30 inches;

- count and record the number of blows struck by the hammer for each six inch increment of penetration;

- the test is completed when either the spoon has been driven 24 inches or when 100 blows are counted within a 6 inch increment before the complete 6 inch penetration of the increment has been obtained (refusal); and,

- if refusal occurs at anytime during the test, record the number of blows counted for each 6 inch increment penetrated prior to refusal, and then 100 blows per the amount of penetration (to the nearest hundredth of a foot) attained during the final increment.

In situations where the weight of the drill rods (w/r) or the weight of the hammer and drill rods together (w/h) is sufficient to drive the split spoon into soil without inflicting blows from the hammer, this should be recorded on the Soil Boring Logs as "w/r" or "w/h" for each applicable 6 inch increment.

1.0 Split Spoon Sampling Procedure

Subsurface soil samples are collected in order to accurately characterize local stratigraphic compositions and interfaces.

The following procedures for retrieving and logging a subsurface soil sample via split spoon sampling shall be followed:

- 24 inch split spoon soil samples will be collected at ground surface and at 5.0 foot intervals, unless otherwise indicated in the Sampling Plan;

- the SPT will be conducted for each sample and the blows recorded on the geologic sample label and on the Soil Boring Logs;

- upon completion of the SPT, the split spoon is brought to the surface and removed from the drill rods;

- the split spoon sample will be opened and immediately screened for organic vapors by the site geologist using a calibrated photo or flame ionization detector (PSC-300). Organic vapor measurements are made by placing the instrument probe approximately 1.5 inches from the sample core and slowly passing the probe over the length of the sample;

- record the highest reading obtained, and the position of that reading along the length (depth) of the spoon in both the field notebook and on the Soil Boring Logs;

Standard Penetration Tests and Split Spoon Sampling

Written By:	Approved By:	Date:	QA Concurrence:	Date:
Carolyn Mayer	Carolyn Mayer	7/1/98	Laurel Muselwhite	7/1/98

This SOP contains ten sections:

1.0 Purpose
1.0 Application
1.0 References
1.0 Associated SOPs
1.0 Equipment
1.0 Decontamination
1.0 Standard Penetration Test Procedures
1.0 Split Spoon Sampling Procedures
1.0 Documentation
1.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide geotechnical field personnel with an outline of the specific information needed to conduct and document standard penetration tests and split spoon sampling. The required equipment and field forms are also outlined for each of these procedures.

1.0 Application

This SOP provides a step-by-step guideline to be followed by the site geologist when obtaining split spoon samples during drilling operations.

1.0 References

None

1.0 Associated SOPs

PSC-101	PSC-200
PSC-102	PSC-300
PSC-104	PSC-400
PSC-106	PSC-202

1.0 Equipment

The following equipment is required to properly conduct split spoon sampling and standard penetration tests from soil borings:

- a 24 inch or 60 inch split spoon sampler, including sample traps;
- sample characterization equipment such as a Geological Society of America Rock-Color Chart (Munsell System), a 10x (minimum) hand lens, a rigid two foot ruler (accurate to a hundredth of a foot), the Unified Soil Classification System, and an organic vapor analyzer (e.g. a photoionization detector, HNU PI-101, or a flume ionization detector, OVA)
- a stainless steel bowl and scoop;
- sample bottles, including labels, and;
- all personal protective and decontamination equipment required in the project sampling plan and Standard Operating Procedure PSC-200 and PSC-202

1.0 Decontamination

All equipment which will come in contact with the subsurface and/or be used to acquire a sample will be decontaminated prior to arrival on site, between samples, and site exit. Standard Operating Procedure PSC-200 shall be followed.

1.0 Standard Penetration Test

Engineering and physical properties of soil may be of interest should site construction activities be planned. Soil types, bearing strength, compressibility, permeability, plasticity, and moisture content are some of the physical characteristics that may be determined on soil samples. The ASTM Standard Penetration Test (SPT) is an important component in identifying some of these characteristics (e.g., relative density,

compactness, and cohesiveness). The following procedure must be followed in order to conducted the SPT:

- Attach a decontaminated 24 inch split spoon sampler to the appropriate length of drill rods and gently lower the sampler to the bottom of the bore hole (the spoon should only be handled while wearing a clean pair of Latex gloves in order to reduce the risk of contamination). The spoon should be resting on undisturbed soil at the upper boundary of the soil interval to be sampled;

- mark 6 inch increments on the drill rod upward from a rigid surface datum (e.g., ground surface or hollow stem auger drill casing), for a length of 24 inches;

- drive the split spoon into the soil using a certified 140 lb. Hammer dropped consistently from a height of 30 inches;

- count and record the number of blows struck by the hammer for each six inch increment of penetration;

- the test is completed when either the spoon has been driven 24 inches or when 100 blows are counted within a 6 inch increment before the complete 6 inch penetration of the increment has been obtained (refusal); and,

- if refusal occurs at anytime during the test, record the number of blows counted for each 6 inch increment penetrated prior to refusal, and then 100 blows per the amount of penetration (to the nearest hundredth of a foot) attained during the final increment.

In situations where the weight of the drill rods (w/r) or the weight of the hammer and drill rods together (w/h) is sufficient to drive the split spoon into soil without inflicting blows from the hammer, this should be recorded on the Soil Boring Logs as "w/r" or "w/h" for each applicable 6 inch increment.

1.0 Split Spoon Sampling Procedure

Subsurface soil samples are collected in order to accurately characterize local stratigraphic compositions and interfaces.

The following procedures for retrieving and logging a subsurface soil sample via split spoon sampling shall be followed:

- 24 inch split spoon soil samples will be collected at ground surface and at 5.0 foot intervals, unless otherwise indicated in the Sampling Plan;

- the SPT will be conducted for each sample and the blows recorded on the geologic sample label and on the Soil Boring Logs;

- upon completion of the SPT, the split spoon is brought to the surface and removed from the drill rods;

- the split spoon sample will be opened and immediately screened for organic vapors by the site geologist using a calibrated photo or flame ionization detector (PSC-300). Organic vapor measurements are made by placing the instrument probe approximately 1.5 inches from the sample core and slowly passing the probe over the length of the sample;

- record the highest reading obtained, and the position of that reading along the length (depth) of the spoon in both the field notebook and on the Soil Boring Logs;

Groundwater Monitoring Well Installation

Written By:	Approved By:	Date:	QA Concurrence:	Date:
Carolyn Mayer	Carolyn Mayer	7/1/98	Laurel Muselwhite	7/1/98

This SOP contains nine sections:

1.0 Purpose
1.0 Application
1.0 References
1.0 Associated SOPs
1.0 Installation Equipment and Materials
1.0 Monitoring Well Installation Procedure
1.0 Standard Surface Finishing Designs
1.0 Documentation
1.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide geotechnical field personnel with an outline of the specific information needed to install and construct monitoring wells in both unconsolidated and bedrock media. The required equipment and documentation are also outlined for each of these procedures. The recommended monitoring well design, as presented in this SOP, is based on the assumption that the objective of the program is to obtain representative ground water information and water quality samples from aquifers.

1.0 Application

Ground water monitoring wells are generally used as collection points for ground water samples and as measuring points for aquifer hydraulic properties.

This SOP provides a step-by-step guideline to be followed by the site geologist to design and install monitoring wells suited to these purposes.

1.0 References

ASTM Proposed Recommended Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers (February 19, 1990).

U.S. EPA, Office of Solid Waste. 1992. RCRA Ground-Water Monitoring Draft Technical Guidance. November.

Driscoll, Fletcher G. 1986. Groundwater and Wells. Second Edition. Published by Johnson Filtration Systems, Inc., St. Paul Minnesota.

1.0 Associated SOPs

PSC-103
PSC-121
PSC-400

1.0 Installation Equipment and Materials

The following equipment should be provided and maintained by the site geologist:

- a calibrated photoionization detector; isobutylene span gas, regulator, and tedlar bag;
- a weighted fiberglass tape calibrated to .001 foot and of sufficient length to reach the bottom of the deepest bore hole;
- a wooden folding ruler calibrated to a .001 foot;
- an electric water level indicator, immiscible phase probe or chalked steel tape for obtaining water level measurement to an accuracy of .001 foot;
- a field notebook and calculator.
- a camera;

- a small file or saw to permanently mark a double notch at the top of the well casing/riser;
- permanent marker or paint pen to mark the identification of the well on the steel pipe finish;
- a sufficient supply of blank daily drilling reports and monitoring well construction field forms;
- a copy of the Field Operations Plan including, at a minimum, the Field Sampling Plan, the Health and Safety Plan and the Quality Assurance Project Plan
- all required personnel protective equipment as defined in the Health and Safety Plan;
- a sufficient amount of deionized water to hydrate the bentonite.
- A brass or hardened-steel security lock.

The drilling contractor is responsible for providing the following:

- well screen and riser components with flush joints with square profile threads to obtain water tight seals;
- machine slotted well screens (0.010 size);
- bentonite pellets or chips;
- "quick-set" additive (if necessary when cold weather conditions);
- filter sand;
- a steam cleaner;
- cement grout, mixer, tremie pipe;
- the project specific required surface finishing materials; and
- all required personnel protective equipment as defined in the Health and Safety Plan.

6.0 Monitoring Well Installation Procedure

Once a stable bore hole has been advanced to the desired depth in accordance with Standard Operating Procedure PSC-103, the installation of a well screen and riser will proceed as follows:

Materials Inspection and Cleaning

- decontaminate both inside and outside of the well screen, bottom plug and riser immediately prior to assembly and installation, using a water source of known chemistry and a mild non-phosphate detergent then rinse with deionized water; store decontaminated riser and screen in an area free of contaminants and cover with plastic sheeting;

- inspect all materials prior to assembly to insure material integrity.

Bore Hole Preparation

- if viscous drilling fluids were introduced to the borehole, then the borehole should be flushed with clean water of known chemistry. This is done to remove all viscous drill fluids from the bore hole which could prevent proper setting of well construction materials;

- record the volume of water introduce into the bore hole and recovered from the bore hole during flushing. The difference in there two volumes requires recovery during well development in addition to the calculated well volume to be removed PSC-121.

- check the total depth of the bore hole using a weighted fiberglass tape and a constant datum such as the ground surface. Bore holes that are partially obstructed by caved or blow-in sediments should be cleared in accordance with Standard Operating Procedure PSC-103 prior to initiating well installation;

- a 1.0 foot thick base layer of filter san should be placed at the base of the bore hole using a decontaminated, flush threaded, one inch internal diameter (minimum) tremie pipe. Alternatively, the filter sand may be added directly between the rise pipe and the auger or casing. Verify the depth of the top of the sand base;

Monitoring Well Pre-assembly

- pre-cut the uppermost section of the well riser so that when the well is in place, the top of the well riser will be approximately 4 to 6 inches below the ground surface for flush finished wells, or 3.0 feet above the ground surface for wells designed with a standpipe finish;

- permanently identify the survey and measuring point on the upper rim of the well riser by cutting a double notch into the rim (Figure 1);

Monitoring Well Installation

- quickly assemble the well within the bore hole by adding sections to the top of the column until the screened section is set at the desired depth. Care should be taken to prevent any materials from entering the well during down hole assembly;

- use of a geosock to prevent fines from entering the well should be discussed on an individual basis per project. If used, slip it on over the screened interval as the well is being assembled.

- cap the well riser to prevent materials from entering the well during construction;

- begin placing the chemically inert filter pack within the annular space surrounding the well screen while simultaneously removing the augers or casing;

- the filter pack should be added slowly in order to prevent bridging of the sand between the riser and the borehole or auger; when adding filter pack below the water table or to a deep well, a tremie pipe should be used;

- add the filter sand until it extends no more than 2.0 feet inside the auger or casing, then pull the casing upward allowing the filter sand to flow from the bottom, filling the resultant annular space. Frequent depth measurements should be taken using a weighted tape to verify the effectiveness of this procedure. The augers or casings should not be extracted in greater than 2.0 foot increments to minimize the potential for native sediments to cave or slump into the annular space;

- continue placing the filter pack until it extends above the screen for a distance equal to approximately 20% of the total screened interval, but not less than 2.0 feet above the top of the screen. Where there is a hydraulic connection between the zone to be monitored and the overlying strata, this upward extension of the filter pack should be minimized, subject to the construction described above, to prevent seepage from upper zones which may result in less than representative sampling;

- it is optional to place a secondary, finer filter pack directly above the first to prevent intrusion of the bentonite seal into the primary filter pack. This filter pack should be designed with a vertical thickness ranging between 0.5 and 2.0 feet. As with the primary filter pack, the secondary filter must not extend into an overlying hydrologic unit. The need for this filter pack should consider the gradation of the primary filter pack, the hydraulic heads between adjacent units, and the potential for grout intrusion into the primary filter pack;

- place an annular sealant seal directly above the filter pack(s) while continuing to remove the augers or casing in 2.0 foot increments. This seal consisting of bentonite pellets or chips, should extend a minimum of 3.0 feet above the top of the filter pack. Frequent depth measurements should be taken using a weighted tape to verify the efficiency of this procedure.

- pour water of a known chemistry over the bentonite pellets or ships if the seal is located in the vadose (unsaturated) zone (i.e., above the water table) to hydrate the bentonite. Record the amount of water added during this procedure for corrected well water removal during well development (PSC-121).

- fill the remaining annular space with a bentonite grount slurry continuing to remove the augers or casing in two foot increments. The slurry should extend to approximately 5.0 to 6.0 feet below ground surface and all augers or casing should be withdrawn. Allow 24 hours to settle and set;

- top-off the grouted column to 5.0 to 6.0 feet below the ground surface and allow to set overnight.

6.0 Standard Surface Finishing Designs

The following defined our standard "flush mount" and "stand pipe" monitoring well finishing procedures:

7.1 Standard Flush Mount Finish

This finishing design (Figure 2) is used when monitoring wells are installed in high traffic areas or other areas where a low profile design is needed. Flush mount wells are less preferable than stand pipe wells because there is a greater chance of surface water entering a flush mount well. The standard flush mount finish is constructed as follows:

- add filter sand to the annular space above the grouted column to a depth of approximately 3.5 feet below ground surface;

- center a 4.0 foot length of 4 or 5 inch diameter steel casing, with locking steel cap into the bore hole. This casing should be placed so that the locking lid rests approximately 2 inches above the top of the capped well riser, and is seated a minimum of 6 inches into the filter sand;

- place a bentonite seal using water of known chemistry;

- place filter sand in the annular space between the well riser and the steel casing to a depth of 1.0 foot below ground surface;

- center a 13 inch diameter, aluminum cast, manhole-type cover equipped with a water tight gasket and a 1.0 foot aluminum vertical extension, over the locking steel casing. The top of the aluminum cover should be approximately a ¼ inch above the ground surface;

- add grout to the excavated area, allowing the grout to flow into the annular spacing surrounding the steel casing. Fill the excavation evenly to a depth of approximately 8 inches below the ground surface and allow to settle and set (to shorten the setting time, the use of adding "quick-set" to the grout is acceptable). The bottom few inches of the aluminum cover should be seated in the cement;

- add cement to the excavated area surrounding the aluminum cover until the cement is flush with the ground surface. Gently grade and smooth the cement from the edge to the cover, so that runoff is away from the well and allow to set;

- permanently identify the well by labeling the cement pad, aluminum cover and lid to the locking steel casing; and

- secure well with an approved brass or hardened-steel lock.

7.2 Standard Stand Pipe Finish

This finishing design (Figure 3) is used when the flush finish design is not needed. The standard stand pipe finish is constructed as follows:

- add filter sand to the annular space above the grouted column to a depth of approximately 1.5 feet below ground surface;

- center a 5.0 foot length of 4 or 5 inch inside diameter steel casing, with locking steel cap into the bore hole. This casing should be placed so that the locking lid rests approximately 2 inches above the top of the capped well riser, and is seated a minimum of 6 inches into filter sand;

- place filter sand in the annular space between the well riser and the steel casing to ground surface;

- excavate a 2.5 foot square which measures approximately 6 inches deep around the edges and grades deeper with depth at a slope of approximately 45° toward the bore hole. Take care to minimize the deposition of soil into the annular space outside the steel casing;

- using 2' x 6' lumber, construct a 3.0 foot square wooden frame and insert the frame into the excavation. Situate the frame so that all edges are flush with the ground surface;

- place three 3.0 foot long steel bumper guards in the excavation to protect the stand pipe from damage resultant from vehicular traffic on the line;

- add cement to the excavated area, allowing the cement to flow into the annular spacing surrounding the steel casing, until the cement is flush with the ground surface. Gently grade and smooth the cement from the edge to the casing, so the runoff is away from the well, and allow to set (to shorten the setting tiem, the sue of adding "quick-set" to the cement is acceptable under cold weather conditions);

- permanently identify the well by labeling the cement pad, stand pipe and lid to the locking steel casing; and,

- secure well with an approved brass or hardened-steel lock and record key number in field log book.

8.0 Documentation

Documentation of all monitoring well installation activities including all geotechnical forms and the maintenance of a detailed field notebook will be recorded in accordance with Standard Operating Procedure PSC-400.

9.0 Measure of Proficiency

Field staff will demonstrate proficiency on this SOP by successfully completing Sections 6.0, 7.0 and 8.0 a minimum of twice under the direct supervision of the Corrective Actions Manager or a designee.

Soil Gas Monitoring Location Installation

Written By:	Approved By:	Date:	QA Concurrence:	Date:
Carolyn Mayer	Kevin McNeill	October 31, 2000	Kevin McNeill	October 31, 2000

This SOP contains nine sections:

1.0 Purpose
2.0 Application
3.0 References
4.0 Associated SOPs
5.0 Installation Equipment and Materials
6.0 Installation Procedure
7.0 Standard Surface Finishing Designs
8.0 Documentation
9.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide field personnel with an outline of the specific information needed to install and construct permanent soil gas monitoring locations in unconsolidated media. The required equipment and documentation are also outlined for this procedure. The recommended soil gas monitoring location design, as presented in this SOP, is based on the assumption that soil gas samples should be representative of chemicals that may volatilize from the uppermost aquifer into the vadose zone.

2.0 Application

Soil gas monitoring locations are generally used as collection points for soil gas samples.

This SOP provides a step-by-step guideline to be followed by the site geologist to design and install soil gas monitoring locations suited to these purposes.

3.0 References

USEPA, Center for Environmental Research Information, Office of Research and Development. Compendium of Methods for Determination of Toxic Organic Compounds in Ambient Air, Second Edition, Compendium Method To-14A, Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters with Subsequent Analysis by Gas Chromatography. January 1999.

ASTM Proposed Recommended Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers (February 19, 1990).

4.0 Associated SOPs

PSC-126
PSC-400

5.0 Installation Equipment and Materials

The following equipment should be provided and maintained by the site geologist:

- a calibrated photoionization detector; span gas, and regulator;
- a weighted fiberglass tape calibrated to 0.01 foot and of sufficient length to reach the bottom of the deepest bore hole;
- a field notebook and field forms,
- a camera;
- permanent marker, paint pen, or tap kit to mark the identification of the port on the steel pipe finish;
- a copy of the Field Operations Plan including, which may include, the Field Sampling Plan, the Health and Safety Plan and the Quality Assurance Project Plan
- all required personnel protective equipment as defined in the Health and Safety Plan;
- a sufficient amount of water to hydrate the bentonite.
- A soil gas valve with appropriate fittings.

- A locking cap or surface cover.

The drilling contractor is responsible for providing the following:

- Stainless steel well screen and riser components with flush joints with square profile threads to obtain water tight seals;
- machine slotted screens (0.020" size);
- bentonite pellets or chips;
- "quick-set" additive (if necessary when cold weather conditions);
- filter sand;
- a steam cleaner;
- cement grout, mixer, tremie pipe;
- the project specific required surface finishing materials; and
- all required personnel protective equipment.

6.0 Soil Gas Monitoring Location Installation Procedure

Once a stable borehole has been advanced to the desired depth, installation of the screen and riser will proceed as follows:

Materials Inspection and Cleaning

- decontaminate both inside and outside of the screen, bottom plug and riser immediately prior to assembly and installation, using a water source of known chemistry and a mild non-phosphate detergent then rinse with water; store decontaminated riser and screen in an area free of contaminants and cover with plastic sheeting;
- inspect all materials prior to assembly to insure material integrity.

Bore Hole Preparation

- check the total depth of the borehole using a weighted fiberglass tape and a constant datum such as the ground surface. Bore holes that are partially obstructed by caved or blow-in sediments should be cleared prior to initiating well installation;

- a minimum 3" thick base layer of filter sand should be placed at the base of the borehole using a decontaminated, flush threaded, tremie pipe. Verify the depth of the top of the sand base;

Soil Gas Monitoring Well Pre-assembly

- the well screen should be 6" in length. The bottom of the screen will be sealed with a cap.

- pre-cut the uppermost section of the riser so that when the riser is in place, the top of the riser will be approximately 4 to 6 inches below the ground surface for flush finished monitoring ports, or 3.0 feet above the ground surface for monitoring ports designed with a standpipe finish;

Soil Gas Monitoring Well Installation

- assemble the soil gas port sections prior to placing in the borehole. Insert the port until the screen is set at the desired elevation.

- cap the riser to prevent materials from entering the port during construction;

- begin placing the chemically inert filter sand pack within the annular space surrounding the screen while simultaneously removing the augers or casing;

- the filter pack should be added slowly in order to prevent bridging of the sand between the riser and the borehole or auger;

- add the filter sand until it extends no more than 1.0 feet inside the auger or casing, then pull the casing upward allowing the filter sand to flow from the bottom, filling the resultant annular space. Frequent depth measurements should be taken using a weighted tape to verify the effectiveness of this procedure. The augers or casings should not be extracted in greater than 2.0 foot increments to minimize the potential for native sediments to cave or slump into the annular space;

- continue placing the filter pack until it extends above the screen for a distance equal to 3" above the top of the screen;

- place an annular sealant seal directly above the filter pack(s) while continuing to remove the augers or casing in 2.0 foot increments. This seal consisting of bentonite pellets or chips, should extend a minimum of 1.0 to 3.0 feet above the top of the filter pack. Frequent depth measurements should be taken using a weighted tape to verify the efficiency of this procedure.

- pour water of a known chemistry over the bentonite pellets or chips to hydrate the bentonite.

- fill the remaining annular space with bentonite grout slurry continuing to remove the augers or casing in two foot increments;

- top the annular space off with a minimum of 6" of concrete, which will hold the well casing in place.

- once the concrete has set, connect the stainless steel valve to the riser and tighten to ensure an airtight connection.

7.0 Standard Surface Finishing Designs

The following define the standard "flush mount" and "stand pipe" monitoring location finishing procedures:

7.1 Standard Flush Mount Finish

This finishing design is used when monitoring ports are installed in high traffic areas or other areas where a low profile design is needed. Flush mount ports are less preferable than stand pipe ports because there is a greater chance of surface water entering a flush mount port. The standard flush mount finish is constructed as follows:

- add grout to a depth of approximately 1 foot below ground surface;

- center a 1.0 foot length of an 8" – 12" inch diameter locking steel manhole-type cover equipped with a water tight gasket into the bore hole. This cover should be placed so that the locking lid rests approximately 4 inches above the top of the capped riser, and is seated a minimum of 6 inches into the grout. The top of the cover should be approximately a ¼ inch above the ground surface.

- add grout to the excavated area, allowing the grout to flow into the annular spacing surrounding the steel casing. Fill the excavation evenly to a depth of approximately 8 inches below the ground surface and allow to settle and set (to shorten the setting

time, the use of adding "quick-set" to the grout is acceptable). The bottom few inches of the cover should be seated in the cement;

- add cement to the excavated area surrounding the aluminum cover until the cement is flush with the ground surface. Gently grade and smooth the cement from the edge to the cover, so that runoff is away from the riser and allow to set;

- permanently identify the port by labeling the cement pad, aluminum cover and lid to the locking steel casing; and

- secure port with a lock or specialty bolts.

7.2 Standard Stand Pipe Finish

This finishing design is used when the flush finish design is not needed. The standard stand pipe finish is constructed as follows:

- add grout to a depth of approximately 1.5 feet below ground surface;

- center a 5.0 foot length of 4 or 5 inch inside diameter steel casing, with locking steel cap into the bore hole. This casing should be placed so that the locking lid rests approximately 2 inches above the top of the capped riser, and is seated a minimum of 6 inches into filter sand;

- place filter sand in the annular space between the riser and the steel casing to ground surface;

- excavate a 2.5 foot square, which measures approximately 6 inches deep around the edges and grades deeper with depth at a slope of approximately 45° toward the bore hole. Take care to minimize the deposition of soil into the annular space outside the steel casing;

- using 2' x 6' lumber, construct a 3.0 foot square wooden frame and insert the frame into the excavation. Situate the frame so that all edges are flush with the ground surface;

- place three 3.0 foot long steel bumper guards in the excavation to protect the stand pipe from damage resultant from vehicular traffic on the line;

- add cement to the excavated area, allowing the cement to flow into the annular spacing surrounding the steel casing, until the cement is flush with the ground surface. Gently grade and smooth the cement from the edge to the casing, so the

runoff is away from the riser, and allow to set (to shorten the setting time, the sue of adding "quick-set" to the cement is acceptable under cold weather conditions);

- permanently identify the port by labeling the cement pad, stand pipe and lid to the locking steel casing; and,

- secure location with an approved brass or hardened-steel lock and record key number in field log book.

8.0 Documentation

Documentation of all soil gas monitoring location installation activities including all geotechnical forms and the maintenance of a detailed field notebook will be recorded in accordance with Standard Operating Procedure PSC-400.

9.0 Measure of Proficiency

Field staff will demonstrate proficiency on this SOP by successfully completing Sections 6.0, 7.0 and 8.0 a minimum of twice under the direct supervision of the Corrective Actions Manager or a designee.

Measuring Water and NAPL Elevations, and Total Depths

SOP No. PSC-120

Origination Date: 4/28/98
Revision No. 3 10/29/02

Written By:	Approved By:	Date:	QA Concurrence:	Date:
Joe Depner Joe Depner	Carolyn Mayer Carolyn Mayer	11/1/02	Tasya Gray Tasya Gray Lou La Rosa Lou La Rosa	11/1/02 11·1·02

This standard operating procedure (SOP) contains the following sections:

1. Purpose
2. Application
3. References
4. Associated SOPs
5. Terminology
6. Equipment and Supplies
7. Procedures
   - 7.1 Simultaneity of Measurements
   - 7.2 Order of Completion
     - 7.2.1 Special Instructions for Wells with Dedicated Pumps
   - 7.3 Pre-Measurement Procedures
   - 7.4 General Measurement Procedures
   - 7.5 Measuring LNAPL Levels
   - 7.6 Measuring Water Levels
     - 7.6.1 Measuring Water Levels Using an Electric Oil/Water Interface Detector
     - 7.6.2 Measuring Water Levels Using an Electric Water-Level Indicator
   - 7.7 Measuring DNAPL Levels
   - 7.8 Measuring Well Total Depths
   - 7.9 Post-Measurement Procedures
8. Decontamination
9. Documentation
10. Measure of Proficiency

1 Purpose

The purpose of this SOP is to provide personnel with the specific information needed to collect and document consistent and representative data on liquid levels at, and total depths of, monitoring wells and piezometers.

2 Application

This SOP shall be followed by all personnel who measure liquid levels at, and total depths of, monitoring wells and piezometers at the following PSC facilities in Washington state: Seattle (Georgetown), Kent, Tacoma, Washougal.

3 References

Yeskis, D. and B. Zavala. May 2002. Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers. EPA Office of Solid Waste and Emergency Response. EPA 542-S-02-001.

U.S. EPA. Nov 1992. RCRA Groundwater Monitoring: Draft Technical Guidance. Office of Solid Waste. EPA/530-R-93-001.

4 Associated SOPs

PSC-124 – Low-Flow Groundwater Sampling Procedure
PSC-200 – Equipment Decontamination Procedure
PSC-300 – Photoionization Detector Calibration and Operation
PSC-400 – Documentation Procedures

5 Terminology

The following terminology is used in this SOP:

"NAPL" means nonaqueous-phase liquid. "DNAPL" and "LNAPL" mean dense and light NAPL (described below), respectively.

"Wells" means groundwater-monitoring wells and piezometers.

"Liquid levels" means the elevations of fluid interfaces in wells. These include the following:

The "LNAPL level" is the elevation of the air/LNAPL interface, if floating LNAPL is present.

The "water level" is either (1) the elevation of the air/water interface if LNAPL is absent, or (2) the elevation of the LNAPL/water interface if LNAPL is present.

The "DNAPL level" is the elevation of the water/DNAPL interface, if DNAPL is present.

The level is measured as the depth of the interface, from the well's measuring point (MP).

6 Equipment and Supplies

The following equipment and supplies are necessary to properly measure liquid levels and total depths:

- Equipment required to open the well monuments (e.g., padlock keys, well keys, hand drill, socket set, Allen wrenches or other tools).
- A photoionization detector (PID) or similar instrument to monitor the well headspace.
- An electric water-level indicator and/or an electric oil/water interface detector. Each such instrument must have a chemically inert suspension line that is graduated in 0.01-foot increments and sufficiently long to reach the bottom of the well.
- Fully charged batteries for each battery-powered instrument.
- An accurate and reliable watch that has been properly set.
- Documentation materials as described in SOP PSC-400.
- Health-and-safety equipment and supplies (e.g., personal protective equipment [PPE]) as described in the relevant site health-and-safety plan (HSP).
- Decontamination equipment and supplies as specified in SOP PSC-200.

Although not essential, the following items are useful for verifying the correctness of field measurements:

- A construction (as-built) diagram for each well, showing the well's total depth and its screened interval.
- A table or graph (e.g., a well hydrograph) of field measurement results (liquid levels, total depth) from previous monitoring events, for each well.

7 Procedures

7.1 Simultaneity of Measurements

If liquid-level measurements are to be completed at a group of wells at a site, then complete the entire set of measurements for the group within a single business day. In addition, if any of the wells at a site are screened in tide-influenced hydrogeologic units, then complete the set of measurements corresponding to those wells within a single one-hour period. To facilitate compliance with this requirement, the water-level field form for each site shall identify those wells screened in tide-influenced units.

7.2 Order of Completion

At each well, complete the liquid-level and total-depth measurements in the following order:

1. LNAPL level
2. water level
3. DNAPL level
4. total depth

7.2.1 Special Instructions for Wells with Dedicated Pumps

The instrument access ports on some dedicated pumps will not accommodate some probes (e.g., most oil/water interface probes). If so, the pump must be removed from the well to measure the DNAPL level and the total depth. At wells with dedicated pumps, complete the measurements in the following order:

1. Measure the water level.
2. Remove the pump from the well and place it in a clean plastic bag.
3. Allow the liquid levels to stabilize.
4. Measure the DNAPL level.
5. Measure the total depth.

7.3 Pre-Measurement Procedures

On arrival at each well, complete the following steps in the order listed:

1. Don appropriate PPE as described in the site HSP.
2. Remove any debris (e.g., soil, vegetation, or refuse) and any standing water from the well opening, to prevent foreign matter from entering the well.
3. Open the well monument.
4. Vent the well by carefully removing the well cap. Record the time at which the well is initially vented to the atmosphere (i.e., the time at which the well cap is removed). If the gas in the well casing appears to have been over-pressurized or under-pressurized relative to the atmosphere, then note this in the field book.

Caution (1): Never put your face, head, or any other body part over the well when venting it. If possible, vent the well gradually, so the cap does not become airborne.

Caution (2): Handle monitoring wells with care at all times. If it is necessary to apply lift or torque to a well cap to remove it (e.g., if the casing is airtight and under a vacuum), then be extremely careful to prevent the well casing from being raised or rotated.

5. Immediately after removing the well cap, monitor the headspace within the well using the PID (see SOP PSC-300 for PID operation). Do this by placing the instrument probe at the opening of the well, and recording the reading in the field book and on the appropriate field forms.

6. Wait at least 20 minutes from the time the well is vented, to allow the liquid levels in the well to equilibrate to the current atmospheric pressure, before measuring liquid levels. At some wells it may be necessary to vent for longer periods.

7.4 General Measurement Procedures

Each liquid level measurement involves lowering an instrument probe into the well, until the instrument emits the appropriate response, indicating the probe has reached the desired fluid interface in the well. Depending on the type (manufacturer and model) of instrument, the response may be audible (e.g., a tone is steadily or intermittently emitted), visible (e.g., an indicator light is steadily or intermittently illuminated), or both. Consult the instrument's operating manual for details. The probe is attached to the body of the instrument by a flexible suspension line consisting of a graduated "tape" or coaxial cable that sheathes an electric conductor. After lowering the probe to the appropriate level in the well (see below), hold the upper end of the graduated tape against the well's MP and read the numeric value off the tape. Record all of the measurements to the nearest 0.01 foot below the well's MP. If the MP is not clearly marked (typically by a notch cut into the top of the well riser), then measure all levels from the top of the north side of the riser or dedicated pump.

Duplicate each liquid-level and total-depth measurement in the field to ensure that the reading is accurate. Record all results (times, measured values, etc.) both in the field book and on the water-level field form.

7.5 Measuring LNAPL Levels

LNAPLs are NAPLs that are less dense than water. In the subsurface, free-phase LNAPL tends to accumulate on the water table. Free-phase LNAPL that enters a well tends to accumulate on the air/water interface. Some wells routinely contain LNAPL. Typically, the thicknesses of the LNAPL layers in such wells are measured at the same time the water levels are measured.

Use an oil/water interface detector for the measurement. Turn the detector on. Then slowly lower the probe into the well. In some cases a very thin (~ 0.01 foot) layer of LNAPL may accumulate on the air/water interface in the well, so the probe must be lowered very slowly if the

LNAPL layer is to be detected and accurately measured. The oil/water interface detector emits one type of response to indicate that the probe has contacted NAPL, and a different type of response to indicate that the probe has contacted water. First, lower the probe until the air/LNAPL interface is detected. Measure the depth to the interface. Record the result. Record "sheen" if the instrument detects an LNAPL layer whose thickness is less than 0.01 foot.

7.6 Measuring Water Levels

Measure water levels using either an oil/water interface detector or, if no LNAPL is present, using an electric water-level indicator.

7.6.1 Measuring Water Levels Using the Oil/Water Interface Detector

After measuring the depth to LNAPL in the well, and before retrieving the probe from the well, slowly lower the probe further into the well. When the LNAPL/water (or air/water) interface is detected, measure the depth to the interface. Record the result.

7.6.2 Measuring Water Levels Using the Electric Water-Level Indicator

Turn the water-level indicator on. Manually adjust the sensitivity to a medium level. Slowly lower the indicator probe into the well until the indicator emits a short audible tone, indicating the probe has contacted the air-water interface. Measure the depth to the interface. Record the result.

7.7 Measuring DNAPL Levels

DNAPLs are NAPLs that are denser than water. In the subsurface, free-phase DNAPL tends to sink below the water table. Free-phase DNAPL that enters a well tends to sink to the bottom of the well. DNAPL levels are measured at some wells at the same time that the water levels are measured. Use an oil/water interface detector to measure the DNAPL level as described below.

If the well does *not* have a dedicated pump, then after measuring the water level in the well, and before retrieving the probe from the well, slowly lower the probe further into the well. If the well *does* have a dedicated pump, then after the pump has been removed from the well and the liquid levels in the well have been allowed to stabilize, slowly lower the probe into the well.

When (if) the water/DNAPL interface is detected, measure the depth to the interface. Record the result.

7.8 Measuring Well Total Depths

For measuring well total depths, complete the following steps in the order listed:

1. Lower the instrument (water-level indicator or oil/water interface detector) probe to the bottom of the well to measure the well's total depth.

2. Gently bounce the probe on the well bottom to determine when the probe is at the bottom of the well, and take up the slack on the suspension line.

3. Measure the total depth. Record the result.

7.9 Post-Measurement Procedures

After all of the measurements have been made at a well, and the results have been recorded, complete the following steps in the order listed:

1. Retrieve the instrument (water-level indicator and/or the oil/water interface detector) suspension line and probe from the well, and simultaneously decontaminate the instrument suspension line and probe (see below).

2. If the well has a dedicated pump that was removed to complete the measurements, replace the pump.

3. Close (seal) and secure the well.

4. Record any well integrity concerns in the field book and on the well maintenance form.

8 Decontamination

Decontaminate all equipment that may come in contact with the well water or NAPL, at the following times:

- prior to, or on, arrival at the site
- on moving from one well to another, on site
- immediately prior to exit from the site.

Follow the decontamination procedures given in SOP PSC-200.

9 Documentation

Record all measurement results (liquid levels, total depth, and time of measurement) on the appropriate field forms and field notebook. Follow the documentation procedures given in SOP PSC-400.

10 Measure of Proficiency

Field staff shall demonstrate proficiency on this SOP by successfully completing sections 7, 8, and 9 at least twice under the direct supervision of the Corrective Actions Manager or her/his designee.

Monitoring Well Development

Written By:	Edited by:	Approved By:	QA Concurrence:
Carolyn Mayer	Tasya Gray	Carolyn Mayer	Kevin McNeil
11/23/97	7/24/01	7/24/01	7/24/01

This SOP contains nine sections:

1.0 Purpose
2.0 Application
3.0 References
4.0 Associated SOPs
5.0 Equipment
6.0 Decontamination
7.0 Well Development Procedures
  7.1 New Well Development Procedure
  7.2 Existing Well Development Procedure
8.0 Documentation
9.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide field personnel with a set of guidelines to assure proper monitoring well development. According to EPA all monitoring wells should be developed to create an effective filter pack around the well screen, to rectify damage to the formation caused by drilling, to remove fine particulates from the formation near the borehole, and to assist in restoring the natural water quality of the aquifer in the vicinity of the well.

2.0 Application

This SOP provides a step-by-step guideline to be followed by the field sampling crew for performing or overseeing monitoring well development.

3.0 References

RCRA Groundwater Monitoring Draft Technical Guidance (Nov. 1992) EPA/530-R-93-001

4.0 Associated SOPs

PSC-200 – Equipment Decontamination Procedure
PSC-300 – Photo-ionization Detector Calibration and Operation
PSC-400 – Documentation Procedures

5.0 Equipment

The following equipment is necessary to properly develop a ground water monitoring well:

- A well key, hand drill, socket set, pad lock key, or other well access equipment.
- A calibrated photo-ionization detector (PID) to monitor and record the well headspace.
- An electric water meter and oil/water interface probe calibrated to a hundredth of a foot, and sufficiently long to reach the bottom of the well.
- Well purging equipment (e.g. bailer, silicone line, PVC pipe, plug, pump, tubing, power supply, and extension cord), as needed.
- A solid PVC surge block.
- A sufficient number of 55-gallon drums (including lids, gaskets, and fasteners) to contain all purge water, unless other water handling arrangements have been made.
- A calibrated water quality meter that measures temperature, pH, specific conductivity, dissolved oxygen, redox potential, and turbidity.
- All required documentation including sample labels, field books, sampling forms, and chains-of-custody.
- Personal protective equipment as described in the Site Health and Safety Plan.

- Decontamination equipment as specified in the Work Plan.

6.0 Decontamination

All equipment that will come in contact with the well water will be decontaminated prior to arrival on site, relocation on site, and site exit. Standard Operating Procedure PSC-200 shall be followed.

7.0 Well Development Procedures

Upon arrival at each well, the following procedures shall be followed:

- Suit up in appropriate personal protective equipment as described in the Site Health and Safety Plan.

- Brush any soil or vegetation and pump any standing water away from the well opening.

- Lay plastic sheeting around well to place equipment on and keep cords, tubing and pumps from touching the ground.

- Open the well cap.

- Monitor the headspace within the well using the PID (PSC-300 for PID operation). This is done by placing the instrument probe at the opening of the well, and recording the reading in the field book and on the appropriate field forms.

- Measure and record the depth to LNAPL, water, DNAPL, and total depth of the well using a decontaminated oil/water interface probe or water level indicator (depending on the historical presence of NAPLs in the well). All LNAPL and DNAPL measurements are to be made in accordance with PSC-120. Measurements are to be made to the nearest one hundredth of a foot and recorded in the field book and on the appropriate field form.

- Compute the unit purge volume using the following formula and the input values on the attached Well Volumes Sheet.

  1 well volume (including annular space) = [x(total well depth – water level)] + [y(total well depth – bottom of seal)]

where "x" is the Casing/Riser Volume per Unit Length, Internal (gal/ft) and "y" is the Annular Volume per Unit Length (gal/ft)

7.1 New Well Development Procedure

- If a submersible pump is to be used for well development, gently lower the pump to the well bottom. If a non-submersible pump is used, lower the tubing to the bottom of the well.

- Begin to purge the well at a rate sufficient to remove fines, slowly run the pump up and down the well over the length of the screen, and initiate physical water quality testing at least every 20% water removed for temperature, pH, conductivity, dissolved oxygen, and turbidity.

- A minimum of three and maximum of five well volumes (including annular space) will be removed. If this is the first time the well has been developed and water was used in the drilling process, the volume of water introduced into the formation during well formation must also be removed during development. *Purging is completed once the following has occurred:*
  - *the minimum purge volume has been removed and the water quality parameters have stabilized by the following screening requirements for three consecutive readings: Turbidity <5 NTU, specific conductivity within 10% of each other, and pH within 0.5 units; OR*
  - *the well runs dry; OR*
  - *five purge volumes and drilling process water volumes have been removed.*

- Measure total depth of well after development.

- Containerize all purge water in 55-gallon drums, unless other handling arrangements have been made.

- Record additional information such as unique odors or water color, and a description of the suspended particle content in the field notes and on appropriate field forms.

- Upon completion of development, both the well and the purge drums are to be properly sealed and secured.

- All drums are to be permanently labeled as follows:

Well ID
Facility Name
Drum Contents
Date
Drum Number

- Close the well appropriately and record any well integrity concerns in the field book and on the sampling form.

7.2 Existing Well Development Procedure

- Remove pump from well.
- Attach one length of twine to the surge block or use a drill rig or tripod and lower it to the bottom of the well.
- Vigorously begin moving the surge block up and down in the well creating a surging action across the screened interval. This action will bring the finer grained materials into suspension.
- Remove the surge block.
- Begin to purge the well at a sufficient rate to remove fines and initiate physical water quality testing at a minimum of every 20% water removed for turbidity.
- Repeat surging and purging to reduce silt presence in water and keep checking total depth measurements.
- A minimum of three and maximum of five well volumes (including annual space) will be removed. *Purging is completed once the following has occurred:*
  - *the minimum purge volume has been removed and the water quality parameters have stabilized by the following screening requirements for three consecutive readings: Turbidity <5 NTU, specific conductivity within 10% of each other, and pH within 0.5 units; OR*
  - *the well runs dry; OR*
  - *five purge volumes and drilling process water volumes have been removed.*
- Measure total depth of well after development.

- Containerize all purge water in 55-gallon drums, unless other handling arrangements have been made.

- Record additional information such as unique odors or water color, and a description of the suspended particle content in the field notes and on appropriate field forms.

- Upon completion of development, both the well and the purge drums are to be properly sealed and secured.

- All drums are to be permanently labeled as follows:
  Well ID
  Facility Name
  Drum Contents
  Date
  Drum Number

- Close the well appropriately and record any well integrity concerns in the field book and on the sampling form.

8.0 Documentation

Documentation of all monitoring well development activities including all field forms and the maintenance of a detailed field notebook are described in PSC-400.

9.0 Measure of Proficiency

Field staff will demonstrate proficiency on this SOP by successfully completing sections 6.0, 7.0, and 8.0 a minimum of twice under the direct supervision of the Corrective Actions Manager or her/his designee.

Indoor Air Sampling (Using USEPA TO-14 or TO-15 Analytical Method)
SOP No. PSC-127
Origination Date: 2/19/03

	Written By:	Approved By:	QA Concurrence:
Staff Person	Tasya Gray	Carolyn Mayer	Don Robbins
Date	2/19/03	2/19/03	2/19/03
Signature			

This standard operating procedure (SOP) contains the following sections:

1 Purpose
2 Application
3 References
4 Associated SOPs
5 Equipment and Supplies
6 Procedures
  6.1 Preparation of Buildings for Sampling
  6.2 Sampling Methodology
  6.3 Post-Sample Collection Procedures
  6.4 Analysis
7 Decontamination
8 Documentation
9 Measure of Proficiency

1 Purpose

The purpose of this SOP is to provide personnel with the specific information needed to collect and document consistent and representative indoor air data.

2 Application

This SOP shall be followed by all personnel who collect indoor air samples associated with the following PSC facilities in Washington state: Seattle (Georgetown), Kent, Tacoma, Washougal. This SOP was written primarily for use in investigating the vapor intrusion pathway (or volatilization of groundwater or soil to indoor air). However, this procedure may have other viable applications as well.

3 References

Air Toxics LTD. Guide to Air Sampling and Analysis, Canisters and Tedlar Bags. Fourth Edition. Folsom, California. www.airtoxics.com

Massachusetts Department of Environmental Protection. April 2002. Indoor Air Sampling and Evaluation Guide. Boston, Massachusetts.

Pioneer Technologies Corporation, Foster Wheeler Environmental Corporation and Philip Services Corporation. August 2002. Revised Inhalation Pathway Interim Measures Work Plan,

Philip Service Corporation, Georgetown Facility, Seattle, Washington. Pioneer Technologies Corporation, Olympia, Washington.

USEPA. January 1999. Method TO-14A. EPA/625/R-96/010b. Cincinnati, OH.

USEPA. January 1999. Method TO-15. EPA/625/R-96/010b. Cincinnati, OH.

4 Associated SOPs

PSC-400 – Documentation Procedures

5 Equipment and Supplies

The following equipment and supplies are necessary to properly conduct indoor air sampling:

- Sufficient number of 6 Liter Summa canisters, appropriate filters and flow controllers to collect samples required by the work plan.
- Equipment required to collect samples using 6 Liter Summa canisters, including appropriate wrenches and pressure gauges.
- A photoionization detector (PID) or similar instrument and the proper calibration gases to monitor the indoor air during building evaluation.
- An accurate and reliable watch that has been properly set.
- Documentation materials as described in SOP PSC-400 and applicable project work plans or sampling analysis plans, including Chains of Custody and Custody Seals.
- Shipping package for the Summa canisters.
- Health-and-safety equipment and supplies (e.g., personal protective equipment [PPE]) as described in the relevant site health-and-safety plan (HSP).

6 Procedures

6.1 Preparation of Buildings for Sampling

Prior to sampling a building, conduct a building evaluation to determine potential sources of contamination. A building evaluation form is included as Attachment C. The purpose of the building evaluation is to identify building construction characteristics, heating and ventilation systems, and sources of possible chemical contaminants that may influence the results of indoor

sampling at each location[1]. Identify potential sources of VOCs in the building by visual observation and by using a photo ionization detector, or similar air monitoring device, to screen the building. If possible, any chemicals found should be sealed properly or removed from the building during the test. If source materials are removed from the building, it is recommended that sampling be delayed for a minimum of 24 hours. During the evaluation, document outdoor sources of contamination and weather conditions that could influence indoor air concentrations.

6.2 Sampling Methodology

Time-integrated indoor air samples are collected using 6 Liter (L) Summa canisters prepared under negative pressure and lab-certified clean for the compounds of interest for the site. The Summa canisters should be equipped with dedicated flow regulators. The most representative indoor air sample using this sampling technology will use a 24-hour sample period. In such a case, the flow rate of the flow regulators should be set at a fill rate for a 24-hour period.

- Verify the canister number engraved on the canister matches the canister number listed on the certified clean tag attached to the canister to insure proper decontamination of the canister was completed.
- Set up the 6 L Summa canister in the desired sample location.
- Verify that the canister valve is closed tightly, and then remove the threaded cap at the top of the canister.
- Attach a pressure gauge at the top of the canister using a wrench to gently tighten it.
- Place a threaded a cap on the gauge and tighten gently with a wrench to seal the canister.
- Open the valve and record the pressure on the gauge as the "initial pressure" in the field notes, on the sample tag attached to the canister, and on any applicable field forms.
- Close the valve tightly and remove the gauge from the canister.
- Install a flow controller at the top of the canister. Then, if applicable, attach a sample filter to the top of the flow controller. In some cases the filter and flow controller will be one integrated piece of equipment.
- Completely fill out the sample tag attached to the canister and start the sample collection by opening the valve.
- Record all sample information in the field book and/or applicable field forms including the following:
    - Sample identification
    - Sample start date
    - Sample start time

[1]There are many sources of indoor air contamination from the use of everyday cleaning products, beauty products, and home maintenance materials. Carpets and wood may contain volatile chemicals such as formaldehyde, xylenes, and acetone. Paints and paint thinners contain chemicals such as acetone and toluene. Refrigerators can leak Freon. Sinks and drains may be linked to sewer systems, and gases, such as methane, may back up through the sewer pipes into the home. Chemicals stored in the home may emit volatile compounds into the air such as cleaning products (oven cleaners, degreasers, ammonia, and chlorine) and beauty products (spray deodorants, hair spray, and perfumes). Other items that may also cause volatile emissions include animal feces in litter boxes, degrading food products, dry-cleaning chemicals from clothing, and fuel in furnaces.

- Location of sample: distance from walls and floor shown on building evaluation floor plan
- Initial pressure of canister
- Canister number

- After sampling begins and the canister is verified to be operating correctly and filling at the correct speed, leave the canister to fill.

Return after approximately 16-20 hours to check the canisters to ensure that they are operating properly. It is necessary to check the canister prior to the 24-hour period because the accuracy of the flow regulators can vary slightly, causing the canisters to fill faster than expected. To check the sample progress complete the following:

- Close the valve on the canister.
- Remove the filter and flow controller.
- Attach the pressure gauge to the top of the canister.
- Place a threaded cap on the gauge and tighten gently with a wrench to seal the canister.
- Open the valve and record the pressure on the gauge. **The final pressure at the end of sampling should be approximately -5 to -6 inches mercury (Hg).** If the canister has already reached this point, sampling is complete and this pressure should be recorded as the "final pressure" on the sample tag, the field book, and applicable field forms. If the pressure is not at this level yet, the valve should be closed, the gauge removed, the filter and flow controller reattached and the sample restarted.
- Record all stop and start times of sample collection in the field book and the applicable field forms.
- If the sample collection was continued after 20 hours and appears to be filling at the appropriate rate, sample collection will be considered complete after 24 hours have elapsed.
- Record the exact pressure of the canister and time at the end of sampling on the sample tag for that canister, in the field book and on the applicable field forms.

6.3 Post-Sample Collection Procedures

Label all sample containers with the following information: sample identification, date and time sample was collected, the starting and ending canister pressure, the site name, and the company name. Include all this information in the field book plus the ending time of sample collection, and transfer pertinent information to the chain-of-custody record. Pack all Summa canisters in the original shipping containers, sealed with a custody seal, and send to the lab for analysis. The unofficial holding time for this analysis is 30 days. However, attempt to get samples to the lab as soon as possible to allow lab time to conduct re-runs, dilutions, low-level analyses, as necessary prior to sample expiration.

6.4 Analysis

The indoor air samples should be analyzed using EPA Methods TO-14 or TO-15, and when necessary/possible, low-level analysis or Selective Ion Mode (SIM) analysis to obtain the lowest

achievable detection and reporting limits. The air samples collected in the Summa canisters have a 30-day holding time. Note the desired analytical method on the Chain of Custody form.

7 Decontamination

The equipment used for air sampling does not require decontamination in the field. The Summa canisters will be individually cleaned and certified to 0.02 ppbv THC for the project-specific analyte list by the contract laboratory prior to shipment. Insure that documentation of this certification is included on a tag attached to the canister and in the paperwork that accompanies the canister shipment from the lab.

8 Documentation

Record all field activities, environmental and building conditions, and sample documentation on the appropriate field forms and field notebook. Follow the documentation procedures given in SOP PSC-400.

9 Measure of Proficiency

Field staff shall demonstrate proficiency on this SOP by successfully implementing this SOP at least twice under the direct supervision of the Corrective Actions Manager or her/his designee.

Ambient Air Sampling (Using USEPA Method TO-14 or TO-15 Analytical Method)

SOP No. PSC-128

Origination Date: 2/19/03

	Written By:	Approved By:	QA Concurrence:
Staff Person	Tasya Gray	Carolyn Mayer	Don Robbins
Date	2/19/03	2/19/03	2/19/03
Signature			

This standard operating procedure (SOP) contains the following sections:

1 Purpose
2 Application
3 References
4 Associated SOPs
5 Equipment and Supplies
6 Procedures
  6.1 Sampling Locations
  6.2 Sampling Methodology
  6.3 Post-Sample Collection Procedures
  6.4 Analysis
7 Decontamination
8 Documentation
9 Measure of Proficiency

1 Purpose

The purpose of this SOP is to provide personnel with the specific information needed to collect and document consistent and representative ambient air (or outside air) data.

2 Application

This SOP shall be followed by all personnel who collect ambient air samples in support of indoor air sampling investigations, but may also be applicable for other studies, associated with the following PSC facilities in Washington state: Seattle (Georgetown), Kent, Tacoma, Washougal.

3 References

Air Toxics LTD. Guide to Air Sampling and Analysis, Canisters and Tedlar Bags. Fourth Edition. Folsom, California. www.airtoxics.com

Pioneer Technologies Corporation. August 2002. Revised Inhalation Pathway Interim Measures Work Plan, Philip Service Corporation, Georgetown Facility, Seattle, Washington. Pioneer Technologies Corporation, Olympia, Washington.

USEPA. January 1999. Method TO-14A. EPA/625/R-96/010b. Cincinnati, OH.

USEPA. January 1999. Method TO-15. EPA/625/R-96/010b. Cincinnati, OH.

40 CFR Part 58, Appendix E, *Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring*

4 Associated SOPs

PSC-127 - Indoor Air Sampling
PSC-400 - Documentation Procedures

5 Equipment and Supplies

The following equipment and supplies are necessary to properly conduct indoor air sampling:

- Sufficient number of 6 Liter Summa canisters, appropriate filters and flow controllers to collect samples required by the work plan.
- Equipment required to collect samples using 6 Liter Summa canisters, including appropriate wrenches and pressure gauges.
- An accurate and reliable watch that has been properly set.
- Documentation materials as described in SOP PSC-400 and applicable project work plans or sampling analysis plans, including Chains of Custody and Custody Seals.
- Shipping package for the Summa canisters.
- Health-and-safety equipment and supplies (e.g., personal protective equipment [PPE]) as described in the relevant site health-and-safety plan (HSP).

6 Procedures

6.1 Sampling Locations

Ambient air samples are usually collected near buildings where indoor sampling is occurring (see PSC-SOP-127). Sample collection points should be selected so that intake occurs at least 3 meters or more above ground surface and upwind of the building undergoing indoor air sampling.

6.2 Sampling Methodology

Time-integrated ambient air samples will be collected using 6 Liter (L) Summa canisters prepared under negative pressure and certified clean for the compounds of interest for the site. The Summa canisters should be equipped with dedicated flow regulators. The most representative indoor air sample using this sampling technology will use a 24-hour sample period. In such a case, the flow rate of the flow regulators should be set at a fill rate for a 24-hour period.

- Verify the canister number engraved on the canister matches the canister number listed on the certified clean tag attached to the canister to insure proper decontamination of the canister was completed.
- Set up the 6 L Summa canister in the desired sample location.
- Verify that the valve is closed tightly, and then remove the threaded cap at the top of the canister.
- Attach a pressure gauge at the top of the canister using a wrench to gently tighten.
- Place a threaded a cap on the gauge and tighten gently with a wrench to seal the canister.
- Open the valve and record the pressure on the gauge as the "initial pressure" in the field notes, on the sample tag attached to the canister, and on any applicable field forms.
- Close the valve tightly and remove the gauge from the canister.
- Install a flow controller at the top of the canister. Then, if applicable, attach a sample filter to the top of the flow controller. In some cases the filter and flow controller will be one integrated piece of equipment.
- Completely fill out the sample tag attached to the canister and start the sample collection by opening the valve.
- Record all sample information in the field book and/or applicable field forms including the following:
    - Sample identification
    - Sample start date
    - Sample start time
    - Location of sample: distance from walls and floor shown on building evaluation floor plan
    - Initial pressure of canister
    - Canister number
- After sampling begins and the canister is verified to be operating correctly and filling at the correct speed, leave the canister to fill.

Return after approximately 16-20 hours to check the canisters to ensure that they are operating properly. It is necessary to check the canister prior to the 24-hour period because the accuracy of the flow regulators can vary slightly, causing the canisters to fill faster than expected. To check the sample progress complete the following:

- Close the valve on the canister.
- Remove the filter and flow controller.
- Attach the pressure gauge to the top of the canister.
- Place a threaded a cap on the gauge and tighten gently with a wrench to seal the canister.
- Open the valve and record the pressure on the gauge. **The final pressure at the end of sampling should be approximately -5 to -6 inches mercury (Hg).** If the canister has already reached this point, sampling is complete and this pressure should be recorded as the "final pressure" on the sample tag, the field book, and applicable field forms. If the pressure is not at this level yet, the valve should be closed, the gauge removed, the filter and flow controller reattached and the sample restarted.
- Record all stop and start times of sample collection in the field book and the applicable field forms.
- If the sample collection was continued after 20 hours and appears to be filling at the

appropriate rate, sample collection will be considered complete after 24 hours have elapsed.

- Record the exact pressure of the canister and time at the end of sampling on the sample tag for that canister, in the field book and on the applicable field forms.

6.3 Post-Sample Collection Procedures

Label all sample containers with the following information: sample identification, date and time sample was collected, the starting and ending canister pressure, the site name, and the company name. Include all this information in the field book plus the ending time of sample collection, and transfer pertinent information to the chain-of-custody record. Pack all Summa canisters in the original shipping containers, sealed with a custody seal, and send to the lab for analysis. The unofficial holding time for this analysis is 30 days. However, attempt to get samples to the lab as soon as possible to allow lab time to conduct re-runs, dilutions, low-level analyses, as necessary prior to sample expiration.

6.4 Analysis

The ambient air samples should be analyzed using EPA Methods TO-14 or TO-15, and when necessary/possible, low-level analysis or Selective Ion Mode (SIM) analysis to obtain the lowest achievable detection and reporting limits. The air samples collected in the Summa canisters have a 30-day holding time. Note the desired analytical method on the Chain of Custody form.

7 Decontamination

The equipment used for air sampling does not require decontamination in the field. The Summa canisters will be individually cleaned and certified to 0.02 ppbv THC for the project-specific analyte list by the contract laboratory prior to shipment. Insure that documentation of this certification is included on a tag attached to the canister and in the paperwork that accompanies the canister shipment from the lab.

8 Documentation

Record all field activities, environmental and building conditions, and sample documentation on the appropriate field forms and field notebook. Follow the documentation procedures given in SOP PSC-400.

9 Measure of Proficiency

Field staff shall demonstrate proficiency on this SOP by successfully implementing this SOP at least twice under the direct supervision of the Corrective Actions Manager or her/his designee.

	Written By:	Approved By:	QA Concurrence:
Staff Person	Tasya Gray	Carolyn Mayer	Don Robbins
Date	2/11/03	2/11/03	2/11/03
Signature			

This standard operating procedure (SOP) contains nine sections:

1.0 Purpose
2.0 Application
3.0 References
4.0 Associated SOPs
5.0 Equipment Required
6.0 Sampling Procedure
7.0 Documentation
8.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide field personnel with an outline of the specific information needed to collect and document representative soil gas samples. The recommended soil gas sampling technique, as presented in this SOP, is based on the assumption that soil gas samples should be representative of chemicals that may volatilize from the uppermost aquifer into the vadose zone or from soil contamination within the vadose zone.

2.0 Application

This SOP shall be followed by all personnel who collect sub-slab soil gas samples associated with the vapor intrusion pathway at the following facilities in Washington state: Seattle (Georgetown), Kent, Tacoma, Washougal.

3.0 References

Department of Environmental Protection, Commonwealth of Massachusetts. Indoor Air Sampling and Evaluation Guide. WSC Policy #02-430. Boston, Massachusetts. April 2002.

USEPA, Center for Environmental Research Information, Office of Research and Development. Compendium of Methods for Determination of Toxic Organic Compounds in Ambient Air, Second Edition, Compendium Method To-14A, Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters with Subsequent Analysis by Gas Chromatography. January 1999.

USEPA. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway Form Groundwater and Soils. EPA530-F-02-052. November 2002.

Advanced Radon Technologies, Inc. Radon Mitigation and Testing. Spokane, Washington. 2002.

4.0 Associated SOPs

PSC-400 – Documentation Procedures

5.0 Sampling Equipment and Materials

The following equipment and supplies are necessary to properly conduct soil gas sampling:

- Hand drill.
- Plumber's putty or suitable substitute.
- Air pump and appropriate connection tubing and/or accessories.
- Sufficient number of 6 Liter Summa canisters, appropriate filters and flow controllers to collect samples per the work plan.
- Equipment required to collect samples using 6 Liter Summa canisters, including appropriate wrenches and pressure gauges.
- An accurate and reliable watch that has been properly set.
- Documentation materials as described in SOP PSC-400 and applicable project work plans or sampling analysis plans, including Chains of Custody and Custody Seals.
- Health-and-safety equipment and supplies (e.g., personal protective equipment [PPE]) as described in the relevant site health-and-safety plan (HSP).
- Shipping package for the canisters.
- Disposable Teflon®-lined tubing for each sample.
- A calculator.
- Patch material to repair hole drilled to original condition.

6.0 Soil Gas Monitoring Port Sampling Procedure

6.1 Preparation for Sampling

- Prior to beginning, have the sampling locations cleared for utilities, if appropriate, make sure access agreements are in place, and the appropriate permits have been obtained.
- In preparation for sampling, the field team shall drill an approximately 3/8-inch hole, using a hand drill, through the concrete floor of the building foundation near the indoor air samples when possible (if applicable). New Teflon®-lined tubing will be placed down the hole to a depth just below the foundation floor. Plumbers putty, or a similar substance that is VOC-free, will be applied to the hole around the tubing to seal the hole, minimizing disturbance of sub slab concentrations and surface air intrusion. Attach the tubing outside the hole to the purging pump.

6.2 Sampling Methodology

- Purge each soil vapor port into a tedlar bag, to avoid purging into the indoor air, at approximately 300 mL/min using an air pump to ensure that the soil gas sample is representative of subsurface conditions. Three-five tubing volumes should be removed. Use the following equation to calculate how much volume to remove:

  Volume = π x r^2 x length of tubing (inches)

  where r = the inner diameter radius (inches) of the tubing being used

  π = 3.14

  The result will be in $inches^3$. Convert to mL using 1 $inch^3$ = 16.387 mL to determine how long to purge port.
- Verify the canister number engraved on the canister matches the canister number listed on the certified clean tag attached to the canister to insure proper decontamination of the canister was completed.
- Set up the 6 L Summa canister in the desired sample location.
- Verify that the canister valve is closed tightly, and then remove the threaded cap at the top of the canister.
- Attach a pressure gauge at the top of the canister using a wrench to gently tighten.
- Place a threaded a cap on the gauge and tighten gently with a wrench to seal the canister.
- Open the valve and record the pressure on the gauge as the "initial pressure" in the field notes, on the sample tag attached to the canister, and on any applicable field forms.
- Close the valve tightly and remove the gauge from the canister.
- Install a flow controller at the top of the canister. Then, if applicable, attach a sample filter to the top of the flow controller. In some cases the filter and flow controller will be one integrated piece of equipment.
- Completely fill out the sample tag attached to the canister and start the sample collection by opening the valve.
- Record all sample information in the field book and/or applicable field forms including the following:
  - Sample identification
  - Sample start date

- Sample start time
- Location of sample: distance from walls and floor shown on building evaluation floor plan
- Initial pressure of canister
- Canister number

- After sampling begins and the canister is verified to be operating correctly and filling at the correct speed, leave the canister to fill.

Return after approximately 16-20 hours to check the canisters to ensure that they are operating properly. It is necessary to check the canister prior to the 24-hour period because the accuracy of the flow regulators can vary slightly, causing the canisters to fill faster than expected. To check the sample progress complete the following:

- Close the valve on the canister.
- Remove the filter and flow controller.
- Attach the pressure gauge to the top of the canister.
- Place a threaded cap on the gauge and tighten gently with a wrench to seal the canister.
- Open the valve and record the pressure on the gauge. **The final pressure at the end of sampling should be approximately -5 to -6 inches mercury (Hg).** If the canister has already reached this point, sampling is complete and this pressure should be recorded as the "final pressure" on the sample tag, the field book, and applicable field forms. If the pressure is not at this level yet, the valve should be closed, the gauge removed, the filter and flow controller reattached and the sample restarted.
- Record all stop and start times of sample collection in the field book and the applicable field forms.
- If the sample collection was continued after 20 hours and appears to be filling at the appropriate rate, sample collection will be considered complete after 24 hours have elapsed.
- Record the exact pressure of the canister and time at the end of sampling on the sample tag for that canister, in the field book and on the applicable field forms.
- Discard the sample tubing after all samples have been collected.
- Abandon the boring and repair to original condition.

6.3 Post-Sample Collection Procedures

Label all sample containers with the following information: sample identification, date and time sample was collected, the starting and ending canister pressure, the site name, and the company name. Include all this information in the field book plus the ending time of sample collection, and transfer pertinent information to the chain-of-custody record. Pack all Summa canisters in the original shipping containers, sealed with a custody seal, and send to the lab for analysis. The unofficial holding time for this analysis is 30 days. However, attempt to get samples to the lab as soon as possible to allow lab time to conduct re-runs, dilutions, low-level analyses, as necessary prior to sample expiration.

6.4 Analysis

The soil gas samples should be analyzed using EPA Methods TO-14 or TO-15, and when necessary/possible, low-level analysis or Selective Ion Mode (SIM) analysis to obtain the lowest achievable detection and reporting limits. The air samples collected in the Summa canisters have a 30-day holding time. Note the desired analytical methods on the Chain of Custody form.

7 Decontamination

The equipment used for soil gas sampling does not require decontamination in the field. The Summa canisters will be individually cleaned and certified to 0.02 ppbv THC for the project-specific analyte list by the contract laboratory prior to shipment. Insure that documentation of this certification is included on a tag attached to the canister and in the paperwork that accompanies the canister shipment from the lab.

8 Documentation

Record all field activities, environmental and building conditions, and sample documentation on the appropriate field forms and field notebook. Follow the documentation procedures given in SOP PSC-400.

9 Measure of Proficiency

Field staff shall demonstrate proficiency on this SOP by successfully implementing this SOP at least twice under the direct supervision of the Corrective Actions Manager or her/his designee.

Direct Push Groundwater Sampling
SOP No. PSC-130
Origination Date: 2/19/03
Revision No.: 0

	Written By:	Approved By:	QA Concurrence:
Staff Person	Tasya Gray	Carolyn Mayer	Lou La Rosa
Date	2/19/03	2/19/03	2/19/03
Signature			

This standard operating procedure (SOP) contains nine sections:

1.0 Purpose
2.0 Application
3.0 References
4.0 Associated SOPs
5.0 Sampling Equipment and Materials
6.0 Direct Push Groundwater Sampling Procedure
7.0 Decontamination
8.0 Documentation
9.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide personnel with the specific information needed to collect and document consistent and representative direct push groundwater samples.

2.0 Application

This SOP shall be followed by all personnel who collect direct push groundwater samples at the following facilities in Washington state: Seattle (Georgetown), Kent, Tacoma, Washougal.

3.0 References

Pioneer Technologies Corporation. August 2002. Revised Inhalation Pathway Interim Measures Work Plan, Philip Service Corporation, Georgetown Facility, Seattle, Washington. Pioneer Technologies Corporation, Olympia, Washington.

4.0 Associated SOPs

PSC-200 – Equipment Decontamination Procedure
PSC-400 – Documentation Procedures

5.0 Sampling Equipment and Materials

The following equipment and supplies are necessary to properly conduct direct push groundwater sampling:

- Direct push equipment including drill rig, rods, and sampling screens.
- Disposable tubing for each sample.
- Peristaltic pump.
- Sampling support equipment and supplies (such as sample coolers, ice/blue ice, bubble wrap and VOC bottle holders, tape, plastic locking bags, razor knives, garbage bags, paper towels, deionized water, nitrile gloves, five-gallon buckets, and protective plastic sheeting) as needed.
- A sufficient number of sampling containers, including containers for regular samples and quality control samples (e.g., field blanks, equipment blanks, duplicates, trip blanks, and matrix spike/matrix spike duplicates), as required by project work plan.
- A sufficient number of containers to store all purge water (e.g., 5-gallon buckets, 55-gallon drums with lids, labels, gaskets, and fasteners), unless other water handling arrangements have been made.
- A calibrated water-quality meter(s) and calibration solutions to measure temperature, pH, specific conductivity, dissolved oxygen (DO) and oxidation-reduction potential (ORP).
- An instrument and calibration solutions to measure turbidity.
- An accurate and reliable watch that has been properly set.
- Decontamination supplies as described in SOP PSC-200.
- Documentation materials as described in SOP PSC-400 and applicable project work plans or sampling analysis plans, and Chains of Custody and Custody Seals.
- Health-and-safety equipment and supplies (e.g., personal protective equipment [PPE]) as described in the relevant site health-and-safety plan (HSP).
- Shipping containers for samples (e.g. coolers).

6.0 Direct Push Groundwater Sampling Procedure

6.1 Preparation for Sampling

The general procedures described in this section will be performed by the drilling contractor.

- Prior to beginning, have the sampling locations cleared for utilities, make sure access agreements are in place, and the appropriate permits have been obtained[1].
- Attach a decontaminated direct push water sampling tool to the end of the drive rods.
- Advance the lower tip of the sampling tool to the lower depth of the interval to be sampled. Note any changes in behavior (e.g., sound, resistance) as the tool is advanced.
- Insert the inner rods into the drive rods with the male threads pointing down.
- Engage the inner threaded end of the inner rod into the retaining plug located at the top of the water sampling tool. Remove the reverse threaded plug that opens the sampling tool.
- Retract the drive rods 4 feet, allowing the groundwater sample screen to be exposed to the subsurface.
- Remove the inner rods. Place disposable tubing down the drive rods to the depth of the screen.

6.2 Sampling Methodology

- Attach the top of the tubing to the peristaltic pump and remove approximately 1 volume of water to purge the tubing and to assure that sampled water is from the specified depth[2].
- Collect a water quality reading (pH, temperature, dissolved oxygen, specific conductivity, redox, and turbidity) from the purge tubing.
- Fill sample bottles per the work plan and/or laboratory requirements.
- Discard the tubing after all samples have been collected from one sample interval.
- Retract the sampling device, and decontaminate the sample tool and drive rods using a non-phosphate detergent and a potable water rinse. Further rinse the sample tool by using a hexane rinse and follow with a deionized water rinse and air drying. If it is not being used immediately thereafter, wrap in aluminum foil.
- Collect equipment rinsate blanks as appropriate (e.g., on the direct push screen) if required by the project specific work plan.
- Attach the decontaminated sample tool to the decontaminated drive rods so that the procedure may be repeated at the next sampling interval.

---

[1] State well permit, city access agreement or private property access agreement, traffic plan if necessary, etc.

[2] Volume refers to the volume of the direct push screen plus rod. Calculate using the following equation for a typical screen and adjust radius or length if using a different size:
Volume = (0.5" radius rod)^2 X π X 48" long screen plus rod = 38 cubic inches
Where 1 cubic inch = 0.004 gallons

- Abandon the boring after all samples have been collected..

6.3 Post-Sample Collection Procedures

- Label all sample containers with the following information: sample identification, date and time sample was collected, the site name, analysis required and the company name. Include all this information in the field book and/or field forms and transfer pertinent information to the chain-of-custody record.
- Collect field quality control samples as specified in the applicable work plan.
- Pack all samples in an ice-filled cooler, sealed with a custody seal, with COC attached, and deliver or have couriered to the lab for analysis.

6.4 Analysis

The groundwater samples should be analyzed for selected compounds specified in the applicable work plan. Note the specified analytical methods on the Chain of Custody form.

7 Decontamination

All reusable equipment that will contact the water samples will be decontaminated prior to its use according to the procedures described in SOP PSC-200.

8 Documentation

Record all field activities and sample documentation on the appropriate field forms and field notebook. Follow the documentation procedures given in SOP PSC-400.

9 Measure of Proficiency

Field staff shall demonstrate proficiency on this SOP by successfully implementing this SOP at least twice under the direct supervision of the Corrective Actions Manager or her/his designee.

Equipment Decontamination Procedure
SOP No. PSC - 200
Origination Date: 10/28/99
Revision Date: 3/19/01
Revision No.1

Written By:	Edited by:	Approved By:	Date:	QA Concurrence:	Date:
Tasya Gray	Tasya Gray	Carolyn Mayer	3/27/01	Kevin McNeil	3/27/01

This SOP contains eight sections:

1.0 Purpose
2.0 Application
3.0 References
4.0 Associated SOPs
5.0 Equipment
6.0 General Decontamination Procedures
  6.1 Decontamination When Organic Constituents Are of Interest
  6.2 Decontamination When Inorganic Constituents Are of Interest
  6.3 Decontamination When Inorganic and Organic Constituents Are of Interest
7.0 Specific Decontamination Procedures
  7.1 Non-Dedicated Submersible Pump Decontamination Procedure
8.0 Documentation
9.0 Measure of Proficiency

1.0 Purpose

The purpose of this SOP is to provide field personnel with an outline of the procedure and frequency of decontaminating equipment that has come into contact with monitoring well water.

2.0 Application

This SOP provides a step-by-step guideline to be followed by the field sampling crew to prevent cross-contamination between monitoring wells and preserve well integrity.

3.0 References

RCRA Groundwater Draft Technical Guidance (EPA, 1992)

4.0 Associated SOPs

PSC-120 PSC-121 PSC-124 PSC-125 PSC-400

5.0 Equipment

The following equipment is necessary to properly decontaminate equipment used with monitoring wells:

- Di-ionized water and spray bottle.
- Alconox and spray bottle, hexane and spray bottle, and 10% Nitric acid and spray bottle, paper towels/rags.
- PVC pipe, capped on one end, 5 feet long.
- A clean hose and tap water source.
- A labeled 55-gallon drum for wastewater and a bucket to use for smaller volume prior to containing in drum.
- Personal protective equipment as described in the Site Health and Safety Plan.

6.0 General Decontamination Procedures

All reusable equipment that will come in contact with the well and/or be used to acquire samples will be decontaminated prior to arrival on site, relocation on site, and site exit.

6.1 Decontamination When Organic Constituents Are of Interest

- Wash the equipment with a solution of nonphosphate detergent (Alconox or equivalent) and water.

- Rinse the equipment with tap water.
- Rinse the equipment with Hexane.
- Rinse the equipment with DI water.

6.2 Decontamination When Inorganic Constituents Are of Interest

- Wash the equipment with a solution of nonphosphate detergent (Alconox or equivalent) and water.
- Rinse the equipment with tap water.
- Rinse the equipment with 10% Nitric Acid solution.
- Rinse the equipment with DI water.

6.3 Decontamination When Inorganic and Organic Constituents Are of Interest

- Wash the equipment with a solution of nonphosphate detergent (Alconox or equivalent) and water.
- Rinse the equipment with tap water.
- Rinse the equipment with Hexane.
- Rinse the equipment with DI water.
- Rinse the equipment with 10% Nitric Acid solution.
- Rinse the equipment with DI water.

7.0 Specific Decontamination Procedures

7.1 Non-Dedicated Submersible Pump Decontamination Procedure

After sampling or developing a well using a non-dedicated submersible pump, decontaminate the pump as follows:

- Use hose to spray off pump with tap water.
- Place pump into a capped approximately 5' long, 3" diameter PVC pipe.
- Fill the PVC pipe with tap water and detergent.
- Run the pump until the pipe is empty, refilling it with tap water 3 times. The discharge decontamination water will be pumped into a 55-gallon drum.
- Remove the pump and wash out the pipe using tap water from the hose.
- Place the pump in the pipe again and fill with tap water.

- Repeat the process, running the pump until the pipe empties 3 times, when there is half a pipe of water left, add 2L of Hexane and continue pumping until pipe is empty.
- Remove the pump and rinse out the pipe with tap water.
- Place the pump back in the pipe and fill with tap water.
- Run the pump until the pipe empties 3 times, when there is half a pipe of water left add 2L of 10% Nitric Acid.
- Run the pump until it empties, then rinse it with water and refill the pipe with di-ionized water.
- Run the pump until the pipe empties three times with the deionized water.

8.0 Documentation

Documentation of all decontamination procedures associated with monitoring well activities including all field forms and the maintenance of a detailed field notebook as described in PSC-400.

9.0 Measure of Proficiency

Field staff will demonstrate proficiency on this SOP by successfully completing sections 6.0, 7.0, and 8.0 a minimum of twice under the direct supervision of the Corrective Actions Manager or her/his designee.

APPENDIX 4-C

WELL DECOMMISSIONING RECORDS

RESOURCE PROTECTION WELL REPORT

START CARD NO. 208581

PROJECT NAME: Georgetown well abandonments
WELL IDENTIFICATION NO. HC-9
DRILLING METHOD: Pressure Grouting
DRILLER: John W. Dolan
FIRM: Burlington Environmental Inc.
SIGNATURE: John W. Dolan II 1222
CONSULTING FIRM:
REPRESENTATIVE:

COUNTY: King
LOCATION: ~~NE~~ ¼ ~~NE~~ ¼ Sec ~~39~~ Twn ~~24N~~ R ~~4E~~
STREET ADDRESS OF WELL: 734 S. Lucile St
Seattle, Washington
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION:
INSTALLED: ~~Abandone Well~~
DEVELOPED:

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
PVC bushing & nipple		
		~~Ground Surface~~
1½ O.D. pvc		I ran tremmie pipe to the bottom of the well & pumped cement bentonite grout from the bottom up, so ground water would flow out a "T" on top & into a drum. When the well was full of grout, I pulled my tremmie pipe out & topped it off with grout. Then I glued a bushing & nipple to the top of the riser pipe so I could connect my grout hose to the well. I then pumped grout into the well (with Pressure from my pump) to force the grout out the screen and into the formation. After pressure grouting the well, I cut the top off the well and topped off the well with grout until the well quit taking it.
	100.5'	TOTAL DEPTH FROM GROUND SURFACE

SCALE: 1" = _____ PAGE _____ OF _____

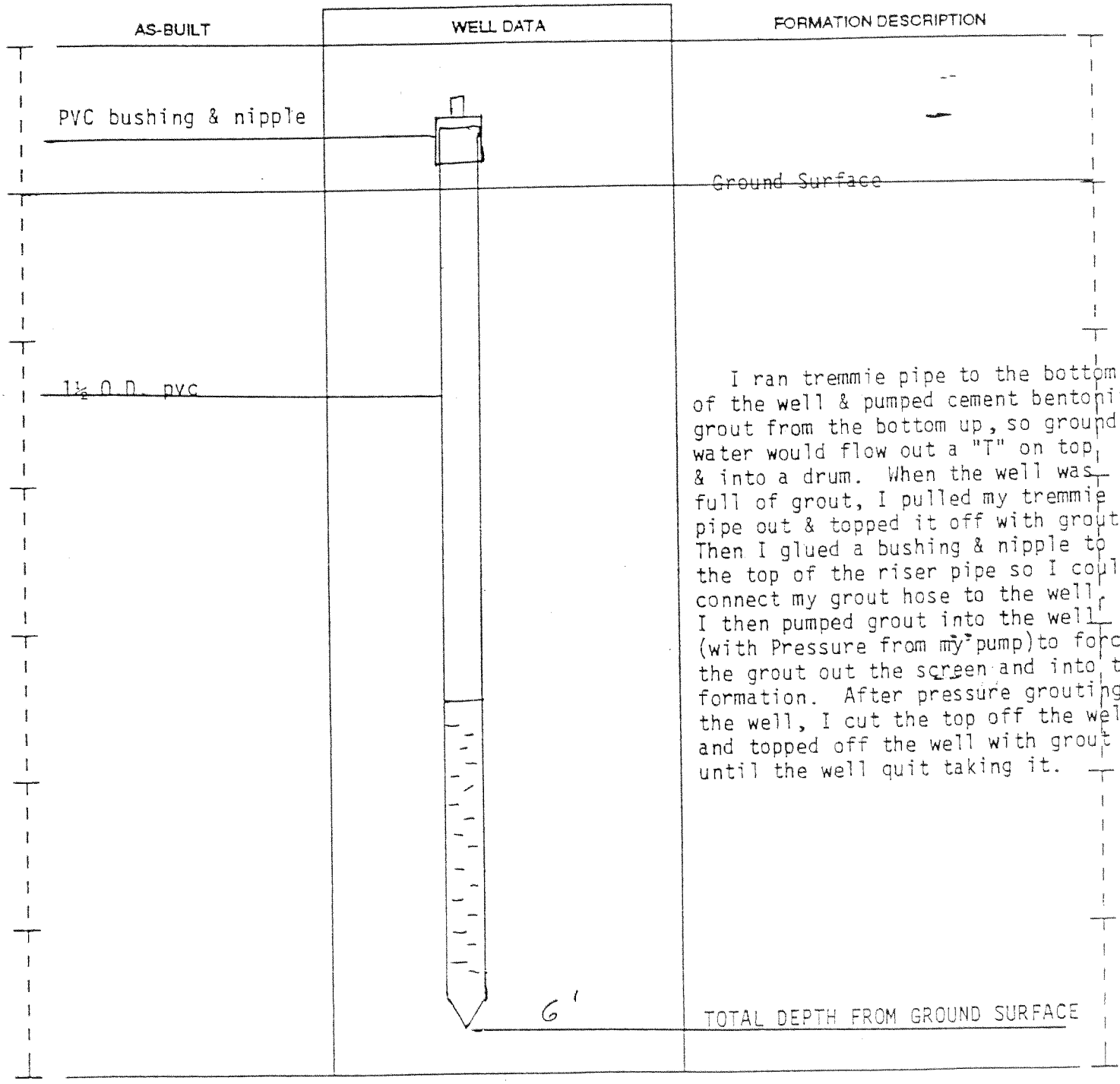
ECY 050-12 (Rev. 11/89)

RESOURCE PROTECTION WELL REPORT

START CARD NO. 208586

PROJECT NAME: Georgetown well abandonments
WELL IDENTIFICATION NO. H6-7
DRILLING METHOD: Pressure Grouting
DRILLER: John W. Dolan
FIRM: Burlington Environmental Inc.
SIGNATURE: John W. Dolan #1277
CONSULTING FIRM:
REPRESENTATIVE:

COUNTY: King
LOCATION: ~~NE~~ ¼ ~~NE~~ ¼ Sec ~~39~~ Twn ~~24N~~ R ~~4E~~
STREET ADDRESS OF WELL: 734 S. Lucile St
Seattle, Washington
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION:
INSTALLED: ~~Abandone Well~~
DEVELOPED:



I ran tremmie pipe to the bottom of the well & pumped cement bentonite grout from the bottom up, so ground water would flow out a "T" on top & into a drum. When the well was full of grout, I pulled my tremmie pipe out & topped it off with grout. Then I glued a bushing & nipple to the top of the riser pipe so I could connect my grout hose to the well. I then pumped grout into the well (with Pressure from my pump) to force the grout out the screen and into the formation. After pressure grouting the well, I cut the top off the well and topped off the well with grout until the well quit taking it.

SCALE: 1" = _____ PAGE _____ OF _____

RESOURCE PROTECTION WELL REPORT

START CARD NO. 208585

PROJECT NAME: Georgetown well abandonments
WELL IDENTIFICATION NO. HG-3
DRILLING METHOD: Pressure Grouting
DRILLER: John W. Dolan
FIRM: Burlington Environmental Inc.
SIGNATURE: John W. Dolan #1223
CONSULTING FIRM:
REPRESENTATIVE:

COUNTY: King
LOCATION: ~~NE~~ ¼ ~~NE~~ ¼ Sec ~~39~~ Twn ~~24N~~ R ~~4E~~
STREET ADDRESS OF WELL: 734 S. Lucile St
Seattle, Washington
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION:
INSTALLED: ~~Abandone Well~~
DEVELOPED:

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
PVC bushing & nipple		--
		~~Ground Surface~~
1½ O.D. pvc		
		15' TOTAL DEPTH FROM GROUND SURFACE

I ran tremmie pipe to the bottom of the well & pumped cement bentonite grout from the bottom up, so ground water would flow out a "T" on top & into a drum. When the well was full of grout, I pulled my tremmie pipe out & topped it off with grout. Then I glued a bushing & nipple to the top of the riser pipe so I could connect my grout hose to the well. I then pumped grout into the well (with Pressure from my pump) to force the grout out the screen and into the formation. After pressure grouting the well, I cut the top off the well and topped off the well with grout until the well quit taking it.

SCALE: 1" = _____ PAGE _____ OF _____

RESOURCE PROTECTION WELL REPORT

START CARD NO. 208584

PROJECT NAME: Georgetown well abandonments
WELL IDENTIFICATION NO. HC-2
DRILLING METHOD: Pressure Grouting
DRILLER: John W. Dolan
FIRM: Burlington Environmental Inc.
SIGNATURE: John W. Dolan #1222
CONSULTING FIRM:
REPRESENTATIVE:

COUNTY: King
LOCATION: ~~NE~~ ¼ ~~NE~~ ¼ Sec ~~39~~ Twn ~~24N~~ R ~~4E~~
STREET ADDRESS OF WELL: 734 S. Lucile St
Seattle, Washington
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION:
INSTALLED: ~~Abandone Well~~
DEVELOPED:

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
PVC bushing & nipple		
		~~Ground Surface~~
1½ O.D. PVC		I ran tremmie pipe to the bottom of the well & pumped cement bentonite grout from the bottom up, so ground water would flow out a "T" on top & into a drum. When the well was full of grout, I pulled my tremmie pipe out & topped it off with grout. Then I glued a bushing & nipple to the top of the riser pipe so I could connect my grout hose to the well. I then pumped grout into the well (with Pressure from my pump) to force the grout out the screen and into the formation. After pressure grouting the well, I cut the top off the well and topped off the well with grout until the well quit taking it.
	24.3'	TOTAL DEPTH FROM GROUND SURFACE

SCALE: 1" = _____ PAGE _____ OF _____

RESOURCE PROTECTION WELL REPORT

START CARD NO 208583

PROJECT NAME: Georgetown well abandonments
WELL IDENTIFICATION NO. HC-2
DRILLING METHOD: Pressure Grouting
DRILLER: John W. Dolan
FIRM: Burlington Environmental Inc.
SIGNATURE: John W. Dolan #1777
CONSULTING FIRM:
REPRESENTATIVE:

COUNTY: King
LOCATION: ~~NE~~ ¼ ~~NE~~ ¼ Sec ~~39~~ Twn ~~24N~~ R ~~4E~~
STREET ADDRESS OF WELL: 734 S. Lucile St
Seattle, Washington
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION:
INSTALLED: ~~Abandone Well~~
DEVELOPED:

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
PVC bushing & nipple		
		~~Ground Surface~~
1½ O.D. pvc		I ran tremmie pipe to the bottom of the well & pumped cement bentonite grout from the bottom up, so ground water would flow out a "T" on top & into a drum. When the well was full of grout, I pulled my tremmie pipe out & topped it off with grout. Then I glued a bushing & nipple to the top of the riser pipe so I could connect my grout hose to the well. I then pumped grout into the well (with Pressure from my pump) to force the grout out the screen and into the formation. After pressure grouting the well, I cut the top off the well and topped off the well with grout until the well quit taking it.
	51'	TOTAL DEPTH FROM GROUND SURFACE

SCALE: 1" = _____ PAGE _____ OF _____

ECY 050-12 (Rev. 11/89)

RESOURCE PROTECTION WELL REPORT Notice of Intent No. 50403

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *Original Construction Notice of Intent Number* NOT Available

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Philip Services corporation

Unique Ecology Well ID Tag No. No Ecology Assigned CG-751

Consulting Firm Philip Services Corp.

Driller or Trainee Name John W. Dolan

Driller or Trainee Signature John W. Dolan

Driller or Trainee License No 1777

If trainee, licensed driller's Signature and License no.

Site Address 734 S. Lucille st

City Seattle County: King

Location SW 1/4- 1/4 NE 1/4 Sec 20 Twn 24N R 4E EWM circle one (WWM)

Lat/Long (s, t, r still REQUIRED) Lat Deg 47 Lat Min/Sec 33.75 N

Long Deg 122 Long Min/Sec 19.18 W

Tax Parcel No. 172280-0206

Cased or Uncased Diameter 2" Static Level 5.71

Work/Decommission Start Date 5-6-02

Work/Decommission Completed Date 5-6-02

Construction/Design	Well Data	Formation Description
-Flush well movement Total Depth 17.5 Feet	Cement Top 2' of casing & movement for fork lift traffic. Backfilled well From the Bottom up To 2' Feet from surface with 3/8 Bentonite chips.	

PROJECT NAME: Philips Georgetown
WELL IDENTIFICATION NO.: n/a CG-2-I
DRILLING METHOD: Abandon
DRILLER: Frankl Scott
FIRM: Cascade Drilling, Inc.
SIGNATURE:
CONSULTING FIRM: Philips Env
REPRESENTATIVE: Cory Johnson

COUNTY: King
LOCATION: NE¼ SW¼ SEC 20 TWN 24N R 4E
STREET ADDRESS OF WELL: 731 S. Lucile St, Seattle WA
WATER LEVEL ELEVATION: N/A
GROUND SURFACE ELEVATION: N/A
INSTALLED: Abandon 8/15/02
DEVELOPED: n/a

2440

AS-BUILT

WELL DATA

FORMATION DESCRIPTION

0 - ft.

CONCRETE SURFACE SEAL

BACKFILL Bentonite Grout

- ft.

- ft.

DEPTH OF BORING 10'0"

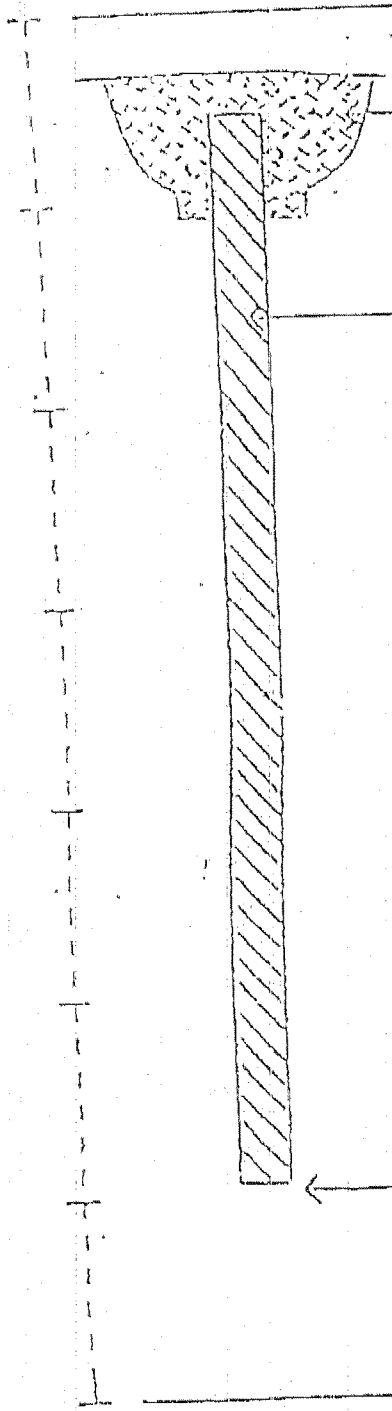
SCALE: 1" = PAGE OF

PROJECT NAME: Georgetown Facility
WELL IDENTIFICATION NO. n/a CG-2-D
DRILLING METHOD: Abandon
DRILLER: F. Lynn Goble
FIRM: Cascade Drilling, Inc.
SIGNATURE: Lynn Goble
CONSULTING FIRM: Rhdhp Env. Svcs
REPRESENTATIVE: Tasya Gray

COUNTY: King
LOCATION: NE ¼ SW ¼ Sec 20 TWN 24N R 4E
STREET ADDRESS OF WELL:
731 S. Lucile St Seattle
WATER LEVEL ELEVATION: N/A
GROUND SURFACE ELEVATION: N/A
~~INSTALLED~~ Abandoned 1-22-02
DEVELOPED: n/a

2037

AS-BUILT



WELL DATA

CONCRETE SURFACE SEAL

BACKFILL BENTONITE GROUT

DEPTH OF BORING 128'0"

FORMATION DESCRIPTION

0 - ft.

ABANDON

- ft.

- ft.

SCALE: 1" = _____

PAGE _____ OF _____

RESOURCE PROTECTION

START CARD NO. A-47063

PROJECT NAME: Georgetown Facility
WELL IDENTIFICATION NO. n/a
DRILLING METHOD: Abandon CG-4-D
DRILLER: F. Lynn Goble
FIRM: Cascade Drilling, Inc.
SIGNATURE: [signature]
CONSULTING FIRM: Pbulp Env. Svcs
REPRESENTATIVE: Tasya Gray

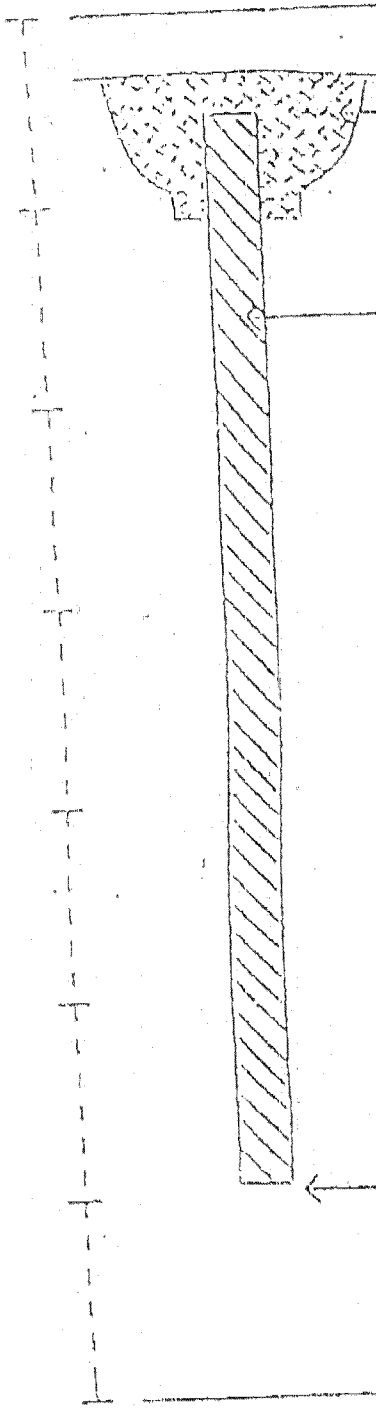
COUNTY: King
LOCATION: NE¼ SW¼ Sec 20 Twn 24N R 4E
STREET ADDRESS OF WELL: 731 S. Lucile St Seattle
WATER LEVEL ELEVATION: N/A
GROUND SURFACE ELEVATION: N/A
~~INSTALLED~~: Abandoned 1-22-02
~~DEVELOPED~~: n/a

2037

AS-BUILT

WELL DATA

FORMATION DESCRIPTION



CONCRETE SURFACE SEAL

0 - FT.

ABANDON

BACKFILL BENTONITE GROUT

- FT.

- FT.

DEPTH OF BORING 10ft 0"

SCALE: 1" = _____

PAGE _____ OF _____

600 University Street
Suite 1020
Seattle, WA 98101

GEOMATRIX

September 5, 2003
8770.001.0

Mr. Don Robbins
Philip Services Corporation
955 Powell Avenue SW
Renton, Washington 98055-2908

Subject: Well Abandonment Logs; PSC Georgetown Facility
Seattle, Washington

Dear Don:

Geomatrix Consultants, Inc. (Geomatrix) is pleased to submit the well abandonment notification (Start Card) and logs for the above-referenced project. Well abandonment was conducted at PSC Georgetown located at 734 S. Lucile Street, Seattle, Washington, on July 28, July 31, and August 7, 2003. A copy of the written approval from Department of Ecology (Ecology) is attached for your reference. Monitoring wells located within 10 feet of the proposed barrier wall alignment were abandoned. Monitoring wells were abandoned by Cascade Drilling, Inc. (Cascade) in full-time presence of Geomatrix.

Fifteen monitoring wells were abandoned. Well depths ranged from approximately 15 to 74 feet for a total of 587 linear feet. Well abandonment was performed in accordance with WAC 173-160 and was documented in accordance with WAC 173-160-560 using the Ecology's required format. Cascade submitted well construction notifications (start cards) to Ecology 72 hours prior to the start of the abandonment and documented the materials used and methods. Cascade will provide the documentation to Ecology within 30 days of well abandonment.

All wells, except well CG-12-I, were abandoned by filling the casing from the bottom to the ground surface with cement grout or bentonite and by placing a concrete cap on the casing. Monitoring wells less than 25 feet in depth were filled with bentonite chips whereas wells greater than 25 feet in depth were tremied with concrete grout. All monuments were grouted with cement grout at the surface. In accordance with Ecology's requirements, Well CG-12-I was overdrilled to a depth of 63 feet and tremied with cement grout. The surface was capped with cement grout.

GEOMATRIX

We trust this provides the information you require. If you have any questions or if you need additional information, please contact us at (206) 763-4120.

Sincerely,
GEOMATRIX CONSULTANTS, INC.

Koorus Tahghighi, P.E.
Project Manager

Attachments
- Letter of approval
- Abandonment notifications
- Abandonment Logs

CC: C. Mayer/PSC
File

NOTICE OF INTENT TO DECOMMISSION A WELL

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Notification Number A 61193

This form MUST BE RECEIVED by the Department of Ecology 72 HOURS BEFORE you decommission a well.

Submit one form for each job site. Mail this form to the Department of Ecology, Water Resources Program, Well Drilling Unit, PO Box 47600, Olympia WA 98504-7600. Instructions for filling out this form are printed on the back.

NOTE: PLEASE PRINT ALL ANSWERS. PROCESSING YOUR NOTICE OF INTENT MAY BE DELAYED IF ALL FIELDS OUTLINED IN THE BOXES ARE NOT FILLED IN COMPLETELY.

1. Property Owner Philip - Georgetown Phone No. ✓

Address (include city, state and zip) c/o GeoMatrix

2. Agent (if different from #1) GeoMatrix Phone No. 206 / 342-1761

Address (include city, state and zip) 600 University, Ste 1020, Seattle WA 98101

3. Well Location: NE 1/4-1/4 of the SW 1/4 Section 20 Township 24N Range 4E (EWM) or WWM *(circle one)*

4. Print COUNTY NAME of well location (DO NOT ABBREVIATE) King

5. Type of well to decommission *(please "x" appropriate circle)*

○ Water Well ○ Geotech Soil Boring How many? _____

⊗ Resource Protection How many? 16

Lattitude and Longitude (if available) NOTE: 1/4-1/4, 1/4, section, township and range are REQUIRED.

Lat Degrees _____ Lat Time _____ Horizontal collection method _____

Long Degrees _____ Long Time _____

6. Well Site Street Address 734 S. Lucile Street, Seattle

7. Notice of Intent No. of well being decommissioned and Unique Well ID Tag# *(if applicable)* _____

8. Tax parcel number ✓ 9. Approx. decommissioning start date 7/28/03

10. Contractor L & I Registration No. CASCADD-893KR

11. Well Drilling Company Name Cascade Drilling, Inc Phone No. 425 / 485-8908

12. Well Driller Name Kasey Coble License No. 2501

13. SEND THE ENTIRE FORM. The bottom portion of this notice will be validated in our office and sent back to the name and address contained on the address label. This is the proof of notification. Please fill out the portion below CAREFULLY.

NOTE: Please copy the Notification Number (located in the upper and lower right corner) and keep in a safe place. Please reference this number when communicating with the Department of Ecology.

This notification number must be provided to your well driller: A 61193

RETURN NAME AND MAILING ADDRESS

Name ~~CASCADE DRILLING, INC.~~

Address P.O. BOX 1184 ~~WOODINVILLE, WA 98072~~

City _____ State _____ Zip _____

3441-18

Client Name Geometrix

Agency Validation

Date _____

ECY 040-24 (Rev. 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: ✓

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (W)WM circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter ✓ Static Level ✓

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

⊗ Driller ☐ Engineer ☐ Trainee Name (Print) KASEY GOBLE TJ

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. ✓

Well Data 3441-18

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 20 ft.
BACKFILL Bentonite	— ft.
GROUT	GROUT IN PLACE
	— ft.
DEPTH OF BORING 20.0 ft.	

CLIENTS WELL ID #

CG-2-S1

Scale 1"= _____ Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Philip - Georgetown

Consulting Firm Geomatrix

Site Address 734 S. Lucile Street

City Seattle County: King

Unique Ecology Well ID

Tag No: _____

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E/W/M) *circle one* WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Goble

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

Tax Parcel No. N/A

Cased or Uncased Diameter _____ Static Level _____

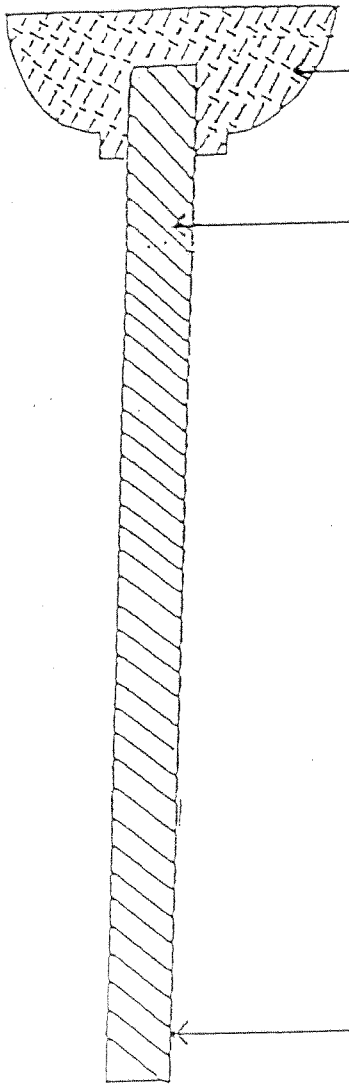
Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

If trainee, licensed driller's Signature and License no. _____

Well Data 3441-18

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL Bentonite

GROUT

DEPTH OF BORING 42.0 ft.

Formation Description

0 42 ft.

— ft.

GROUT IN PLACE

— ft.

CLIENTS WELL ID #

CG-2-52

Scale 1"= _____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction
⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection
○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: ✓

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (EWM) or WWM *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Goble

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. ✓

Tax Parcel No. N/A

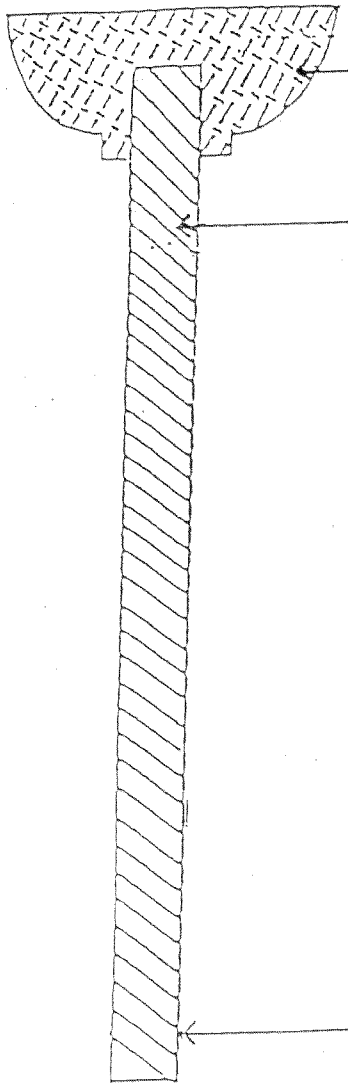
Cased or Uncased Diameter ✓ Static Level ✓

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

Well Data 341-18

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL Bentonite CHIPS

DEPTH OF BORING 19.0 "

Formation Description

0 - 19 ft.

— ft.

Chipin Place

— ft.

CLIENTS WELL ID #

CG-8-51

Scale 1"=_____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. A 61193

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: /

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E/WM) circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter / Static Level /

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

⊗ Driller ☐ Engineer ☐ Trainee Name (Print) KASEY VOGLE

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. /

Well Data 3441-18

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 42 ft.
BACKFILL Bentonite GROUT	— ft.
	GROUT IN PLACE
	— ft.
DEPTH OF BORING 42.0 "	

CLIENTS WELL ID #

CG-8-52

Scale 1"=

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID

Tag No: _____

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E)WM *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter _____ Static Level _____

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

⊗ Driller ☐ Engineer ☐ Trainee Name (Print) K. Casey Grosle

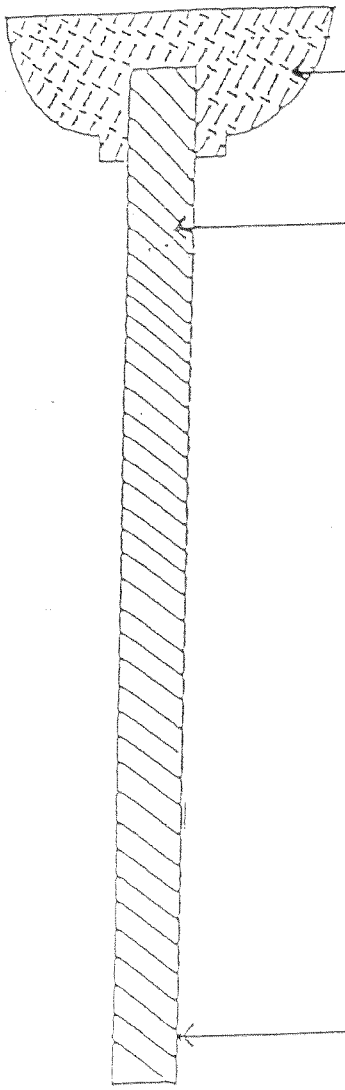
Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. /

Well Data 3441-18

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL Bentonite

GROUT

DEPTH OF BORING 74' 0"

Formation Description

0 - 74 ft.

— ft.

GROUT IN PLACE

— ft.

CLIENTS WELL ID #

CG-9-I

Scale 1"= _____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. A 61193

Construction/Decommission *("x" in circle)*

○ Construction
⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection
○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID
Tag No: _____

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E E WM or W WM (circle one)

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____
Long Deg _____ Long Min/Sec _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Goble

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. _____

Tax Parcel No. N/A

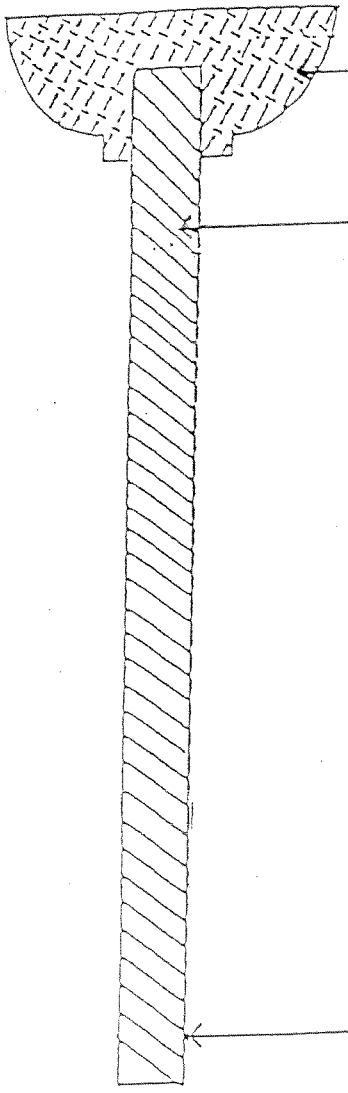
Cased or Uncased Diameter _____ Static Level _____

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

Well Data 3441-18

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL Bentonite Chips

DEPTH OF BORING 19.0 "

Formation Description

0 - 19 ft.

— ft.

Chip in Place

— ft.

CLIENTS WELL ID #

CG-9-S1

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID

Tag No: /

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E E WM *circle one* or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

⊗ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Goble

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2501

Tax Parcel No. N/A

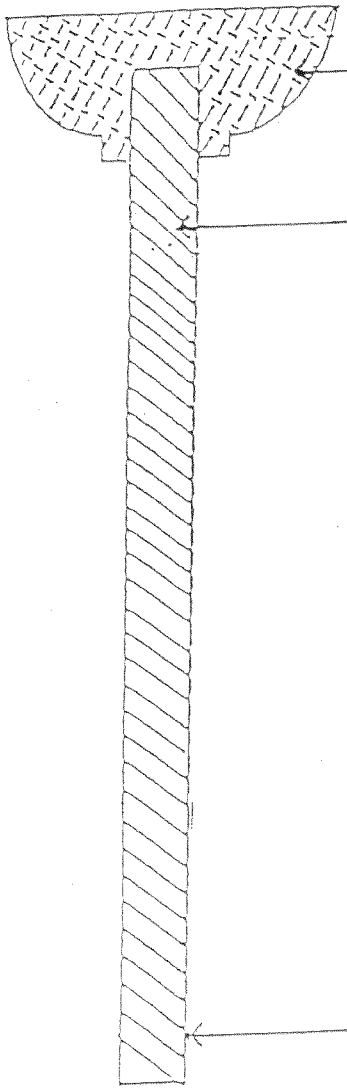
Cased or Uncased Diameter / Static Level /

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

If trainee, licensed driller's Signature and License no. /

Well Data 3441-18

Construction/Design		Formation Description
	CONCRETE SURFACE SEAL	0 - 42 ft.
	BACKFILL Bentonite GROUT	— ft.
		GROUT IN PLACE
		— ft.
	DEPTH OF BORING 42.0 "	

CLIENTS WELL ID #

CG-9-S2

Scale 1"= _____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. A 61193

Construction/Decommission *("x" in circle)*

- ○ Construction
- ⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

- ⊗ Resource Protection
- ○ Geotech Soil Boring

Consulting Firm: Geomatrix

Unique Ecology Well ID Tag No: ✓

Property Owner: Philip - Georgetown

Site Address: 734 S. Lucile Street

City: Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E)WM *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No.: N/A

Cased or Uncased Diameter: ✓ Static Level: ✓

Work/Decommission Start Date: 7/28/03

Work/Decommission Completed Date: 7/28/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print): Kasey Goble

Driller/Engineer/Trainee Signature: K. Goble

Driller or Trainee License No.: 2501

If trainee, licensed driller's Signature and License no.: ✓

Well Data 3441-18

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 31 ft. Chip in Place
BACKFILL Bentonite Chips	— ft.
	— ft.
DEPTH OF BORING 31' 0"	

CLIENTS WELL ID #

CG-7525

Scale 1"=_____ Page_____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Philip - Georgetown

Consulting Firm Geomatrix

Site Address 734 S. Lucile Street

Unique Ecology Well ID

Tag No: _____

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E)WM circle one

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Gable

Tax Parcel No. N/A

Driller/Engineer/Trainee Signature _____

Cased or Uncased Diameter _____ Static Level _____

Driller or Trainee License No. 2501

Work/Decommission Start Date 7/28/03

If trainee, licensed driller's Signature and License no. _____

Work/Decommission Completed Date 7/28/03

Well Data 3441-18

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 1.5 ft.
	GROUT IN PLACE
BACKFILL Bentonite Grout	— ft.
	— ft.
DEPTH OF BORING 15.0 ft.	

CLIENTS WELL ID #

CG-11-51

Scale 1"=_____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. A 61193

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

Consulting Firm Geomatrix

City Seattle County: King

Unique Ecology Well ID Tag No: ✓

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E/W/M) circle one WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Goble

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

Tax Parcel No. N/A

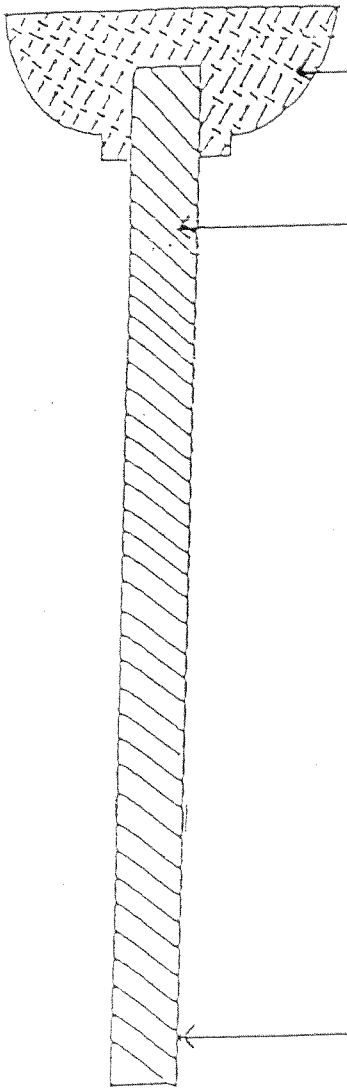
Cased or Uncased Diameter ✓ Static Level ✓

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

If trainee, licensed driller's Signature and License no. ✓

Well Data 3441-18

Construction/Design		Formation Description
	CONCRETE SURFACE SEAL	0 - 3½ ft. GROUT IN PLACE
	BACKFILL Bentonite GROUT	— ft.
		— ft.
	DEPTH OF BORING 36.0 "	

CLIENTS WELL ID #

CG-11-52

Scale 1"=_____ Page_____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. A 61193

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: /

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E E/W/M *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Gable

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. /

Tax Parcel No. N/A

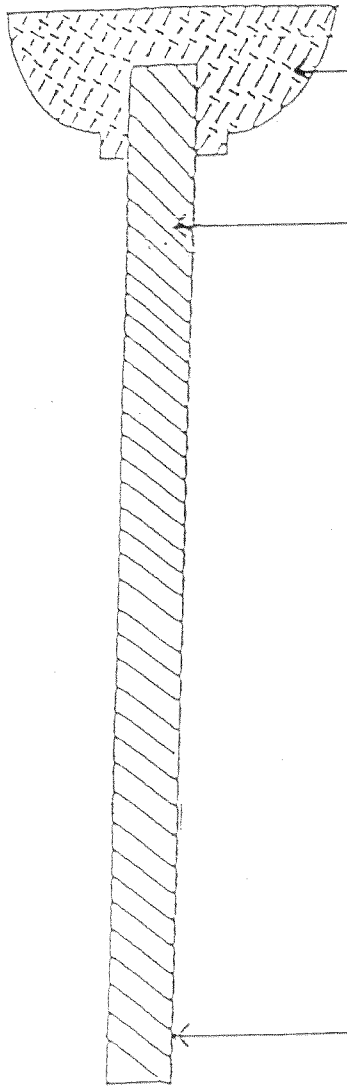
Cased or Uncased Diameter / Static Level /

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

Well Data 3441-18

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 4.5 ft.
BACKFILL Bentonite GROUT	GROUT IN PLACE — ft.
DEPTH OF BORING 63' 0"	— ft.



CLIENTS WELL ID #

CG-12-I

Scale 1"= _____ Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

Consulting Firm Geomatrix

City Seattle County: King

Unique Ecology Well ID

Tag No: _____

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (WWM) circle one

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

⊗ Driller ☐ Engineer ☐ Trainee Name (Print) Frank Scott

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2549

Tax Parcel No. N/A

Cased or Uncased Diameter _____ Static Level _____

Work/Decommission Start Date 8/7/03

Work/Decommission Completed Date 8/7/03

If trainee, licensed driller's Signature and License no. _____

Well Data 3441-12

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 6 3 ft. med Sand
BACKFILL Bentinyt grout	— ft.
	— ft.
DEPTH OF BORING 63'0"	

CLIENTS WELL ID #

GC42

Scale 1"=_____ Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. H 61193

Construction/Decommission *("x" in circle)*

○ Construction
⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*
⊗ Resource Protection
○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: ✓

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E/WM) *circle one* or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter ✓ Static Level ✓

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Gable

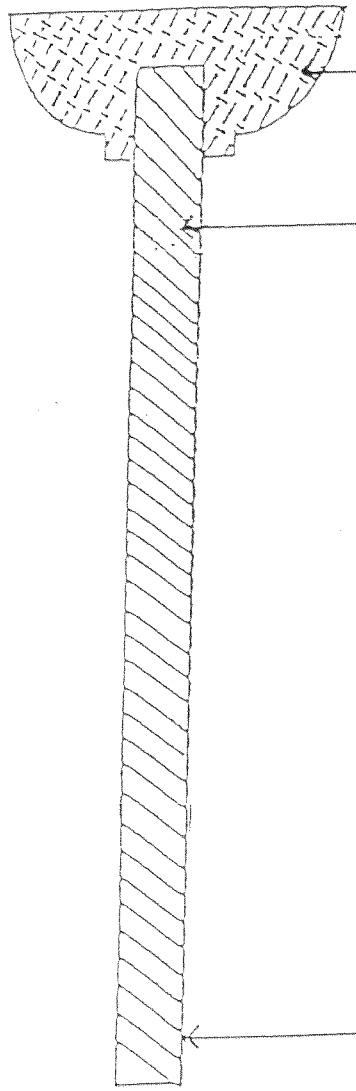
Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. ✓

Well Data 3441-18

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL Bentonite

GROUT

DEPTH OF BORING 66'0"

Formation Description

0 - 4½ ft.

GROUT IN PLACE

— ft.

— ft.

CLIENTS WELL ID #

CG-11-I

Scale 1"= _____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: ✓

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Gable

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. ✓

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (E/WM) *circle one* WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter ✓ Static Level ✓

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

Well Data 341-18

Construction/Design	Formation Description
CONCRETE SURFACE SEAL	0 - 17 ft.
BACKFILL Bentonite Chips	— ft.
	Chip in place
	— ft.
DEPTH OF BORING 17.0 "	

CLIENTS WELL ID #

CG-105-S1

Scale 1"= _____

Page _____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. A 61193

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Consulting Firm Geomatrix

Unique Ecology Well ID Tag No: ✓

Property Owner Philip - Georgetown

Site Address 734 S. Lucile Street

City Seattle County: King

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (W)WM *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter ✓ Static Level ✓

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Goble

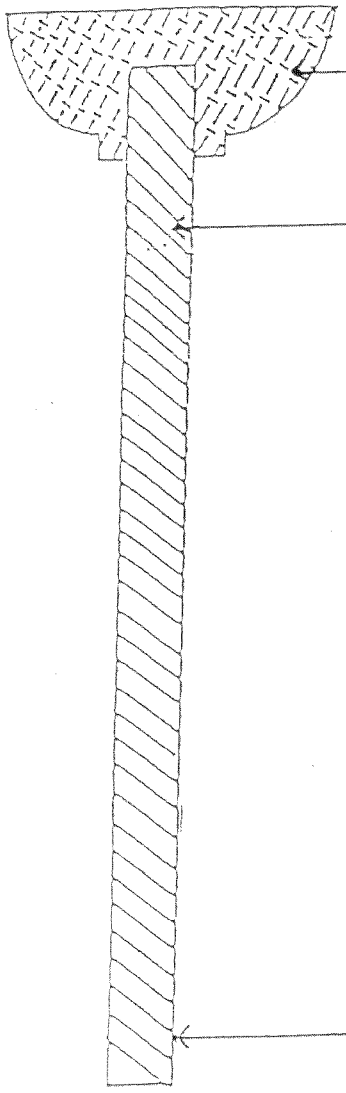
Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

If trainee, licensed driller's Signature and License no. ✓

Well Data 3441-18

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL Bentonite GROUT

DEPTH OF BORING 35.0 ft.

Formation Description

0 - 35 ft. GROUT IN PLACE

— ft.

— ft.

CLIENTS WELL ID #

CG-105-S2

Scale 1"=_____

Page_____ of _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A 61193

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

⊗ Resource Protection

○ Geotech Soil Boring

Property Owner Phillip - Georgetown

Site Address 734 S. Lucile Street

Consulting Firm Geomatrix

City Seattle County: King

Unique Ecology Well ID

Tag No: _____

Location NE 1/4 SW 1/4 Sec 20 Twn 24N R 4E (WWM) circle one WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Kasey Gable

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2501

Tax Parcel No. N/A

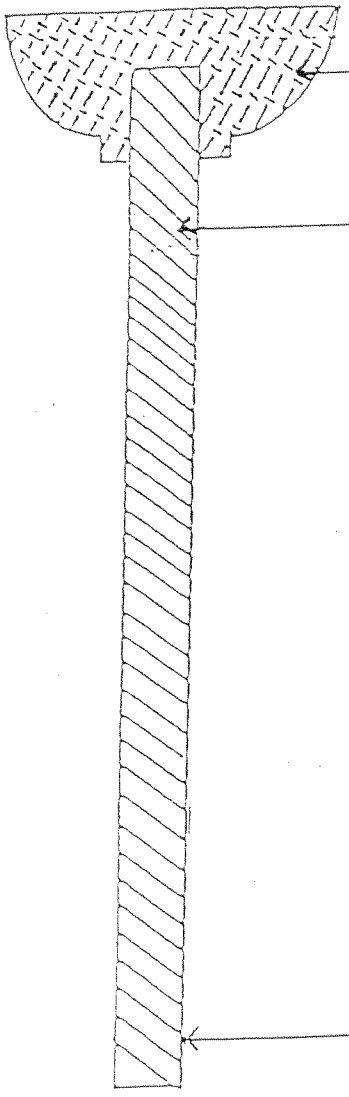
Cased or Uncased Diameter _____ Static Level _____

Work/Decommission Start Date 7/28/03

Work/Decommission Completed Date 7/28/03

If trainee, licensed driller's Signature and License no. _____

Well Data 3441-18

Construction/Design		Formation Description
	CONCRETE SURFACE SEAL	0 - 6.6 ft.
	BACKFILL Bentonite GROUT	— ft.
		GROUT IN PLACE
		— ft.
	DEPTH OF BORING 66.0 "	

CLIENTS WELL ID #

CG-105-I

Scale 1"= _____

Page _____ of _____

ECY 050-12 (Rev 2/01)

APPENDIX 4-D

PERMANENT SOIL GAS
PORT CONSTRUCTION DIAGRAMS

PHILIP SERVICES CORP.

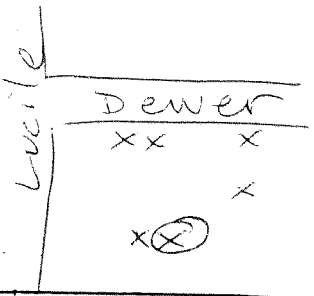
Monitoring Well Construction

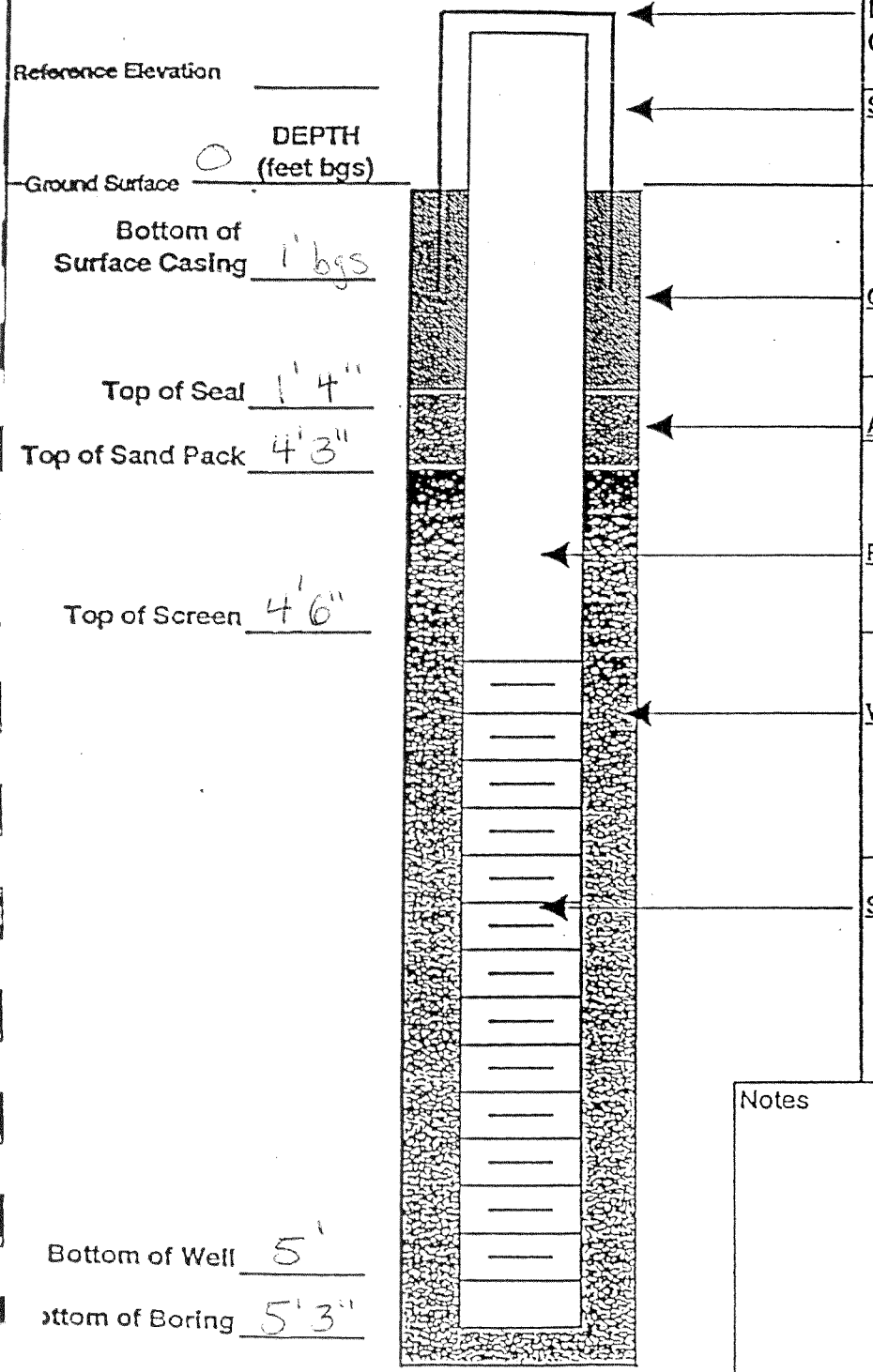
Well ID CG-5-SG1

Date Start 11/20/00
Date Complete 11/20/00
Boring Depth 5' 3"
Borehole Diameter 8.25"
Well Diameter 1" Stainless steel

Contractor Cascade Drilling
Drillers
Geologist Tasya Gray
Salamah Magnuson
Depth to Water (bgs) NA

Location Diagram





Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout
Type: Jet Set Lonestar Standard Fill Cement
4" ± 1'

Annular Seal
Type: Pure Gold Med. Bentonite

Riser Casing
Type: Stainless steel
Diameter: 1"

Well Packing Material
Type: sand
Monterey 2/2

Screen
Type: Stainless steel
Slot Width: .020"
Diameter: 1"

Notes

PHILIP SERVICES

Monitoring Well Construction

Well ID CG-6-SG

Date Start 11/20/00

Date Complete 11/20/00

Boring Depth 8' 3"

Borehole Diameter 8.25"

Well Diameter 1"

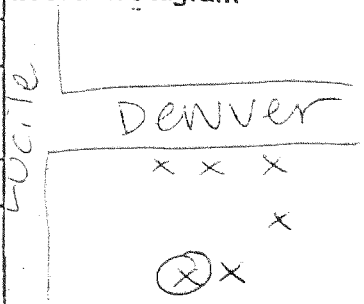
Contractor Cascade

Drillers Drilling

Geologist Tasya Gray
Salamah Magnuson

Depth to Water (bgs) NA

Location Diagram



Reference Elevation _____

Ground Surface 0 DEPTH (feet bgs)

Bottom of Surface Casing 1' bgs

Top of Seal 1'6"

Top of Sand Pack 7'3"

Top of Screen 7'6"

Bottom of Well 8'

Bottom of Boring 8'3"

Bore Hole Diameter 8.25"

Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout Type: 3" Jet Set
1'3" Cement Lonestar

Annular Seal Type: Pure Gold Med. Bentonite

Riser Casing Type: Stainless Steel
Diameter: 1"

Well Packing Material
Type:
Monterey 2/12 sand

Screen Type: Stainless Steel
Slot Width: .020"
Diameter: 1"

Notes

PHILIP SERVICES CORP.

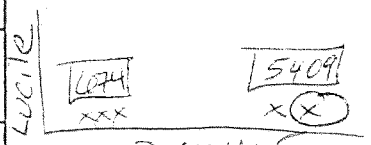
Monitoring Well Construction

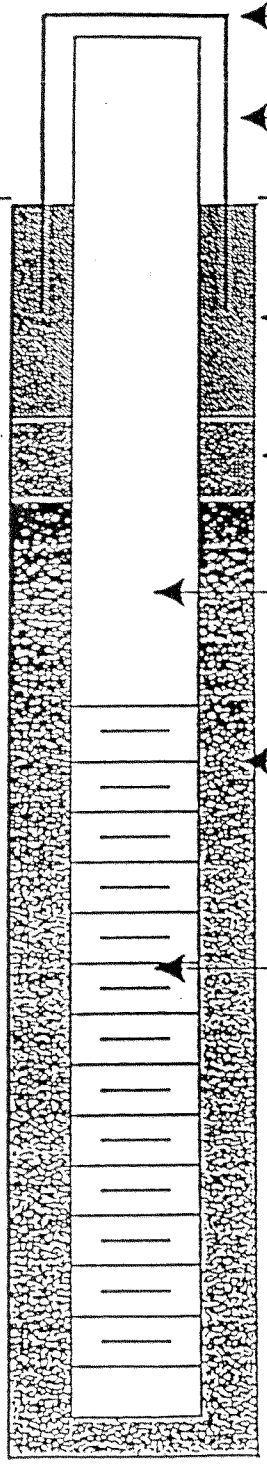
Well ID CG-2-SG

Date Start 11/20/00
Date Complete 11/20/00
Boring Depth 5' 3"
Borehole Diameter 8.25"
Well Diameter 1"

Contractor Cascade
Drillers Drilling
Geologist Tasya Gray
Salamah Magnuson
Depth to Water (bgs)

Location Diagram





Reference Elevation _____

Ground Surface 0 DEPTH (feet bgs)

Bottom of Surface Casing 1'

Top of Seal 1'2"

Top of Sand Pack 4'3"

Top of Screen 4'6"

Bottom of Well 5'

Bottom of Boring 5'3"

Bore Hole Diameter 8.25"

Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout Type: Jet Set & Lonestar Cement

Annular Seal Type: Pure Gold Med. Bentonite Chips

Riser Casing Type: Stainless Steel
Diameter: 1"

Well Packing Material
Type: Monterey 212 sand

Screen Type: Stainless Steel
Slot Width: .020"
Diameter: 1"

Notes

PHILIP SERVICES CORP.

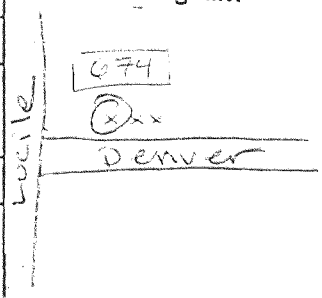
Monitoring Well Construction

Well ID CG-3-SG

Date Start 11/20/00
Date Complete 11/20/00
Boring Depth 5'3"
Borehole Diameter 8.25"
Well Diameter 1"

Contractor Cascade Drilling
Drillers
Geologist Tasya Gray
Salamah Magnuson
Depth to Water (bgs)

Location Diagram



Reference Elevation _____

DEPTH (feet bgs)

-Ground Surface 0

Bottom of Surface Casing 1'

Top of Seal 1'3"

Top of Sand Pack 3'9"

Top of Screen 4'6"

Bottom of Well 5'

Bottom of Boring 5'3"

Bore Hole Diameter 8.25"

Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout Type: Set Set & Lonestar Cement

Annular Seal Type: Pure Gold med. ~~Bentonite~~ Chips

Riser Casing Type: Stainless Steel
Diameter: 1"

Well Packing Material
Type: Monterey 2/12 sand

Screen Type: stainless steel
Slot Width: .020"
Diameter: 1"

Notes

Moisture probe installed ~6" west at 4.5' bgs

PHILIP SERVICES CORP.

Monitoring Well Construction

Well ID CG-4-SG

Date Start 11/20/00 | Contractor Cascade Drilling

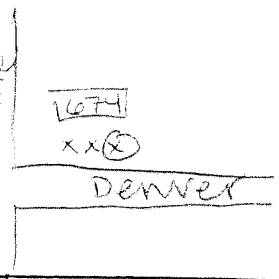
Date Complete 11/20/00 | Drillers

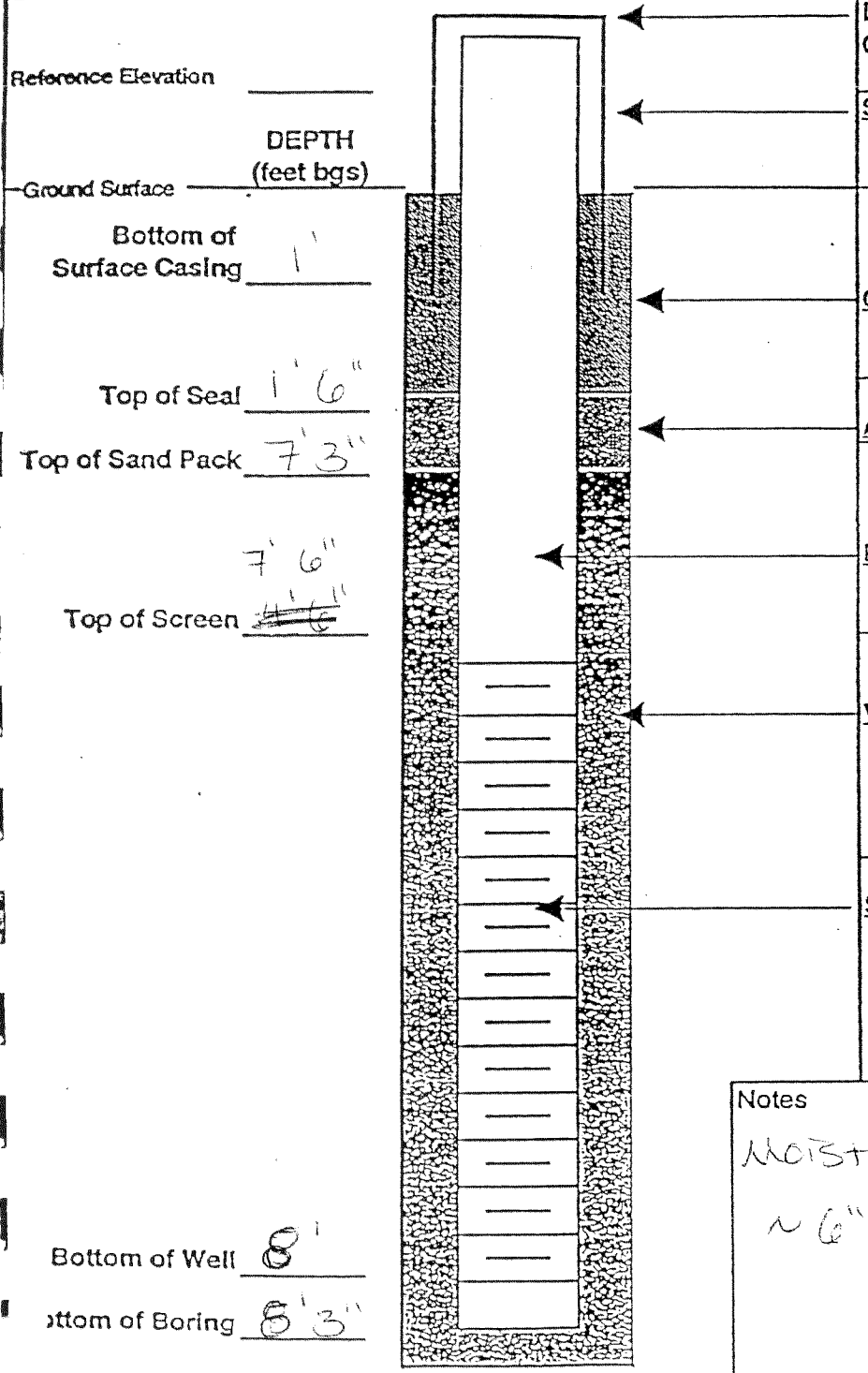
Boring Depth 8' 3" | Geologist Tasya Gray, Salamah Magnuson

Borehole Diameter 8.25" | Well Diameter 1"

Depth to Water (bgs)

Location Diagram





Reference Elevation _____

DEPTH (feet bgs)

Ground Surface

Bottom of Surface Casing 1'

Top of Seal 1' 6"

Top of Sand Pack 7' 3"

7' 6"

Top of Screen ~~4' 1"~~

Bottom of Well 8'

Bottom of Boring 8' 3"

Bore Hole Diameter 8.25"

Locking Cap

Steel Protective Surface Casing
Diameter: 8", 12" skirt

Grout Type: Jet Set & Lonestar Cement

Annular Seal Type: Pure Gold Med. Bentonite Chips

Riser Casing Type: Stainless Steel
Diameter: 1"

Well Packing Material
Type: Monterey 2/12 sand

Screen Type: stainless steel
Slot Width: .020"
Diameter: 1"

Notes

Moisture probe installed ~6" west at 7.5' bgs

APPENDIX 4-E

SVE WELL CONSTRUCTION DIAGRAMS

Well Completion Report

Site #: 623188-6347 County King Well # V-1

Site Name: Chempro-Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Environmental Inc. Date Drilled Start: 11/11/91

Driller: Gary Gauf Geologist: Ken Walter Date Completed: 11/12/91

Drilling Method: HSA Mobile B-61 Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete Ready Mix

Type of Annular Sealant: Bentonite & Cement

Amount of cement: # of bags 2 lbs. per bag 90

Amount of bentonite: # of bags ½ lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): chips, 3/8" holeplug

Amount of bentonite: # of Bags 4 lbs. per bag 50

Type of Sand Pack: Silica sand 16-30

Source of Sand: Unimin Granusil from Emmett, Idaho

Amount of Sand: # of bags 18 lbs. per bag 100

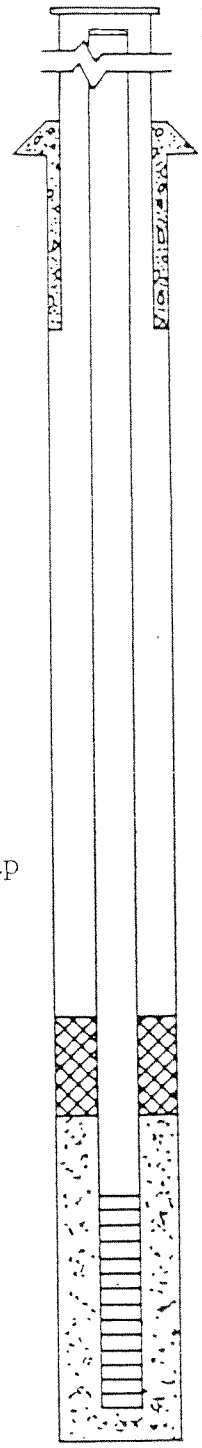
Well Construction Materials

5" Wire Wrap Screen	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type Sch 40	Other Specify Type
Riser coupling joint			Flush	
Riser pipe above w.t.			5"	
Riser pipe below w.t.			5"	
Screen			5"	Wire wrap
Coupling joint screen to riser				Flush
Protective casing			Flush Mount	

Measurements to .01 ft. (where applicable)

Riser pipe length	3'
Protective casing length	13' 12" I.D.
Screen length	25'
Bottom of screen to end cap	1"
Top of screen to first joint	1"
Total length of casing	28'
Screen slot size	0.30" continuous wire-wrap
% of openings in screen	
Diameter of borehole (in)	14"
ID of riser pipe (in)	

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

_____ 1.0 ft. Top of Seal

_____ _____ ft. Total Seal Interval

_____ 1.5 ft. Top of Sand

_____ 3 ft. Top of Screen

_____ 25 ft. Total Screen Interval

_____ 28 ft. Bottom of Screen

_____ 35 ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____

Well Completion Report

Site #: 623188-6347 County King Well # V-2

Site Name: Chempro-Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Environmental Inc. Date Drilled Start: 11/7/91

Driller: John Dolan Geologist: Ted Smith Date Completed: 11/7/91

Drilling Method: HSA D-50 Drilling Fluids (type): _____

Annular Space Details

Type of Surface Seal: Concrete Ready Mix

Type of Annular Sealant: Cement-Bentonite Powder

Amount of cement: # of bags 1 lbs. per bag 90

Amount of bentonite: # of bags ½ lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): chips, 3/8" holeplug

Amount of bentonite: # of Bags ½ lbs. per bag 50

Type of Sand Pack: 10-20 silica

Source of Sand: Colorado silica sand

Amount of Sand: # of bags 4 lbs. per bag 100

Well Construction Materials

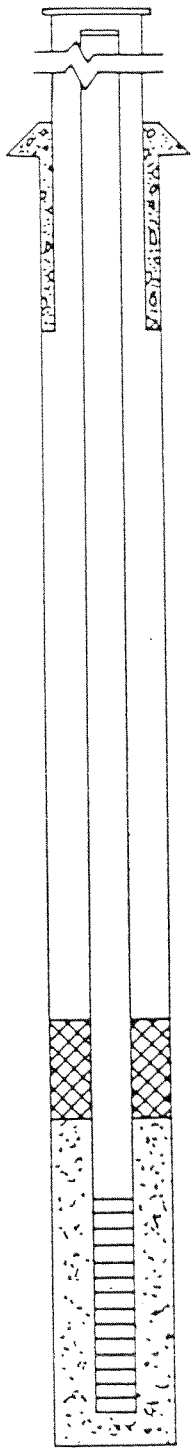
	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.			2"	
Riser pipe below w.t.				
Screen			2"	
Coupling joint screen to riser			Flush	
Protective casing			Flush Mount	

Measurements

to .01 ft. (where applicable)

Riser pipe length	2'
Protective casing length	13' 6" I.D.
Screen length	15'
Bottom of screen to end cap	0.5'
Top of screen to first joint	0.4'
Total length of casing	17
Screen slot size	.020
% of openings in screen	
Diameter of borehole (in)	6"
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ .5' ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

_____ 0.9 ft. Top of Seal

_____ _____ ft. Total Seal Interval

_____ 1.5 ft. Top of Sand

_____ 2 ft. Top of Screen

_____ 15 ft. Total Screen Interval

_____ 17 ft. Bottom of Screen

_____ 19 ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____

Well Completion Report

Site #: 623188-6347 County King Well # V-3

Site Name: Chempro-Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Environmental Inc. Date Drilled Start: 11/8/91

Driller: John Dolan Geologist: Ted Smith Date Completed: 11/8/91

Drilling Method: HSA (8.5") Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete Ready Mix

Type of Annular Sealant: Holeplug & Bentonite Powder

Amount of cement: # of bags _____ lbs. per bag _____

Amount of bentonite: # of bags _____ lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Granular 3/16 holeplug

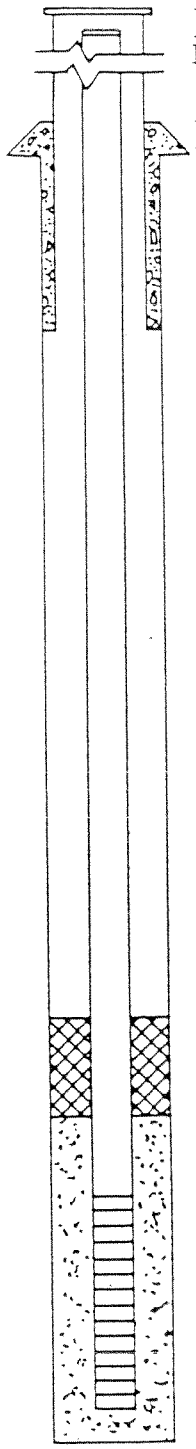
Amount of bentonite: # of Bags _____ lbs. per bag 50

Type of Sand Pack: 10-20

Source of Sand: Colorado silica sand

Amount of Sand: # of bags 4 lbs. per bag 100

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

Flush _____ ft. Casing Stickup

_____ 0 MSL Ground Surface

_____ 0 ft. Top of annular sealant

Auger I.D. 4.25"

_____ 1.0 ft. Top of Seal

_____ 0.5 ft. Total Seal Interval

_____ 1.5 ft. Top of Sand

_____ 2 ft. Top of Screen

_____ 15 ft. Total Screen Interval

_____ 17 ft. Bottom of Screen

_____ 19 ft. Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Sch 40	
Riser pipe above w.t.			2"	
Riser pipe below w.t.			None	
Screen			2"	
Coupling joint screen to riser			Flush	Thread
Protective casing			Flush	Mount

Measurements

to .01 ft. (where applicable)

Riser pipe length	2'
Protective casing length	13' 6" I.D.
Screen length	15'
Bottom of screen to end cap	0.78'
Top of screen to first joint	4"
Total length of casing	17
Screen slot size	0.020
% of openings in screen	
Diameter of borehole (in)	6"
ID of riser pipe (in)	2 NOM

Completed by: Ted Smith Surveyed by: _____

Well Completion Report

Site #: 623188-6347 County: King Well #: V-4

Site Name: Chempro-Georgetown Grid Coordinate: Northing _____ Easting _____

Drilling Contractor: Burlington Environmental Inc. Date Drilled Start: 11/15/91

Driller: Glenn Geologist: Ken Walter Date Completed: 11/15/91

Drilling Method: HSA B-61 Drilling Fluids (type): N/A

Annular Space Details

Type of Surface Seal: Concrete Ready Mix

Type of Annular Sealant: Holeplug & Bentonite Powder; Cement

Amount of cement: # of bags 2 lbs. per bag 90

Amount of bentonite: # of bags 2 lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Chips

Amount of bentonite: # of Bags 2 lbs. per bag 50

Type of Sand Pack: 10-20

Source of Sand: Colorado silica sand

Amount of Sand: # of bags 4 lbs. per bag 100

Well Construction Materials

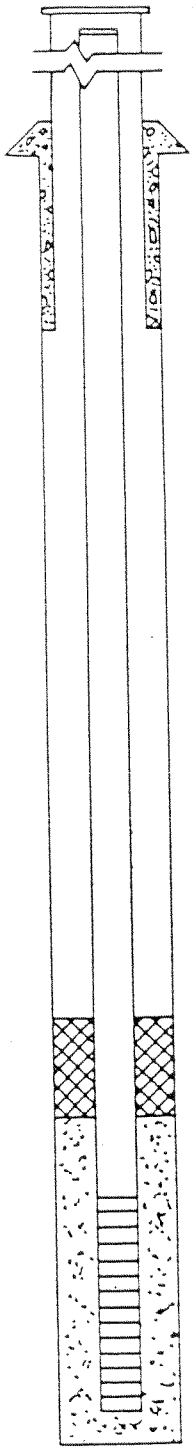
	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			Flush	
Riser pipe above w.t.			2"	
Riser pipe below w.t.				
Screen			2"	
Coupling joint screen to riser			Flush thread	
Protective casing			Flush mount	

Measurements

to .01 ft. (where applicable)

Riser pipe length	2.0'
Protective casing length	13' 6" I.D.
Screen length	15'
Bottom of screen to end cap	0.5'
Top of screen to first joint	0.4'
Total length of casing	17
Screen slot size	0.020
% of openings in screen	
Diameter of borehole (in)	
ID of riser pipe (in)	2"

Elevations — .01 ft.



_____ _____ MSL Top of Protective Casing

_____ _____ MSL Top of Riser Pipe

_____ _____ ft. Casing Stickup

_____ _____ MSL Ground Surface

_____ _____ ft. Top of annular sealant

_____ 0.8 ft. Top of Seal

0.8 1.4 ft. Total Seal Interval

_____ 1.4 ft. Top of Sand

_____ 2.0 ft. Top of Screen

_____ _____ ft. Total Screen Interval

_____ 16.8 ft. Bottom of Screen

30 _____ ft. Bottom of Borehole

Completed by: Ken Walter Surveyed by: _____