Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN
SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Hand Auger
Sampling Method	:
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HA-1

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Topsoil, rootlets	
		SS-1	0.0-0.5	2.6						
		SS-1	0.5-1.0						Dark brown SAND, rootlets	
1	-1	SS-2	1.0-1.3	5.1					Same as above	
		SS-2	1.3-1.5						Brown SAND, some gravel, dry	
		SS-3	1.5-2.3	4.7					Brown SAND, coarse, moist, trace gravel	
									Same as above	
2	-2	SS-4	2.3-2.8	4.1						
		SS-5	2.8-3.3	4.0					Same as above	
3	-3	SS-6	3.3-4.0	3.5					Same as above	
4									End of boring at 4'	

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Hand Auger
Sampling Method	:
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HA-2

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Dark brown SAND with gravel, rootlets, glass	
		SS-1	0.0-0.7	2.7					Brown SAND with gravel, rootlets	
		SS-2	0.7-1.3	4.5						
1	-1									
		SS-3	1.3-1.7	4.7					Same as above (no rootlets)	
		SS-4	1.7-2.2	6.4					Light brown SAND, some gravel	
2	-2									
		SS-5	2.2-2.7	8.1					Light brown coarse SAND, trace gravel, moist	
		SS-6	2.7-3.3	7.8					Same as above	
3	-3									
		SS-7	3.3-4.0	6.8					Same as above	
4									End of boring at 4'	

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Hand Auger
Sampling Method	:
Total Depth (ft.)	: 1.4'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HA-3

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1	0.0-0.9	0.0					Dark brown SAND with cinder, rootlets, dry	
1	-1	SS-2	0.9-1.4	3.3					Same as above but cinders are in smaller pieces; rootlets are less prevelant	
									Refusal at 1.4' (rock) End of boring at 1.4'	
2										

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Hand Auger
Sampling Method	:
Total Depth (ft.)	: 2.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HA-4

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1	0.0-0.8	2.2					Dark brown SAND with cinder, rootlets, dry	
		SS-2	0.8-1.4	5.2					Same as above with less rootlets	
1	-1	SS-3	1.4-2.0	5.1					Cinder fill	
2									End of boring at 2.0'	

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11-28-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/23/01
Date Completed	: 08/23/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Split Spoon / GeoProbe
Sampling Method	:
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING SB-26A

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	3.2					Concrete to 9"	
1	-1								Brown clayey SAND, moist	
2	-2	SS-2 2.0-4.0	24/18	6.8					Same as above	
3	-3								Brown fine to medium SAND, trace silt	
4									End of boring at 4.0'	

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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/23/01
Date Completed	: 08/23/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Split Spoon / GeoProbe
Sampling Method	:
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING SB-27A

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Crushed LIMESTONE and slag gravel	
		SS-1 0.0-2.0	24/24	4.1						
1	-1									
2	-2	SS-2 2.0-4.0	24/24	6.5					Dark brown clayey FILL, few gravel, few sand, brick fragments, cloth noted	
3	-3									
4									End of boring at 4.0'	

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 85.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-1D

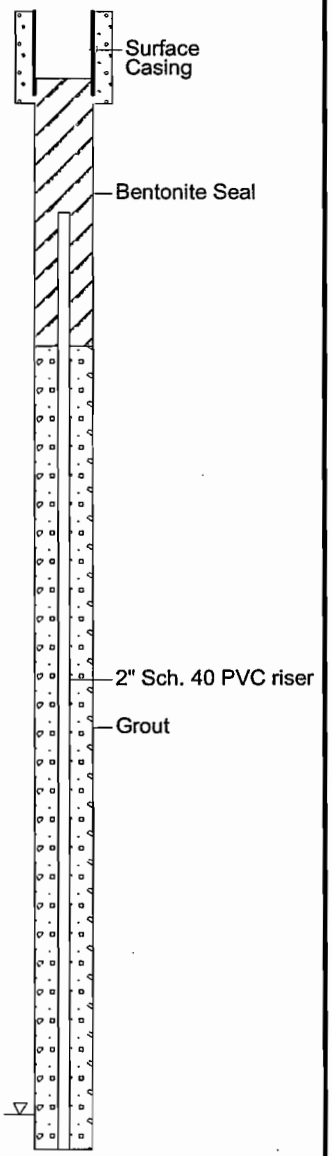
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: Photo vac 100ppm ISO
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		2.3				Black organic rich medium to fine SAND, trace silt, trace gravel, dry, rootlets throughout
1	-1							
2	-2	HA-2/ 2.0-4.0		4.8				Brown medium to coarse SAND, trace gravel, moist, loose
3	-3							
4	-4	SS-3 4.0-6.0	24/10	4.9	1-5-1			Used tile probe from 4 to 5, begin s/s at 4.0'
5	-5							Same as above, trace silt
6	-6	SS-4 6.0-8.0	24/12	3.3	2-3-1			Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/18	6.0	2-2-3			Same as above, less silt
9	-9							
10	-10	SS-6 10.0-12.0	24/12	6.4	3-9-9			Same as above
11	-11							
12	-12	SS-7 12.0-14.0	24/14	4.8	4-14-11			Same as above
13	-13							
14	-14	SS-8 14.0-16.0	24-12	3.1	4-20-11			Same as above
15	-15							
16	-16	SS-9 16.0-18.0	24/24	4.7	9-26-12			Same as above, wet, more gravel, more coarse sand
17								

Well: HMW-1D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 85.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-1D

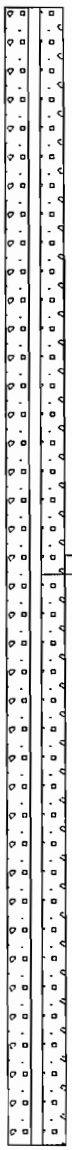
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: Photo vac 100ppm ISO
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-1D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
17	-17							
18	-18	SS-10 18.0-20.0	24/12	2.8	9-24-6			Same as above
19	-19							
20	-20	SS-11 20.0-22.0	24/12	6.1	3-10-7			Same as above
21	-21							
22	-22	SS-12 22.0-24.0	24/12	5.9	4-10-8			Same as above
23	-23							
24	-24	SS-13 24.0-26.0	24/12	5.0	5-18-13			Same as above, less gravel, less coarse sand
25	-25							
26	-26	SS-14 26.0-28.0	24/12	4.1	2-14-2			Same as above
27	-27							
28	-28	SS-15 28.0-30.0	24/16	3.0	4-16-13			Same as above
29	-29							
30	-30	SS-16 30.0-32.0	24/14	8.4	5-18-15			Same as above, hit rock in end of spoon
31	-31							
32	-32	SS-17 32.0-34.0	24/12	5.1	9-48-30			Same as above
33	-33							
34								



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 85.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-1D

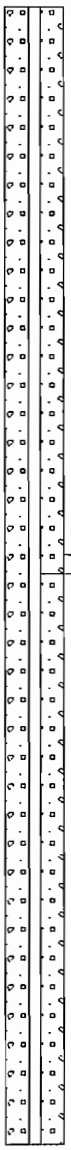
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: Photo vac 100ppm ISO
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-1D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
34	-34	SS-18 34.0-36.0	24/18	7.1	7-38-29	Same as above, more gravel
35	-35					
36	-36	SS-19 36.0-37.0	24/0 12/6	7.1 5.8	15-50-27	No recovery, resampled at 36 to 37'
37	-37	SS-20 37.0-39.0	24/12	5.5	8-34-25	Same as above, increase to a few gravel, more coarse sand
38	-38					
39	-39	SS-21 39.0-41.0	24/12	0	21-40-27	Same as above, back to trace of gravel
40	-40					
41	-41	SS-22 41.0-43.0	24/12	1.9	29-66-27	Same as above
42	-42					
43	-43	SS-23 43.0-45.0	24/18	3.5	15-51-27	Same as above
44	-44					
45	-45	SS-24 45.0-47.0	24/12	1.7	18-85-50	Same as above
46	-46					
47	-47	SS-25 47.0-49.0	24/22	1.8	14-66-40	Same as above, less gravel
48	-48					Brown fine SAND, trace silt, wet
49	-49	SS-26 49.0-51.0	24/16	1.1	7-39-27	Same as above, sluff in 1st feet
50	-50					
51						



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 85.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-1D

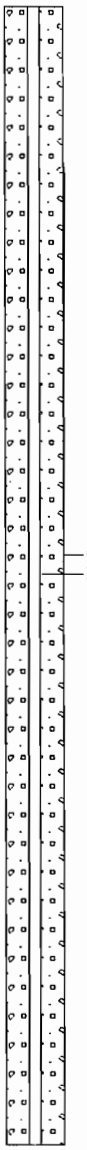
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: Photo vac 100ppm ISO
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-1D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
51	-51	SS-27 51.0-53.0	24/22	2.3	5-46-44			Brown coarse to medium SAND, trace silt, wet
52	-52							Brown fine SAND, trace silt, wet
53	-53	SS-28 53.0-55.0	24/14	3.0	5-29-21			Same as above, trace medium sand and gravel
54	-54							
55	-55	SS-29 55.0-57.0	24/22	4.0	7-26-28			Same as above, no coarse sand or gravel
56	-56							
57	-57	SS-30 57.0-59.0	24/12	3.7	3-9-11			Grey fine silty SAND, wet Same as above, sluff 1st 8"
58	-58							
59	-59	SS-31 59.0-61.0	24/24	1.3	8-26-16			Same as above, 12" shoe ss
60	-60							
61	-61	SS-32 61.0-63.0	24/24	9.1	13-31-21			Grey fine sandy SILT, wet, 1st 6" sluff
62	-62							
63	-63	SS-33 63.0-65.0	24/24	7.8	29-45-26			Same as above, increase silt with depth
64	-64							
65	-65	SS-34 65.0-67.0	24/10	9.2	35-50			Same as above
66	-66							
67	-67	SS-35 67.0-69.0	24/24	6.5	15-46-27			Interbeded with clay at end of spoon
68								Same as above, interbeded clayey silt



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 07/31/01
Date Completed	: 07/31/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 85.0'
S. Water Level Date	:
S. Water Level (ft.)	:

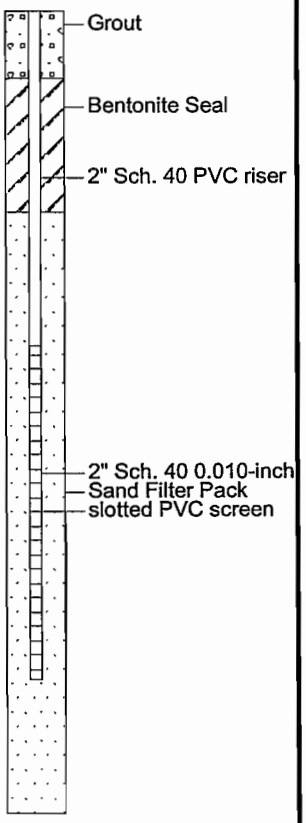
LOG OF BORING HMW-1D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: Photo vac 100ppm ISO
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
68	-68							
69	-69	SS-36 69.0-71.0	24/24	8.2	11-30-19			Same as above, trace gravel
70	-70							
71	-71	SS-37 71.0-73.0	24/24	3.1	11-48-26			Same as above
72	-72							
73	-73	SS-38 73.0-75.0	24/24	6.4	8-34-27			Same as above, more gravel
74	-74							
75	-75	SS-39 75.0-77.0	24/24	8.9	6-18-14			Same as above, no clay, less gravel
76	-76							
77	-77	SS-40 77.0-79.0	24/24	5.8	4-15-13			Same as above
78	-78							
79	-79	SS-41 79.0-81.0	24/24	3.5	7-17-13			Grey silty fine SAND, wet, trace gravel
80	-80							Same as above
81	-81	SS-42 81.0-83.0	24/18	3.9	23-31-50			Same as above
82	-82							Brown and grey layering
83	-83	SS-43 83.0-85.0	24/24	3.6	14-34-23			Same as above, no layering less silt
84	-84							Same as above, brown and grey layering
85								End of boring at 85'

Well: HMW-1D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

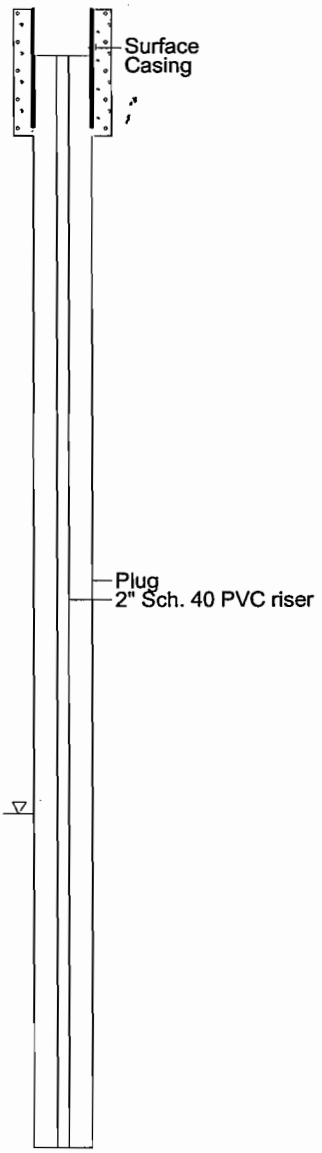
Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 24.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-6S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	SS-1 0.0-2.0	24/12	7.1	7-27-8			Black organic rich medium to fine sand FILL, few silt, trace gravel, dry, slag fragments noted
1	-1							
2	-2		24/0	8.9	1-4-3			
3	-3							No recovery, no catch, black staining on spoon
4	-4	SS-3 4.0-6.0	24/10	14.5	1-4-3			Black stained medium to coarse SAND, trace gravel, trace silt
5	-5							
6	-6	SS-4 6.0-8.0	24/12	11.9	1-4-4			Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/12	5.4	2-5-3			Same as above, wet
9	-9							
10	-10	SS-6 10.0-12.0	24/12	10.5	2-6-7			Same as above
11	-11							Brown medium to coarse SAND, trace silt, trace gravel
12								



Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 24.0'
S. Water Level Date	:
S. Water Level (ft.)	:

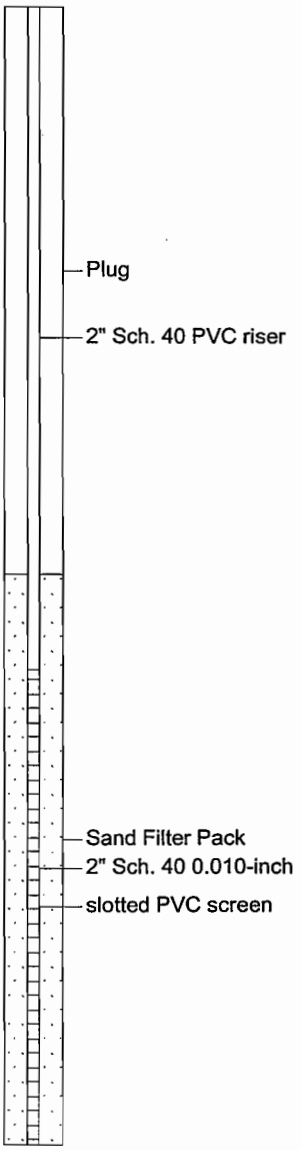
LOG OF BORING HMW-6S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
12	-12		24/2		7-18-12			
13	-13							Same as above, increase gravel, moist
14	-14	SS-7 14.0-16.0	24-10	9.2	6-13-10			Same as above, few gravel, more coarse sand
15	-15							
16	-16	SS-8 16.0-18.0	24/10	8.6	4-15-12			Same as above, less staining
17	-17							
18	-18	SS-9 18.0-20.0	24/10	2.5	4-17-9			Same as above, wet at end of spoon, no staining
19	-19							
20	-20	SS-10 20.0-22.0	24/12	8.4	6-15-10			Same as above, wet
21	-21							
22	-22	SS-11 22.0-24.0	24/12	9.4	4-12-9			Same as above, wet, black staining noted
23	-23							
24								End of boring at 24'

Well: HMW-6S
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 88.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-6D

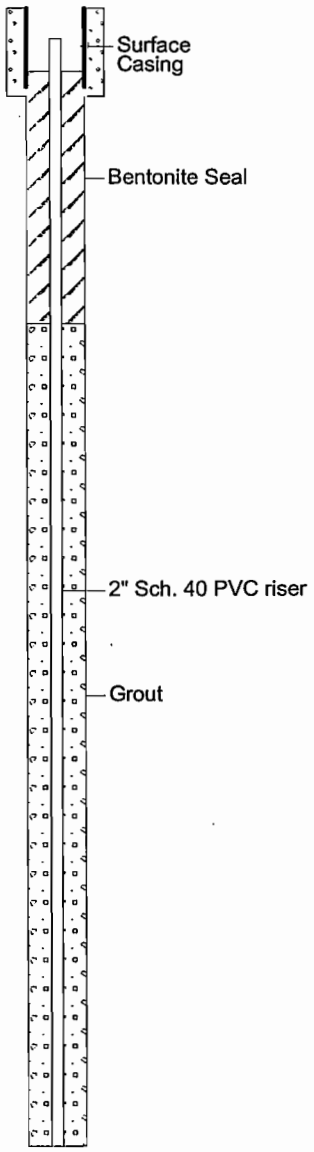
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		1.6				Black organic rich medium to fine sand FILL, trace silt, trace gravel, dry, slag fragments noted
1	-1							
2	-2	HA-2/ 2.0-4.0		4.1				
3	-3							Brown medium to coarse SAND, trace gravel, trace silt, moist
4	-4	SS-3 4.0-6.0	24/14	3.4	4-9-4			Same as above
5	-5							
6	-6	SS-4 6.0-8.0	24/12	6.4	3-7-3			Same as above, black colored banding
7	-7							
8	-8	SS-5 8.0-10.0	24/18	3.4	5-10-5			Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/18	5.3	3-5-3			Same as above
11	-11							
12	-12	SS-7 12.0-14.0	24/14	2.8	7-29-15			Same as above, more coarse SAND, more gravel
13	-13							
14	-14	SS-8 14.0-16.0	24/10	5.6	17-61-20			Same as above, increase to a few gravel
15	-15							
16	-16	SS-9 16.0-18.0	24/12	8.8	13-28-16			Same as above
17	-17							
18								

Well: HMW-6D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 88.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-6D

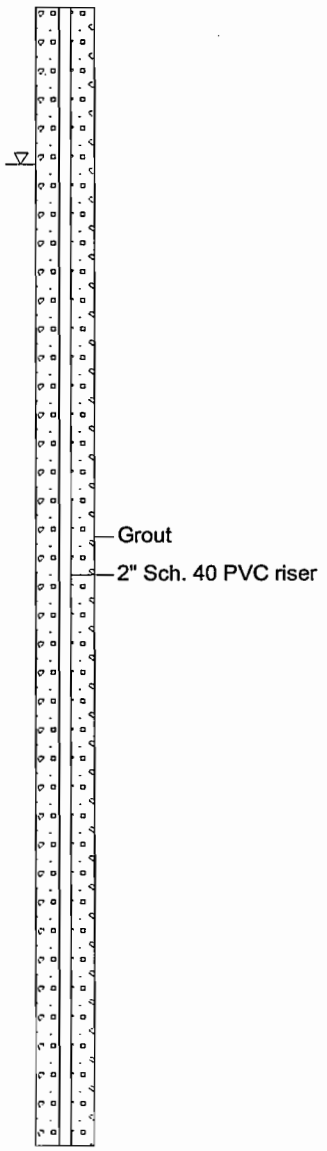
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
18	-18	SS-10 18.0-20.0	24/12	9.5	16-35-15			Same as above
19	-19							
20	-20	SS-11 20.0-22.0	24/16	1.3	10-26-15			Same as above, wet
21	-21							
22	-22	SS-12 22.0-24.0	24/12	0.3	8-37-17			Same as above, black staining at 21.5', 2" thick Same as above, increase medium grain SAND
23	-23							
24	-24	SS-13 24.0-26.0	24/8	0.0	11-28-17			Same as above
25	-25							
26	-26	SS-14 26.0-28.0	24/14	2.4	10-27-11			Same as above
27	-27							
28	-28	SS-15 28.0-30.0	24/10	0.9	5-15-9			Same as above
29	-29							
30	-30	SS-16 30.0-32.0	24/12	1.3	23-52-28			Same as above, increase silt (still trace)
31	-31							
32	-32	SS-17 32.0-34.0	24/16	2.3	7-27-31			Same as above, fine to medium grain SAND, trace gravel, trace silt, wet
33	-33							
34	-34	SS-18 34.0-36.0	24/12	0.0	13-39-31			Same as above, large stone in end of spoon
35	-35							
36								

Well: HMW-6D
Elev.:



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Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 88.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-6D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-6D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
36	-36	SS-19 36.0-38.0	23/14	1.4	36-61-50	Same as above, increase silt, larger size gravel, becoming very dense
37	-37					
38	-38	SS-20 38.0-40.0	24/16	1.7	15-54-40	Same as above
39	-39					
40	-40	SS-21 40.0-42.0	24/16	0.0	29-78-50	Same as above, very dense
41	-41					
42	-42	SS-22 42.0-44.0	24/8	0.7	15-54-39	Same as above, less gravel (Note: Had to move rig, possibly hit large rock and it caused augers to offset 2 to 3", Didn't move boring)
43	-43					
44	-44	SS-23 44.0-46.0	23/12	0.1	28-88-50	Same as above, less silt
45	-45					
46	-46	SS-24 46.0-48.0	24/4	0.0	15-88-4	Same as above
47	-47					
48	-48	SS-24 48.0-50.0	11/10	0.0	38-50	Same as above
49	-49					
50	-50		23/0		9-63-50	
51	-51					Trace of gravel in spoon, no recovery
52	-52	SS-25 52.0-54.0	23/12	1.6	15-67-50	Same as above, medium to fine SAND, trace silt, trace gravel
53	-53					
54						

Grout
2" Sch. 40 PVC riser

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South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 88.0'
S. Water Level Date	:
S. Water Level (ft.)	:

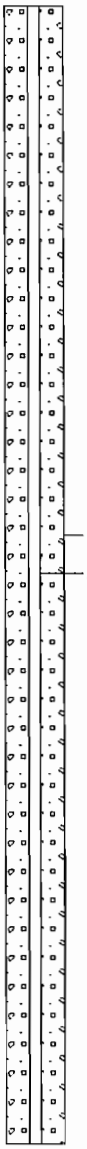
LOG OF BORING HMW-6D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-6D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
54	-54		23/0		25-71-50			No recovery, resampling same interval, no recovery on 2nd attempt
55	-55							
56	-56	SS-26 56.0-58.0	23/14	1.3	18-54-50			Same as above, black staining at 57.5
57	-57							
58	-58	SS-27 58.0-60.0	17/14	1.6	13-28-50			Same as above
59	-59							
60	-60	SS-28 60.0-62.0	24/12	2.1	15-52-38			Same as above
61	-61							
62	-62	SS-29 62.0-64.0	17/0		18-36-50			No Recovery
63	-63							
64	-64	SS-30 64.0-66.0	16/10	8.4	17-32-50			Same as above, less gravel
65	-65							
66	-66	SS-31 66.0-68.0	17/14	0.5	7-32-50			Same as above, more gravel
67	-67							
68	-68		15/15		27-25-50			1" of brown clayey SILT, very stiff in spoon, dry
69	-69							14" of sluff 1" clayey SILT at end
70	-70	SS-32 70.0-72.0	21/18	4.1	6-38-50			Brown medium to carse SAND, trace gravel, trace silt, wet
71	-71							
72								



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 88.0'
S. Water Level Date	:
S. Water Level (ft.)	:

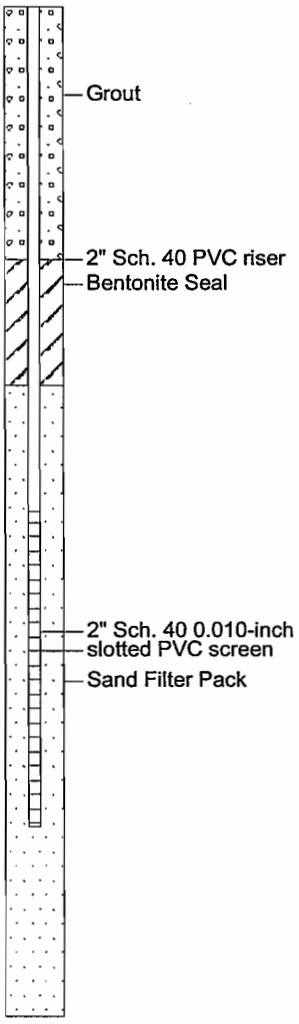
LOG OF BORING HMW-6D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
72	-72							
73	-73	SS-33 72.0-74.0	21/16	2.5	13-48-50			Same as above
74	-74	SS-34 74.0-76.0	12/12		38-120			Same as above, less gravel
75	-75							
76	-76	SS-35 76.0-78.0	21/21	1.1	18-63-50			Same as above, no gravel
77	-77							
78	-78	SS-36 78.0-80.0	15/15	7.5	18-72-50			Brown silty CLAY, few sand and gravel, 1" thick in end of spoon No recovery on first attempt, took 109 to go 6"
79	-79							
80	-80	SS-37 80.0-82.0	12/12	4.2	34-100			Brown medium to fine SAND, trace gravel, wet, very dense Same as above, no gravel, increase fines
81	-81							
82	-82		24/0		12-89			Brown fine to very fine silty SAND, wet, no recovery
83	-83							
84	-84	SS-38 84.0-86.0	24/4	0	1-9-20			Same as above, 1" silt seem at end of spoon
85	-85							
86	-86	SS-39 86.0-88.0	24/12	0	23-9			Brown fine to medium grain SAND, trace gravel, trace silt
87	-87							
88	-88							End of boring at 88.0'
89	-89							
90								

Well: HMW-6D
Elev.:



Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 78.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-8D

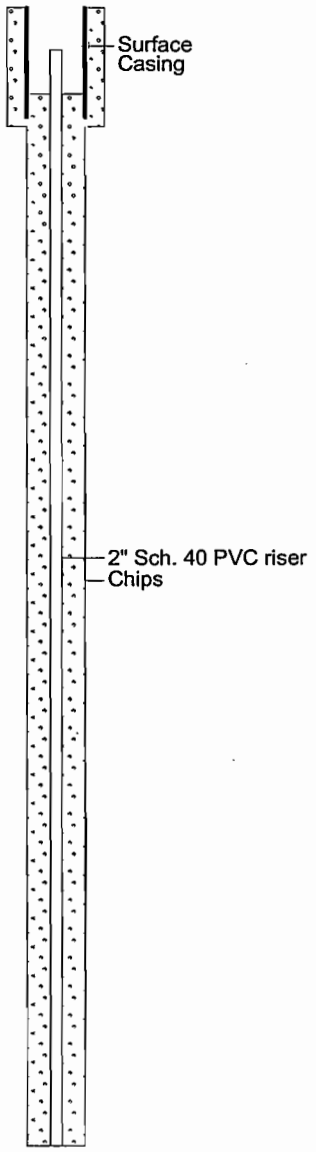
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							Concrete
1	-1	HA-1/ 1.0-2.0		1.8				
2	-2	HA-2/ 2.0-4.0		2.3				Brown silty medium to carse SAND, trace gravel moist
3	-3							Light brown medium to carse SAND, trace gravel moist
4	-4	SS-3 4.0-6.0	24/14	0.9	4-17-8			Same as above
5	-5							
6	-6	SS-4 6.0-8.0	24/18	2.1	4-9-5			Same as above, less gravel
7	-7							
8	-8	SS-5 8.0-10.0	24/22	5.6	3-6-4			Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/16	0.6	2-6-4			Same as above, increase gravel
11	-11							
12	-12	SS-7 12.0-14.0	24/14	2.9	4-19-16			Same as above
13								

Well: HMW-8D
Elev.:



Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 78.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-8D

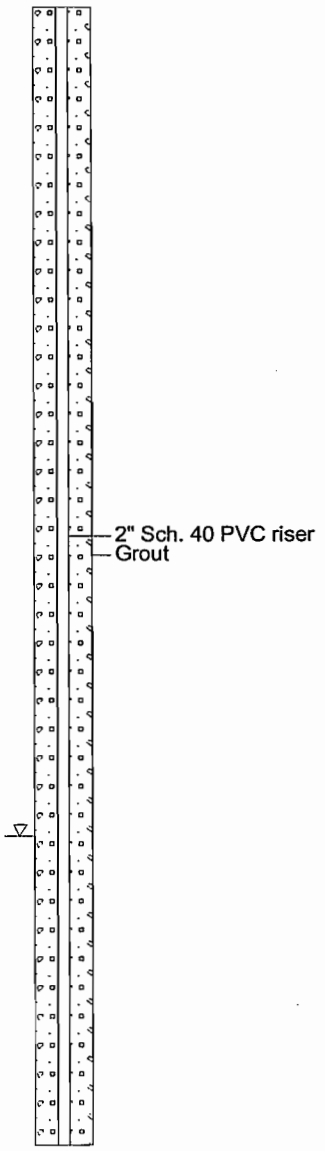
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
13	-13							
14	-14	SS-8 14.0-16.0	24/14	2.4	4-21-13			Same as above, no gravel
15	-15							
16	-16	SS-9 16.0-18.0	24/20	2.1	4-47-31			Same as above
17	-17							
18	-18	SS-10 18.0-20.0	24/24	0.8	11-29-17			Same as above, trace gravel
19	-19							
20	-20	SS-11 20.0-22.0	24/20	0.0	11-31-17			Same as above
21	-21							
22	-22	SS-12 22.0-24.0	24/18	0.0	8-16-12			Same as above, wet
23	-23							
24	-24	SS-13 24.0-26.0	24/20	0.0	4-22-21			Same as above
25	-25							
26								

Well: HMW-8D
Elev.:



Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 78.0'
S. Water Level Date	:
S. Water Level (ft.)	:

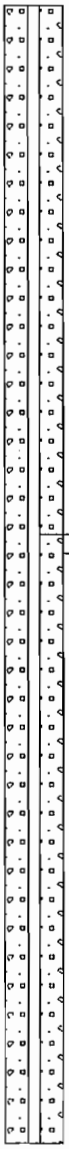
LOG OF BORING HMW-8D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
26	-26	SS-14 26.0-28.0	24/24	0.0	5-15-13			Same as above
27	-27							
28	-28	SS-15 28.0-30.0	24/22	0.0	4-19-19			Same as above, more coarse, less gravel
29	-29							
30	-30	SS-16 30.0-32.0	24/22	0.0	4-18-13			Same as above, less coarse, more fines
31	-31							
32	-32	SS-17 32.0-34.0	24/20	0.0	4-16-17			Same as above
33	-33							
34	-34	SS-18 34.0-36.0	24/22	0.0	5-24-25			Same as above, increase gravel with depth
35	-35							
36	-36	SS-19 36.0-38.0	24/20	0.0	2-15-13			Same as above, less fines, more coarse
37	-37							
38	-38	SS-20 38.0-40.0	24/10	0.0	13-31-19			Same as above
39								

Well: HMW-8D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 78.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-8D

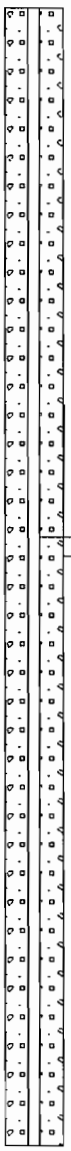
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Well: HMW-8D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
39	-39							
40	-40	SS-21 40.0-42.0	24/10	0.0	16-29-16			Same as above, less gravel
41	-41							
42	-42	SS-22 42.0-44.0	24/16	0.0	11-39-23			Same as above, increase gravel
43	-43							
44	-44	SS-23 44.0-46.0	24/20	0.0	7-60-45			Same as above, large cobble in end of spoon
45	-45							
46	-46	SS-24 46.0-48.0	24/10	0.0	8-27-24			Same as above
47	-47							
48	-48	SS-25 48.0-50.0	24/14	0.0	9-28-21			Same as above
49	-49							
50	-50	SS-26 50.0-52.0	24/10	0.0	8-20-16			Same as above
51	-51							
52								



Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 78.0'
S. Water Level Date	:
S. Water Level (ft.)	:

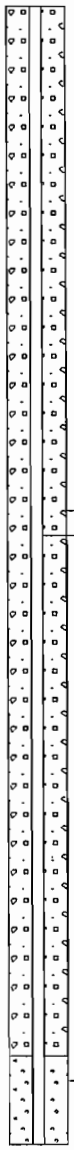
LOG OF BORING HMW-8D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
52	-52	SS-27 52.0-54.0	24/12	0.0	12-37-23			Same as above, few gravel
53	-53							
54	-54	SS-28 54.0-56.0	24/12	0.0	9-35-30			Same as above
55	-55							
56	-56	SS-29 56.0-58.0	24/10	0.0	11-26-17			Same as above
57	-57							
58	-58	SS-30 58.0-60.0	24/16	0.0	19-45-27			Same as above, large cobble in spoon
59	-59							
60	-60	SS-31 60.0-62.0	24/18	0.0	10-50-43			Same as above, brown medium to coarse sand, trace silt, trace gravel, wet
61	-61							
62	-62	SS-32 62.0-64.0	23/12	0.0	14-60-50			Same as above
63	-63							
64	-64	SS-33 64.0-66.0	24/20	0.0	16-51-35			Same as above
65								

Well: HMW-8D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN
SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 78.0'
S. Water Level Date	:
S. Water Level (ft.)	:

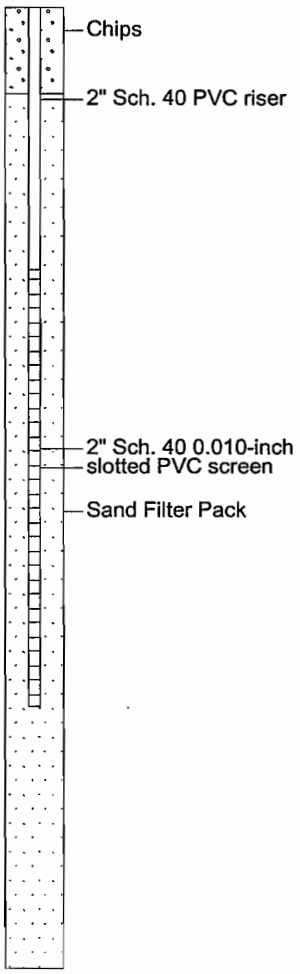
LOG OF BORING HMW-8D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample
Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
65	-65					Same as above, few gravel
66	-66	SS-34 66.0-68.0	24/18	0.0	14-61-37	Brown silty CLAY seam, 1" thick at end of spoon
67	-67					Brown medium to coarse SAND, trace silt, trace gravel, wet
68	-68	SS-35 68.0-70.0	23/16	0.0	23-60-50	Same as above, few gravel
69	-69					Same as above, trace gravel
70	-70	SS-36 70.0-72.0	15/10	0.0	34-50	Greyish to brown silty SAND 8" of greyish to brown clayey SILT, dry
71	-71					Brown medium to fine SAND, trace silt, trace gravel, wet
72	-72	SS-37 72.0-74.0	23/23	0.0	6-36-50	
73	-73					Same as above
74	-74	SS-38 74.0-76.0	17/17	0.0	37-42-50	Grey very fine very silty SAND, wet Same as above
75	-75					
76	-76	SS-39 76.0-78.0	17/17	0.0	23-41-50	Grey very fine sandy SILT, wet
77	-77					Grey SILT outer beded with clay
78						Grey very fine very silty SAND End of boring at 78'

Well: HMW-8D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 09/15/01
Date Completed	: 09/15/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-9D

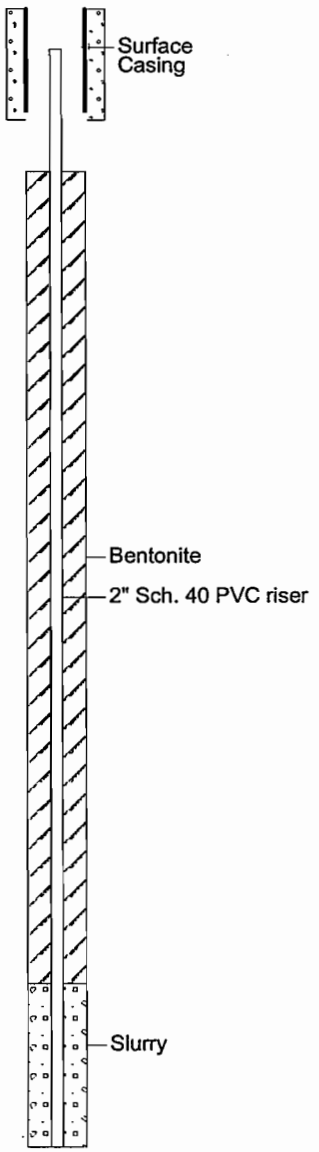
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		3.3				Dark brown fine to medium SAND, trace gravel, moist
1	-1							
2	-2	HA-2/ 2.0-4.0		2.9				Brown fine to medium SAND, trace gravel, moist
3	-3							
4	-4	SS-3 4.0-6.0	24/20	0.6				Dark brown fine to medium SAND, trace gravel, moist
5	-5							Brown medium to coarse SAND trace gravel, moist
6	-6	SS-4 6.0-8.0	24/10	0.0				Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/12	0.9				Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/10	0.0				Same as above
11	-11							
12	-12	SS-7 12.0-14.0	24/8	3.2				Same as above
13	-13							
14								

Well: HMW-9D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 09/15/01
Date Completed	: 09/15/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

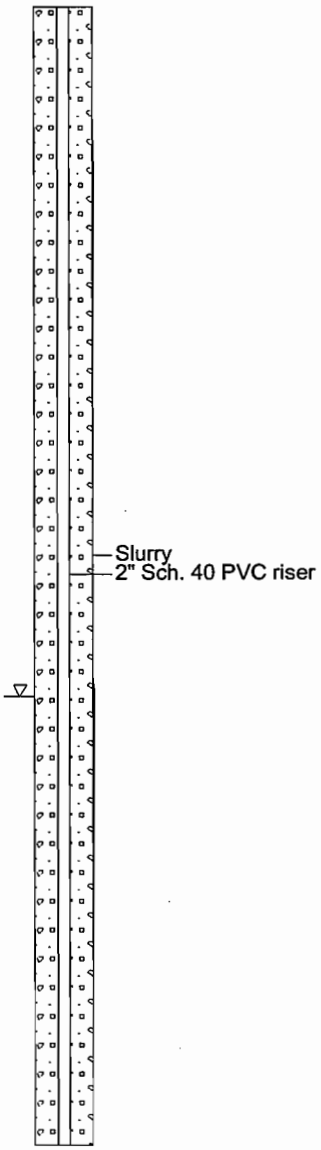
LOG OF BORING HMW-9D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
14	-14	SS-8 14.0-16.0	24/12	3.9				Same as above
15	-15							
16	-16	SS-9 16.0-18.0	24/14	2.7				Same as above, less coarse, more fine sand
17	-17							
18	-18	SS-10 18.0-20.0	24/14	3.4				Same as above, increase coarse
19	-19							
20	-20	SS-11 20.0-22.0	24/10	1.0				Same as above
21	-21							
22	-22	SS-12 22.0-24.0	24/10	2.1				Same as above, wet
23	-23							
24	-24	SS-13 24.0-26.0	24/15	0.5	5-13-10			Same as above
25	-25							
26	-26	SS-14 26.0-28.0	24/10	2.4	6-17-11			Same as above
27	-27							
28								

Well: HMW-9D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 09/15/01
Date Completed	: 09/15/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

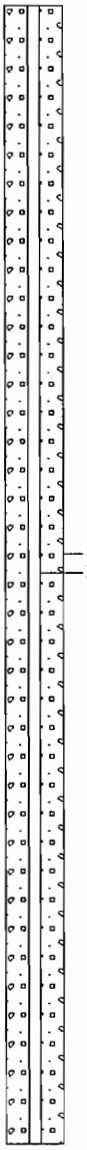
LOG OF BORING HMW-9D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
28	-28	SS-15 28.0-30.0	24/20	1.9	5-13-8			Same as above
29	-29							
30	-30	SS-16 30.0-32.0	24/12	1.5	2-6-5			Same as above, Petro staining and odor (start drumming soils)
31	-31							
32	-32	SS-17 32.0-34.0	24/24	1.0	7-16-13			Same as above, staining continues
33	-33							
34	-34	SS-18 34.0-36.0	24/15	1.6	7-17-14			Same as above, staining continues
35	-35							
36	-36	SS-19 36.0-38.0	24/15	0.2	7-19-17			Same as above, staining continues
37	-37							
38	-38	SS-20 38.0-40.0	24/12	1.6	5-16-11			Same as above, staining continues
39	-39							
40	-40	SS-21 40.0-42.0	24/12	1.8	7-18-10			Same as above, staining continues
41	-41							
42								

Well: HMW-9D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 09/15/01
Date Completed	: 09/15/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-9D

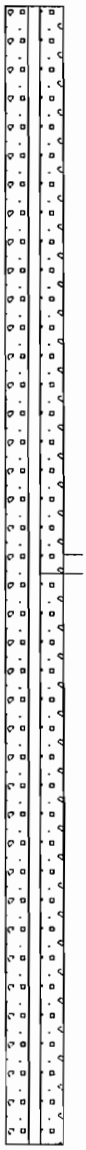
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-9D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
42	-42	SS-22 42.0-44.0	24/15	1.6	7-14-10	Same as above, staining continues
43	-43					
44	-44	SS-23 44.0-46.0	24/15	1.1	7-19-14	Same as above, staining continues
45	-45					
46	-46	SS-24 46.0-48.0	24/10	3.1	7-25-21	Same as above, staining continues
47	-47					
48	-48	SS-25 48.0-50.0	24/10	2.2	7-17-14	Same as above, more gravel in bottom 5" of spoon, less staining
49	-49					
50	-50	SS-26 50.0-52.0	24/10	2.0	10-26-17	Same as above, less gravel, slight staining
51	-51					
52	-52	SS-27 52.0-54.0	24/10	4.2	8-24-26	Same as above, more gravel in bottom 6" of spoon, slight staining
53	-53					
54	-54	SS-28 54.0-56.0	24/8	2.1	8-17-8	Same as above, less gravel, slight staining
55	-55					
56						



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11-30-2001

Hull & associates, inc.

South Bend Area A
UP&V Reservoir
South Bend, IN

SBI002

Date Started	: 09/15/01
Date Completed	: 09/15/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

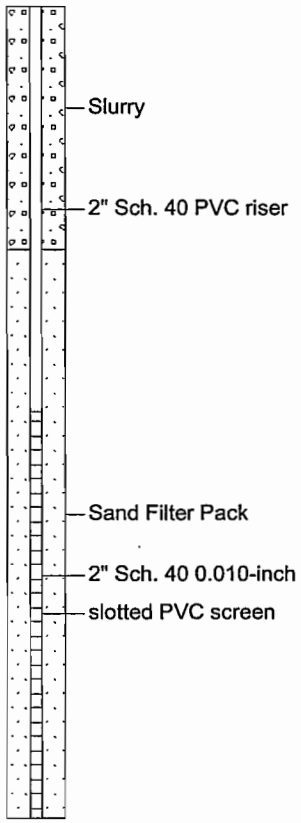
LOG OF BORING HMW-9D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
56	-56	SS-29 56.0-58.0	24/3	2.2	17-24-50			Same as above, slight staining
57	-57							
58	-58	SS-30 58.0-60.0	24/10	1.0	21-64-50			Same as above, more gravel in bottom 7" of spoon, slight staining
59	-59							
60	-60	SS-31 60.0-62.0	24/10	1.5	5-12-9			Same as above, slight staining
61	-61							
62	-62	SS-32 62.0-64.0	24/8	1.3	10-28-36			Same as above, slight odor, no obvious staining
63	-63							
64	-64	SS-33 64.0-66.0	24/15	1.7	5-12-40			Same as above
65	-65							
66	-66	SS-34 66.0-68.0	14/12	1.7	44-34-52			Tight grey sandy SILT, trace gravel, moist
67	-67							
68	-68		12/6	0.2	34-50			Same as above
								End of boring at 69.0'
69	-69							
70								

Well: HMW-9D
Elev.:



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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

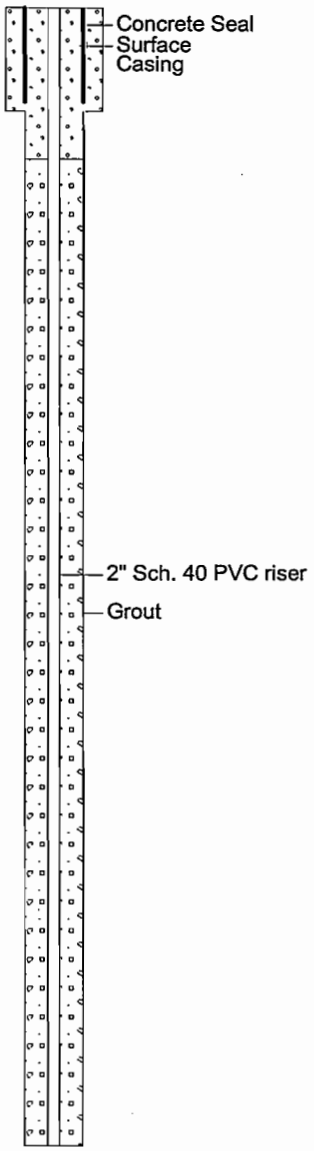
LOG OF BORING HMW-11D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							Concrete and rebar
2	-2	HA-1/ 2.0-4.0						FILL - Brown clayey sand, trace gravel / crushed limestone / crushed concrete, piece of cloth noted
4	-4	SS-2 4.0-6.0	14/6		4-6-50			Same as above, refusal on concrete fragment at 5.1', augered to 10' Boring located on abandoned and filled truck dock
10	-10	SS-3 10.0-12.0	24/18	11.1	6-10-7			Brown medium to fine SAND, trace silt, trace gravel, moist
12	-12	SS-4 12.0-14.0	24/16	14.8	4-12-8			Same as above, less silt with depth
14	-14	SS-5 14.0-16.0	24/22	17.8	4-10-10			Same as above

Well: HMW-11D
Elev.:



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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-11D

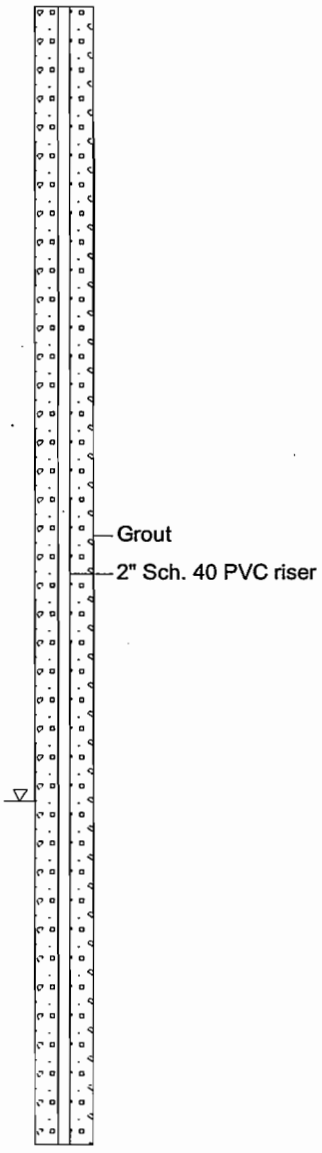
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-11D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
15	-15							
16	-16	SS-6 16.0-18.0	24/22	16.0	6-17-12			Same as above
17	-17							
18	-18	SS-7 18.0-20.0	24/22	16.8	5-9-6			Same as above, less fines, increase coarse sand
19	-19							
20	-20	SS-8 20.0-22.0	24/20	16.9	6-16-12			Same as above, increase gravel
21	-21							
22	-22	SS-9 22.0-24.0	24/20	19.2	6-19-12			Same as above, less gravel
23	-23							
24	-24	SS-10 24.0-26.0	24/20	11.0	4-10-11			Light brown medium to fine sand, trace silt trace gravel
25	-25							Same as above, less fines, wet
26	-26	SS-11 26.0-28.0	24/24	44.6	2-7-7			Grey medium to fine SAND, trace silt, strong odor (petro bitter) noted, few black stains noted
27	-27							
28	-28	SS-12 28.0-30.0	24/24	94.2	3-19-21			Same as above, strong odor noted
29	-29							
30								



Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

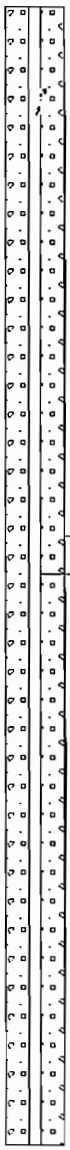
LOG OF BORING HMW-11D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
30	-30	SS-13 30.0-32.0	24/16	89.4	2-12-15			Same as above, trace gravel, sample wax have washed out, increase fine sand, strong odor noted
31	-31							
32	-32	SS-14 32.0-34.0	24/18	81.8	6-29-24			Same as above, strong odor noted
33	-33							
34	-34	SS-15 34.0-36.0	24/18	120	3-11-15			Same as above, strong odor noted, increase gravel with depth, less fines, brown oily staining noted (free phase)
35	-35							
36	-36	SS-16 36.0-38.0	24/24	121	5-30-24			Same as above, strong odor noted, brown oily staining noted
37	-37							Brown medium to coarse SAND, trace silt, trace gravel, strong odor (petro bitter)
38	-38	SS-17 38.0-40.0	24/18	70.7	4-16-20			Same as above
39	-39							
40	-40	SS-18 40.0-42.0	24/22	15.4	6-36-30			Same as above, slight odor
41	-41							
42	-42	SS-19 42.0-44.0	24/16	17.5	7-25-23			Same as above, slight odor
43	-43							
44	-44	SS-20 44.0-46.0	24/12	18.1	4-33-27			Same as above, slight odor, black stain noted
45								

Well: HMW-11D
Elev.:



Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: 48" Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

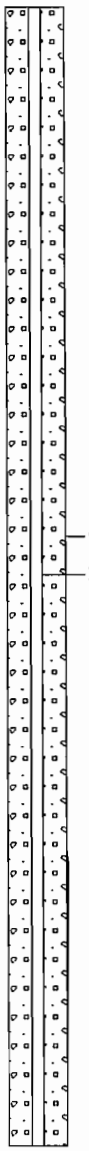
LOG OF BORING HMW-11D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
45	-45							
46	-46	SS-21 46.0-48.0	24/12	15.8	14-54-33			Same as above, slight odor
47	-47							
48	-48	SS-22 48.0-50.0	24/12	11.4	8-44-33			Same as above, increase silt, increase gravel, slight odor may be from pulling spoons through bad water
49	-49							
50	-50	SS-23 50.0-52.0	24/12	15.4	12-79-37			Same as above
51	-51							
52	-52	SS-24 52.0-54.0	21/14	16.3	8-61-50			Same as above
53	-53							
54	-54	SS-25 54.0-56.0	24/16	15.9	9-46-33			Same as above
55	-55							
56	-56	SS-26 56.0-58.0	24/12	15.3	6-25-50			Same as above, less coarse sand, less gravel
57	-57							
58	-58	SS-27 58.0-60.0	24/8	7.8	20-70-35			Brown fine to medium SAND, trace gravel trace clay
59	-59							Large cobble in spoon
60								

Well: HMW-11D
Elev.:



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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN
SBI002

Date Started : 08/22/01
Date Completed : 08/22/01
Logged by : Matt Young
Reviewed by : James P. Hogan
Drilling Contractor : Topflite
Drilling Method : 4.25 ID HSA
Sampling Method : 48" Split Spoon
Total Depth (ft.) : 74.0'
S. Water Level Date :
S. Water Level (ft.) :

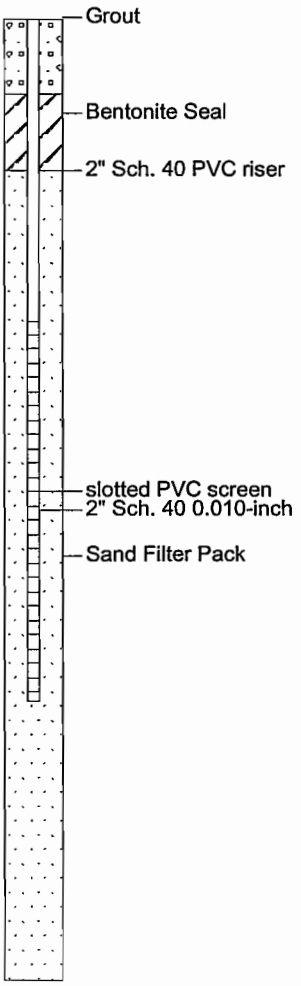
LOG OF BORING HMW-11D

G. Elev. (ft. USGS) : Not Surveyed
PID/FID Model : PID 2020 / 100ppm Iso.
PID/FID Calibration : 100ppm Isobutylene
Drum Label ID :

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
60	-60	SS-28 60.0-62.0	24/12	0.0	16-60-28			Same as above
61	-61							
62	-62	SS-29 62.0-64.0	24/14	0.0	16-73-50			Same as above, less clay, few gravel
63	-63							
64	-64	SS-30 64.0-66.0	24/6	0.0	24-45-50			Same as above, large cobble in spoon
65	-65							
66	-66	SS-31 66.0-68.0	24/14	0.0	25-60-50			Same as above, no clay, trace silt
67	-67							
68	-68	SS-32 68.0-70.0	24/18	0.0	18-58-38			Same as above, 2" very fine sand, trace silt seem at top of spoon
69	-69							
70	-70	SS-33 70.0-72.0	24/16					Same as above
71	-71							
72	-72	SS-34 72.0-74.0						Brown very fine silty SAND
73	-73							
74	-74							
75								

Well: HMW-11D
Elev.:



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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

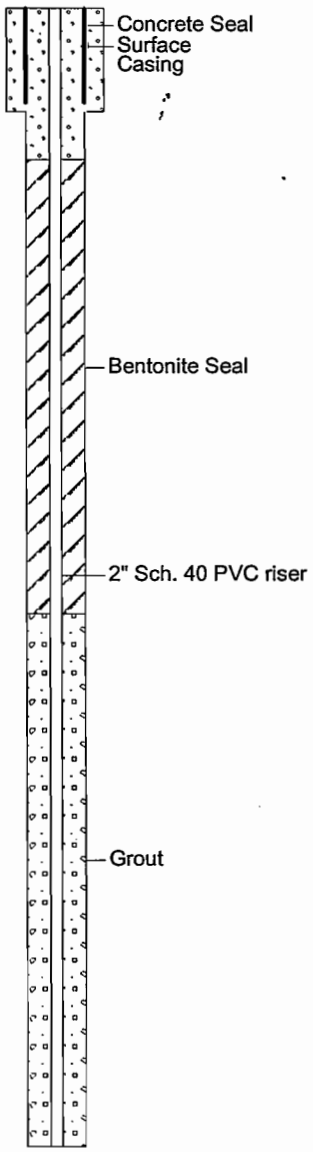
LOG OF BORING HMW-11DA

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							Concrete
1	-1							
2	-2	HA-1/ 2.0-4.0						FILL - Brown clayey sand, trace gravel / crushed limestone / crushed concrete, piece of cloth noted
3	-3							
4	-4	SS-2 4.0-6.0	14/6		4-6-50			Same as above, refusal on concrete fragment at 5.1', augered to 10' Boring located on abandoned and filled truck dock
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10	SS-3 10.0-12.0	24/18	11.1	6-10-7			Brown medium to fine SAND, trace silt, trace gravel, moist
11	-11							
12	-12	SS-4 12.0-14.0	24/16	14.8	4-12-8			Same as above, less silt with depth
13	-13							
14	-14	SS-5 14.0-16.0	24/22	17.8	4-10-10			Same as above
15								

Well: HMW-11DA
Elev.:



Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-11DA

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
15	-15							
16	-16	SS-6 16.0-18.0	24/22	16.0	6-17-12			Same as above
17	-17							
18	-18	SS-7 18.0-20.0	24/22	16.8	5-9-6			Same as above, less fines, increase coarse sand
19	-19							
20	-20	SS-8 20.0-22.0	24/20	16.9	6-16-12			Same as above, increase gravel
21	-21							
22	-22	SS-9 22.0-24.0	24/20	19.2	6-19-12			Same as above, less gravel
23	-23							
24	-24	SS-10 24.0-26.0	24/20	11.0	4-10-11			Light brown medium to fine sand, trace silt trace gravel
25	-25							Same as above, less fines, wet
26	-26	SS-11 26.0-28.0	24/24	44.6	2-7-7			Grey medium to fine SAND, trace silt, strong odor (petro bitter) noted, few black stains noted
27	-27							
28	-28	SS-12 28.0-30.0	24/24	94.2	3-19-21			Same as above, strong odor noted
29	-29							
30								

Well: HMW-11DA
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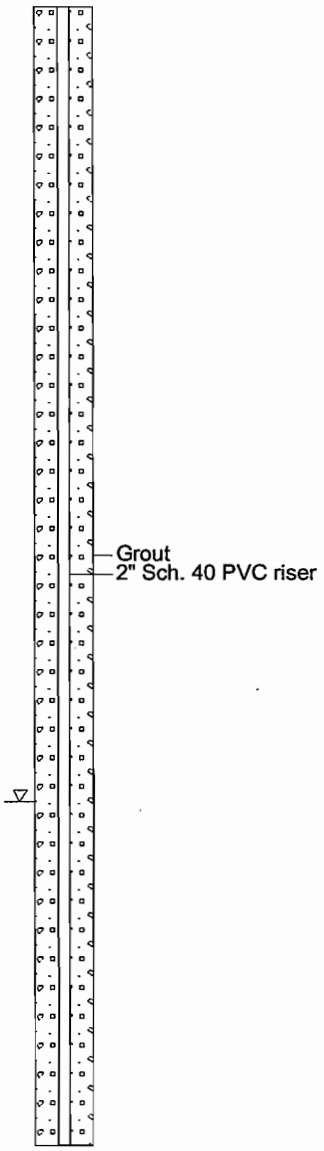

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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

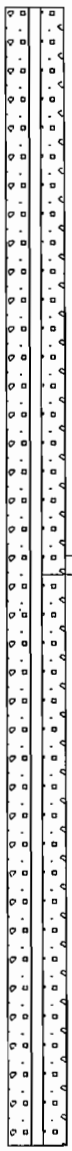
LOG OF BORING HMW-11DA

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
30	-30	SS-13 30.0-32.0	24/16	89.4	2-12-15			Same as above, trace gravel, sample wax have washed out, increase fine sand, strong odor noted
31	-31							
32	-32	SS-14 32.0-34.0	24/18	81.8	6-29-24			Same as above, strong odor noted
33	-33							
34	-34	SS-15 34.0-36.0	24/18	120	3-11-15			Same as above, strong odor noted, increase gravel with depth, less fines, brown oily staining noted (free phase)
35	-35							
36	-36	SS-16 36.0-38.0	24/24	121	5-30-24			Same as above, strong odor noted, brown oily staining noted
37	-37							Brown medium to coarse SAND, trace silt, trace gravel, strong odor (petro bitter)
38	-38	SS-17 38.0-40.0	24/18	70.7	4-16-20			Same as above
39	-39							
40	-40	SS-18 40.0-42.0	24/22	15.4	6-36-30			Same as above, slight odor
41	-41							
42	-42	SS-19 42.0-44.0	24/16	17.5	7-25-23			Same as above, slight odor
43	-43							
44	-44	SS-20 44.0-46.0	24/12	18.1	4-33-27			Same as above, slight odor, black stain noted
45								

Well: HMW-11DA
Elev.:



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Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

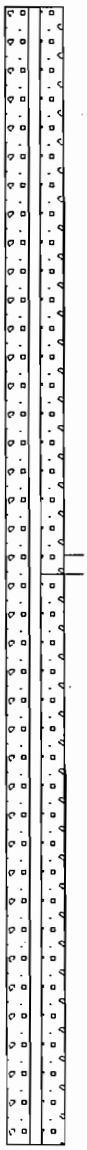
LOG OF BORING HMW-11DA

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
45	-45							
46	-46	SS-21 46.0-48.0	24/12	15.8	14-54-33			Same as above, slight odor
47	-47							
48	-48	SS-22 48.0-50.0	24/12	11.4	8-44-33			Same as above, increase silt, increase gravel, slight odor may be from pulling spoons through bad water
49	-49							
50	-50	SS-23 50.0-52.0	24/12	15.4	12-79-37			Same as above
51	-51							
52	-52	SS-24 52.0-54.0	21/14	16.3	8-61-50			Same as above
53	-53							
54	-54	SS-25 54.0-56.0	24/16	15.9	9-46-33			Same as above
55	-55							
56	-56	SS-26 56.0-58.0	24/12	15.3	6-25-50			Same as above, less coarse sand, less gravel
57	-57							
58	-58	SS-27 58.0-60.0	24/8	7.8	20-70-35			Brown fine to medium SAND, trace gravel trace clay
59	-59							Large cobble in spoon
60								

Well: HMW-11DA
Elev.:



Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 74.0'
S. Water Level Date	:
S. Water Level (ft.)	:

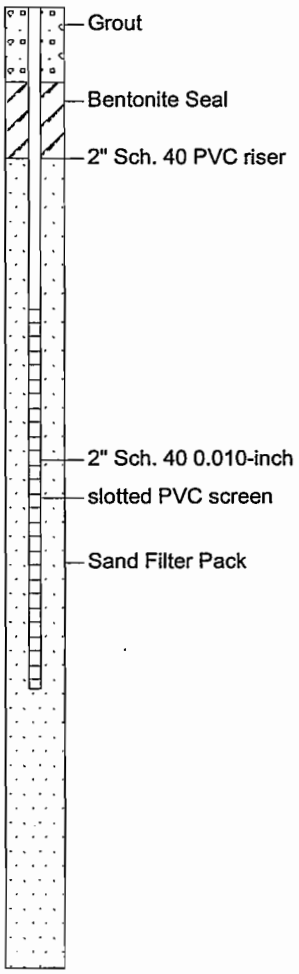
LOG OF BORING HMW-11DA

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
60	-60	SS-28 60.0-62.0	24/12	0.0	16-60-28			Same as above
61	-61							
62	-62	SS-29 62.0-64.0	24/14	0.0	16-73-50			Same as above, less clay, few gravel
63	-63							
64	-64	SS-30 64.0-66.0	24/6	0.0	24-45-50			Same as above, large cobble in spoon
65	-65							
66	-66	SS-31 66.0-68.0	24/14	0.0	25-60-50			Same as above, no clay, trace silt
67	-67							
68	-68	SS-32 68.0-70.0	24/18	0.0	18-58-38			Same as above, 2" very fine sand, trace silt seem at top of spoon
69	-69							Drilling note: Encountered hard gray clayey SILT at 69.0 to 69.5'
70	-70	SS-33 70.0-72.0	24/16					Same as above
71	-71							
72	-72	SS-34 72.0-74.0						Hard gray clayey SILT, trace sand; dry
73	-73							
74	-74							
75								

Well: HMW-11DA
Elev.:



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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250,4 1/4"HSA
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 40.0'
S. Water Level Date	:
S. Water Level (ft.)	:

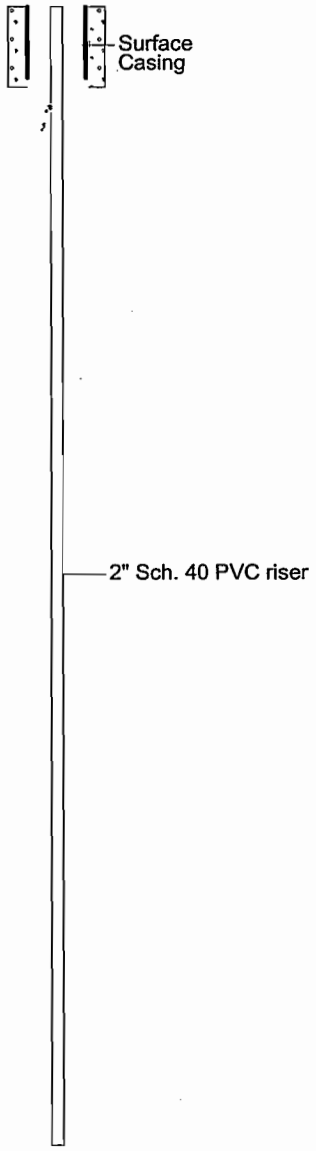
LOG OF BORING HMW-11I

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							15" Concrete
1	-1							
2	-2	HA-1/ 2.0-4.0						FILL - Brown clayey sand, trace gravel / crushed limestone / crushed concrete, piece of cloth noted
3	-3							
4	-4	SS-2 4.0-6.0	14/6		4-6-50			Same as above, refusal on concrete fragment at 5.1', augered to 10' Boring located on abandoned and filled truck dock
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10	SS-3 10.0-12.0	24/18	11.1	6-10-7			Brown medium to fine SAND, trace silt, trace gravel, moist
11	-11							
12	-12	SS-4 12.0-14.0	24/16	14.8	4-12-8			Same as above, less silt with depth
13	-13							
14	-14	SS-5 14.0-16.0	24/22	17.8	4-10-10			Same as above
15	-15							
16	-16	SS-6 16.0-18.0	24/22	16.0	6-17-12			Same as above
17	-17							
18	-18	SS-7 18.0-20.0	24/22	16.8	5-9-6			Same as above, less fines, increase coarse sand
19	-19							
20								

Well: HMW-11I
Elev.:



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11-30-2001

Hull & associates, inc.

Phase II Drilling
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: Matt Young
Reviewed by	: James P. Hogan
Drilling Contractor	: Topflite
Drilling Method	: Canterra CT250,4 1/4"HSA
Sampling Method	: Hand Auger/Split Spoon
Total Depth (ft.)	: 40.0'
S. Water Level Date	:
S. Water Level (ft.)	:

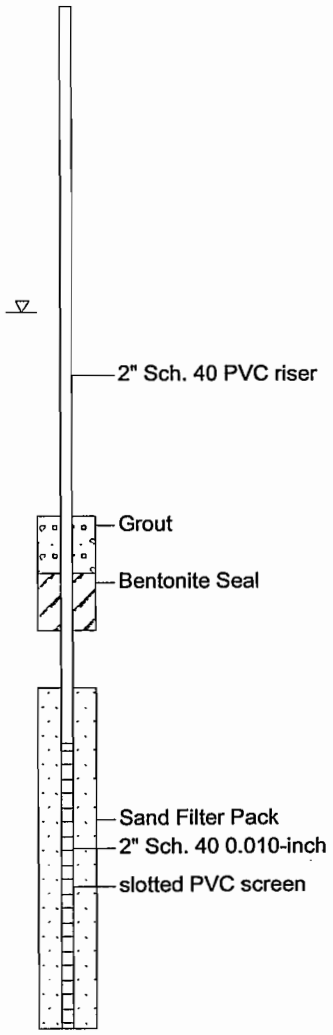
LOG OF BORING HMW-11I

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
20	-20	SS-8 20.0-22.0	24/20	16.9	6-16-12			Same as above, increase gravel
21	-21							
22	-22	SS-9 22.0-24.0	24/20	19.2	6-19-12			Same as above, less gravel
23	-23							
24	-24	SS-10 24.0-26.0	24/20	11.0	4-10-11			Light brown medium to fine sand, trace silt trace gravel
25	-25							Same as above, less fines, wet
26	-26	SS-11 26.0-28.0	24/24	44.6	2-7-7			Grey medium to fine SAND, trace silt, strong odor (petro bitter) noted, few black stains noted
27	-27							
28	-28	SS-12 28.0-30.0	24/24	94.2	3-19-21			Same as above, strong odor noted
29	-29							Auger 28' to 33' – photos 13 to 7 free Product encountered
30	-30	SS-13 30.0-32.0	24/16	89.4	2-12-15			Same as above, trace gravel, sample wax have washed out, increase fine sand, strong odor noted
31	-31							
32	-32	SS-14 32.0-34.0	24/18	81.8	6-29-24			Same as above, strong odor noted
33	-33							
34	-34	SS-15 34.0-36.0	24/18	120	3-11-15			Same as above, strong odor noted, increase gravel with depth, less fines, brown oily staining noted (free phase)
35	-35							
36	-36	SS-16 36.0-38.0	24/24	121	5-30-24			Same as above, strong odor noted, brown oily staining noted
37	-37							Brown medium to coarse SAND, trace silt, trace gravel, strong odor (petro bitter)
38	-38	SS-17 38.0-40.0	24/18	70.7	4-16-20			Same as above
39	-39							
40								

Well: HMW-11I
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 68.0'
S. Water Level Date	:
S. Water Level (ft.)	:

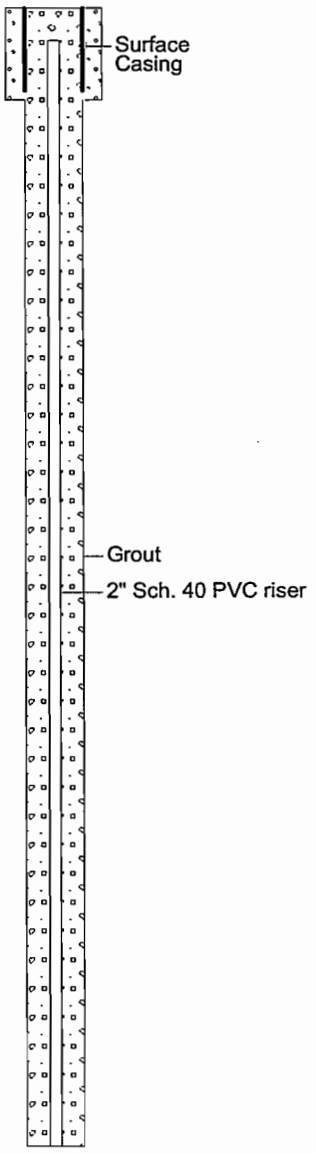
LOG OF BORING HMW-12D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0						Concrete and rebar
2	-2	HA-2/ 2.0-4.0		0.0				Brown medium to coarse SAND, trace silt, trace gravel; small amount of balck staining, moist
4	-4	SS-3 4.0-6.0	24/12	2.5	4-3-2			Same as above, less staining
6	-6	SS-4 6.0-8.0	24/22	7.8	3-3-1			Same as above
8	-8	SS-5 8.0-10.0	24/14	4.7	3-6-3			Light brown medium to coarse SAND, trace gravel, trace silt, moist
10	-10	SS-6 10.0-12.0	24/8	10.1	9-9-5			Brown medium to coarse SAND, trace silt, trace gravel, moist
12	-12	SS-7 12.0-14.0	24/16	7.0	8-21-14			Same as above, less silt
14	-14	SS-8 14.0-16.0	24/14	9.0	8-21-15			Light brown fine to medium SAND, trace silt, moist
16	-16	SS-9 16.0-18.0	24/22	7.3	8-24-15			Same as above
17								

Well: HMW-12D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 68.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-12D

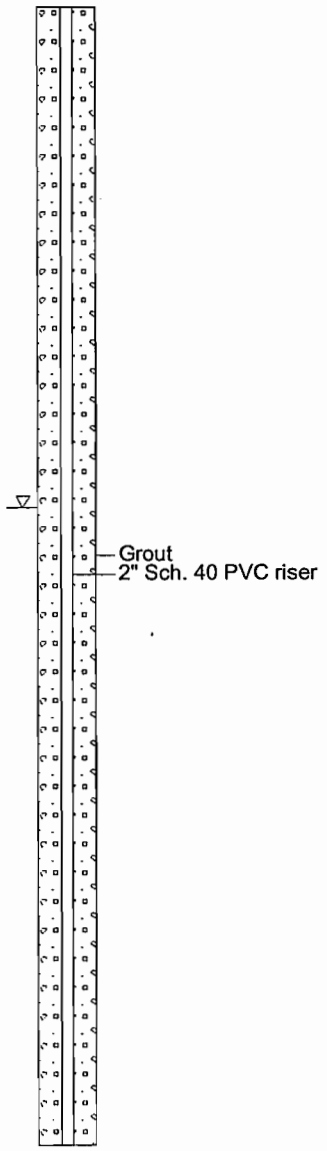
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
17	-17							
18	-18	SS-10 18.0-20.0	24/22	2.0	6-16-10			Same as above, gradual black through spoon, less fines more medium to coarse
19	-19							
20	-20	SS-11 20.0-22.0	24/18	0.0	6-16-12			Same as above, trace gravel
21	-21							Same as above
22	-22	SS-12 22.0-24.0	24/24	0.0	8-23-14			Same as above
23	-23							
24	-24	SS-13 24.0-26.0	24/18	0.0	5-25-13			Same as above, wet
25	-25							Brown medium to coarse SAND, few gravel, trace silt, wet
26	-26	SS-14 26.0-28.0	24/12	0.0	4-22-13			Same as above
27	-27							
28	-28	SS-15 28.0-30.0	24/20	0.0	13-24-17			Same as above
29	-29							Same as above, black stain
30	-30	SS-16 30.0-32.0	24/20	0.0	7-33-27			Same as above
31	-31							
32	-32	SS-17 32.0-34.0	24/20	0.0	13-30-16			Same as above
33	-33							
34								

Well: HMW-12D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 68.0'
S. Water Level Date	:
S. Water Level (ft.)	:

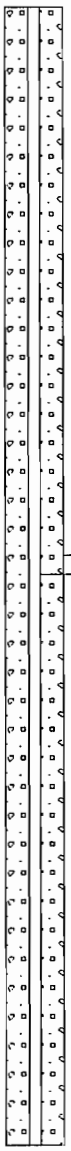
LOG OF BORING HMW-12D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-12D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
34	-34	SS-18 34.0-36.0	24/16	0.9	29-22-17			Same as above
35	-35							
36	-36	SS-19 36.0-38.0	24/12	1.6	42-28-18			Same as above, 2 large cobbles
37	-37							
38	-38	SS-20 38.0-40.0	24/18	0.0	23-29-17			Same as above
39	-39							
40	-40	SS-21 40.0-42.0	24/12	0.0	47-34-27			Same as above, more silt
41	-41							
42	-42	SS-23 42.0-44.0	24/18	0.4	14-50-29			Same as above
43	-43							
44	-44	SS-23 44.0-46.0	24/16	0.0	7-23-14			Same as above, 4" at top, no gravel
45	-45							
46	-46	SS-24 46.0-48.0	24/18	0.0	14-49-27			Same as above
47	-47							
48	-48	SS-25 48.0-50.0	24/16	0.0	11-55-27			Same as above
49	-49							
50	-50	SS-26 50.0-52.0	24/18	0.0	15-45-44			Same as above, trace gravel
51								



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 68.0'
S. Water Level Date	:
S. Water Level (ft.)	:

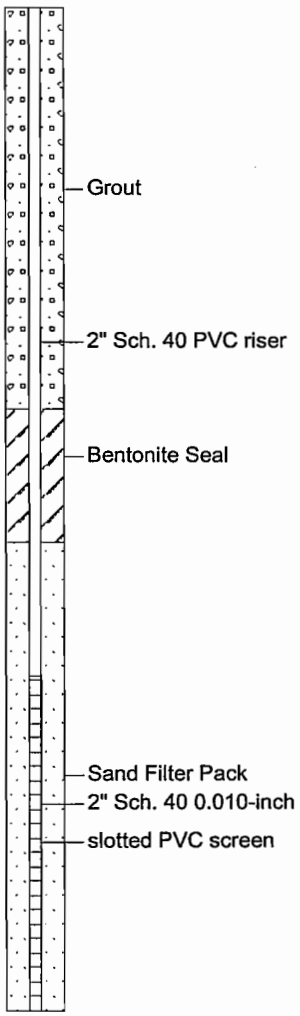
LOG OF BORING HMW-12D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
51	-51							
52	-52	SS-27 52.0-54.0	23/16	0.0	13-67-50			Same as above, less gravel
53	-53							
54	-54	SS-28 54.0-56.0	16/12	0.0	37-50-50			Same as above, black banding
55	-55							
56	-56	SS-29 56.0-58.0	24/14	0.0	17-49-33			Same as above, black banding
57	-57							
58	-58	SS-30 58.0-60.0	23	0.0	11-72-50			Same as above
59	-59							
60	-60	SS-31 60.0-62.0	24/18	0.0	10-51-42			Same as above, less gravel
61	-61							
62	-62	SS-32 62.0-64.0	24/4	0.0	10-50-50			Same as above, no gravel, sample most likely washed out
63	-63							
64	-64	SS-33 64.0-66.0	23/20	3.4	8-54-50			Same as above, trace gravel
65	-65							Same as above, black staining
66	-66	SS-34 66.0-68.0	24/22	0.0	10-62-50			Brown SILT, trace gravel
67	-67							Grey SILT, trace fine to medium sand, trace gravel
68								End of boring at 68.0'

Well: HMW-12D
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 ID HSA
Sampling Method	: 2' Split Spoon
Total Depth (ft.)	: 31.5
S. Water Level Date	:
S. Water Level (ft.)	:

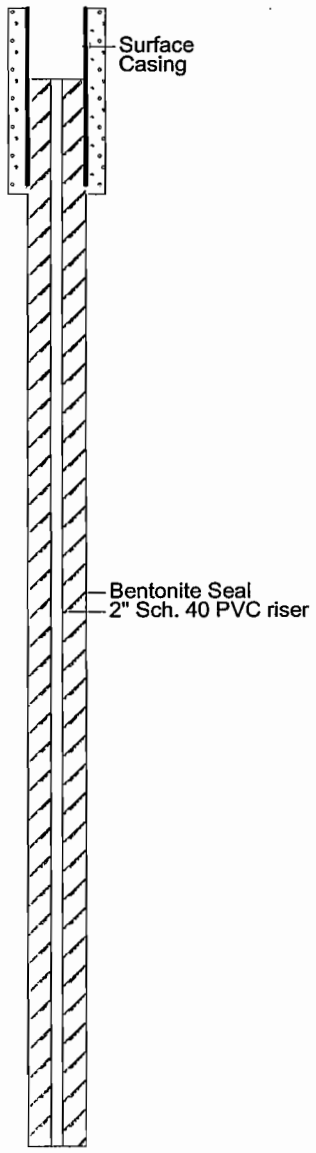
LOG OF BORING HMW-14S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							Asphalt / concrete
1	-1	HA-1/ 1.0-1.5		0.8				Brown fine SAND, some gravel, moist
		HA-2/ 1.5-2.0		3.0				Black silty SAND, some gravel, organics, moist
2	-2	HA-3/ 2.0-2.7		6.8				Black silty SAND, trace gravel, moist
		HA-4/ 2.7-3.3		7.3				Same as above, slight petro odor
3	-3	HA-5/ 3.3-4.2		9.3				Same as above
4	-4	HA-6/ 4.2-4.8		20.6				Same as above
5	-5	SS-7 5.0-5.8	24/24	1.8	2-5-4			Brown fine SAND, trace gravel, slight petro staining and odor
								Brown clayey SAND, trace gravel, moist
6	-6							Brown coarse SAND, trace gravel, moist
7	-7	SS-8 7.0-8.5	24/18	3.7	2-3-2			Same as above
8								

Well: HMW-14S
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 ID HSA
Sampling Method	: 2' Split Spoon
Total Depth (ft.)	: 31.5
S. Water Level Date	:
S. Water Level (ft.)	:

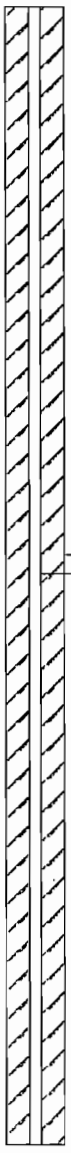
LOG OF BORING HMW-14S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
8	-8							
9	-9	SS-9 9.0-10.3	24/15	5.1	6-7-4			Same as above, trace clay at 9.3 to 9.8
10	-10							
11	-11	SS-10 11.0-12.7	24/20	1.1	4-7-2			Light brown coarse SAND, trace gravel, moist
12	-12							
13	-13	SS-11 13.0-14.7	24/20	0.0	3-5-3			Light brown fine SAND, trace gravel, moist
14	-14							
15	-15	SS-12 15.0-15.3	24/20	3.0	4-5-2			Same as above Light brown coarse SAND, trace gravel, moist
16								

Well: HMW-14S
Elev.:



11-30-2001 F:\CLIENTS\SBI\SBI002\SOIL BORING LOGS\HMW-14S.BOR

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 ID HSA
Sampling Method	: 2' Split Spoon
Total Depth (ft.)	: 31.5
S. Water Level Date	:
S. Water Level (ft.)	:

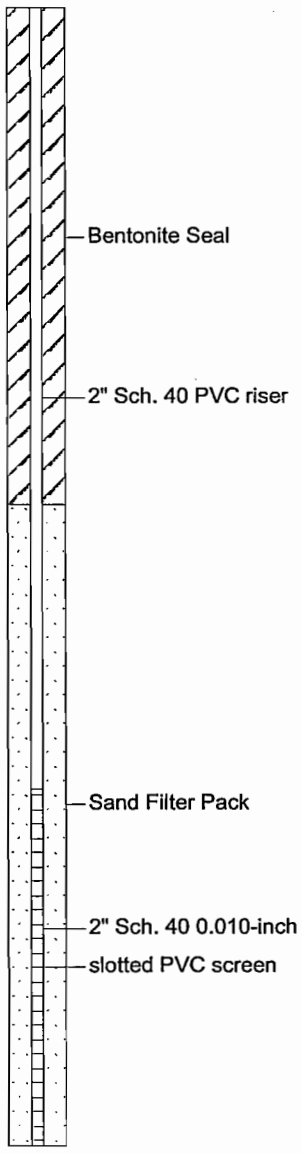
LOG OF BORING HMW-14S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
16	-16							
17	-17	SS-13	24/20	4.3	7-13-12			Same as above
		17.0-18.7						
18	-18							
19	-19	SS-14	24/15	5.1	7-21-14			Light brown coarse SAND, with gravel, band of dark staining from 19.4 to 19.6 and from 19.9 to 20.2
		19.0-20.3						
20	-20							
21	-21	SS-15	24/15	4.0	8-33-20			Same as above (no staining)
		21.0-22.3						
22	-22							
23	-23	SS-16	24/24	5.0	10-22-9			Light brown coarse SAND, some gravel, very moist from 23.0 to 24.0 and saturated at 24.0
		23.0-25.0						
24								

Well: HMW-14S
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 ID HSA
Sampling Method	: 2' Split Spoon
Total Depth (ft.)	: 31.5
S. Water Level Date	:
S. Water Level (ft.)	:

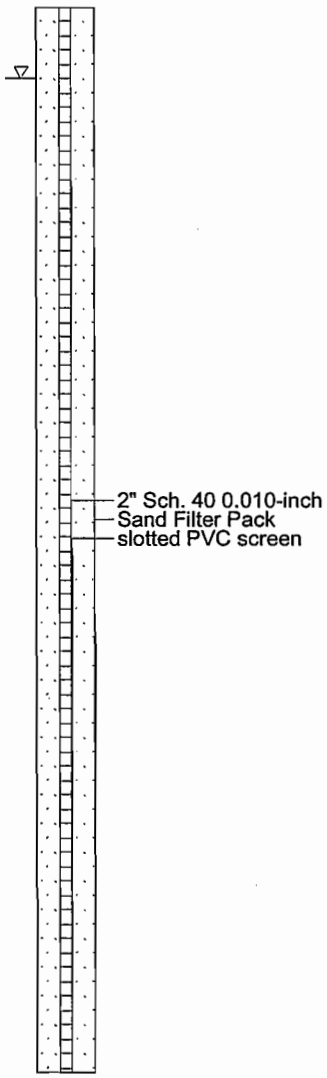
LOG OF BORING HMW-14S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
24	-24							
25	-25	SS-17 25.0-26.4	24/17	8.9	3-7-10			Same as above
26	-26							
27	-27	SS-18 27.0-28.5	24/18	27.7	4-8-10			Same as above, petrol, stain and odor from 27.7 to 28.5
28	-28							
29	-29	SS-19 29.0-30.5	24/18	11.5	3-5-3			Same as above
30	-30							
31	-31							End of boring at 31.5'
32								

Well: HMW-14S
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: James P. Hogan
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: CT250 4 1/4 HSAs
Sampling Method	: Hand Auger, Split Spoons
Total Depth (ft.)	: 64.0'
S. Water Level Date	:
S. Water Level (ft.)	:

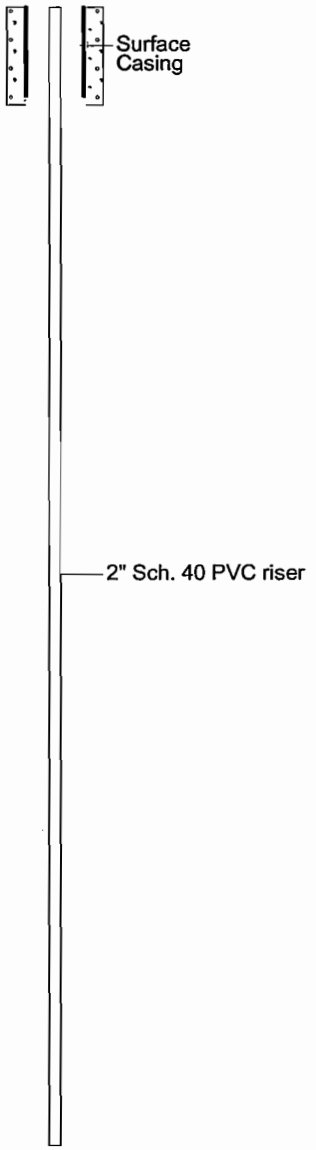
LOG OF BORING HMW-15D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							Asphalt / concrete
1	-1	HA-1/ 1.0-1.5		0.8				Brown fine SAND, some gravel, moist
		HA-2/ 1.5-2.0		3.0				Black silty SAND, some gravel, organics, moist
2	-2	HA-3/ 2.0-2.7		6.8				Black silty SAND, trace gravel, moist
		HA-4/ 2.7-3.3		7.3				Same as above, slight petro odor
3	-3	HA-5/ 3.3-4.2		9.3				Same as above
4	-4	HA-6/ 4.2-4.8		20.6				Same as above
5	-5	SS-7 5.0-5.8	24/24	1.8	2-5-4			Brown fine SAND, trace gravel, slight petro staining and odor
6	-6							Brown clayey SAND, trace gravel, moist
								Brown coarse SAND, trace gravel, moist
7	-7	SS-8 7.0-8.5	24/18	3.7	2-3-2			Same as above
8	-8							
9	-9	SS-9 9.0-10.3	24/15	5.1	6-7-4			Same as above, trace clay at 9.3 to 9.8
10	-10							
11	-11	SS-10 11.0-12.7	24/20	1.1	4-7-2			Light brown coarse SAND, trace gravel, moist
12	-12							
13	-13	SS-11 13.0-14.7	24/20	0.0	3-5-3			Light brown fine SAND, trace gravel, moist
14	-14							
15	-15	SS-12 15.0-15.3	24/20	3.0	4-5-2			Same as above Light brown coarse SAND, trace gravel, moist
16								

Well: HMW-15D
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: James P. Hogan
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: CT250 4 1/4 HSAs
Sampling Method	: Hand Auger, Split Spoons
Total Depth (ft.)	: 64.0'
S. Water Level Date	:
S. Water Level (ft.)	:

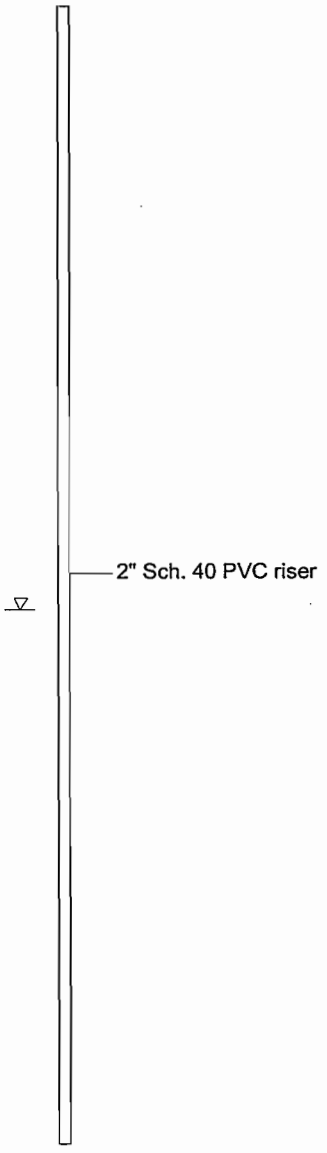
LOG OF BORING HMW-15D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
16	-16							
17	-17	SS-13 17.0-18.7	24/20	4.3	7-13-12			Same as above
18	-18							
19	-19	SS-14 19.0-20.3	24/15	5.1	7-21-14			Light brown coarse SAND, with gravel, band of dark staining from 19.4 to 19.6 and from 19.9 to 20.2
20	-20							
21	-21	SS-15 21.0-22.3	24/15	4.0	8-33-20			Same as above (no staining)
22	-22							
23	-23	SS-16 23.0-25.0	24/24	5.0	10-22-9			Light brown coarse SAND, some gravel, very moist from 23.0 to 24.0 and saturated at 24.0
24	-24							
25	-25	SS-17 25.0-26.4	24/17	8.9	3-7-10			Same as above
26	-26							
27	-27	SS-18 27.0-28.5	24/18	27.7	4-8-10			Same as above, petrol, stain and odor from 27.7 to 28.5
28	-28							
29	-29	SS-19 29.0-30.5	24/18	11.5	3-5-3			Same as above
30	-30	SS-1 30.0-31.2	2.0/1.2	2.5	8-21-15			Medium dense to dense coarse and medium brown SAND; trace gravel; wet
31	-31							
32								

Well: HMW-15D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: James P. Hogan
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: CT250 4 1/4 HSAs
Sampling Method	: Hand Auger, Split Spoons
Total Depth (ft.)	: 64.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-15D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
32	-32	SS-2 32.0-33.3	2.0/1.3	2.4	7-20-12			Medium dense, same as above
33	-33							
34	-34	SS-3 34.0-35.3	2.0/1.3	7.0	9-23-15			Medium dense to dense, same as above
35	-35							
36	-36	SS-4 36.0-37.3	2.0/1.3	6.2	8-28-17			Same as above
37	-37							
38	-38	SS-5 38.0-38.9	2.0/0.9	5.0	6-20-13			Medium dense brown SAND, trace gravel; wet
39	-39							
40	-40	SS-6 40.0-41.3	2.0/1.3	6.8	4-13-34			Medium dense brown SAND; wet
41	-41							
42	-42	SS-7 42.0-43.0	2.0/1.0	5.3	9-50-33			Dense to very dense orange-brown gravelly coarse SAND; trace of silt, trace clay; wet
43	-43							
44	-44	SS-8 44.0-45.3	2.0/1.3	5.7	11-95-40			
45	-45							
46	-46	SS-9 46.0-46.7	2.0/1.3	7.5	14-48-37			Dense to very dense, same as above
		SS-10 46.7-47.3		8.0				
47	-47							Dense to very dense fine SAND; wet
48								

Well: HMW-15D
Elev.:

2" Sch. 40 PVC riser

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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: James P. Hogan
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: CT250 4 1/4 HSAs
Sampling Method	: Hand Auger, Split Spoons
Total Depth (ft.)	: 64.0'
S. Water Level Date	:
S. Water Level (ft.)	:

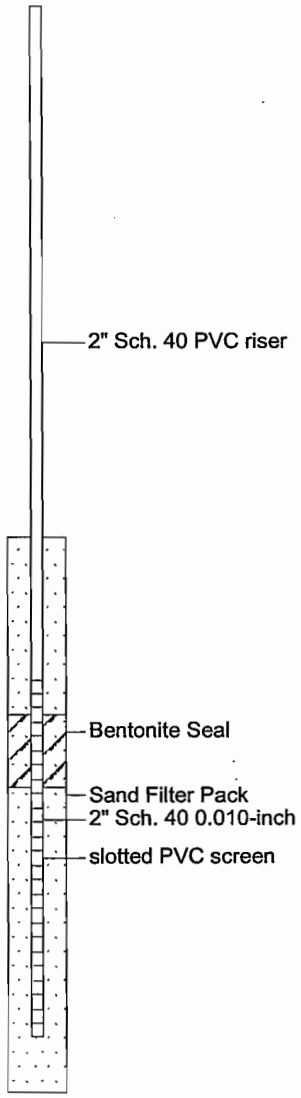
LOG OF BORING HMW-15D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
48	-48	SS-11 48.0-48.8	2.0/0.8	6.8	9-32-31			Dense, same as above
49	-49							
50	-50	SS-12 50.0-50.9	2.0/0.9	7.0	11-14-17			Medium dense brown SAND, trace gravel; wet
51	-51							
52	-52	SS-13 52.0-52.8	2.0/0.8	7.2	7-45-45			Dense to very dense brown SAND; wet
53	-53							
54	-54	SS-14 54.0-55.5	2.0/1.9	4.6	4-22-28			Medium dense to dense brown fine SAND; wet
55	-55							
56	-56	SS-15 55.5-55.9 SS-16 56.0-56.8	2.0/0.8	4.5 5.4	17-38-40			Medium dense to dense SAND, litle gravel; wet Dense brown SAND; wet
57	-57							
58	-58	SS-17 58.0-59.3	2.0/1.3	4.0	7-51-48			Very dense, same as above
59	-59							
60	-60	SS-18 60.0-61.0	2.0/1.0	3.3	19-32-31			Dense brown SAND, trace gravel; wet
61	-61							
62	-62	SS-19 62.0-63.0	1.3/1.3	1.4	3-34-50			Very dense brown SAND; wet
63	-63	SS-20 63.0-63.3		2.9				Hard clayey SILT, little sand; dry
64								

Well: HMW-15D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: James Hogan
Reviewed by	:
Drilling Contractor	: Topflite Drilling
Drilling Method	: CT250, 4 1/4" HSAs
Sampling Method	: Split Spoon, Hand Auger
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

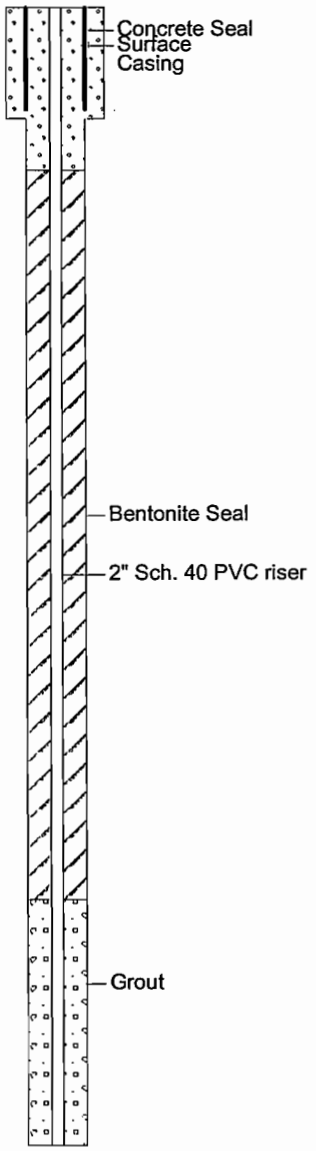
LOG OF BORING HMW-16D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
0	0					Asphalt and Concrete
1	-1	HA-1/ 1.0-2.0		6.7		Dark brown gravelly SAND, brick, wood, moist
2	-2	HA-2/ 2.0-4.0		5.3		Dark brown silty SAND, trace gravel; moist
3	-3					
4	-4	SS-3 4.1-5.5	2.0/1.5	0	6-11-6	Same as above Medium dense orange to brown SAND; moist
5	-5					
6	-6	SS-4 6.0-7.1	2.0/1.1	0	4-10-8	Loose orange-brown SAND, trace gravel; moist
7	-7					
8	-8	SS-5 8.0-9.5	2.0/1.5	0	5-12-6	Medium dense orange-brown SAND; trace gravel; moist
9	-9					
10	-10	SS-6 10.0-11.1	2.0/1.1	0	3-10-8	Loose orange-brown SAND, trace gravel, moist
11	-11					
12	-12	SS-7 12.0-13.0	2.0/1.0	0	5-6-1	Same as above
13	-13					
14						

Well: HMW-16D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: James Hogan
Reviewed by	:
Drilling Contractor	: Topflite Drilling
Drilling Method	: CT250, 4 1/4" HSAs
Sampling Method	: Split Spoon, Hand Auger
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

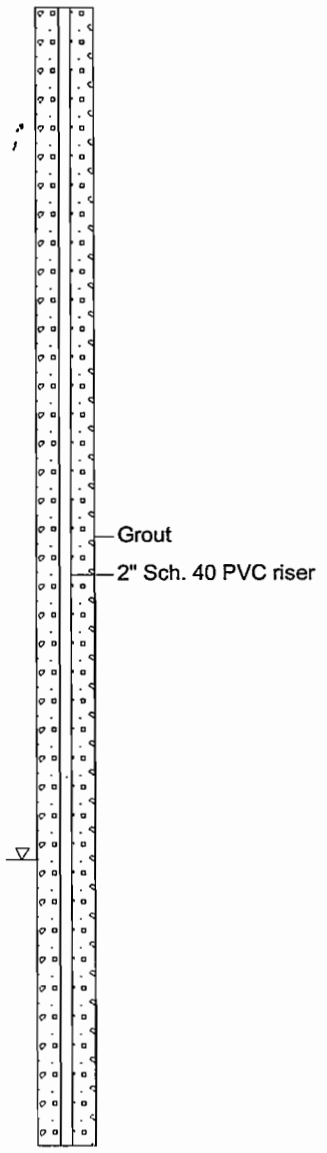
LOG OF BORING HMW-16D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
14	-14	SS-8 14.0-15.1	2.0/1.1	0	5-6-7	■		Same as above
15	-15							
16	-16	SS-9 16.0-17.0	2.0/1.0	0.7	9-18-10	■		Medium dense brown gravelly SAND; moist
17	-17							
18	-18	SS-10 18.0-19.3	2.0-1.3	2.0	9-22-8	■		Medium dense to dense brown gravelly SAND; moist
19	-19							
20	-20	SS-11 20.0-20.7	2.0/0.7	1.3	8-18-13	■		Medium dense brown sandy GRAVEL; moist
21	-21							
22	-22	SS-12 22.0-23.0	2.0/1.0	2.0	13-31-14	■		Dense brown gravelly SAND; moist
23	-23							
24	-24	SS-13 24.0-25.1	2.0/1.1	3.2	6-17-13	■		Medium dense brown SAND; wet
25	-25							
26	-26	SS-14 26.0-27.4	2.0/1.4	2.3	5-16-13	■		Same as above
27	-27							
28								

Well: HMW-16D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: James Hogan
Reviewed by	:
Drilling Contractor	: Topflite Drilling
Drilling Method	: CT250, 4 1/4" HSAs
Sampling Method	: Split Spoon, Hand Auger
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

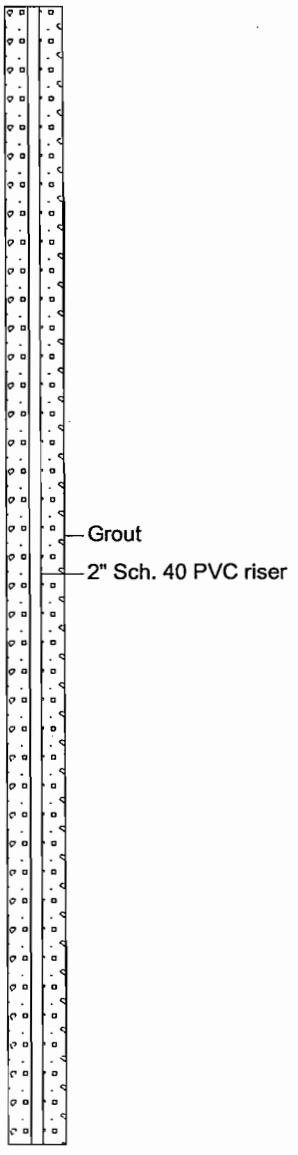
LOG OF BORING HMW-16D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
28	-28	SS-15 28.0-29.3	2.0/1.3	4.0	3-17-13			Same as above
29	-29							
30	-30	SS-16 30.0-31.0	2.0/1.0	1.7	10-17-9			Medium dense brown sandy GRAVEL; wet
31	-31							
32	-32	SS-17 32.0-33.0	2.0/1.0	5.1	8-25-16			Medium dense to dense brown sandy GRAVEL; wet
33	-33							
34	-34	SS-18 34.0-35.0	2.0/1.0	4.8	6-18-12			Medium dense brown SAND; some coarse sand; wet
35	-35							
36	-36	SS-19 36.0-37.2	2.0/1.2	4.3	4-14-13			Same as above
37	-37							
38	-38	SS-20 38.0-39.3	2.0/1.3	2.9	4-24-18			Medium dense to dense brown SAND; trace gravel; wet
39	-39							
40	-40	SS-21 40.0-40.9	2.0/0.9	3.1	8-12-20			Same as above
41	-41							
42								

Well: HMW-16D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: James Hogan
Reviewed by	:
Drilling Contractor	: Topflite Drilling
Drilling Method	: CT250, 4 1/4" HSAs
Sampling Method	: Split Spoon, Hand Auger
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

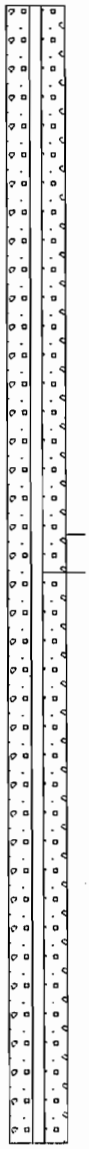
LOG OF BORING HMW-16D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
42	-42	SS-22 42.0-43.1	2.0/1.1	3.1	6-30-19			Medium dense to dense brown SAND; wet
43	-43							
44	-44	SS-23 44.0-45.0	2.0/1.0	3.9	4-12-10			Medium dense, same as above
45	-45							
46	-46	SS-24 46.0-46.8	2.0/0.8	4.1	4-21-21			Medium dense to dense, same as above
47	-47							
48	-48		0.2/0.0		50/2			No recovery
49	-49							
50	-50	SS-25 50.0-50.1	0.1/0.0	4.1	50/1			Very dense SAND, some coarse sand; wet
51	-51							
52	-52	SS-26 52.0-52.1	0.3/0.1	3.9	100/3			Very dense gravelly SAND; wet
53	-53							
54	-54	SS-27 54.0-54.3	0.3/0.3	3.5	50/3			Very dense SAND, some coarse sand; wet
55	-55							
56								

Well: HMW-16D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/22/01
Date Completed	: 08/22/01
Logged by	: James Hogan
Reviewed by	:
Drilling Contractor	: Topflite Drilling
Drilling Method	: CT250, 4 1/4" HSAs
Sampling Method	: Split Spoon, Hand Auger
Total Depth (ft.)	: 69.0'
S. Water Level Date	:
S. Water Level (ft.)	:

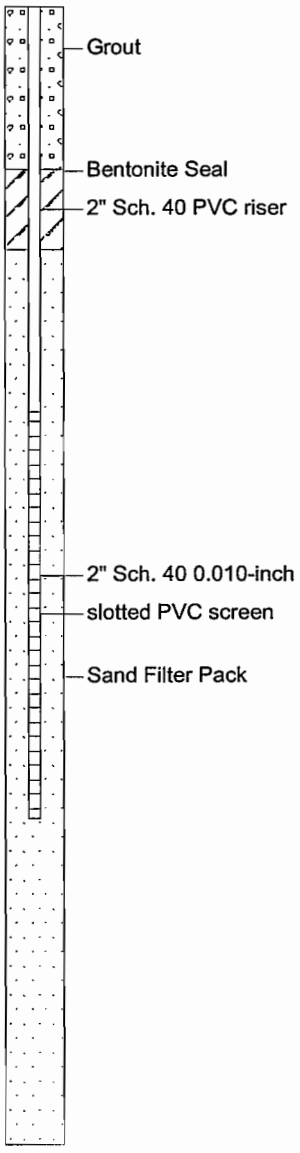
LOG OF BORING HMW-16D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
56	-56	SS-28 56.0-56.7	2.0/0.7	4.8	138-219-25			Very dense coarse SAND; trace sand; trace gravel; wet
57	-57							
58	-58	SS-29 58.0-59.0	2.0/1.0	3.1	39-56-61			Very dense SAND; wet; clayey sand in tip
59	-59							
60	-60	SS-30 60.0-61.1	1.3/1.1	4.3	10-31-50			Very dense brown SAND; wet; sandy gravel in tip
61	-61							
62	-62	SS-31 62.0-63.3	1.9/1.3	4.9	12-55-50			Very dense brown SAND; wet
63	-63							
64	-64	SS-32 64.0-64.7	1.5/1.3	4.0	24-35-50			Same as above
65	-65	SS-33 64.7-65.3		4.3				Very dense brown sandy GRAVEL; wet
66	-66	SS-34 66.0-66.9	1.5/1.2	5.2	9-27-50			Very dense brown SAND; wet
67	-67	SS-35 66.9-67.2		5.8				Very dense brown silty, little sand; trace clay; moist
68	-68	SS-36 68.0-68.9	1.5/0.9	4.4	23-42-50			Hard gray clayey SILT, trace sand; moist End of boring at 69.0'
69	-69							
70								

Well: HMW-16D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/14/01
Date Completed	: 08/14/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoons
Total Depth (ft.)	: 32'
S. Water Level Date	:
S. Water Level (ft.)	:

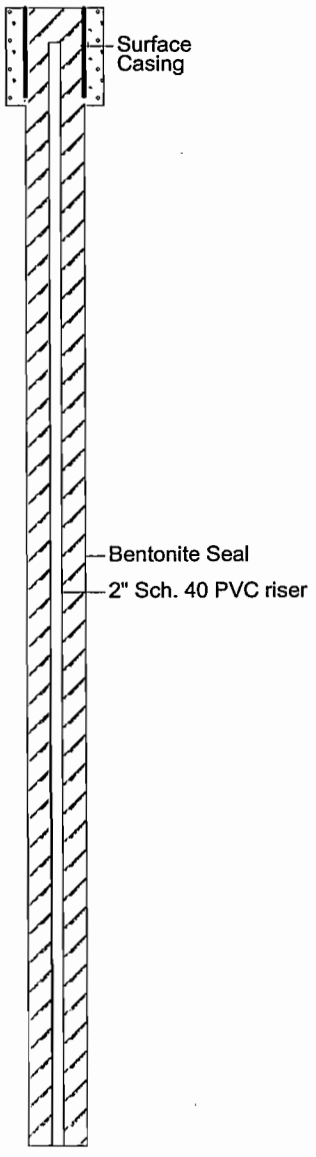
LOG OF BORING HMW-18S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
0	0	SS-1 0.0-1.2		1.5		Black silty SAND, some gravel organics, very moist
1	-1	SS-2 1.2-2.1		2.1		Same as above
2	-2	SS-3 2.1-2.3		4.9		Brown fine SAND, some gravel, very moist
3	-3					Same as above
4	-4	SS-4 3.5-4.2		2.6		Same as above, wood fragments
		SS-5 4.2-5.0		1.9		Same as above, trace coal fragments
5	-5	SS-6 5.0-6.7	24/20	7.8	4-7-3	Brown fine SAND, trace gravel, moist
6	-6					
7	-7	SS-7 7.0-8.3	24/20	3.9	4-6-3	Same as above
8	-8					Brown coarse SAND, trace gravel, moist
9	-9	SS-8 9.0-10.3	24/15	5.7	5-11-7	Same as above
10	-10					
11	-11	SS-9 11.0-12.3	24/15	6.3	5-7-2	Brown coarse SAND, some gravel, very moist
12	-12					
13	-13	SS-10 13.0-13.8	24/15	1.4	3-5-2	Same as above
14	-14					Brown clayey SILT, some gravel, moist
15	-15	SS-11 15.0-16.3	24/15	3.7	4-10-6	Brown coarse SAND, some gravel, very moist
16						Brown coarse SAND, some gravel, trace clay, very moist

Well: HMW-18S
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/14/01
Date Completed	: 08/14/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoons
Total Depth (ft.)	: 32'
S. Water Level Date	:
S. Water Level (ft.)	:

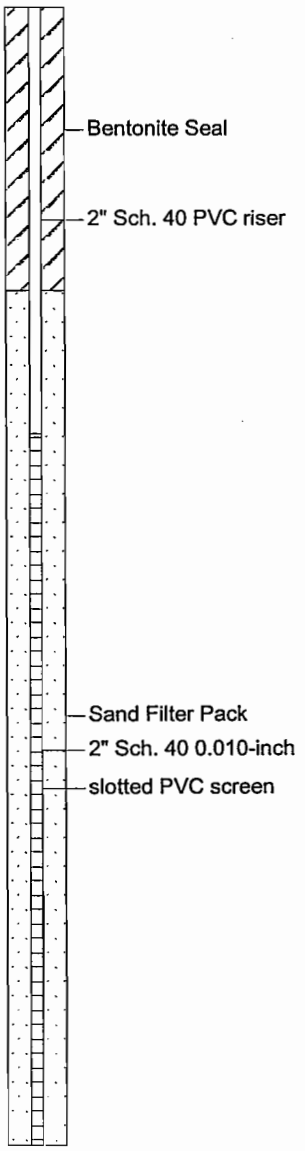
LOG OF BORING HMW-18S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
16	-16					
17	-17	SS-12 17.0-18.0	24/12	3.8	3-8-7	Same as above
18	-18					
19	-19	SS-13 19.0-20.7	24/20	6.2	6-19-18	Brown coarse SAND, some gravel, very moist
20	-20					
21	-21	SS-14 21.0-22.3	24/15	4.7	9-21-24	Same as above
22	-22					
23	-23	SS-15 23.0-24.7	24/20	8.4	12-15-6	Same as above, black staining from 23.8 to 24.7, slight petro odor
24	-24					
25	-25	SS-16 25.0-26.0	24/12	7.8	6-13-9	SAND and GRAVEL, black staining from 25 to 25.3, saturated at 25.3'
26	-26					
27	-27	SS-17 27.0-28.3	24/15	6.7	1-3-2	Light brown coarse SAND, trace gravel, saturated
28	-28					
29	-29	SS-18 29.0-30.0	24/12	5.8	1-2-1	Same as above
30	-30					
31	-31	SS-19 31.0-31.4	24/5	5.9	2-3-2	Same as above
32						

Well: HMW-18S
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

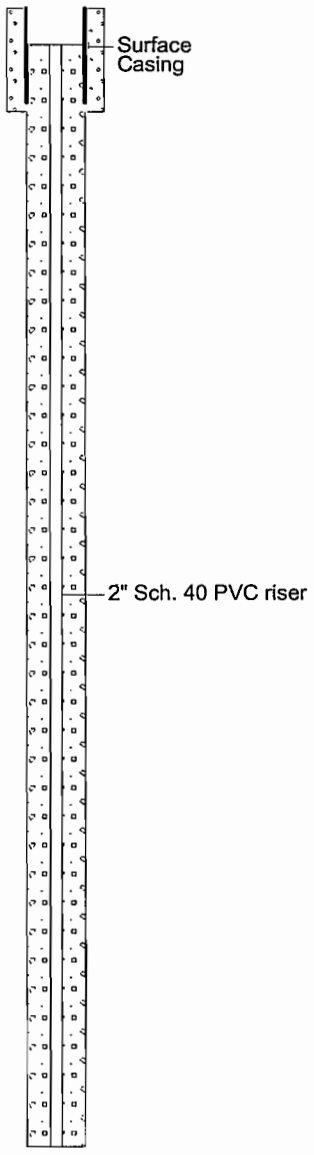
LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		3.1				Crushed stone, slag fragments, black FILL medium to coarse grain sand / cinders, dry
2	-2	HA-2/ 2.0-4.0		3.1				Brown medium to fine grain SAND, trace silt, trace gravel, moist
4	-4	SS-3 4.0-6.0	24/8	4.4	7-17-13			Same as above, light brown
5	-5							Same as above
6	-6	SS-4 5.0-6.7	24/18	3.8	2-8-6			Same as above, interbeded silty sand seam at 6.5'
7	-7							Light brown medium to fine grain SAND, moist trace silt
8	-8	SS-5 8.0-10.0	24/12	2.6	2-4-6			Same as above
9	-9							Brown medium to coarse SAND, trace silt, trace gravel
10	-10	SS-6 10.0-12.0	24/12	2.4	9-18-11			Same as above
11	-11							
12	-12	SS-7 12.0-14.0	24/18	3.7	6-21-15			Same as above, interbeded clayey sand seam at 12.5'
13	-13							
14	-14	SS-8 14.0-16.0	24/16	8.6	12-29-17			Same as above
15								

Well: HMW-22D
Elev.:



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11-05-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

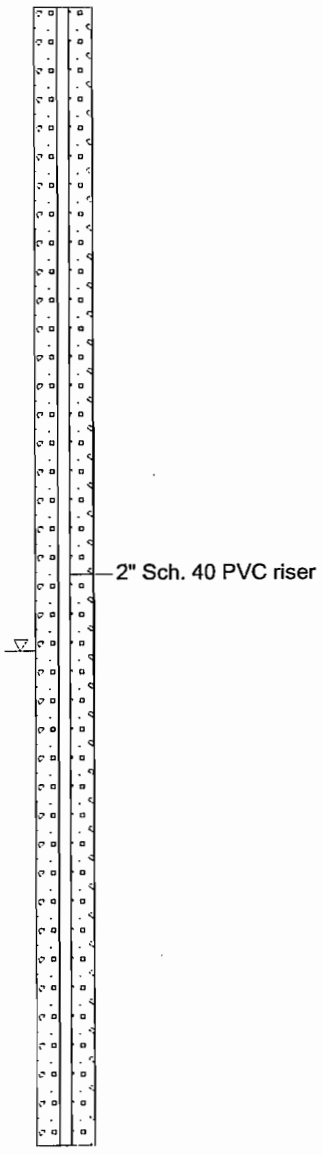
LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
15	-15							
16	-16	SS-9 16.0-18.0	24/20	1.8	9-26-17			Same as above, less gravel at 17.0
17	-17							
18	-18	SS-10 18.0-20.0	24/20	6.3	8-28-16			Same as above
19	-19							
20	-20	SS-11 20.0-22.0	24/22	14.7	10-25-16			Same as above, black banding at 21.5'
21	-21							
22	-22	SS-12 22.0-23.0	24/20	3.8	8-19-12			
23	-23	SS-13 23.0-24.0		4.1				Same as above, wet at 23.0'
24	-24	SS-14 24.0-26.0	24/22	3.6	4-14-9			Same as above, brown coarse to medium sand, trace silt, trace gravel
25	-25							
26	-26	SS-15 26.0-28.0	24/22	9.7	4-28-20			Same as above
27	-27							
28	-28	SS-16 28.0-30.0	24/16	9.9	6-23-16			Same as above, more gravel
29	-29							
30								

Well: HMW-22D
Elev.:



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11-05-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

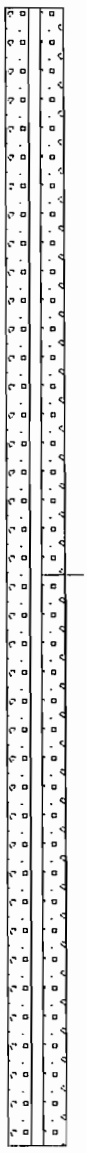
LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
30	-30	SS-17 30.0-32.0	24/20	16.0	6-10-13			Same as above, black banding at 31.5'
31	-31							
32	-32	SS-18 32.0-34.0	24/22	5.9	9-19-22			Same as above
33	-33							
34	-34	SS-19 34.0-36.0	24/18	13.7	6-21-14			Same as above, large stone stuck in end of spoon, less coarse sand
35	-35							
36	-36	SS-20 36.0-38.0	24/20	5.4	9-22-9			Same as above, more coarse sand
37	-37							
38	-38	SS-21 38.0-40.0	24/18	5.6	6-32-35			Same as above
39	-39							
40	-40	SS-22 40.0-42.0	23/22	3.4	8-58-50			Same as above
41	-41							
42	-42	SS-23 42.0-44.0	24/16	2.4	9-49-30			Same as above
43	-43							
44	-44	SS-24 44.0-46.0	24/24	4.1	9-47-25			Same as above
45								

Well: HMW-22D
Elev.:



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11-05-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

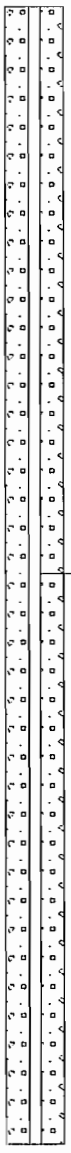
LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
45	-45							
46	-46	SS-25 46.0-48.0	24/20	5.9	14-47-37			Same as above, increase gravel
47	-47							
48	-48	SS-26 48.0-50.0	24/20	5.5	10-38-19			Same as above, few gravel, less sand
49	-49							
50	-50	SS-27 50.0-52.0	24/10	5.6	13-31-28			Same as above, increase silt
51	-51							
52	-52	SS-28 52.0-54.0	23/16	4.6	25-88-50			Same as above, large stone in spoon
53	-53							Brown fine to medium SAND, trace silt, trace gravel, large stone in end of spoon
54	-54	54.0-55.0	24/18	6.8	24-53-27			Same as above
55	-55	SS-30 55.0-56.0		6.3				Grey silty clayey SAND, trace gravel
56	-56	SS-31 56.0-58.0	24/6	4.0	39-75-18			Same as above
57	-57							
58	-58	SS-22 58.0-60.0	24/12	6.6	2-19-19			Same as above
59	-59							Brown fine to medium SAND, trace gravel trace silt
60								

Well: HMW-22D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

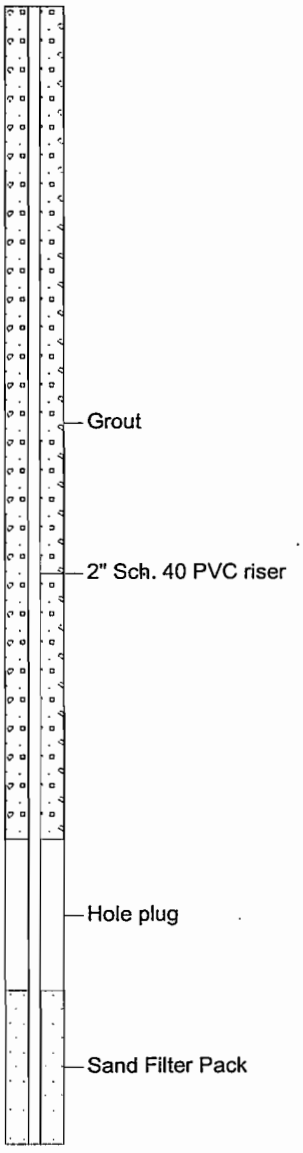
LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
60	-60	SS-23 60.0-62.0	24/24	8.4	8-28-27	Same as above, medium to coarse sand
61	-61					Brown fine SAND, trace silt, trace gravel
62	-62	SS-27 62.0-64.0	24/24	8.3	13-68-52	2" brown clayey sand seam, very dense, trace gravel Brown fine SAND, trace silt, trace gravel
63	-63					Same as above, increase gravel
64	-64	SS-28 64.0-66.0	17/6	8.1	18-25-50	Brown fine silty SAND 1" brown silt seam, lost last 6" at 63.5 Same as above, may have washed out sand when removing rods
65	-65					
66	-66	SS-29 66.6-68.0	23/18	5.5	10-57-50	Brown fine to medium SAND, trace silt, trace gravel
67	-67					
68	-68	SS-30 68.0-70.0	21/24	8.2	15-58-50	Same as above, no gravel
69	-69					
70	-70	SS-31 70.0-72.0	22/20	8.5	18-56-50	2" brown sandy SILT seam at 69.5' Same as above, trace gravel
71	-71					
72	-72	SS-32 72.0-74.0	15/15	8.7	9-25-50	Same as above, no gravel, 3" brown silt seam at 73.5, lost last 6"
73	-73					
74	-74	SS-33 74.0-76.0	21/18	0.0	25-61-50	Same as above, trace gravel just above 1" sandy silt seam
75						

Well: HMW-22D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

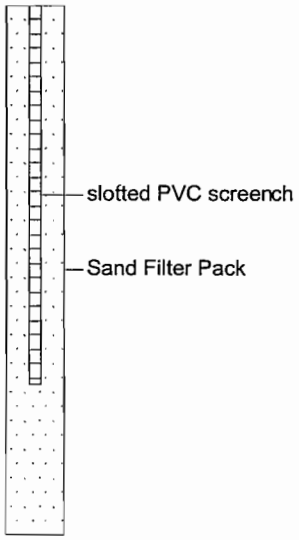
LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
75	-75							
76	-76	SS-34 76.0-78.0	22/18	0.0	10-75-50			Same as above, increase silt with depth, trace gravel
77	-77							
78	-78	SS-35 78.0-80.0	24/18	0.0	8-44-50			Same as above
79	-79							Brown silt seam at 79', 1" thick Brown sandy silt, 6" thick Brown silt at end of spoon 3" thick
80	-80	SS-36 80.0-82.0	24/16	0.0	8-35-35			Brown sandy SILT, trace gravel
81	-81							Brown silt seam, trace gravel, last 4"
82	-82	SS-37 82.0-84.0	24/24	0.0	12-38-46			Light brown fine to medium SAND, trace silt, trace gravel
83	-83							
84	-84	SS-38 84.0-86.0	16/16	0.0	24-45-50			Brown sandy silt, last 6" Same as above, first 3"
85	-85							
86	-86	SS-39 86.0-88.0	16/6	0.0	12-25-50			Brown medium to fine SAND, trace silt, trace gravel
87	-87							Grey sandy SILT, manganese exidation, last 6" Same as above
88	-88	SS-40 88.0-90.0	16/14	0.0	11-45-50			Same asa bove, first 2" Grey silt, very dense, 6" thick
89	-89							
90								

Well: HMW-22D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-22D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
90	-90	SS-41 90.0-92.0	12/10	0.0	25/86			Grey silty SAND, last 6"
91	-91							Same as above
92	-92		24/0		8-24-13			Gravel (cobbles) at end of spoon, few medium to fine sand, trace silt
93	-93							
94	-94	SS-42 94.0-96.0	24/14	0.0	8-32-24			Grey silty SAND
95	-95							
96	-96	SS-43 96.0-98.0	24/24	0.0	8-39-31			Same as above
97	-97							
98	-98		21/24		8-69-50			Same as above
99	-99							
100	-100	SS-45 100-102	24/18	4.2	18-55-50			Same as above
101	-101							Grey SILT, trace fine sand
102	-102	SS-46 102-104	21/16	2.8	22-78-50			Grey sandy SILT
103	-103							
104	-104	SS-47 104-106	15/15	0.0	19-33-50			Same as above
105								

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: Topflite
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 119'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-22D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-22D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
105	-105							
106	-106	SS-48 106-108	21/16	0.0	19-62-50			Same as above, less sand, trace gravel
107	-107							
108	-108	SS-49 108-110	24/18	0.0	12-32-30			Grey fine to medium grain silty SAND
109	-109							Same as above
110	-110	SS-50 110-112	16/12	0.0	23-37-50			Same as above
111	-111							
112	-112	SS-51 112-114	17/16	0.0	23-47-50			Same as above
113	-113							
114	-114	SS-52 114-116	24/24	0.0	12-71-50			Same as above
115	-115							Grey SILT
116	-116	SS-53 116-118	17/16	0.0	10-31-50			Grey silty fine SAND, grey silt
117	-117							Same as above, grey silt, trace sand
118	-118		12/12	0.0	20-50			Grey sandy CLAY, trace gravel, very dense, moist
119	-119							Same as above Sand at end of spoon End of boring at 119.0
120								

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11-05-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon, 2" Macro
Total Depth (ft.)	: 30'
S. Water Level Date	:
S. Water Level (ft.)	:

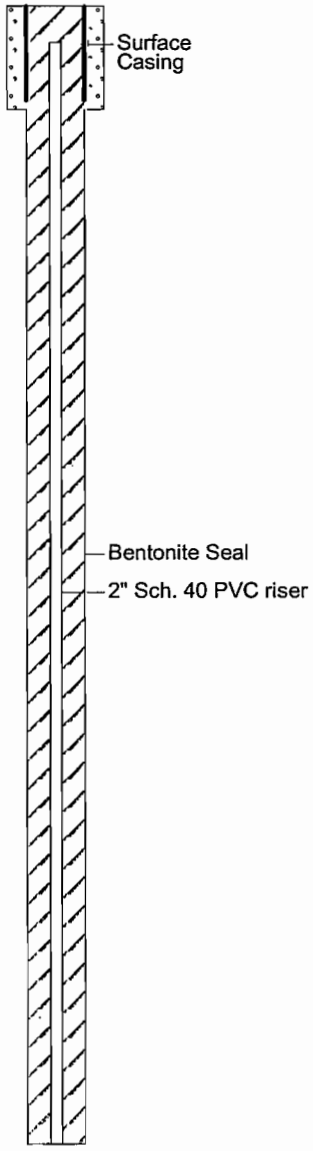
LOG OF BORING HMW-25S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							Asphalt and Concrete
1	-1	HA-1/ 1.0-2.5		0.2				Silty SAND, some gravel very moist
2	-2							
3	-3	HA-2/ 2.5-4.0		0.5				Brown silty SAND, few gravel, very moist
4	-4	HA-3/ 4.0-5.0		0.0				Brown SAND, trace gravel, very moist
5	-5	SS-4 5.0-6.7	24/20	2.5	3-5-2			Light brown fine SAND, trace gravel, very moist
6	-6							
7	-7	SS-5 7.0-8.7	24/20	2.6	3-5-2			Same as above
8	-8							Light brown coarse SAND, some gravel, very moist
9	-9	SS-6 9.0-10.0	24/12	0.9	5-10-7			Same as above
10	-10							
11	-11	SS-7 11.0-12.5	24/18	2.4	4-6-4			Same as above
12	-12							Light brown medium coarse SAND, trace gravel, very moist
13	-13	SS-8 13.0-14.5	24/18	1.9	5-12-8			Same as above
14	-14							Light brown coarse SAND, some gravel, very moist
15								

Well: HMW-25S
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon, 2" Macro
Total Depth (ft.)	: 30'
S. Water Level Date	:
S. Water Level (ft.)	:

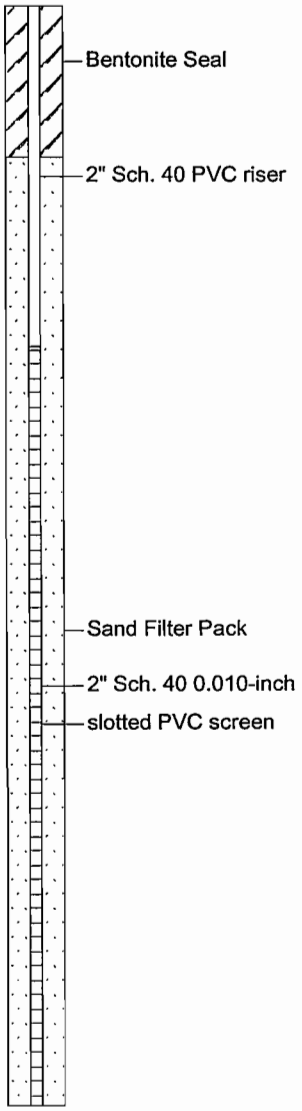
LOG OF BORING HMW-25S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
15	-15	SS-9 15.0-16.7	24/20	2.3	8-18-14	
16	-16					
17	-17	SS-10 17.0-18.7	24/20	5.3	7-12-5	Same as above
18	-18					Coarse SAND and GRAVEL, petrol staining from 18.3 to 18.7', very moist
19	-19	SS-11 19.0-20.0	24/12	4.5	6-21-9	Same as above (also stained)
20	-20					Light brown coarse SAND, trace gravel
21	-21	SS-12 21.0-22.0	24/12	4.3	5-11-9	Light brown coarse SAND and GRAVEL, slight petro staining at 21.7'
22	-22					
23	-23	SS-13 23.0-24.5	24/18	4.1	14-20-12	Same as above, saturated at 24.0'
24	-24					
25	-25	SS-14 25.0-26.2	24/14	4.6	7-10-5	Same as above
26	-26					
27	-27	SS-15 27.0-28.0	24/12	3.7	7-14-8	Same as above
28	-28					
29	-29					Total depth of well is 29' 6"
30						

Well: HMW-25S
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4" HSA
Sampling Method	: 2' Split Spoon
Total Depth (ft.)	: 28'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-26S

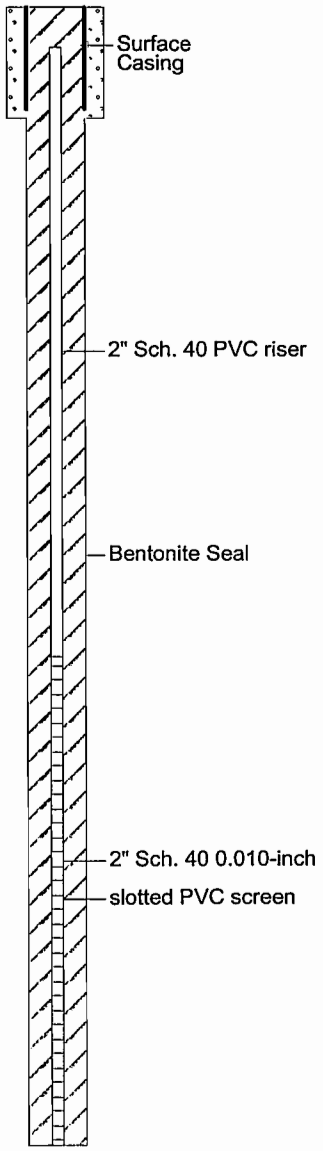
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-26S
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
0	0					Asphalt and Concrete
1	-1					
2	-2	HA-1/ 1.5-2.3		1.8		Silty SAND, some gravel, trace clay, moist
3	-3	HA-2/ 2.3-3.8		1.7		Brown coarse SAND, trace gravel, moist
4	-4	HA-3/ 3.8-5.0		5.2		Same as above
5	-5	SS-4 5.0-7.0	24/24	0.5	4-4-3	Same as above
6	-6					
7	-7	SS-5 7.0-8.7	24/20	0.7	2-2-1	Light brown coarse SAND, trace gravel, very moist
8	-8					
9	-9	SS-6 9.0-10.3	24/15	10.1	3-8-4	Same as above
10	-10					
11	-11	SS-7 11.0-12.7	24/20	1.3	2-6-5	Same as above
12	-12					
13	-13	SS-8 13.0-14.7	24/20	8.3	5-7-8	Same as above, more gravel from 14.5 to 14.7
14						



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4" HSA
Sampling Method	: 2' Split Spoon
Total Depth (ft.)	: 28'
S. Water Level Date	:
S. Water Level (ft.)	:

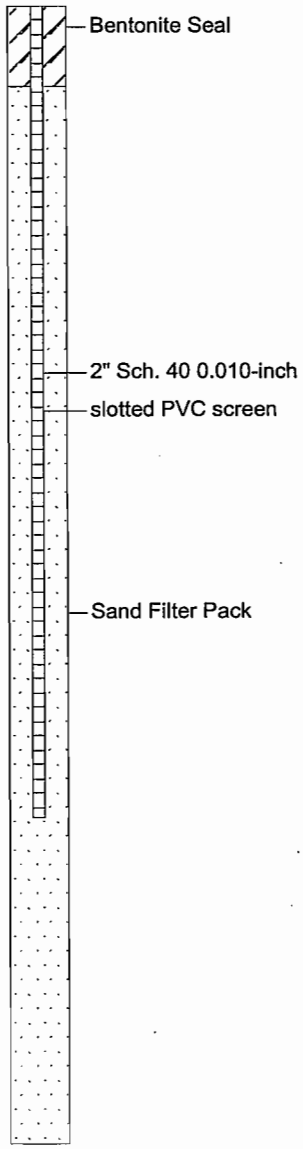
LOG OF BORING HMW-26S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
14	-14							
15	-15	SS-9 15.0-16.7	24/20	5.1	6-14-12			Light brown SAND with gravel, very moist
16	-16							
17	-17	SS-10 17.0-18.7	24/20	6.8	8-10-9			Same as above
18	-18							
19	-19	SS-11 19.0-20.0	24/12	7.9	8-17-12			Same as above
20	-20							
21	-21	SS-12 21.0-22.7	24/20	6.2	8-17-21			Same as above
22	-22							
23	-23	SS-13 23.0-24.7	24/20	3.1	8-13-11			Light brown coarse SAND, some gravel, very moist
24	-24							
25	-25	SS-14 25.0-27.0	24/20	4.0	5-7-4			Same as above
26	-26							
27	-27							Coarse SAND with gravel, saturated at 27.0'
28		SS-15 27.3-28.0	24/12	2.5	6-6			Coarse sand and gravel, saturated Total depth of well is 28.0'

Well: HMW-26S
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 33'
S. Water Level Date	:
S. Water Level (ft.)	:

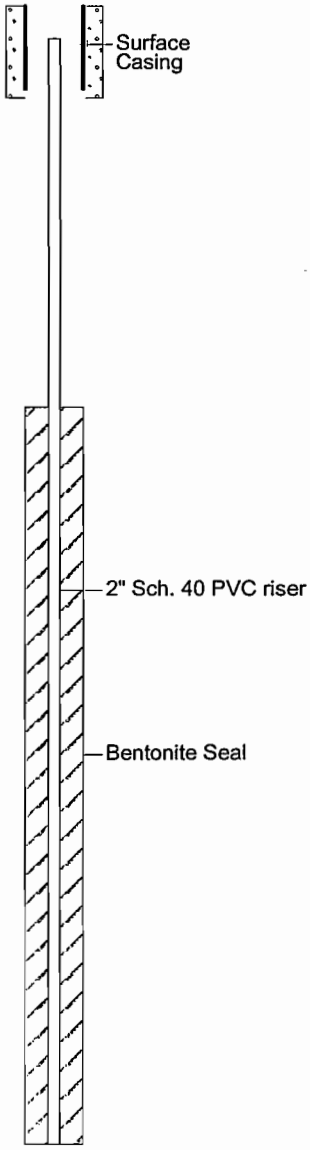
LOG OF BORING HMW-27S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-0.8		3.3				Black SAND, rich organics, rootlest
1	-1							Brown fine SAND, trace gravel, moist, rootlets
2	-2	HA-2/ 1.5-2.0		1.7				Same as above, no rootlets
		HA-3/ 2.0-2.5		4.3				Same as above
3	-3	HA-4/ 2.5-3.5		3.5				Same as above
4	-4	HA-5/ 3.5-4.0		3.6				Same as above
		HA-6/ 4.0-5.0		3.9				Same as above
5	-5	SS-7 5.0-6.0	24/12	0.0	1-3-3			Same as above
6	-6							Hit sewer line at 6.5' bg. offset 5' SW, Asphalt cover drill through asphalt and use probe to 5' - probed to 5' - no obstrutions. Straight drill to 7'
7	-7	SS-8 7.0-7.5	24/10	2.7	4-8-2			Brown fine SAND, trace gravel, moist
8	-8							Light brown coarse SAND, trace gravel, moist
9	-9	SS-9 9.0-10.0	24/12	2.4	1-2-4			Same as above
10	-10							
11	-11	SS-10 11.0-12.0	24/12	1.0	1-2-12			Light brown coarse SAND with gravel, moist
12	-12							
13	-13	SS-11 13.0-14.0	24/12	1.9	1-13-1			Light brown coarse SAND, some gravel, moist
14	-14							
15	-15	SS-12 15.0-16.3	24/15	2.4	2-4-4			Same as above
16	-16							
17								

Well: HMW-27S
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/13/01
Date Completed	: 08/13/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 33'
S. Water Level Date	:
S. Water Level (ft.)	:

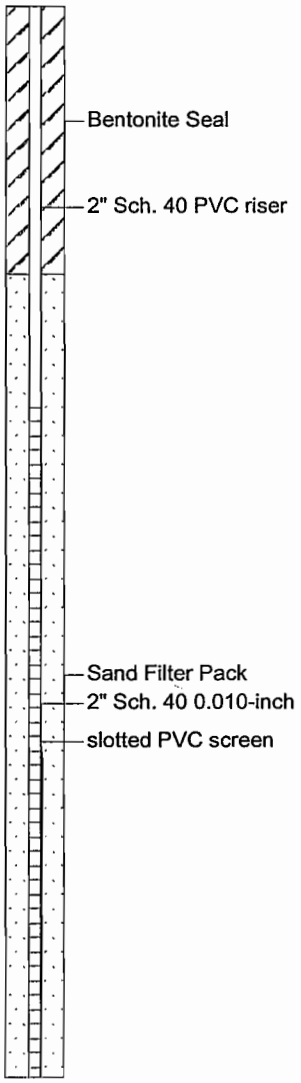
LOG OF BORING HMW-27S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
17	-17	SS-13 17.0-19.0	24/24	3.3	5-16-10			Same as above
18	-18							
19	-19	SS-14 19.0-20.3	24/18	4.7	10-20-15			Same as above
20	-20							
21	-21	SS-15 21.0-22.7	24/20	6.3	5-20-23			Same as above
22	-22							
23	-23	SS-16 23.0-24.0	24/12	6.7	5-20-20			Same as above, very moist to saturated
24	-24							
25	-25	SS-17 25.0-26.3	24/15	6.8	6-8-3			Sand and Gravel, saturated at 26.0'
26	-26							
27	-27	SS-18 27.0-27.8	24/10	4.2	5-10-5			Same as above
28	-28							
29	-29	SS-19 29.0-30.7	24/20	5.5	2-5-4			Same as above
30	-30							
31	-31	SS-20 31.0-32.3	24/15	6.3	4-9-13			Same as above
32	-32							
33	-33							Total depth is 33.0'
34								

Well: HMW-27S
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/12/01
Date Completed	: 09/12/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: No Sampling
Total Depth (ft.)	:
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-28S

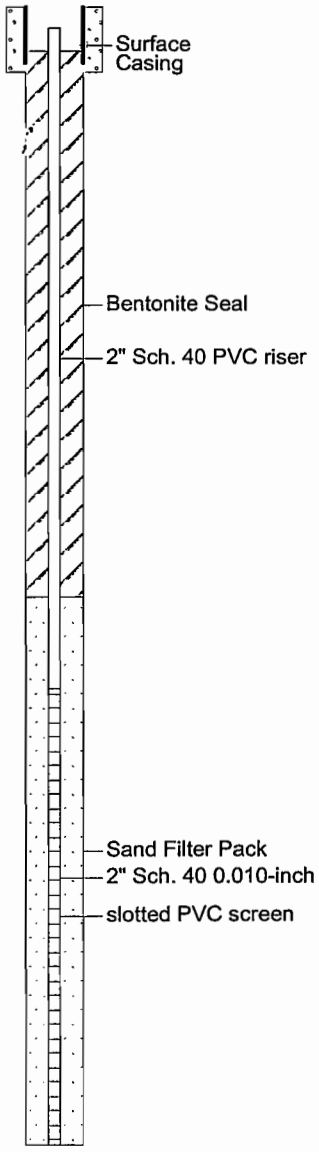
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: PID / 2020
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							See HMW-28D for geology
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							
21	-21							
22	-22							
23	-23							
24	-24							
25								

Well: HMW-28S
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/30/01
Date Completed	: 08/30/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 96.0'
S. Water Level Date	:
S. Water Level (ft.)	:

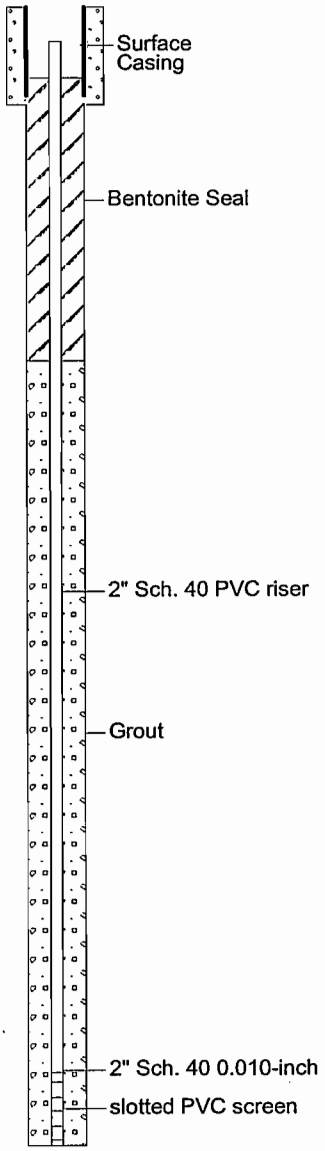
LOG OF BORING MW-28D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		0.0				Dark brown organic rich clayey SAND, trace gravel, moist
2	-2	HA-2/ 2.0-4.0		0.0				Brown medium to coarse SAND, few silt, trace gravel
4	-4	SS-3 4.0-6.0	24/12	0.0	2-3-3			Same as above
6	-6	SS-4 6.0-8.0	24/18	0.0	2-4-2			Same as above, less silt
8	-8	SS-5 8.0-10.0	24/20	0.0	2-4-2			Same as above
10	-10	SS-6 10.0-12.0	24/8	0.0	2-3-1			Same as above, trace clay
12	-12	SS-7 12.0-14.0	24/12	0.0	8-19-10			Light brown medium to coarse SAND, trace silt, trace gravel, moist
14	-14	SS-8 14.0-16.0	24/16	0.0	6-18-14			Same as above
16								

Well: HMW-28D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/30/01
Date Completed	: 08/30/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 96.0'
S. Water Level Date	:
S. Water Level (ft.)	:

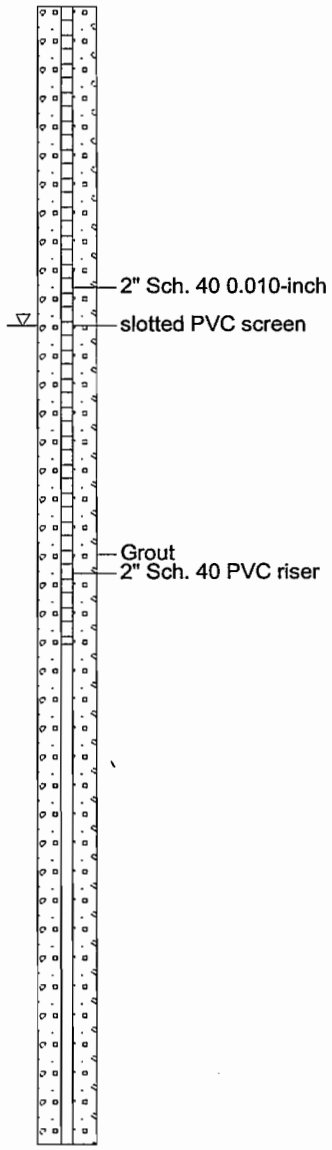
LOG OF BORING MW-28D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-28D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
16	-16	SS-9 16.0-18.0	24/18	0.0	7-20-10			Same as above
17	-17							
18	-18	SS-10 18.0-20.0	24/16	0.0	7-21-12			Same as above
19	-19							
20	-20	SS-11 20.0-22.0	24/16	0.0	6-19-9			Same as above, wet
21	-21							
22	-22	SS-12 22.0-24.0	24/12	0.0	6-18-14			Same as above, large cobble in end of spoon
23	-23							
24	-24	SS-13 24.0-26.0	24/12	0.0	7-21-14			Same as above
25	-25							
26	-26	SS-14 26.0-28.0	24/16	0.0	4-16-15			Same as above
27	-27							Same as above, few gravel
28	-28	SS-15 28.0-30.0	24/14	0.0	6-15-14			Same as above, trace gravel
29	-29							
30	-30	SS-16 30.0-32.0	24/12	0.0	2-8-8			Same as above
31	-31							
32								



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/30/01
Date Completed	: 08/30/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 96.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING MW-28D

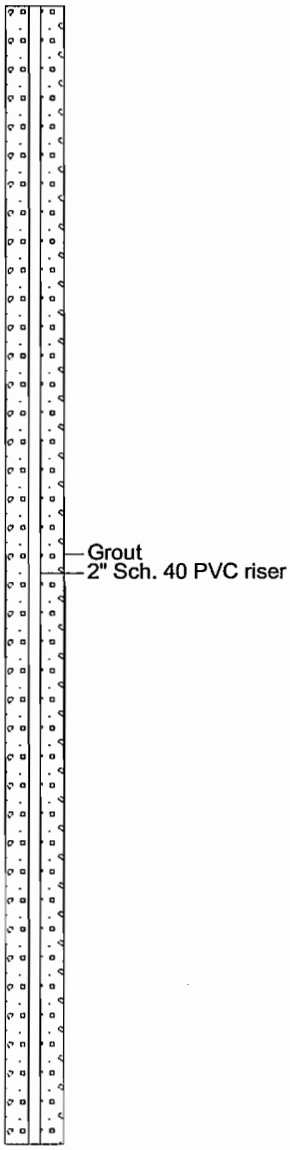
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Well: HMW-28D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
32	-32	SS-17 32.0-34.0	24/16	0.0	3-16-22	Same as above
33	-33					
34	-34	SS-18 34.0-36.0	24/12	0.0	8-48-30	Same as above, large cobble noted in spoon
35	-35					
36	-36	SS-19 36.0-38.0	24/18	0.0	13-28-24	Same as above, increase gravel
37	-37					
38	-38	SS-20 38.0-40.0	24/12	0.0	10-31-23	Same as above
39	-39					
40	-40	SS-21 40.0-42.0	24/6	0.0	6-25-21	Same as above
41	-41					
42	-42	SS-22 42.0-44.0	24/20	0.0	14-53-33	Same as above
43	-43					Same as above, few gravel, trace clay interbeded
44	-44	SS-23 44.0-46.0	24/14	0.0	7-40-17	Same as above, no clay, increase silt, trace gravel
45	-45					Same as above, less gravel
46	-46	SS-24 46.0-48.0	24/20	0.0	7-61-49	Same as above
47	-47					
48						



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/30/01
Date Completed	: 08/30/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 96.0'
S. Water Level Date	:
S. Water Level (ft.)	:

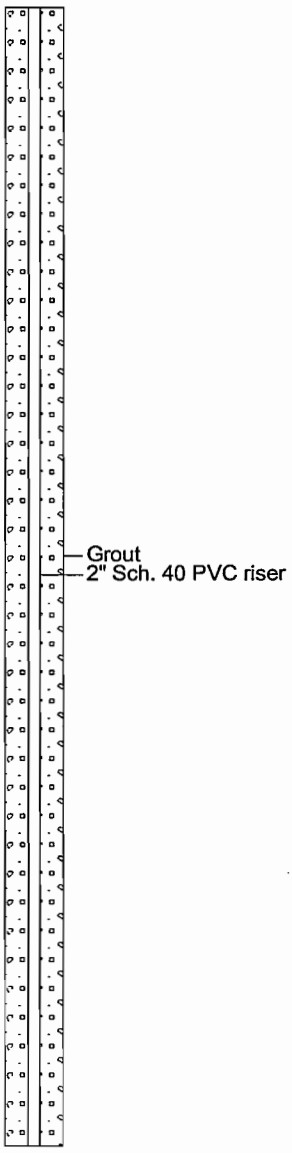
LOG OF BORING MW-28D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-28D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
48	-48	SS-25 48.0-50.0	24/18	0.0	6-65-50			Same as above
49	-49							
50	-50	SS-26 50.0-52.0	24/6	0.0	10-29-50			Same as above
51	-51							
52	-52	SS-27 52.0-54.0	24/0	0.0	14-50			Sample may have washed out
53	-53							
54	-54	SS-28 54.0-56.0	24/8	0.0	13-35-50			Same as above
55	-55							
56	-56	SS-29 56.0-58.0	24/18	0.0	9-74-50			Same as above
57	-57							
58	-58	SS-30 58.0-60.0	24/0	0.0	9-30-50			Same as above, interbeded few silt (grey), sample may have washed out
59	-59							
60	-60		24/0		1-28-44			May have washed out sample
61	-61							
62	-62	SS 62.0-64.0	23/12	0.0	3-53-50			Same as above
63	-63							
64								



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/30/01
Date Completed	: 08/30/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 96.0'
S. Water Level Date	:
S. Water Level (ft.)	:

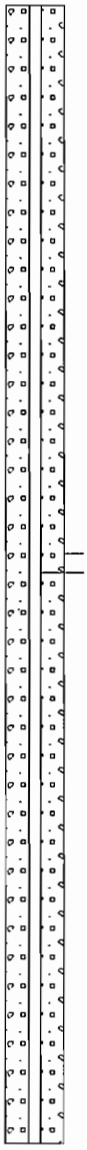
LOG OF BORING MW-28D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-28D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
64	-64	SS 64.0-66.0	22/18	0.0	7-74-50	Same as above
65	-65					
66	-66	SS 66.0-68.0	23/16	0.0	8-71-50	Same as above
67	-67					
68	-68	SS 68.0-70.0	22/20	0.0	9-66-50	Same as above, increase silt
69	-69					
70	-70	SS 70.0-72.0	23/20	0.0	6-47-50	Same as above
71	-71					
72	-72	SS 72.0-74.0	21/20	0.0	14-97-50	Same as above
73	-73					
74	-74	SS 74.0-76.0	21/20	0.0	15-87-50	Same as above
75	-75					
76	-76	SS 76.0-78.0	24/0	0.0	12-43-50	No recovery
77	-77					
78	-78	SS 78.0-80.0	24/20	0.0	9-78-50	Same as above, increase gravel, trace clay
79	-79					
80						



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/30/01
Date Completed	: 08/30/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 96.0'
S. Water Level Date	:
S. Water Level (ft.)	:

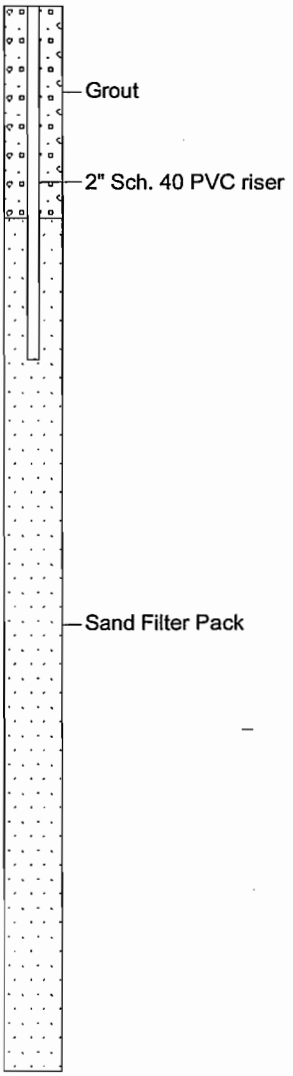
LOG OF BORING MW-28D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
80	-80	SS 80.0-82.0	22/22	0.0	7-52-50			Same as above
81	-81							
82	-82	SS 82.0-84.0	17/16	0.0	6-55-50			Same as above, large cobble in end of shoe
83	-83							
84	-84	SS 84.0-86.0	23/21	0.0	9-45-50			Same as above, increase silt
85	-85							
86	-86	SS 86.0-87.0	12/12	0.0	7-79			Same as above
87	-87							Brown sandy CLAY at end of spoon, trace gravel, soft - interbeded
88	-88	SS 88.0-90.0	15/5	0.0	9-60-50			Same as above, large broken cobbles inspoon
89	-89							
90	-90	SS 90.0-92.0	15/15	0.0	7-83-50			Same as above
91	-91							
92	-92	SS 92.0-94.0	15/15	0.0	29-36-50			Same as above
93	-93							
94	-94	SS 94.0-96.0	16/16	0.0	12-35-50			Same as above
95	-95							Brown clayey SAND, few gravel, trace large broken cobbles
96								End of boring at 96.0'

Well: HMW-28D
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/11/01
Date Completed	: 09/11/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 82.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-29D

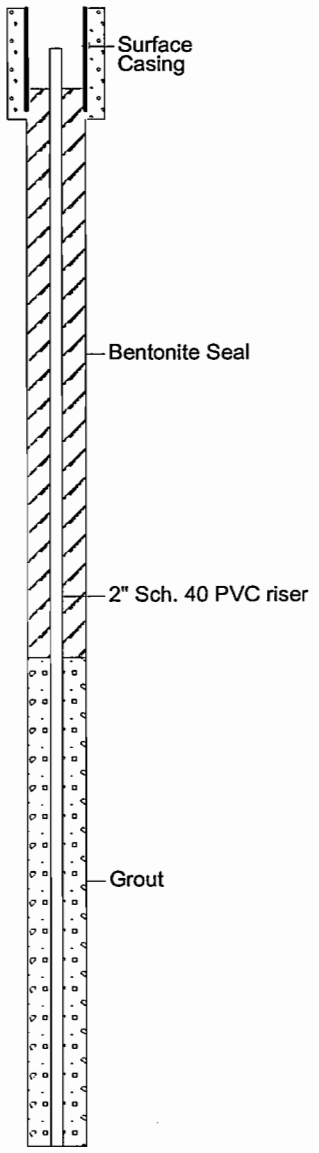
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		0.2				Asphalt top 3" crushed limestone to 6"
1	-1							Brown clayey SAND, trace gravel, moist
2	-2	HA-2/ 2.0-4.0		0.4				Brown medium to fine SAND, trace silt, trace gravel, moist
3	-3							
4	-4	SS-3 4.0-6.0	24/20	0.3	4-11-7			Same as above
5	-5							Same as above, 1" black stain, no odor
6	-6	SS-4 6.0-8.0	24/18	0.6	3-9-8			Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/20	0.2	2-10-6			Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/16	0.4	5-23-14			Same as above
11	-11							Same as above, 4" increase gravel and trace clay seem at 11.5'
12	-12	SS-7 12.0-14.0	24/20	0.6	4-17-17			Same as above, increase coarse sand less fine sand
13	-13							
14								

Well: HMW-29D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/11/01
Date Completed	: 09/11/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 82.0'
S. Water Level Date	:
S. Water Level (ft.)	:

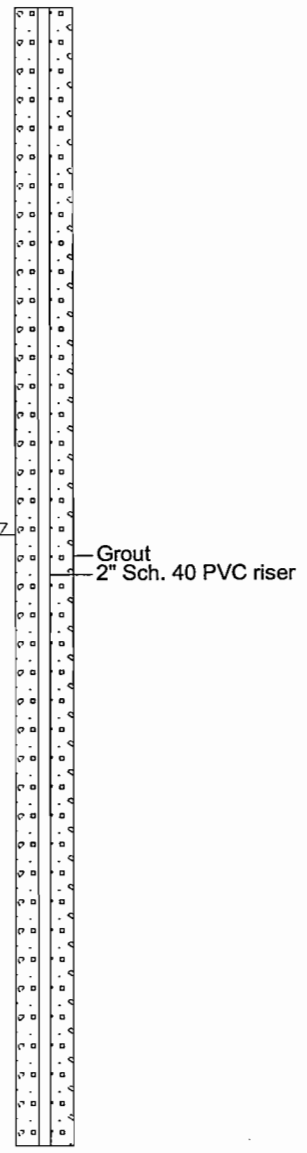
LOG OF BORING HMW-29D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
14	-14	SS-8 14.0-16.0	24/20	0.3	7-35-15			Same as above, increase gravel, trace clay
15	-15							
16	-16	SS-9 16.0-18.0	24/20	0.8	8-20-11			Same as above, very coarse sand, no clay
17	-17							
18	-18	SS-10 18.0-20.0	24/16	0.0	12-27-15			Same as above, less coarse sand
19	-19							
20	-20	SS-11 20.0-22.0	24/18	0.5	11-28-15			Same as above, black stain at 20.5", no odor, wet
21	-21							
22	-22							
23	-23							
24	-24							
25	-25	SS-12 25.0-27.0	24/20	0.3	11-28-14			begin 5' centers
26	-26							
27	-27							
28								

Well: HMW-29D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN
SBI002

Date Started	: 09/11/01
Date Completed	: 09/11/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 82.0'
S. Water Level Date	:
S. Water Level (ft.)	:

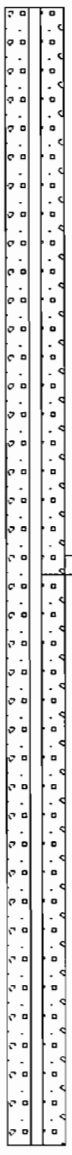
LOG OF BORING HMW-29D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
28	-28							
29	-29							
30	-30	SS-13 30.0-32.0	24/20	96.3	11-31-24			Same as above
31	-31							
32	-32							Brown silty CLAY, trace sand
33	-33							Black silty SAND, trace gravel, strong odor
34	-34							
35	-35	SS-14 35.0-37.0	24/14	191	9-29-24			Same as above, strong odor
36	-36							
37	-37							
38	-38							
39	-39							
40	-40	SS-15 40.0-42.0	24/22	20.7	12-41-35			Same as above
41	-41							
42								

Well: HMW-29D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/11/01
Date Completed	: 09/11/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 82.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-29D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-29D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
42	-42							Same as above, no staining / brown
43	-43							
44	-44							
45	-45	SS-16 45.0-47.0	34/16	0.0	23-51-35			Same as above, few gravel
46	-46							
47	-47							
48	-48							
49	-49							
50	-50	SS-17 50.0-52.0	24/12	20.8	8-36-35			Same as above, trace gravel, grey
51	-51							
52	-52							
53	-53							
54	-54							
55	-55							No recovery
56								

Grout
2" Sch. 40 PVC riser

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/11/01
Date Completed	: 09/11/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 82.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-29D

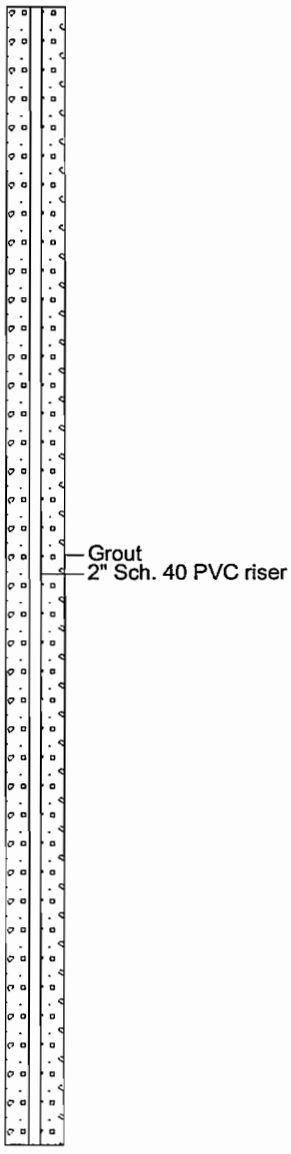
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
56	-56		24/0		6-24-31			
57	-57							
58	-58							
59	-59							
60	-60		24/0		20-37-37			No recovery
61	-61							
62	-62							
63	-63							
64	-64							
65	-65	SS-18 65.0-67.0	21/18	35.2	8-41-50			Same as above
66	-66							
67	-67							
68	-68							
69	-69							
70								

Well: HMW-29D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/11/01
Date Completed	: 09/11/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 82.0'
S. Water Level Date	:
S. Water Level (ft.)	:

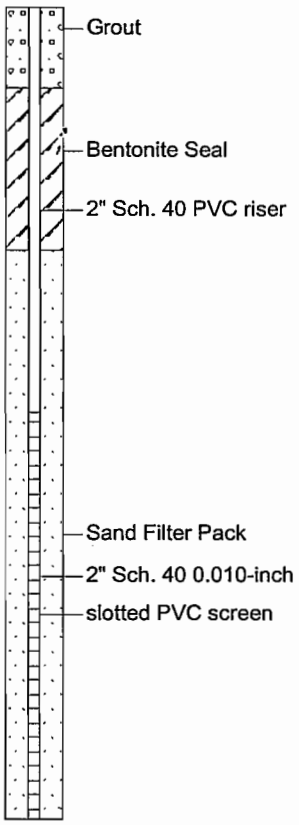
LOG OF BORING HMW-29D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
70	-70		17/0		11-27-20			No recovery
71	-71							
72	-72							
73	-73							
74	-74							
75	-75	SS-19 75.0-77.0	17/17	16.3	11-30-100			Same as above, brown
76	-76							
77	-77							
78	-78							
79	-79							
80	-80							Same as above
81	-81	SS-20 81.0-82.0	24/16	14.2				Brown silty CLAY, trace gravel, trace sand, 3" thick
82	-82							Brown SAND, trace gravel, trace sand End of boring at 82.0'
83	-83							
84								

Well: HMW-29D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/12/01
Date Completed	: 09/12/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: No Sampling
Total Depth (ft.)	:
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-29I

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

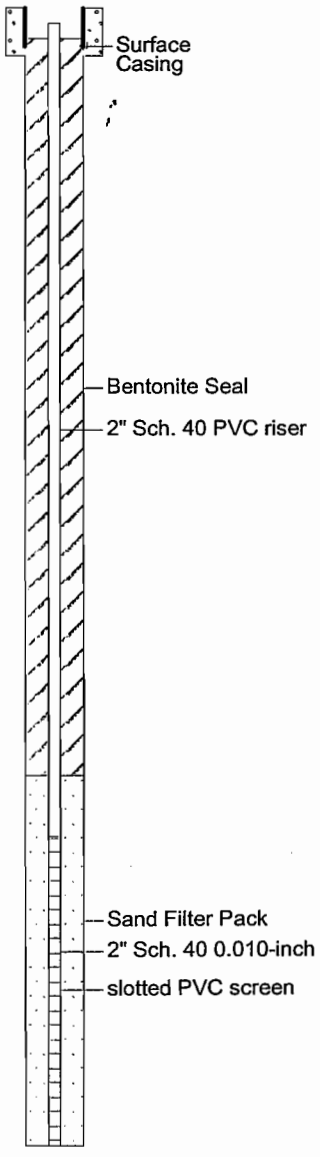
Soil Samples: Sampled Int. (⊠); Lab Sample (■)
Water Levels: Static (▼); During Drilling (▽)

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log
0	0						
1	-1						
2	-2						
3	-3						
4	-4						
5	-5						
6	-6						
7	-7						
8	-8						
9	-9						
10	-10						
11	-11						
12	-12						
13	-13						
14	-14						
15	-15						
16	-16						
17	-17						
18	-18						
19	-19						
20	-20						
21	-21						
22	-22						
23	-23						
24	-24						
25	-25						
26	-26						
27	-27						
28	-28						
29	-29						
30	-30						
31	-31						
32	-32						
33	-33						
34	-34						
35	-35						
36	-36						
37							

DESCRIPTION

See HMW-29D for geology

Well: HMW-29I
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/13/01
Date Completed	: 09/13/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: No Sampling
Total Depth (ft.)	:
S. Water Level Date	:
S. Water Level (ft.)	:

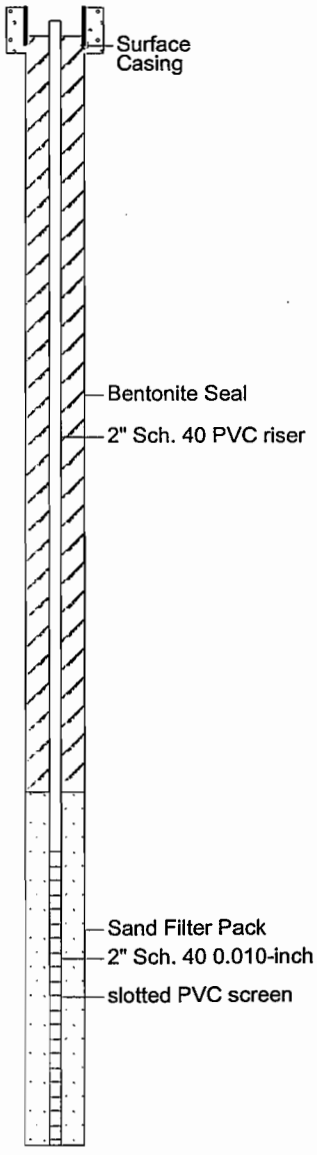
LOG OF BORING HMW-30I

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							See HMW-30D for geology
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							
21	-21							
22	-22							
23	-23							
24	-24							
25	-25							
26	-26							
27	-27							
28	-28							
29	-29							
30	-30							
31	-31							
32	-32							
33	-33							
34	-34							
35	-35							
36	-36							
37	-37							
38	-38							
39								

Well: HMW-30I
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/05/01
Date Completed	: 09/05/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 70'
S. Water Level Date	:
S. Water Level (ft.)	:

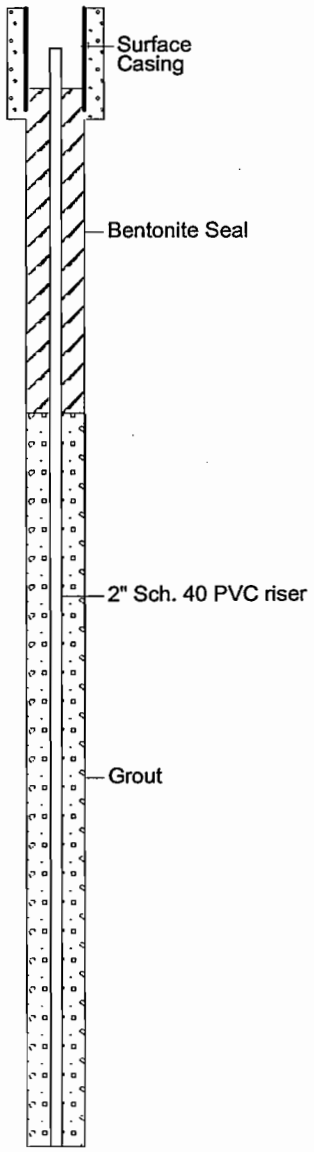
LOG OF BORING HMW-30D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		0.0				Asphalt top 3", crushed limestone to 6"
1	-1							Brown clayey SAND, trace gravel, moist
2	-2	HA-2/ 2.0-4.0		0.2				Same as above
3	-3							
4	-4	SS-3 4.0-6.0	24/24	0.7	4-11-4			Brown fine to medium SAND, trace silt, trace gravel, moist
5	-5							Same as above, trace clay interbeded
6	-6	SS-4 6.0-8.0	24/20	0.8	4-10-4			Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/18	1.6	3-4-3			Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/18	1.0	2-4-2			Same as above
11	-11							Same as above, increase gravel
12	-12	SS-7 12.0-14.0	24/10	0.9	4-6-4			Same as above
13	-13							
14								

Well: HMW-30D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/05/01
Date Completed	: 09/05/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 70'
S. Water Level Date	:
S. Water Level (ft.)	:

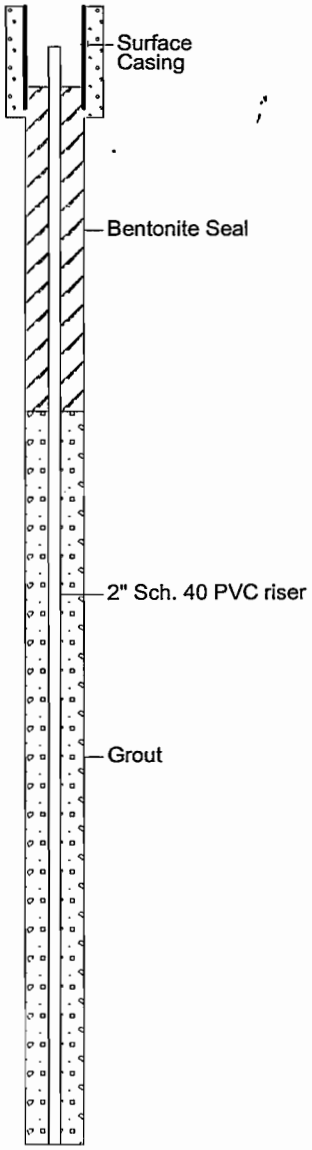
LOG OF BORING HMW-30D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		0.0				Asphalt top 3", crushed limestone to 6"
1	-1							Brown clayey SAND, trace gravel, moist
2	-2	HA-2/ 2.0-4.0		0.2				Same as above
3	-3							
4	-4	SS-3 4.0-6.0	24/24	0.7	4-11-4			Brown fine to medium SAND, trace silt, trace gravel, moist
5	-5							Same as above, trace clay interbeded
6	-6	SS-4 6.0-8.0	24/20	0.8	4-10-4			Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/18	1.6	3-4-3			Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/18	1.0	2-4-2			Same as above
11	-11							Same as above, increase gravel
12	-12	SS-7 12.0-14.0	24/10	0.9	4-6-4			Same as above
13	-13							
14								

Well: HMW-30D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/05/01
Date Completed	: 09/05/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 70'
S. Water Level Date	:
S. Water Level (ft.)	:

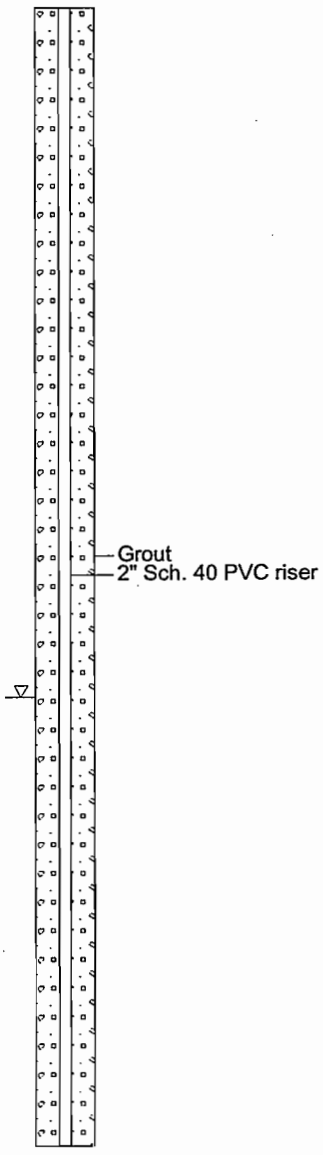
LOG OF BORING HMW-30D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
14	-14	SS-8 14.0-16.0	24/20	0.0	5-16-11			Same as above, no clay, decrease gravel
15	-15							Same as above, increase in gravel, large broken cobble in spoon
16	-16	SS-9 16.0-18.0	24/18	0.6	5-17-9			Same as above
17	-17							
18	-18	SS-10 18.0-20.0	24/22	0.8	5-15-9			Light brown medium to coarse SAND, trace gravel, trace silt, moist
19	-19							
20	-20	SS-11 20.0-22.0	24/22	1.0	7-18-11			Same as above
21	-21							Same as above, trace clay interbeded
22	-22	SS-12 22.0-24.0	24/20	2.2	4-14-8			Same as above, wet, no clay
23	-23							
24	-24	SS-13 24.0-26.0	24/18	2.1	2-15-15			Same as above
25	-25							
26	-26	SS-14 26.0-28.0	24/18	2.0	4-16-9			Same as above, trace clay interbeded, increase gravel
27	-27							
28								

Well: HMW-30D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/05/01
Date Completed	: 09/05/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 70'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-30D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Well: HMW-30D
Elev.:

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION
28	-28	SS-15 28.0-30.0	24/22	3.1	6-19-7	Same as above
29	-29					
30	-30	SS-16 30.0-32.0	24/20	2.3	7-19-11	Same as above, no clay, increase silt
31	-31					
32	-32	SS-17 32.0-34.0	24/18	60.2	9-25-20	Same as above, black staining, strong odor
33	-33					Same as above, grey staining
34	-34	SS-18 34.0-36.0	24/24	1196	9-54-50	Same as above, black staining, very strong odor
35	-35					
36	-36	SS-19 36.0-38.0	24/23	1727	11-45-24	Same as above
37	-37					
38	-38	SS-20 38.0-40.0	24/22	>2000	7-24-13	Same as above
39	-39					
40	-40	SS-21 40.0-42.0	10/10	544	9-50	Same as above, less staining
41	-41					
42						

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/05/01
Date Completed	: 09/05/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 70'
S. Water Level Date	:
S. Water Level (ft.)	:

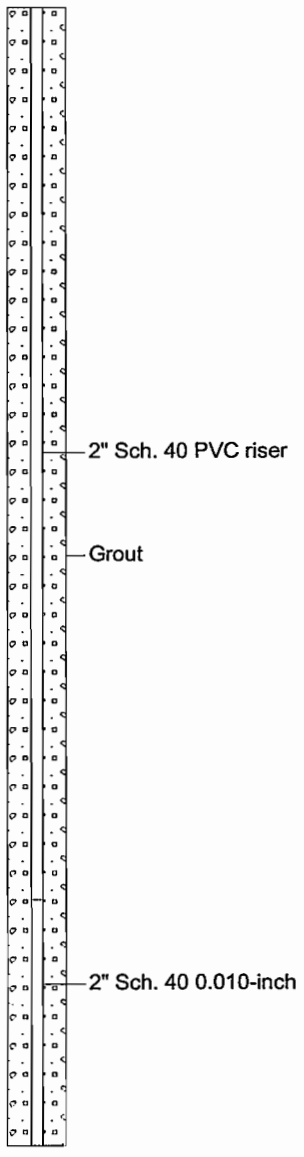
LOG OF BORING HMW-30D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
42	-42		0/0					No recovery, pushing stone
43	-43							
44	-44	SS-22 44.0-46.0	24/16	560	24-30-13			Same as above, no staining, few gravel
45	-45							
46	-46	SS-23 46.0-48.0	24/12	449	13-32-26			Same as above
47	-47							
48	-48	SS-24 48.0-50.0	24/12	53	9-54-26			Same as above, trace clay
49	-49							
50	-50	SS-25 50.0-52.0	24/8	102	56-40-31			Same as above, no clay
51	-51							
52	-52							No recovery
53	-53							
54	-54							No recovery
55	-55							
56								

Well: HMW-30D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/05/01
Date Completed	: 09/05/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 70'
S. Water Level Date	:
S. Water Level (ft.)	:

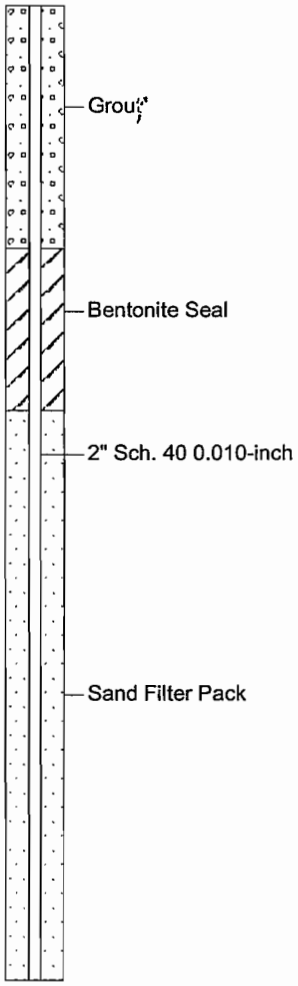
LOG OF BORING HMW-30D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
56	-56	SS-26 56.0-58.0	16/14	102	104-36-50			Same as above, no gravel
57	-57							
58	-58	SS-27 58.0-60.0	5/5	119				Same as above, trace gravel, increase silt
59	-59							
60	-60	SS-28 60.0-62.0	21/20	179	6-68-50			Same as above
61	-61							
62	-62	SS-29 62.0-64.0	22/16	117	5-52-50			Same as above
63	-63							
64	-64	SS-30 64.0-66.0	21/18	68.3	18-77-50			Same as above
65	-65							
66	-66	SS-31 66.0-68.0	24/20	65.8	5-62-33			Same as above
67	-67							
68	-68	SS-32 68.0-70.0	15/15	0.0	8-22-50			Grey very dense silty CLAY, trace sand, trace gravel, dry
69	-69							
70								End of boring at 70.0'

Well: HMW-30D
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/10/01
Date Completed	: 09/10/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: No Sampling
Total Depth (ft.)	:
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-31S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							See HMW-31D for geology
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							
21	-21							
22	-22							
23	-23							
24	-24							
25	-25							
26	-26							
27	-27							
28								

Well: HMW-31S
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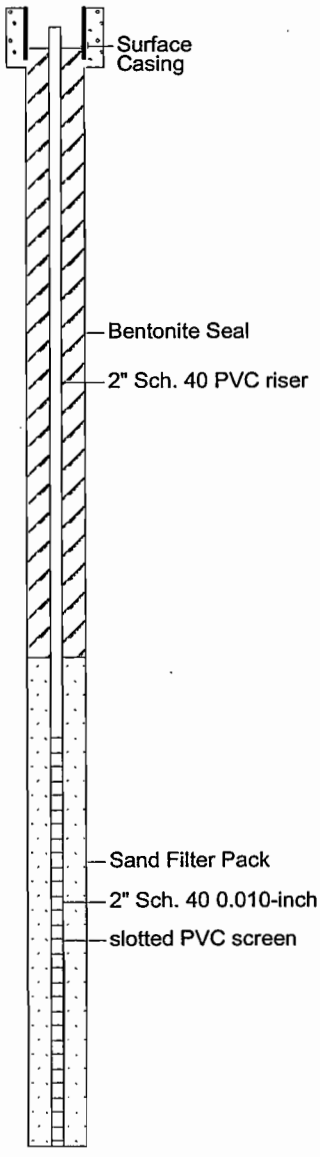

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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/10/01
Date Completed	: 09/10/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: No Sampling
Total Depth (ft.)	:
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-31I

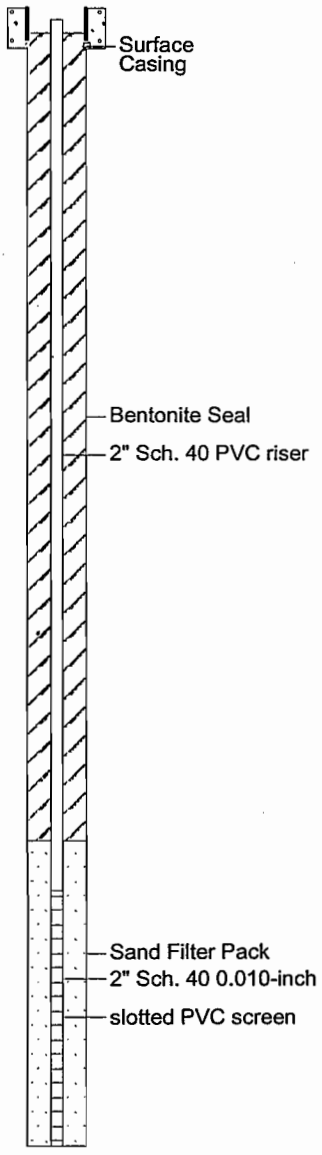
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							See HMW-31D for geology
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							
21	-21							
22	-22							
23	-23							
24	-24							
25	-25							
26	-26							
27	-27							
28	-28							
29	-29							
30	-30							
31	-31							
32	-32							
33	-33							
34	-34							
35	-35							
36	-36							
37	-37							
38	-38							
39	-39							
40	-40							
41	-41							
42	-42							
43	-43							
44	-44							
45								

Well: HMW-31I
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/10/01
Date Completed	: 09/10/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: No Sampling
Total Depth (ft.)	:
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-32I

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0							See HMW-31D for geology
1	-1							
2	-2							
3	-3							
4	-4							
5	-5							
6	-6							
7	-7							
8	-8							
9	-9							
10	-10							
11	-11							
12	-12							
13	-13							
14	-14							
15	-15							
16	-16							
17	-17							
18	-18							
19	-19							
20	-20							
21	-21							
22	-22							
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24	-24							
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26	-26							
27	-27							
28	-28							
29	-29							
30	-30							
31	-31							
32	-32							
33	-33							
34	-34							
35	-35							
36	-36							
37	-37							
38	-38							
39	-39							
40	-40							
41								

Well: HMW-32I
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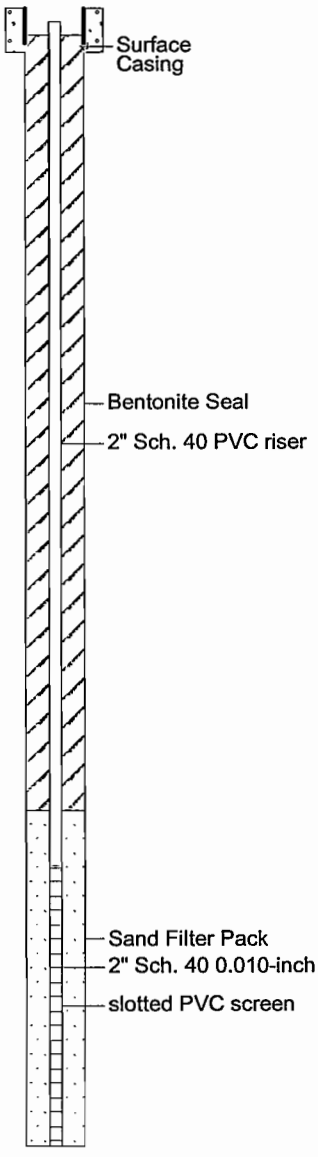

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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/04/01
Date Completed	: 09/04/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 62.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-31D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		0.0				Black sandy FILL, few clay, few gravel, crushed asphalt noted, moist
1	-1							
2	-2	HA-2/ 2.0-4.0		0.0				Brown clayey SAND, trace gravel, moist
3	-3							
4	-4	SS-3 4.0-6.0	24/18	0.0	1-4-3			Brown medium to coarse SAND, few clay, trace gravel, moist
5	-5							
6	-6	SS-4 6.0-8.0	24/16	0.0	3-11-7			Light brown medium to coarse SAND, Trace silt, trace gravel, moist
7	-7							
8	-8	SS-5 8.0-10.0	24/14	0.0	3-8-6			Same as above
9	-9							
10	-10	SS-6 10.0-12.0	24/16	0.0	3-5-2			Same as above, trace clay interbeded
11	-11							
12	-12	SS-7 12.0-14.0	24/8	0.0	2-1-1			Same as above, increase gravel
13	-13							
14	-14	SS-8 14.0-16.0	24/12	0.0	2-2-1			Same as above, less gravel
15								

Well: HMW-31D
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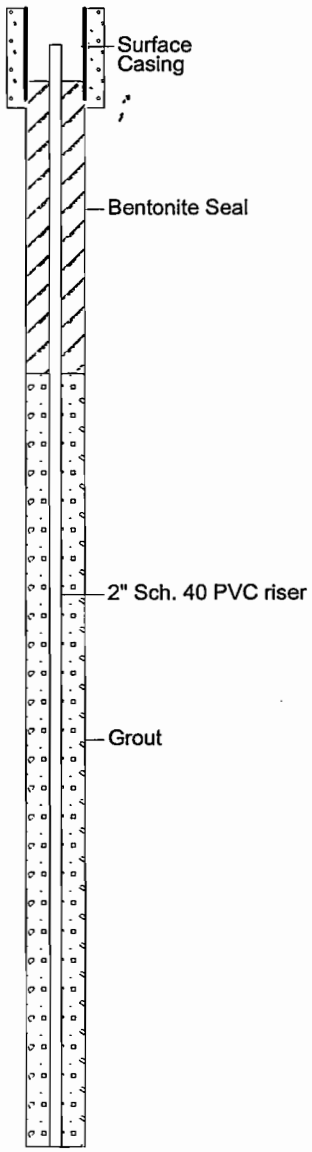

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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/04/01
Date Completed	: 09/04/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 62.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-31D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
16	-16	SS-9 16.0-18.0	24/12	0.0	3-10-12			
17	-17							
18	-18	SS-10 18.0-20.0	24/6	0.0	6-30-17			Same as above, large cobble in end of shoe
19	-19							
20	-20	SS-11 20.0-22.0	24/16	0.0	6-22-14			Same as above, large broken cobble noted in spoon
21	-21							Same as above, no gravel
22	-22	SS-12 22.0-23.0	24/18	0.0	7-21-12			Same as above, trace gravel
23	-23	SS-13 23.0-24.0		0.0				Same as above, increase coarse sand, wet
24	-24							
25	-25							Sample washed out
26	-26		24/0		6-10-9			
27	-27							Begin 5' centers
28	-28							
29	-29	SS-14 29.0-31.0	24/18	0.0	6-18-17			Same as above
30	-30							
31								

Well: HMW-31D
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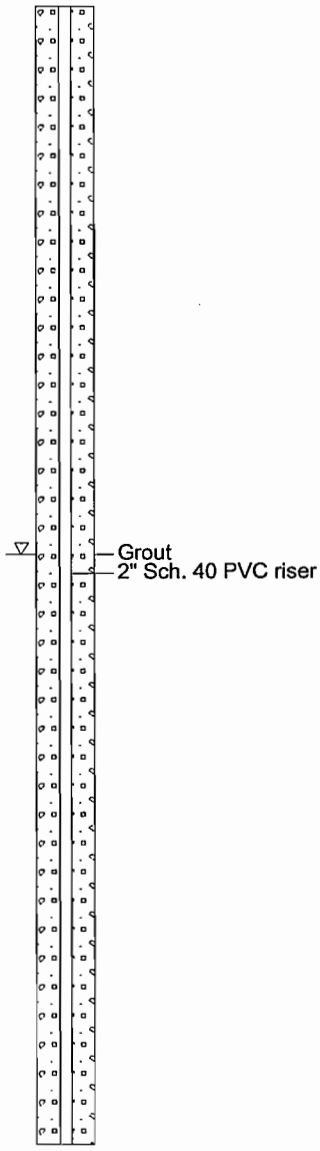


Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/04/01
Date Completed	: 09/04/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 62.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-31D

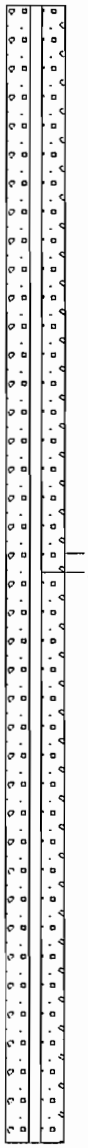
G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
32	-32							
33	-33							
34	-34	SS-15 34.0-36.0	24/12	13.2	8-15-9			Same as above, black staining, petro odor, increase gravel
35	-35							
36	-36							
37	-37							
38	-38							
39	-39	SS-16 39.0-41.0	24/12	193	12-18-9			Same as above, strong sweet odor, decrease gravel, black staining
40	-40							
41	-41							
42	-42							
43	-43							
44	-44	SS-17 44.0-46.0	24/16	249	6-49-20			Same as above, no staining, increase silt, strong odor
45	-45							
46	-46							
47								

Well: HMW-31D
Elev.:



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11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/04/01
Date Completed	: 09/04/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 62.0'
S. Water Level Date	:
S. Water Level (ft.)	:

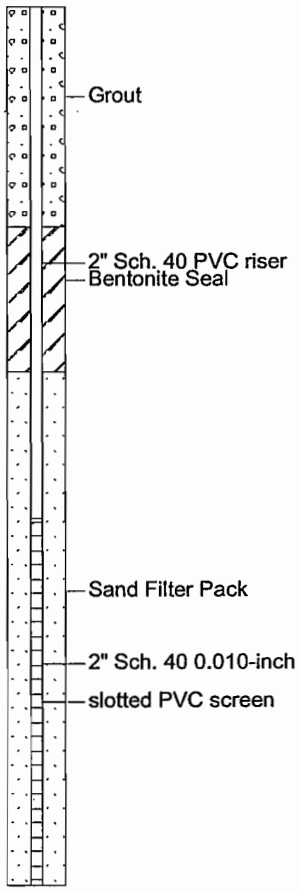
LOG OF BORING HMW-31D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
48	-48							
49	-49	SS-18 49.0-51.0	24/18	141	25-48-22			Same as above, increase fine sand, no staining, strong odor
50	-50							
51	-51							Same as above, decrease fine sand, increase gravel, trace clay
52	-52							
53	-53							
54	-54	SS-19 54.0-56.0	24/20	98	7-43-32			Same as above
55	-55							
56	-56							
57	-57							
58	-58							
59	-59	SS-20 59.0-61.0	24/17	84.5	7-27-50			Same as above
60	-60							
61	-61	SS-21 61.0-62.0	24/17		8-34-50			Grey dense CLAY, trace gravel, trace sand, dry
62	-62							End of boring at 62.0'
63								

Well: HMW-31D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/06/01
Date Completed	: 09/06/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 94.0'
S. Water Level Date	:
S. Water Level (ft.)	:

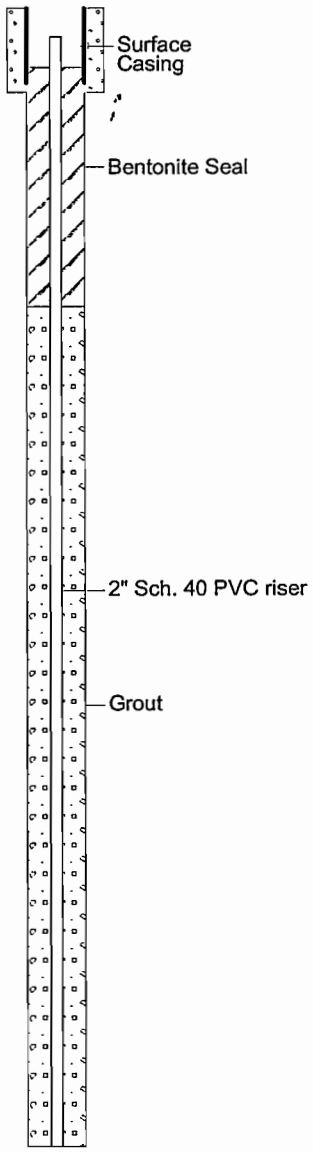
LOG OF BORING HMW-32D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-2.0		1.2				Asphalt to 3", crushed limestone to 6"
1	-1							Brown medium to fine SAND, trace silt, trace gravel, dry
2	-2	HA-2/ 2.0-4.0		1.3				Same as above
3	-3							
4	-4	SS-3 4.0-6.0	23/20	2.0	10-44-50			Brown clayey SAND, trace gravel, moist
5	-5							
6	-6	SS-4 6.0-8.0	24/22	1.1	7-23-14			Same as above
7	-7							
8	-8	SS-5 8.0-10.0	24/18	0.7	13-25-21			Same as above, brick fragment noted in middle of spoon
9	-9							
10	-10	SS-6 10.0-12.0	24/14	2.5	10-22-18			Light brown medium to coarse SAND, trace gravel, trace silt, moist
11	-11							
12	-12		5/0		50			No recovery
13	-13							
14	-14	SS-7 14.0-16.0	24/14	2.4	10-31-32			Same as above
15	-15							
16	-16	SS-8 16.0-18.0	24/12	0.7	10-27-17			Same as above
17	-17							
18	-18	SS-9 18.0-20.0	24/20	3.1	6-18-12			Same as above
19								

Well: HMW-32D
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/06/01
Date Completed	: 09/06/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 94.0'
S. Water Level Date	:
S. Water Level (ft.)	:

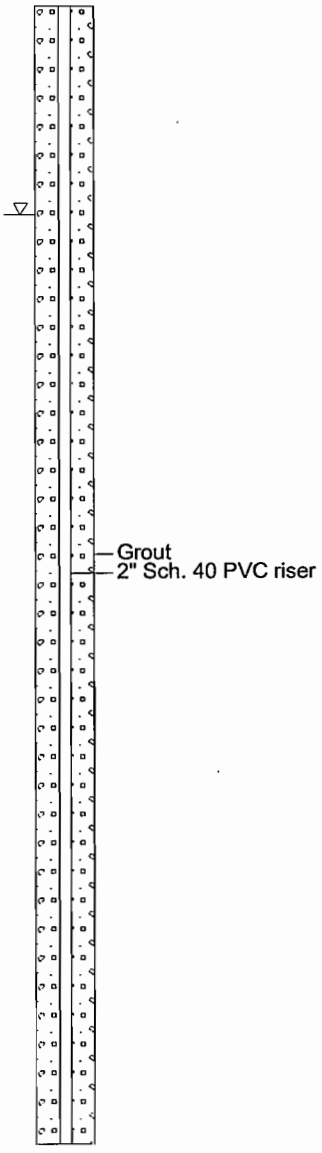
LOG OF BORING HMW-32D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample
Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
19	-19							
20	-20	SS-10 20.0-22.0	24/16	3.4	9-26-22			Same as above
21	-21							
22	-22	SS-11 22.0-24.0	24/12	1.9	6-35-23			Same as above, few gravel, trace clay, wet
23	-23							
24	-24	SS-12 24.0-26.0	24/12	4.2	10-31-12			Same as above
25	-25							
26	-26	SS-13 26.0-28.0	24/12	5.4	12-25-8			Same as above
27	-27							
28	-28	SS-14 28.0-30.0	24/18	5.8	11-34-23			Same as above
29	-29							
30	-30	SS-15 30.0-32.0	24/14	4.5	11-44-36			Same as above, trace gravel, increase silt, no clay
31	-31							
32	-32	SS-16 32.0-34.0	24/16	3.1	7-18-13			Same as above, decrease silt
33	-33							
34	-34	SS-17 34.0-36.0	24/14	8.9	5-29-98			Same as above
35	-35							
36	-36	SS-18 36.0-38.0	24/18	1618	8-40-23			Same as above
37	-37							Same as above, black staining, strong odor
38								

Well: HMW-32D
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/06/01
Date Completed	: 09/06/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 94.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-32D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
38	-38	SS-19 38.0-40.0	24/12	1803	9-25-17			Same as above
39	-39							
40	-40	SS-20 40.0-42.0	24/12	1940	11-31-29			Same as above
41	-41							
42	-42	SS-21 42.0-44.0	24/12	553	7-33-26			Same as above, grey staining
43	-43							
44	-44	SS-22 44.0-46.0	24/12	812	10-41-26			Same as above
45	-45							
46	-46	SS-23 46.0-48.0	24/12	350	6-40-50			Same as above
47	-47							
48	-48	SS-24 48.0-50.0	24/16	346	13-31-20			Same as above
49	-49							
50	-50	SS-25 50.0-52.0	24/16	222	8-36-36			Same as above
51	-51							
52	-52	SS-26 52.0-54.0	22/22	137	8-64-50			Same as above
53	-53							
54	-54	SS-27 54.0-56.0	9/6	73.4	38-50			Same as above, increase silt
55	-55							
56	-56	SS-28 56.0-58.0	18/10	140	11-33-65			Same as above
57								

Well: HMW-32D
Elev.:

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12-03-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/06/01
Date Completed	: 09/06/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 94.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING HMW-32D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
57	-57							
58	-58	SS-29 58.0-60.0	22/18	119	17-67-50			Same as above
59	-59							
60	-60	SS-30 60.0-62.0	24/20	144	4-17-41			Same as above
61	-61							
62	-62	SS-31 62.0-64.0	17/12	184	9-26-61			Same as above, few silt
63	-63							
64	-64		17/0		14-39-50			No recovery
65	-65							
66	-66	SS-32 66.0-68.0	24/20	55.9	6-72-54			Same as above
67	-67							Same as above, brown / no staining, trace clay
68	-68	SS-33 68.0-70.0	24/16	44.9	7-38-39			Same as above, no clay
69	-69							
70	-70	SS-34 70.0-72.0	24/18	65.3	4-18-41			Same as above
71	-71							
72	-72	SS-35 72.0-74.0	21/21	84.9	12-91-50			Same as above
73	-73							
74	-74	SS-36 74.0-76.0	23/19	69.7	19-72-50			Same as above
75	-75							
76								

Well: HMW-32D
Elev.:

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 09/06/01
Date Completed	: 09/06/01
Logged by	: Matt Young
Reviewed by	:
Drilling Contractor	: TopFlight
Drilling Method	: 4.25 ID HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 94.0'
S. Water Level Date	:
S. Water Level (ft.)	:

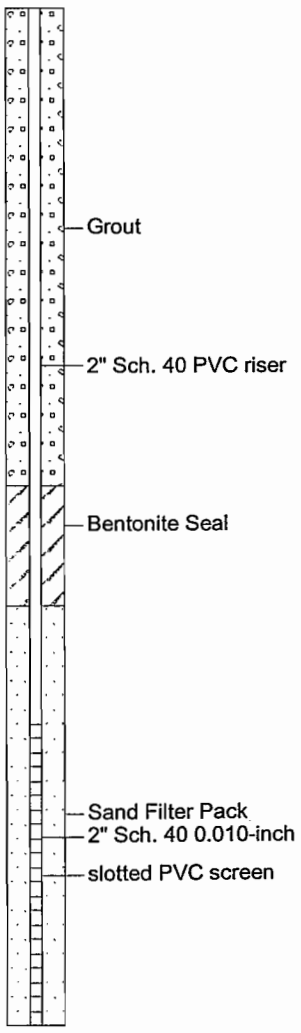
LOG OF BORING HMW-32D

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
76	-76	SS-37 76.0-78.0	21/18	45.7	19-96-50			Same as above
77	-77							
78	-78	SS-38 78.0-80.0	22/18	29.9	12-62-50			Same as above
79	-79							Brown SILT, wet
80	-80		21/0		13-53-50			No recovery, most likely sand that washed out
81	-81							
82	-82	SS-39 82.0-84.0	22/22	33.7	4-30-50			Brown silty SAND, trace gravel, wet
83	-83							
84	-84	SS-40 84.0-86.0	16/15	21.5	15-16-50			Same as above
85	-85							Grey SILT, moist
86	-86	SS-41 86.0-88.0	24/10	12.9	1-22-22			Grey silty SAND, trace gravel wet
87	-87							
88	-88	SS-42 88.0-90.0	24/24	12.1	14-58-48			Same as above
89	-89							
90	-90	SS-43 90.0-92.0	22/14	11.4	6-58-50			
91	-91							
92	-92	SS-44 92.0-94.0	24/12	12.6	13-56-50			Grey sandy SILT, dense / stiff, trace gravel, wet
93	-93							
94	-94							End of boring at 94.0'
95								

Well: HMW-32D
Elev.:



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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/14/01
Date Completed	: 08/14/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 31.6'
S. Water Level Date	:
S. Water Level (ft.)	:

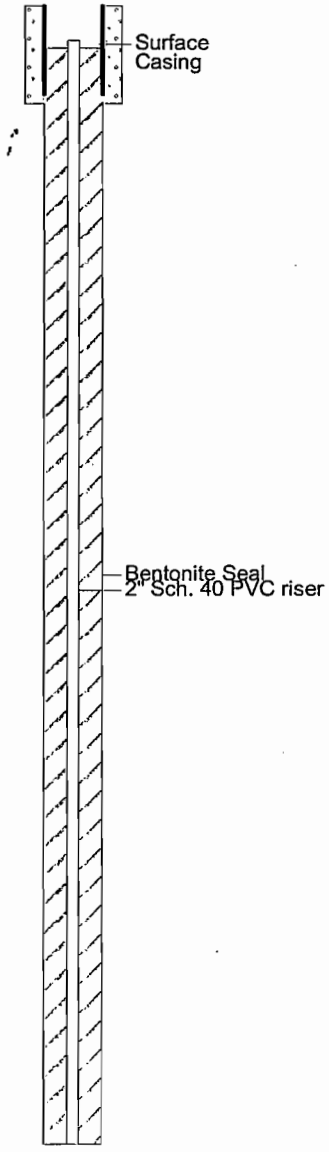
LOG OF BORING HMW-34S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
0	0	HA-1/ 0.0-1.0		0.6				Brown fine SAND, some gravel, moist
1	-1	HA-2/ 1.0-2.0		1.9				Same as above
2	-2	HA-3/ 2.0-3.0		3.0				Black fine SAND, some gravel, moist
3	-3	HA-4/ 3.0-4.0		4.6				Brown fine SAND, trace gravel, very moist
4	-4	HA-5/ 4.0-5.0		0.7				Same as above
5	-5	SS-6 5.0-6.7	24/20	2.0	3-6-3			Same as above
6	-6							
7	-7	SS-7 7.0-8.3	24/15	1.3	3-9-8			Same as above
8	-8							
9	-9	SS-8 9.0-10.7	24/20	1.1	6-20-16			Light brown coarse SAND, some gravel, moist
10	-10							
11	-11	SS-9 11.0-12.7	24/20	3.0	6-9-8			Same as above, trace clay
12	-12							
13	-13	SS-10 13.0-14.3	24/15	1.9	5-8-10			Light brown coarse SAND, some gravel, moist
14	-14							
15	-15	SS-11 15.0-16.7	24/20	0.6	7-17-14			Same as above
16								

Well: HMW-34S
Elev.:



Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/14/01
Date Completed	: 08/14/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: 4.25 HSA
Sampling Method	: Split Spoon
Total Depth (ft.)	: 31.6'
S. Water Level Date	:
S. Water Level (ft.)	:

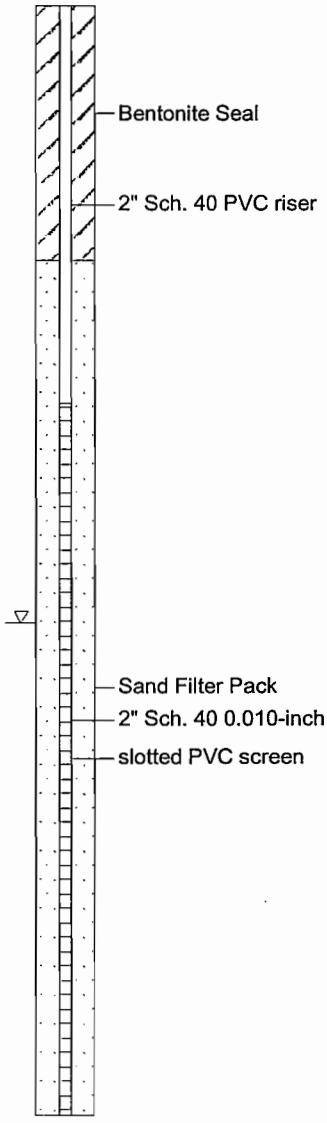
LOG OF BORING HMW-34S

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 2020 / 100ppm Iso.
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	DESCRIPTION
16	-16							
17	-17	SS-12 17.0-18.3	24/15	2.0	6-16-11			Light brown coarse SAND and GRAVEL, moist
18	-18							
19	-19	SS-13 19.0-21.0	24/24	2.5	6-14-6			Same as above, very moist
20	-20							
21	-21	SS-14 21.0-22.3	24/15	3.0	5-16-15			Same as above
22	-22							
23	-23	SS-15 23.0-24.7	24/20	3.5	8-17-8			Same as above, saturated at 24.2'
24	-24							
25	-25	SS-16 25.0-26.3	24/15	3.1	3-4-3			Same as above
26	-26							
27	-27	SS-17 27.0-27.4	24/5	2.0	4-8-5			Same as above
28	-28							
29	-29	SS-18 29.0-30.3	24/15	1.5	3-7-5			Same as above
30	-30							
31	-31							End of boring at 31.6'
32								

Well: HMW-34S
Elev.:



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12-03-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/01/01
Date Completed	: 08/01/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: Hand Auger
Drilling Method	: Grab Sample
Sampling Method	: Grab Sample
Total Depth (ft.)	: 0.6"
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GS-2

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples
⊠ Sampled Int.
■ Lab Sample

Water Levels
▼ Static
▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Foundry SAND	
1										

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/01/01
Date Completed	: 08/01/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: Hand Auger
Drilling Method	: Grab Sample
Sampling Method	: Grab Sample
Total Depth (ft.)	: 0.6"
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GS-3

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples
Sampled Int.
Lab Sample

Water Levels
Static
During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Foundry SAND	
1										

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.5
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-1

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.0	24/12	5.1					GRAVEL, some cinder fill from 0.8 to 1.0'	
1	-1									
2	-2	SS-2 2.0-3.5	24/18	5.1					Brown coarse SAND, trace gravel, very moist	
3	-3								End of boring at 3.5'	
4										

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-2

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-0.8	24/20	7.9					SAND and GRAVEL	
		SS-1 0.8-1.7		6.3					Cinder FILL	
1	-1								Top 5" is slough	
2	-2	SS-2 2.4-2.7	24/24	5.7					Cinder FILL	
		SS-2 2.7-4.0		3.8					Brown coarse SAND, trace gravel, very moist	
3	-3								End of boring at 4.0'	
4										

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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-3

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION	REMARKS
0	0	SS-1 0.0-0.5	24/24	6.2		SAND and GRAVEL	
		SS-1 0.5-2.0		8.3		Cinder FILL, trace gravel	
1	-1						
2	-2	SS-2 2.0-2.7	24/24	5.6		Silty SAND, some gravel, moist	
		SS-2 2.7-3.9		5.2		Brown SAND, trace gravel, very moist	
3	-3						
						End of boring at 4.0'	
4							

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 5.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-5

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Concrete	
1	-1									
		SS-1	24/18	8.8					Dark brown SAND, trace gravel, moist	
		1.5-3.0								
2	-2									
3	-3									
		SS-2	24/18	9.7					Same as above	
		3.5-5.0								
4	-4									
									End of boring at 5.0'	
5										

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-8

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.3	24/24	7.8					Sandy SILT, trace gravel, rootlets	
1	-1	SS-2 1.3-2.0		10.9					Brown SAND, trace gravel, moist	
2	-2	SS-3 2.0-3.0	24/24	9.0					Same as above	
3	-3	SS-4 3.0-4.0		7.0					Light brown SAND, trace gravel, very moist	
4									End of boring at 4.0'	

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-9

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	1.7					Intermittent layers approx. 5" thick of SAND and GRAVEL and cinder fill.	
1	-1									
2	-2	SS-2 2.0-4.0	24/24	0.6					Brown fine SAND with gravel, sand is lighter in color and more coarse in the bottom 2 inches (46-48")	
3	-3									
4									End of boring at 4.0'	

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-10

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	5.4					SAND and GRAVEL, rootlets	
1	-1								Dark brown SAND, some gravel intermittent layers of cinder fill approx. 0.5" thick	
2	-2	SS-2 2.0-4.0	24/24	2.2					Dark brown SAND, trace gravel, very moist, sand becomes lighter in color with increasing depth	
3	-3									
4									End of boring at 4.0'	

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/10/01
Date Completed	: 08/10/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.5'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-11

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.5	24/18	3.6					Silty SAND, some gravel, very moist	
									Cinder FILL	
1	-1								Brown fine SAND, trace gravel, moist	
2	-2	SS-2 2.0-3.5	24/18	2.6					Same as above	
3	-3								End of boring at 3.5'	
4										

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/09/01
Date Completed	: 08/09/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.7'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-12

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	0.2					Brown SAND, trace gravel, rootlets	
									Cinder FILL	
									Brown SAND, trace gravel	
									Cinder FILL	
1	-1								Brown coarse SAND, some gravel	
2	-2	SS-2 2.0-3.7	24/20	1.6					Same as above	
									Cinder FILL	
3	-3								Dark brown fine SAND, trace gravel, very moist	
									End of boring at 3.7'	
4										

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-13

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.0	24/24	4.2					SAND and GRAVEL	
									Wood fragments	
									SAND and GRAVEL	
1	-1	SS-2 1.0-2.0		7.2					Black stained SAND with cinders, moist Top 3" is slough	
2	-2	SS-3 2.0-2.8	24/24	9.8					Brick and cinder FILL	
3	-3	SS-4 3.0-4.0		12.3					Dark brown silty SAND, trace gravel, very moist	
4									End of boring at 4.0'	

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 5.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-14

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Concrete	
1	-1	SS-1 1.5-3.0	24/18	5.6					Silty SAND, trace clay, trace cinder, moist, dark brown	
2	-2									
3	-3	SS-2 3.5-4.8		9.1					Dark brown silty SAND, trace clay, moist, increasing sand content with depth	
4	-4									
5									End of boring at 5.0'	

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-15

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.0	24/24	2.5					Black SAND, some gravel, trace cinder	
1	-1	SS-2 1.0-2.0		3.9					Cinder FILL	
									Black sandy CLAY, slight petro odor	
2	-2	SS-3 2.0-2.7	24/24	10.3					Same as above	
		SS-4 2.7-4.0		11.9					Brown SAND, trace gravel	
3	-3									
									End of boring at 4.0'	
4										

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South Bend Area A
Franklin & Sample
South Bend, IN
SBI002

Date Started	: 08/02/01
Date Completed	: 08/02/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-16

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-0.7	24/24	16.0					Cinder FILL, some silt and sand, rootlets	
		SS-2 0.8-2.0		19.4					Dark brown SAND, trace gravel, moist	
1	-1									
2	-2	SS-3 2.0-3.0		19.4					Same as above	
3	-3	SS-4 3.0-4.0		19.8					Light brown SAND, trace gravel, moist	
									End of boring at 4.0'	
4										

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-17

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.5	24/24	15.9					Cinder FILL, trace gravel	
1	-1	SS-2 1.5-2.0		14.5					Dark brown SAND, trace gravel, moist	
2	-2	SS-3 2.0-2.5	24/24	18.7					Same as above	
		SS-4 2.5-4.0		15.2					Light brown fine SAND, trace gravel, moist	
3	-3									
									End of boring at 4.0'	
4										

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-19

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.0	24/24	3.0					Cinder FILL, trace gravel	
1	-1	SS-2 1.0-2.0		1.1					Sandy SILT, some clay, trace gravel, moist	
2	-2	SS-3 2.0-3.0	24/24	7.1					Light brown SAND, trace gravel, moist	
3	-3	SS-4 3.0-4.0		6.7					Same as above	
4									End of boring at 4.0'	

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN
SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.7'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-28

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.8	24/24	24.0		Light brown fine SAND with gravel	
						GRAVEL	
1	-1					Brown fine SAND, some cinder fill from 1.0 to 1.2', trace clay	
						GRAVEL	
		SS-2 1.8-2.0		15.0		Black stained SAND with gravel, no odor, trace clay	
2	-2	SS-3 2.0-2.3	24/20	24.7		Same as above	
		SS-4 2.3-3.7		22.7		Light brown fine SAND, some gravel, moist	
3	-3					End of boring at 3.7'	
4							

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.5'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-29

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-0.6	24/15	10.3					Grey SAND and GRAVEL	
		SS-2 0.7-1.3		8.1					Black stained SAND, some clay, trace gravel, moist, slight petro odor	
1	-1									
2	-2	SS-3 2.0-2.6	24/18	7.6					Same as above	
		SS-4 2.6-3.5		4.3					Light brown fine SAND, some gravel, moist	
3	-3								End of boring at 3.5'	
4										

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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.7'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-31

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.3	24/24	9.5					Cinder FILL with wood fragments from 0.2 to 0.7 feet, creosote odor	
1	-1	SS-2 1.3-2.0		2.8					Silty clay FILL, some sand, some gravel, moist	
									Light brown fine SAND, moist	
2	-2	SS-3 2.0-3.7	24/20	1.0					Same as above	
3	-3								End of boring at 3.7'	
4										

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 2.8'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-32

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.3	24/24	7.4					Gravel and cinder FILL, wood fragments.	
1	-1	SS-2 1.3-2.0		4.1					Silty SAND, trace clay and gravel, saturated at 1.3 to 1.4' Top 1.3' is slough	
2	-2	SS-3 2.0-2.8	24/24	3.5					Brown SAND, trace gravel, moist End of boring at 2.8'	
3										

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Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN
SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-33

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.0	24/24	4.3					Brown SAND, trace gravel and cinder	
1	-1	SS-2 1.0-2.0		4.5					Cinder FILL, trace gravel	
2	-2	SS-3 2.0-2.8	24/24	0.3					Sandy CLAY, trace cinder, moist	
3	-3	SS-4 2.8-4.0		0.1					Brown SAND, trace cinder and gravel, slight staining (black) and petro odor	
4									End of boring at 4.0'	

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 2.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-34

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Asphalt	
		SS-1 0.0-1.4	24/17	0.0					Cinder FILL, some gravel, trace sand and silt, wood fragments from 1.3 to 1.4' (likely RR tre, creosote odor)	
1	-1		24/24						Light brown SAND, trace gravel, moist	
2									End of boring at 2.0'	

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/07/01
Date Completed	: 08/07/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 3.7'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-35

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0								Silty SAND, some gravel, rootlets	
		SS-1 0.0-1.5	24/24	6.4					Black silty SAND, trace gravel, moist, slight petro odor	
1	-1									
		SS-2 1.5-2.0		8.6					Brown clayey SILT, trace sand and gravel	
2	-2								Same as above	
		SS-3	24/20	7.7					Brown fine SAND, trace gravel, moist	
		2.2-2.5 SS-4 2.5-3.7		5.6					Light brown fine SAND, trace gravel, very moist	
3	-3									
									End of boring at 3.7'	
4										

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11-28-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/10/01
Date Completed	: 08/10/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING GB-36

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample

Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	3.2					Silty SAND, trace gravel, trace clay, moist	
1	-1									
2	-2	SS-2 2.0-3.6	24/24	3.8					Brown fine SAND, trace gravel, moist	
3	-3								Brown coarse SAND, trace gravel, moist	
4									End of boring at 4.0'	

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South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/08/01
Date Completed	: 08/08/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 17.7'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING SB-5

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample
Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-1.5	24/24	4.7					Brown silty SAND, trace gravel, rootlets	
1	-1									
		SS-2 1.5-2.0		11.0						
2	-2	SS-3 2.0-2.3	24/24	7.6					Brown SAND and GRAVEL Same as above	
		SS-4 2.3-4.0		9.6					Light brown SAND, trace gravel, moist	
3	-3									
4	-4	SS-5 4.0-5.3	24/15	7.7					Same as above	
5	-5									
6	-6	SS-6 6.0-7.7	24/20	11.1					Same as above, slightly more gravel	
7	-7									
8	-8	SS-7 8.0-9.7	24/20	9.5					Same as above, less gravel	
9	-9									
10	-10	SS-8 10.0-11.7	24/20	9.3					Light brown SAND, very moist	
11	-11									
12	-12	SS-9 12.0-13.7	24/20	9.0					Light brown SAND, trace gravel, very moist	
13	-13									
14	-14	SS-10 14.0-15.7	24/20	8.0					Same as above	
15	-15									
16	-16	SS-11 16.0-17.7	24/20						Same as above	
17	-17									
									End of boring at 17.7'	
18										

F:\CLIENTS\SBI\SBI002\SOIL BORING LOGS\SB-5.BOR

11-30-2001

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 4.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING SB-7

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample

Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	2.8					SAND and GRAVEL	
1	-1								Cinder FILL	
2	-2	SS-2 2.0-4.0	24/24	2.9					Light brown coarse SAND, trace gravel, moist Same as above	
3	-3									
4									End of boring at 4.0'	

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN
SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 6.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING SB-8

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: ⊠ Sampled Int. ■ Lab Sample
Water Levels: ▼ Static ▽ During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	2.4		SAND and GRAVEL	
1	-1					Cinder FILL	
						Clayey SAND, some gravel (fill), moist	
2	-2	SS-2 2.0-4.0	24/24	2.4		Brown coarse SAND, trace gravel, moist, slight staining at 3.8'	
3	-3						
4	-4	SS-3 4.0-6.0	24/24	4.4		Same as above, no staining	
5	-5						
6						End of boring at 6.0'	

Hull & associates, inc.

South Bend Area A
Franklin & Sample
South Bend, IN

SBI002

Date Started	: 08/15/01
Date Completed	: 08/15/01
Logged by	: Mike Coonfare
Reviewed by	:
Drilling Contractor	: ProbeTech
Drilling Method	: Geoprobe
Sampling Method	: Split Spoon
Total Depth (ft.)	: 6.0'
S. Water Level Date	:
S. Water Level (ft.)	:

LOG OF BORING SB-9

G. Elev. (ft. USGS)	: Not Surveyed
PID/FID Model	: 0.0 (10.2 EV)
PID/FID Calibration	: 100ppm Isobutylene
Drum Label ID	:

Soil Samples: Sampled Int. / Lab Sample
Water Levels: Static / During Drilling

Depth in Feet	Surf. Elev.	Sampler Type/ Sample Number	Sample Interval/ Sample Recovery	PID / FID (ppm)	Blow Count (6"-12"-6")	Soil Samples	Graphic Log	Water Levels	DESCRIPTION	REMARKS
0	0	SS-1 0.0-2.0	24/24	5.4					Silty SAND, some gravel, rootlets, moist	
									Cinder FILL	
1	-1								Brown fine SAND, some gravel	
2	-2	SS-2 2.0-4.0	24/24	4.9					Same as above, staining (black) from 3.6 to 3.8'	
3	-3									
4	-4	SS-3 4.0-6.0	24/24	4.3					Brown coarse SAND, trace gravel, moist (appears natne)	
5	-5									
6									End of boring at 6.0'	

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11-30-2001

Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 24.0'

LOG OF BORING SB-9

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	42/42	SS-1 0.5-2.5	0	NA			6" of Concrete. Black sandy FILL, some clay, cinders and slag noted, slightly moist.
2		SS-2 2.5-3.5	0	NA			
3		SS-3 3.5-4.0	0	NA			
4	48/24	SS-4 4.0-6.0	0	NA			Brown medium to fine Sand, trace gravel, loose. Same as above.
8	48/24	SS-5 8.0-10.0	0	NA			Same as above.
12	48/36	SS-6 12.0-14.0	0	NA			Same as above.
14		SS-7 14.0-15.0	0	NA			Same as above, increase in gravel content from 14.0 to 14.5'.
15							

10-21-2003 F:\CLIENTS\SBI\SBI016\logs\sb9.bor

Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 24.0'

LOG OF BORING SB-9

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
16	48/36	SS-8 16.0-18.0	0	NA			Same as above.
18		SS-9 18.0-19.0	0	NA			
20	48/48	SS-10 20.0-22.0	0	NA			Same as above.
22		SS-11 22.0-24.0	0	NA			
24							EOB @ 24.0'

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 9.0'

LOG OF BORING SB-10

PID Calibration	: 100 ppm isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							6" of Concrete.
1	42/42	SS-1 0.5-2.0	0	NA			Black sandy FILL, some clay, cinders and gravel noted, slightly moist.
2		SS-2 2.0-4.0	0	NA			
3							
4	48/36	SS-3 4.0-6.0	0	NA			Brown fine to medium Sand, trace gravel, dry, loose.
5							
6		SS-4 6.0-7.0	0	NA			Same as above.
7							
8	48/12	SS-5 8.0-9.0	0	NA			
9							EOB @ 9.0'

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Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 10.0'

LOG OF BORING SB-11

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							6" of Concrete.
1	42/36	SS-1 0.5-2.5	0	NA			Black sandy FILL, some cinders slag, loose.
2							
3		SS-2 2.5-3.0	0	NA			Brown sandy CLAY, trace gravel, slightly moist.
4	48/36	SS-3 4.0-5.5	0	NA			Brown sandy CLAY, trace gravel, slightly moist.
5							Brown fine to medium SAND, trace gravel, dry, loose.
6		SS-4 5.5-7.0	0	NA			
7							
8	48/24	SS-5 8.0-10.0	0	NA			Same as above.
9							
10							EOB @ 10.0'

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Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 10.0'

LOG OF BORING SB-12

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" of Concrete.
1	36/24	SS-1 1.0-2.0	0	NA			Dark brown clayey FILL, some sand and gravel, few cinders, slightly moist.
2		SS-2 2.0-3.0	0	NA			Brown sandy CLAY, trace gravel, slightly moist.
3							
4	48/36	SS-3 4.0-5.5	0	NA			Brown medium to fine SAND, trace gravel, loose.
5							
6		SS-4 5.5-7.0	0	NA			
7							
8	48/24	SS-5 8.0-10.0	0	NA			Same as above.
9							
10							EOB @ 10.0'

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Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 10.0'

LOG OF BORING SB-13

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	48/36	SS-1 0.0-1.5	0	NA			Black cinders and slag, some sand and gravel, loose.
1							
		SS-2 1.5-2.5	0	NA			
2							
		SS-3 2.5-3.0	0	NA			Dark brown clayey FILL, some sand and gravel, cinders and slag noted, slightly moist.
3							
							Brown clayey SAND, trace gravel, slightly moist.
4	48/36	SS-4 4.0-5.5	0	NA			Brown fine to medium SAND, trace gravel, loose.
5							
		SS-5 5.5-7.0	0	NA			
6							
7							
8	48/24	SS-6 8.0-10.0	0	NA			Same as above.
9							
							EOB @ 10.0'
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 10.0'

LOG OF BORING SB-14

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" of Concrete.
1	36/24	SS-1 1.0-2.0	0	NA			Brown clayey SAND, trace gravel, slightly moist.
2		SS-2 2.0-3.0	0	NA			Brown sand CLAY, trace gravel.
3							
4	48/36	SS-3 4.0-5.5	0	NA			Brown fine to medium SAND, trace gravel, loose.
5							
6		SS-4 5.5-7.0	0	NA			
7							
8	48/24	SS-5 8.0-10.0	0	NA			Same as above.
9							
10							EOB @ 10.0'

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 3.0'

LOG OF BORING SB-15

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							
	42/36	SS-1 0.5-2.0	0	NA			6" of Concrete. Black sandy FILL, little clay, slag and cinders noted, petroleum odor.
1							
2		SS-2 2.0-3.0	0	NA			Brown fine to medium SAND, trace gravel, loose. EOB @ 3.0'
3							
4							
5							
6							
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 4.0'

LOG OF BORING SB-16

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	42/42	SS-1 0.5-2.0	0	NA			6" of Concrete. Black sandy FILL, trace clay, trace gravel, slag and cinders noted.
2		SS-2 2.0-4.0	0	NA			Brown clayey SAND, trace gravel, slightly moist. Same as above, grading to loose sand. EOB @ 4.0'
4							
5							
6							
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 2.5'

LOG OF BORING SB-17

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	42/24	SS-1 0.5-2.5	0	NA			6" of Concrete. Black fine to medium sand FILL, trace clay, trace gravel, slightly moist. EOB @ 2.5'
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 3.0'

LOG OF BORING SB-18

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	48/36	SS-1 0.0-2.0	0	NA			Black gravel FILL, some sand, trace clay, cinders and slag noted, slightly moist.
2		SS-2 2.0-3.0	0	NA			Brown clayey SAND, trace gravel, slightly moist. EOB @ 3.0'
3							
4							
5							
6							
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-9-03
Date Completed	: 7-9-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 3.0'

LOG OF BORING SB-19

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	48/36	SS-1 0.0-2.0	0	NA			Black/brown clayey FILL, some sand, some gravel, slag, cinders and brick noted, slightly moist.
2		SS-2 2.0-3.0	0	NA			Brown sandy CLAY, trace gravel, slightly moist. EOB @ 3.0'
3							
4							
5							
6							
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-20

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	36/36	SS-1 1.0-3.0	0	NA			Black and Red sandy FILL, trace clay, trace gravel, cinder, slag, and brick fragments noted.
2							
3		SS-2 3.0-4.0	0	NA			Brown fine to medium sand, trace clay, trave gravel.
4	48/36	SS-3 4.0-6.0	0	NA			Same as above, no clay, loose.
5							
6		SS-4 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

10-21-2003 F:\CLIENTS\SBI\SBI016\logs\sb20.bor

Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-21

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	36/36	SS-1 1.0-2.0	0	NA			Black and Red sandy FILL, cinder, slag, and brick fragments noted.
2		SS-2 2.0-3.0	0	NA			Dark brown sand CLAY, trace gravel, slightly moist.
3		SS-3 3.0-4.0	0	NA			Brown fine to medium sand, trace clay, trace gravel.
4	48/36	SS-4 4.0-6.0	0	NA			Same as above, no clay.
5							
6		SS-5 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-22

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	36/18	SS-1 1.0-2.5	0	NA			Black sandy FILL, some cinders, some gravel.
2							
3							
4	48/36	SS-2 4.0-6.0	0	NA			
5							Brown fine to medium sand, trace gravel, loose.
6		SS-3 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

10-21-2003 F:\CLIENTS\SBI\SBI016\logs\sb22.bor

Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 6.0'

LOG OF BORING SB-23

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	36/24	SS-1 1.0-3.0	0	NA			Black sandy FILL, some cinders, trace gravel, loose.
2							
3							
4	48/24	SS-2 4.0-6.0	0	NA			
5							Brown fine to medium sand, trace gravel, loose.
6							EOB @ 6.0'
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-24

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	36/24	SS-1 1.0-3.0	0	NA			Black sandy FILL, some cinders, trace gravel, loose.
2							
3							
4	48/36	SS-2 4.0-6.0	0	NA			
5							Brown fine to medium sand, trace gravel, loose.
6		SS-3 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

10-21-2003 F:\CLIENTS\SBI\SBI016\logs\sb24.bor

Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-25

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							18" Concrete
1	30/24	SS-1 1.5-3.5	0	NA			Black sandy FILL, some cinders, some gravel, loose.
2							
3							Dark brown clayey SAND.
4	48/36	SS-2 4.0-6.0	0	NA			Brown fine to medium sand, trace gravel, loose.
5							
6		SS-3 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-26

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							18" Concrete
1	30/24	SS-1 1.5-3.0	0	NA			Black sandy FILL, some cinders, some gravel.
2							
3		SS-2 3.0-3.5	0	NA			Dark brown clayey SAND, trace gravel.
4	48/36	SS-3 4.0-6.0	0	NA			Brown fine to medium sand, trace clay, trace gravel.
5							Same as above, no clay.
6		SS-4 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 4.0'

LOG OF BORING SB-27

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	30/24	SS-1 1.0-3.0	0	NA			Brown fine to medium sand FILL, loose.
2							
3							Concrete fragments in end of spoon with solvent odor.
4							REFUSAL @ 4.0'
5							
6							
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-10-03
Date Completed	: 7-10-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 4.0'

LOG OF BORING SB-28

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" Concrete
1	30/24	SS-1 1.0-3.0	0	NA			Brown fine to medium sand FILL, loose.
2							
3							
4							Concrete fragments in end of spoon. REFUSAL @ 4.0'
5							
6							
7							
8							
9							
10							

10-21-2003 F:\CLIENTS\SBI\SBI016\logs\sb28.bor

Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-11-03
Date Completed	: 7-11-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-29

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							6" Concrete
1	42/30	SS-1 0.5-2.0	0	NA			Black sandy FILL, some cinders, some gravel, petroleum/solvent odor noted.
2		SS-2 2.0-3.0	0	NA			Same as above, some clay, odor.
3							
4	48/24	SS-3 4.0-6.0	0	NA			Brown clayey SAND, trace gravel, slightly moist.
5							Same as above, less clay content, loose.
6							Same as above.
7							EOB @ 6.0'
8							
9							
10							

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Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-11-03
Date Completed	: 7-11-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 7.0'

LOG OF BORING SB-30

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							6" Concrete
1	42/30	SS-1 0.5-2.0	0	NA			Black sandy FILL, some cinders, some gravel.
							Same as above, some clay.
2		SS-2 2.0-3.0	0	NA			Brown clayey SAND, trace gravel, slightly moist.
3							
4	48/36	SS-3 4.0-6.0	0	NA			Same as above, less clay content, loose.
5							Same as above, no clay.
6		SS-4 6.0-7.0	0	NA			
7							EOB @ 7.0'
8							
9							
10							

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Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-11-03
Date Completed	: 7-11-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 6.0'

LOG OF BORING SB-32

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							6" Concrete
1	42/42	SS-1 0.5-2.5	0.8	NA			Black sandy FILL, some cinders, some gravel, loose.
2							Same as above, some clay.
3		SS-2 2.5-4.0	0.7	NA			Brown clayey SAND, trace gravel, slightly moist.
4	4824	SS-3 4.0-6.0	0.5	NA			Same as above, no clay, loose.
5							Same as above.
6							EOB @ 6.0'
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-11-03
Date Completed	: 7-11-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 6.0'

LOG OF BORING SB-34

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0	42/0						6" Concrete No recovery, pushed rock.
1							
2							
3							Brown fine to medium sand, trace gravel, loose.
4	48/24	SS-1 4.0-6.0	0	NA			
5							
6							EOB @ 6.0'
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-11-03
Date Completed	: 7-11-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 6.0'

LOG OF BORING SB-36

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							6" Concrete
1	42/36	SS-1 0.5-2.5	0	NA			Black sandy fill, some gravel, some cinders, loose.
2							Same as above, some clay.
3		SS-2 2.5-3.5	0	NA			Brown clayey sand, trace gravel, slightly moist.
4	48/24	SS-3 4.0-6.0	0	NA			
5							Same as above, no clay, loose.
6							EOB @ 6.0'
7							
8							
9							
10							

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Hull & associates, inc.

Former South Bend Stamping
Additional Phase II Activities
City of South Bend, IN
SBI016

Date Started	: 7-8-03
Date Completed	: 7-8-03
Logged By	: M. Young
Reviewed By	: M. Young
Drilling Contractor	: TopFlight
Drilling Method	: DirectPush Geoprobe
Sampling Method	: 48" Macrocore
Total Depth	: 28.0'

LOG OF BORING SB-7

PID Calibration	: 100 ppm Isobutylene
PID Model	: PID-PhotoVac 2020

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Length Drive/ Sample Recovery (in.)	Sample Number/ Sample Interval	PID	Blow Count (6"-12"-6")	Samples	GRAPHIC	DESCRIPTION
0							12" of Concrete
1	36/24	SS-1 1.0-3.0	2	NA			Brownish/black sandy FILL, some gravel, some clay.
2							
3							
4	48/36	SS-2 4.0-6.0	1	NA			Brown medium to fine Sand, trace gravel, dry, loose.
5							
6		SS-3 6.0-7.0	3	NA			
7							
8	48/24	SS-4 8.0-10.0	1	NA			Same as above.
9							
10							
11							
12	48/24	SS-5 12.0-14.0	4	NA			Same as above.
13							
14							
15							

10-21-2003 F:\CLIENTS\SBI\SBI016\logs\sb7.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 24.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-SA05

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/3.8	DP1/SS1	0.1	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 3.8 - Loose dark brown medium grain SAND & GRAVEL, dry.
2		DP1/SS2	0.3	NA			
3							
4							
5	5.0/3.5	DP2/SS3	0.1	NA			5.0 to 8.5 - Loose brown medium grain SAND, few gravel, dry.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/3.3	DP3/SS5	0.0	NA			10.0 to 13.3 - Same As Above (SAA)
11							
12		DP3/SS6	0.1	NA			
13							
14							
15	5.0/3.1	DP4//SS7	0.0	NA			15.0 to 18.1 - SAA
16							

Remarks:

Soil samples SBI060:HSBSA05:S005020 and SBI060:HSBSA05:S170181 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 24.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-SA05

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
16							
17		DP4/SS8	0.0	NA			
18							
19							
20	5.0/2.3	DP5/SS9	0.0	NA			20.0 to 24.0 - SAA, wet @ 20.0
21							
22							
23							
24							End of boring.
25							
26							
27							
28							
29							
30							
31							
32							

Remarks:

Soil samples SBI060:HSBSA05:S005020 and SBI060:HSBSA05:S170181 were sent to laboratory for analysis.

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Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-72A01

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.1	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.1 - Loose dark brown medium grain SAND & GRAVEL, slightly moist, staining 2-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.6	DP2/SS3	0.2	NA			5.0 to 8.6 - Same As Above (SAA): staining 6.5 - 7.0'
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.0	DP3/SS5	0.0	NA			10.0 to 12.0 - SAA, brown and black.
11							
12		DP3/SS6	0.0	NA			12.0 to 13.0 - Loose light brown medium grain SAND & GRAVEL, slightly moist.
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:72A01:S005020 and SBI060:HSB72A01:S050070 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-72A01.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-72A02

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.2 - Loose brown and black medium grain SAND & GRAVEL, slightly moist, stained black.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.7	DP2/SS3	0.1	NA			5.0 to 8.7 - Loose brown medium grain SAND & GRAVEL, slightly moist.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/3.4	DP3/SS5	0.0	NA			10.0 to 13.4 - Same As Above (SAA)
11							
12		DP3/SS6	0.1	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSB72A02:S005020 and SBI060:HSB72A02:S020042 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-72A02.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-72A03

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.0	DP1/SS1	0.1	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.0 - Loose brown and black medium grain SAND & GRAVEL, dry.
2		DP1/SS2	0.0	NA			
3							
4							
5	5.0/3.4	DP2/SS3	0.2	NA			5.0 to 8.7 - Same As Above (SAA)
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/3.1	DP3/SS5	0.1	NA			10.0 to 13.1 - Loose brown medium grain SAND & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.1	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:72A03:S005020 and SBI060:HSB72A03:S050070 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-72A03.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-72A04

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.2 - Loose dark brown and black medium grain SAND & GRAVEL, slightly moist to dry, crushed brick @ 3.2', possible staining 2-4'.
2		DP1/SS2	0.0	NA			
3							
4							
5	5.0/2.7	DP2/SS3	0.1	NA			5.0 to 7.7 - Loose brown medium grain SAND & GRAVEL, dry.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/3.0	DP3/SS5	0.0	NA			10.0 to 13.0 - Same As Above (SAA)
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:72A04:S005020 and SBI060:HSB72A04:S020042 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-72A04.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-72A05

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/3.0	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 3.0 - Loose dark brown medium grain SAND & GRAVEL, slightly moist.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/2.8	DP2/SS3	0.1	NA			5.0 to 7.8 - Same As Above (SAA): brown @ 7.6', possible staining 5-7'.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.2	DP3/SS5	NA	NA			10.0 to 13.2 - Loose brown to light brown medium grain SAND & GRAVEL, dry.
11							
12							
13							
14							
15	5.0/4.2	DP4/SS6	NA	NA			15.0 to 19.2 - Loose light brown medium to coarse grain SAND & GRAVEL, wet @ 18.5'.
16							

Remarks:

Soil samples SBI060:HSB72A05:S005020 and SBI060:HSB72A05:S050070 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-72A05

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
16							
17							
18							
19							
20							End of boring.
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							

Remarks:

Soil samples SBI060:HSB72A05:S005020 and SBI060:HSB72A05:S050070 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-0101

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.1	DP1/SS1	0.2	NA			0.0 TO 0.5 - TOPSOIL/FILL.
1							0.5 to 4.1 - Loose brown to dark brown medium grain SOIL & GRAVEL, slightly moist, staining possible 3-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.8	DP2/SS3	0.2	NA			5.0 to 8.5 - Same As Above (SAA).
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.6	DP3/SS5	0.1	NA			10.0 to 13.6 - Loose light brown medium grain SOIL & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSB0101:S005020 and SBI060:HSB0101:S020041 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-0101.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-O102

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.2 - Loose dark brown medium grain SAND & GRAVEL, slightly moist.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.1	DP2/SS3	0.0	NA			5.0 to 8.1 - Same As Above (SAA): staining 5-7'
6							
7		DP2/SS4	0.3	NA			
8							
9							
10	5.0/3.2	DP3/SS5	0.0	NA			10.0 to 13.2 - Loose light brown medium grain SAND & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBO102:S005020 and SBI060:HSBO102:S050070 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-0102.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-O104

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.3	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.2 - Loose dark brown medium grain SAND & GRAVEL, slightly moist.
2		DP1/SS2	0.2	NA			
3							
4							
5	5.0/3.8	DP2/SS3	0.1	NA			5.0 to 8.8 - Same As Above (SAA) : possible staining 5-7'
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.5	DP3/SS5	0.0	NA			10.0 to 13.5 - Loose light brown medium grain SAND & GRAVEL, dry.
11							
12		DP3/SS6	0.1	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBO104:S005020 and SBI060:HSBO104:S050070 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-0104.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060

Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-O105

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.1	DP1/SS1	0.2	NA			0.0 to 0.5 - FILL/ROOTS/TOPSOIL
1							0.5 to 4.1 - Loose brown medium grain SAND & GRAVEL, slightly moist, trace silty clay.
2		DP1/SS2	0.7	NA			
3							
4							
5	5.0/3.8	DP2/SS3	0.2	NA			5.0 to 8.8 - Same As Above (SAA): dark brown.
6		DP2/SS4	0.3	NA			
7							
8		DP2/SS5	0.5	NA			
9							
10	5.0/3.3	DP3/SS6	0.3	NA			10.0 to 10.9 SAA
11							10.9 to 12.7 - Loose brown medium to coarse grain SAND & GRAVEL, slightly moist.
12		DP3/SS7	0.2	NA			
13							12.7 to 13.3 - Loose brown medium to coarse grain SAND, few gravel, slightly moist.
14							
15	5.0/3.7	DP4/SS8	0.3	NA			15.0 to 18.7 - Loose brown medium grain SOIL & GRAVEL, slightly moist.
16							

Remarks:

Soil samples SBI060:HSBO105:S005020 and SBI060:HSBO105:S017020 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-O105

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
16							
17		DP4/SS9	0.2	NA			
18							
19							
20							End of boring.
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							

Remarks:

Soil samples SBI060:HSBO105:S005020 and SBI060:HSBO105:S017020 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B101

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.3	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 4.3 - Loose brown and black SAND & GRAVEL, stained, slightly moist.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.0	DP2/SS3	0.0	NA			5.0 to 8.0 - Same As Above (SAA): stained.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/2.2	DP3/SS5	0.0	NA			10.0 to 10.9 - Loose brown medium grain SAND.
11							10.9 to 11.4 - Crushed CONCRETE.
12							11.4 to 12.2 - Loose brown medium grain SOIL & GRAVEL, slightly moist to dry.
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBB101:S005020 and SBI060:HSBB101:S070080 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-B101.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B102

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.6	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 4.6 - Loose brown and black medium grain SAND & GRAVEL, slightly moist, staining @ 2-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/2.6	DP2/SS3	0.2	NA			5.0 to 8.0 - Same As Above (SAA): stained thoughout, slight petroleum odor.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.2	DP3/SS5	0.1	NA			10.0 to 11.4 - SAA, dark stained.
11							11.4 to 13.2 - Loose light brown medium grain SAND & GRAVEL, slightly moist.
12		DP3/SS6	0.1	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBB102:S005020 and SBI060:HSBB102:S100114 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-B102.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060

Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B103

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 4.2 - Loose brown and black medium grain SAND & GRAVEL, slightly moist, odor and staining @ 2-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.8	DP2/SS3	0.3	NA			5.0 to 8.8 - Same As Above (SAA): dark stained, petroleum odor.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/2.5	DP3/SS5	0.1	NA			10.0 to 11.2 - Loose brown and black medium grain SAND, strong petroleum odor, very moist, very stained.
11							11.2 to 11.4 - Crushed CONCRETE.
12		DP3/SS6	0.0	NA			11.4 to 12.5 - Loose brown medium grain SAND & GRAVEL, slightly moist.
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBB103:S005020 and SBI060:HSBB103:S100112 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-B103.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B104

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/3.5	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 3.5 - Loose brown and black medium grain SAND & GRAVEL, slightly moist.
2		DP1/SS2	0.0	NA			
3							
4							
5	5.0/3.2	DP2/SS3	0.1	NA			5.0 to 8.2 - Loose light brown medium grain SAND, slightly moist.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/2.0	DP3/SS5	0.0	NA			10.0 to 12.0 - Same As Above (SAA)
11							
12							
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBB104:S005020 and SBI060:HSBB104:S020035 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B105

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.1	DP1/SS1	0.1	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 4.1 - Loose brown and black medium grain SAND, moist, staining @ 2-4'.
2		DP1/SS2	0.0	NA			
3							
4							
5	5.0/4.0	DP2/SS3	0.2	NA			5.0 to 8.0 - Loose brown medium grain SAND, slightly moist.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/2.2	DP3/SS5	0.0	NA			10.0 to 12.2 - Same As Above (SAA)
11							
12		DP3/SS6	0.0	NA			
13							
14							
15	5.0/3.1	DP4/SS7	0.0	NA			15.0 to 18.1 - Loose medium grain SAND & GRAVEL, wet @ 17.5'.
16							

Remarks:

Soil samples SBI060:HSBB105:S005020 and SBI060:HSBB105:S020041 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B105

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
16							
17		DP4/SS8	0.0	NA			
18							
19							
20							End of boring.
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							

Remarks:

Soil samples SBI060:HSBB105:S005020 and SBI060:HSBB105:S020041 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-B105.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B106

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.1	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 4.2 - Loose brown and black medium grain SAND & GRAVEL, slightly moist, crushed concrete.
2		DP1/SS2	0.2	NA			
3							
4							
5	5.0/3.2	DP2/SS3	0.3	NA			5.0 to 8.2 - Loose light brown medium grain SAND, slightly moist.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.6	DP3/SS5	0.0	NA			10.0 to 13.0 - Loose light brown medium grain SAND, dry.
11							
12		DP3/SS6	0.1	NA			
13							13.0 to 15.0 - Loose brown medium grain SAND & GRAVEL, dry.
14							
15	5.0/2.3	DP4/SS7	0.0	NA			15.0 to 17.3 - Loose brown medium grain SAND & GRAVEL, dry, wet @ 17'.
16							

Remarks:

Soil samples SBI060:HSBB106:S005020 and SBI060:HSBB106:S020042 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 20.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B106

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
16							
17		DP4/SS8	0.0	NA			
18							
19							
20							End of boring.
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							

Remarks:

Soil samples SBI060:HSBB106:S005020 and SBI060:HSBB106:S020042 were sent to laboratory for analysis.

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B107

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.0	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 4.2 - Loose brown and black medium grain SAND & GRAVEL, slightly moist.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.5	DP2/SS3	0.1	NA			5.0 to 7.0 - Loose light brown medium grain SAND, dry.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/4.3	DP3/SS5	0.0	NA			10.0 to 14.3 - Same As Above (SAA).
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBB107:S005020 and SBI060:HSBB107:S100120 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-B107.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/20/2010
Date Completed	: 08/20/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-B108

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/3.8	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL
1							0.5 to 3.8 - Loose brown medium grain SAND & GRAVEL, slightly moist.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.8	DP2/SS3	0.2	NA			5.0 to 8.8 - Loose light brown medium grain SAND, slightly moist to dry.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/4.1	DP3/SS5	0.1	NA			10.0 to 14.1 - Same As Above (SAA).
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBB108:S005020 and SBI060:HSBB108:S100120 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-B108.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-O101

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.1	DP1/SS1	0.2	NA			0.0 TO 0.5 - TOPSOIL/FILL.
1							0.5 to 4.1 - Loose brown to dark brown medium grain SOIL & GRAVEL, slightly moist, staining possible 3-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.8	DP2/SS3	0.2	NA			5.0 to 8.5 - Same As Above (SAA).
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.6	DP3/SS5	0.1	NA			10.0 to 13.6 - Loose light brown medium grain SOIL & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBO101:S005020 and SBI060:HSBO101:S020041 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-O101.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-SA01

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.0	DP1/SS1	0.0	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.0 - Loose dark brown medium grain SAND & GRAVEL, slightly moist, staining 2-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.2	DP2/SS3	0.2	NA			5.0 to 8.2 - Same As Above (SAA): grades to brown @ 7'.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/3.4	DP3/SS5	0.0	NA			10.0 to 13.4 - Loose light brown medium grain SAND & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.1	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBSA01:S005020 and SBI060:HSBSA01:S020040 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-SA01.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-SA02

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.1	DP1/SS1	0.6	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.1 - Loose dark brown medium grain SAND & GRAVEL, dry, odor and staining 2-4'.
2		DP1/SS2	0.1	NA			
3							
4							
5	5.0/3.2	DP2/SS3	0.0	NA			5.0 to 8.2 - Same As Above (SAA): grades to light brown @ 6.5'.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/2.5	DP3/SS5	0.0	NA			10.0 to 12.5 - Loose light brown medium grain SAND & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBSA02:S005020 and SBI060:HSBSA02:S020041 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-SA02.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-SA03

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/3.9	DP1/SS1	0.1	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 3.9 - Loose dark brown medium grain SAND & GRAVEL, slightly moist, staining @ 3.9'.
2		DP1/SS2	0.3	NA			
3							
4							
5	5.0/2.4	DP2/SS3	0.1	NA			5.0 to 7.4 - Loose brown medium grain SAND & GRAVEL, slightly moist.
6							
7		DP2/SS4	0.0	NA			
8							
9							
10	5.0/3.8	DP3/SS5	0.0	NA			10.0 to 13.8 - Same As Above (SAA): light brown.
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBSA03:S005020 and SBI060:HSBSA03:S020039 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-SA03.bor

Hull & associates, inc.

Former Studebaker Site
South Bend, IN

Project Number: SBI060
Project Manager: Doug Stuart

Date Started	: 08/19/2010
Date Completed	: 08/19/2010
Logged By	: S. Sojda
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T
Drilling Method	: Geoprobe
Sampling Method	: Macrocore
Total Depth	: 15.0'
S. Water Level Date	: NA
S. Water Level (ft)	: NA

LOG OF BORING HSB-SA04

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 2000
PID/FID Calibration	: 100ppm Isobutylene

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	5.0/4.2	DP1/SS1	0.2	NA			0.0 to 0.5 - TOPSOIL/FILL.
1							0.5 to 4.2 - Loose dark brown medium grain SAND & GRAVEL, slightly moist, staining 2-4'.
2		DP1/SS2	0.3	NA			
3							
4							
5	5.0/3.2	DP2/SS3	0.1	NA			5.0 to 8.2 - Loose brown medium grain SAND & GRAVEL, slightly moist.
6							
7		DP2/SS4	0.1	NA			
8							
9							
10	5.0/2.3	DP3/SS5	0.0	NA			10.0 to 12.3 - Loose brown medium grain SAND & GRAVEL, slightly moist.
11							
12		DP3/SS6	0.0	NA			
13							
14							
15							End of boring.
16							

Remarks:

Soil samples SBI060:HSBSA04:S005020 and SBI060:HSBSA04:S020042 were sent to laboratory for analysis.

11-23-2010 J:\CLIENTS\SBI\SBI060 - Area A Additional Asmt. for VRP\LOGS\HSB-SA04.bor

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 29'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 24.44

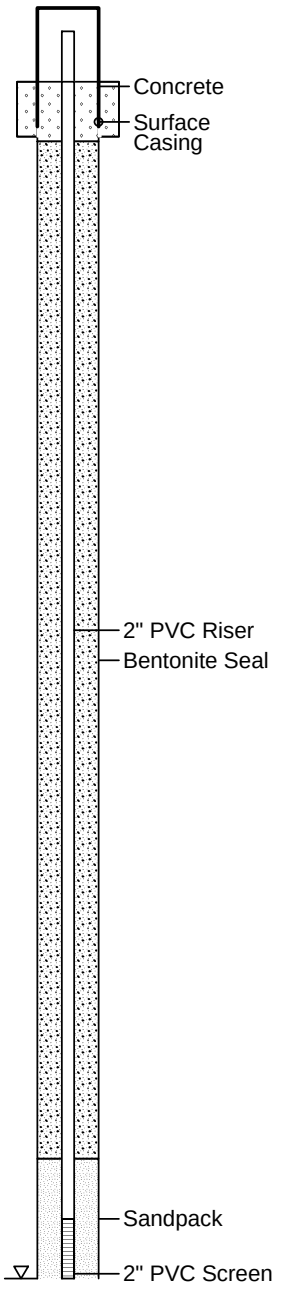
LOG OF BORING AMW-8S

G. Elev. (ft USGS)	: 725.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-8S was blank drilled adjacent to AMW-8I. See log of well AMW-8I for a description of soils. No soil samples from AMW-8S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 29'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 24.44

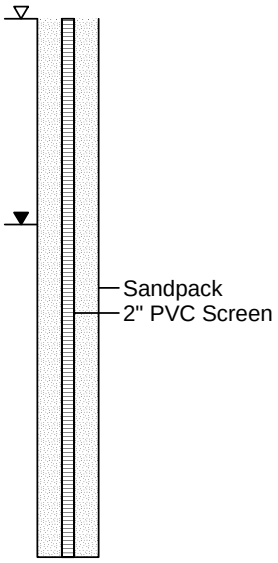
LOG OF BORING AMW-8S

G. Elev. (ft USGS)	: 725.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring



Remarks:
AMW-8S was blank drilled adjacent to AMW-8I. See log of well AMW-8I for a description of soils. No soil samples from AMW-8S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

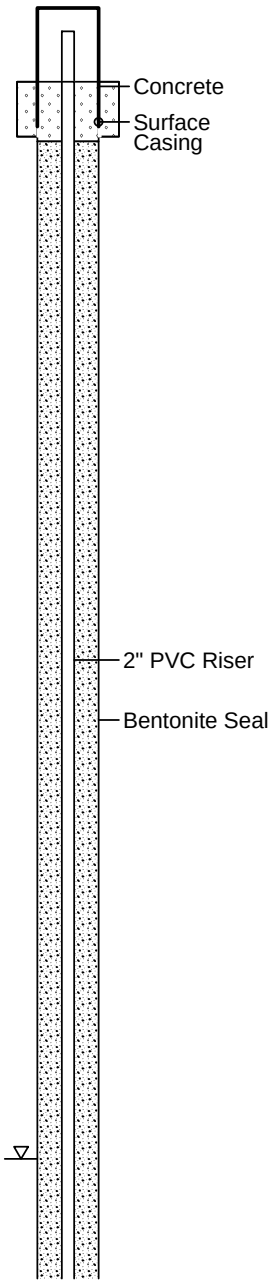
Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.43

LOG OF BORING AMW-1D

G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
0	2.0/1.3	SP1/SS1	0.0	5-7-10-12	0.0 to 0.3 - Loose dark brown TOPSOIL, dry.
1					very moist to wet, 0.3 to 1.3 - Loose dark brown SAND, dry.
2	2.0/1.0	SP2/SS2	0.0	4-5-7-7	2.0 to 3.0 - Loose light tan SAND, dry.
3					
4	2.0/1.3	SP3/SS3	0.0	3-4-6-7	4.0 to 5.3 - Same as Above (SAA).
5					
6	2.0/1.0	SP4/SS4	0.0	3-5-5-4	6.0 to 7.0 - SAA
7					
8	2.0/1.3	SP5/SS5	0.0	4-4-5-4	8.0 to 9.3 - SAA
9					
10	2.0/1.4	SP6/SS6	0.0	4-5-5-3	10.0 to 11.4 - SAA
11					
12	2.0/1.2	SP7/SS7	0.0	3-4-6-7	12.0 to 13.2 - SAA
13					
14	2.0/1.5	SP8/SS8	0.0	3-3-3-4	14.0 to 15.5 - SAA
15					
16	2.0/1.2	SP9/SS9	0.0	2-2-3-4	16.0 to 17.2 - SAA
17					
18	2.0/1.3	SP10/SS10	0.0	3-3-3-4	18.0 to 19.0 - SAA
19					19.0 to 19.3 - Loose brown SAND & GRAVEL, wet.
20					



Remarks:
Soil samples SBI068:AMW1D:S140155 and SBI068:AMW1D:S180190 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.43

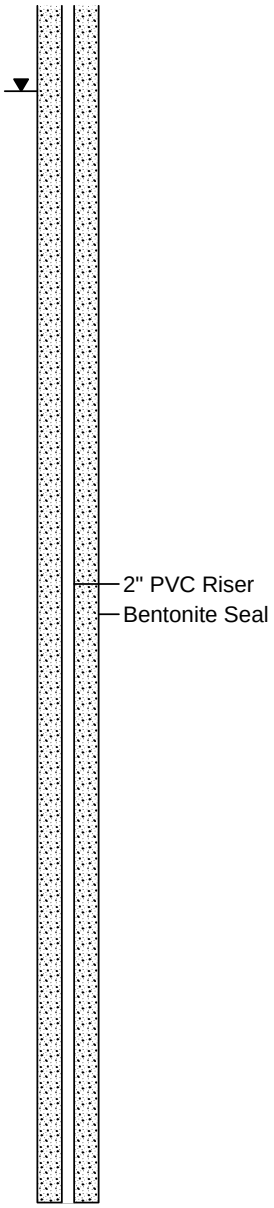
LOG OF BORING AMW-1D

G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-1D
Elev.: 732.41

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
20	2.0/1.5	SP11/SS11	0.0	3-4-5-6	20.0 to 21.5 - SAA
22	2.0/2.0	SP12/SS12	0.0	9-4-4-5	22.0 to 24.0 - SAA
24	2.0/1.4	SP13/SS13	0.0	2-2-3-3	24.0 to 25.4 - SAA
26	2.0/1.6	SP14/SS14	0.0	1-1-2-3	26.0 to 27.6 - SAA
28	2.0/1.5	SP15/SS15	0.0	2-2-2-2	28.0 to 29.5 - SAA
30	2.0/1.4	SP16/SS16	0.0	3-3-4-6	30.0 to 31.4 - SAA
32	2.0/1.4	SP17/SS17	0.0	3-3-4-6	32.0 to 33.4 - SAA
34	2.0/0.8	SP18/SS18	0.0	3-5-7-9	34.0 to 34.8 - SAA
36	2.0/1.8	SP19/SS19	0.0	4-5-7-9	36.0 to 37.8 - SAA
38	2.0/0.7	SP20/SS20	0.0	4-6-6-9	38.0 to 38.7 - SAA
40					



Remarks:
Soil samples SBI068:AMW1D:S140155 and SBI068:AMW1D:S180190 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.43

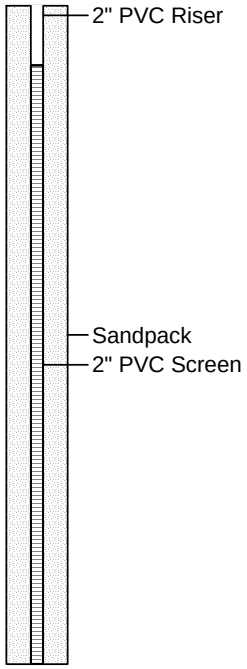
LOG OF BORING AMW-1D

G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-1D
Elev.: 732.41

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40	2.0/1.2	SP21/SS21	0.0	4-4-5-4	⊠		40.0 to 41.2 - SAA
42	2.0/1.0	SP22/SS22	0.0	2-3-5-6	⊠		42.0 to 43.0 - SAA
44	2.0/1.1	SP23/SS23	0.0	5-5-5-7	⊠		44.0 to 45.1 - SAA
46	2.0/0.5	SP24/SS24	0.0	4-6-9-11	⊠		46.0 to 46.5 - SAA
48	2.0/1.6	SP25/SS25	0.0	5-7-4-9	⊠		48.0 to 49.6 - SAA
50	2.0/1.0	SP26/SS26	NS	NA	⊠		50.0 to 51.0 - SAA
51							End of Boring



Remarks:
Soil samples SBI068:AMW1D:S140155 and SBI068:AMW1D:S180190 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 39'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.44

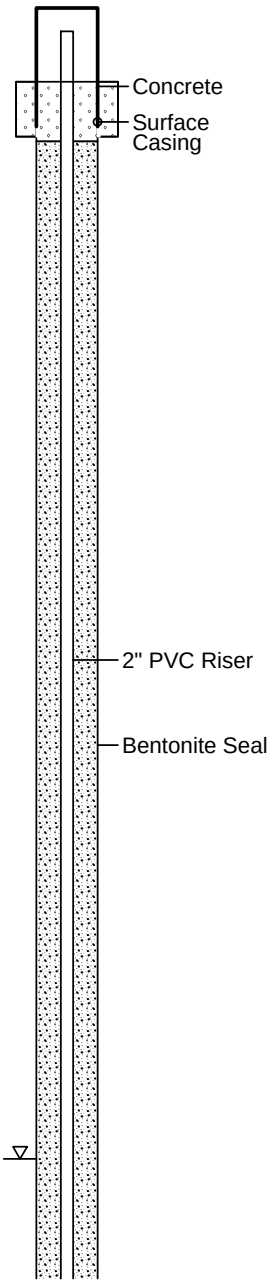
LOG OF BORING AMW-1I

G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-1I was blank drilled adjacent to AMW-1D. See log of well AMW-1D for a description of soils. No soil samples from AMW-1I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 39'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.44

LOG OF BORING AMW-1I

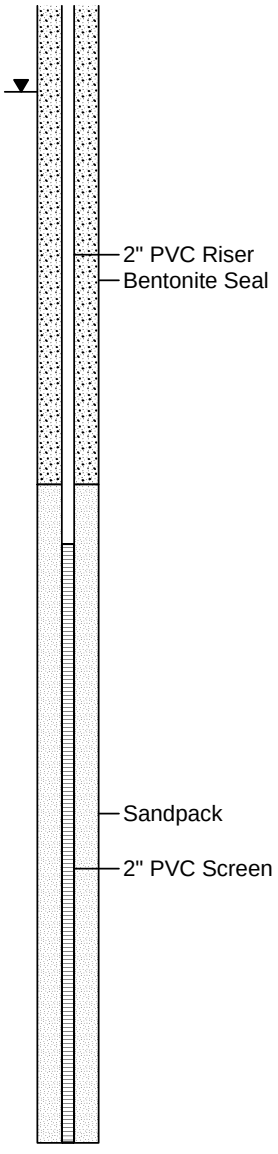
G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Well: AMW-1I
Elev.: 732.40

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring



Remarks:
AMW-1I was blank drilled adjacent to AMW-1D. See log of well AMW-1D for a description of soils. No soil samples from AMW-1I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 27'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.47

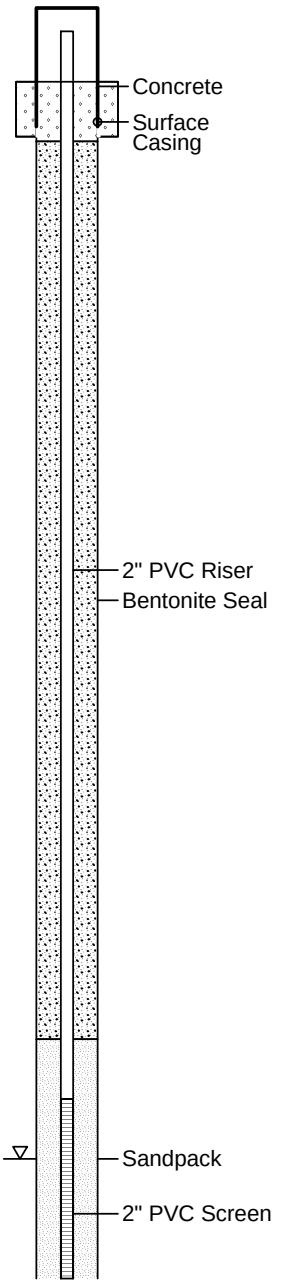
LOG OF BORING AMW-1S

G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0–20							



Remarks:
AMW-1S was blank drilled adjacent to AMW-1D. See log of well AMW-1D for a description of soils. No soil samples from AMW-1S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/24/2012
Date Completed	: 5/24/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 27'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.47

LOG OF BORING AMW-1S

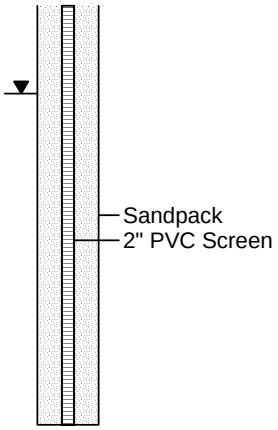
G. Elev. (ft USGS)	: 730.12
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20							
21							
22							
23							
24							
25							
26							
27							End of Boring
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

Well: AMW-1S
Elev.: 732.44



Remarks:
AMW-1S was blank drilled adjacent to AMW-1D. See log of well AMW-1D for a description of soils. No soil samples from AMW-1S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

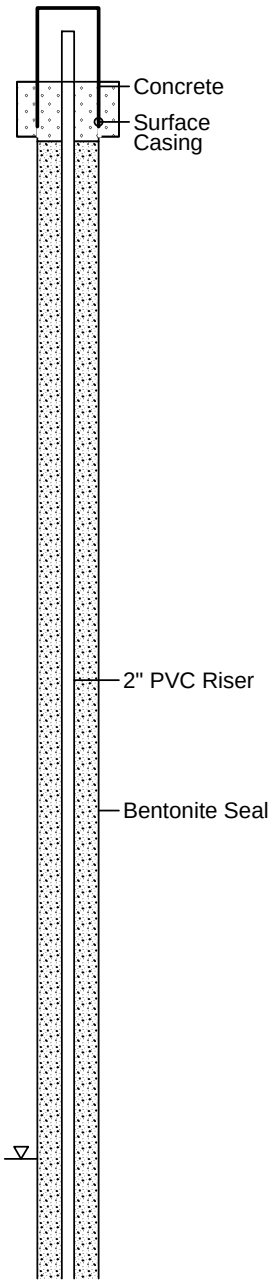
Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.33

LOG OF BORING AMW-2D

G. Elev. (ft USGS)	: 728.32
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	2.0/1.3	SP1/SS1	0.0	7-3-10-10			0.0 to 0.6 - Loose dark brown TOPSOIL, dry.
1							0.6 to 1.3 - Loose dark brown SAND & GRAVEL, dry.
2	2.0/1.6	SP2/SS2	0.0	2-2-3-5			2.0 to 3.6 - Loose brown SAND, dry.
3							
4	2.0/1.1	SP3/SS3	0.0	3-3-4-4			4.0 to 5.1 - Loose brown SAND, trace gravel, dry.
5							
6	2.0/0.9	SP4/SS4	0.0	2-2-3-3			6.0 to 6.9 - Same as Above (SAA).
7							
8	2.0/1.0	SP5/SS5	0.0	2-2-3-4			8.0 to 9.0 - Loose brown SAND & GRAVEL, dry.
9							
10	2.0/0.8	SP6/SS6	0.0	3-3-4-6			10.0 to 10.8 - SAA
11							
12	2.0/1.1	SP7/SS7	10.5	6-4-5-5			12.0 to 13.1 - SAA
13							
14	2.0/1.0	SP8/SS8	6.4	3-3-3-4			14.0 to 15.0 - SAA
15							
16	2.0/1.1	SP9/SS9	0.0	3-5-5-6			16.0 to 17.1 - SAA
17							
18	2.0/1.2	SP10/SS10	NA	6-3-3-6			18.0 to 18.7 - SAA
19							18.7 to 19.2 - Loose brown SAND & GRAVEL, wet.
20							



Remarks:
Soil samples SBI068:AMW2D:S120131 and SBI068:AMW2D:S180187 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.33

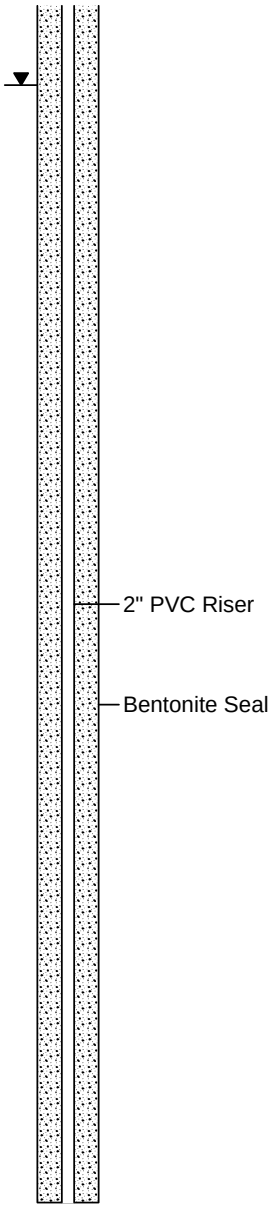
LOG OF BORING AMW-2D

G. Elev. (ft USGS)	: 728.32
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-2D
Elev.: 730.66

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
20	2.0/1.2	SP11/SS11	NA	4-5-6-6	20.0 to 21.2 - SAA
22	2.0/1.1	SP12/SS12	NA	4-4-4-7	22.0 to 23.1 - SAA
24	2.0/1.0	SP13/SS13	NA	4-6-5-6	24.0 to 25.0 - SAA
26	2.0/1.6	SP14/SS14	NA	3-3-4-6	26.0 to 27.6 - SAA
28	2.0/0.7	SP15/SS15	NA	2-2-3-3	28.0 to 28.7 - SAA
30	2.0/1.2	SP16/SS16	NA	2-2-3-3	30.0 to 31.2 - SAA
32	2.0/0.7	SP17/SS17	NA	2-3-3-5	32.0 to 32.7 - SAA
34	2.0/0.5	SP18/SS18	NA	2-6-7-9	34.0 to 34.5 - SAA
36	2.0/1.5	SP19/SS19	NA	4-7-6-9	36.0 to 37.5 - SAA
38	2.0/0.0	SP20/SS20	NA	3-7-6-6	38.0 to 40.0 - No recovery.
40					



Remarks:
Soil samples SBI068:AMW2D:S120131 and SBI068:AMW2D:S180187 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.33

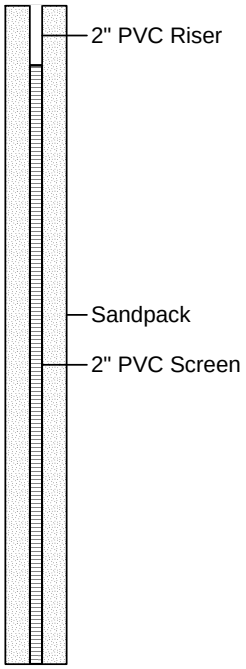
LOG OF BORING AMW-2D

G. Elev. (ft USGS)	: 728.32
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-2D
Elev.: 730.66

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40	2.0/1.1	SP21/SS21	NA	3-4-5-5	⊠		40.0 to 41.1 - Loose brown SAND & GRAVEL, wet.
42	2.0/0.5	SP22/SS22	NA	3-10-10-12	⊠		42.0 to 42.5 - SAA
44	2.0/1.3	SP23/SS23	NA	7-8-10-13	⊠		44.0 to 45.3 - SAA
46	2.0/1.5	SP24/SS24	NA	4-6-6-8	⊠		46.0 to 47.5 - SAA
48	NA	SP25/SS25	NA	3-6-6-2			48.0 to 50.0 - No recovery
50	NA	SP26/SS26	NA	NA			50.0 to 51.0 - SAA
51							End of Boring



Remarks:
Soil samples SBI068:AMW2D:S120131 and SBI068:AMW2D:S180187 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 39'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.41

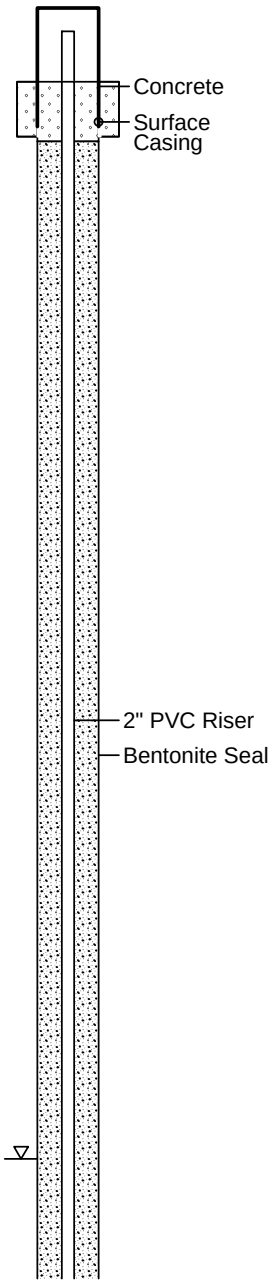
LOG OF BORING AMW-2I

G. Elev. (ft USGS)	: 728.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							



Remarks:
AMW-2I was blank drilled adjacent to AMW-2D. See log of well AMW-2D for a description of soils. No soil samples from AMW-2I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 39'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.41

LOG OF BORING AMW-2I

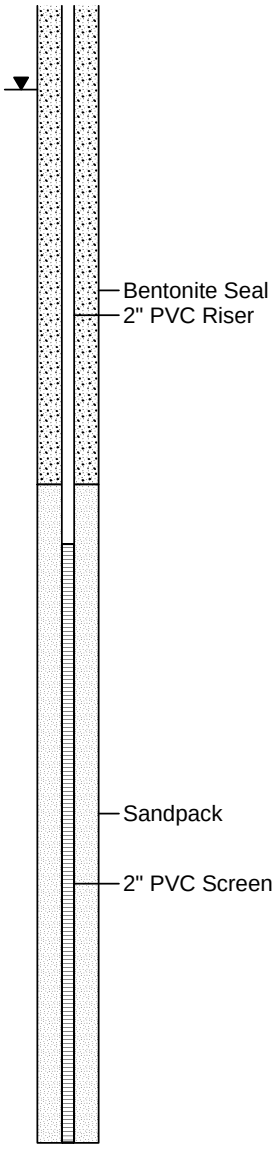
G. Elev. (ft USGS)	: 728.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring

Well: AMW-2I
Elev.: 730.73



Remarks:
AMW-2I was blank drilled adjacent to AMW-2D. See log of well AMW-2D for a description of soils. No soil samples from AMW-2I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 27'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.40

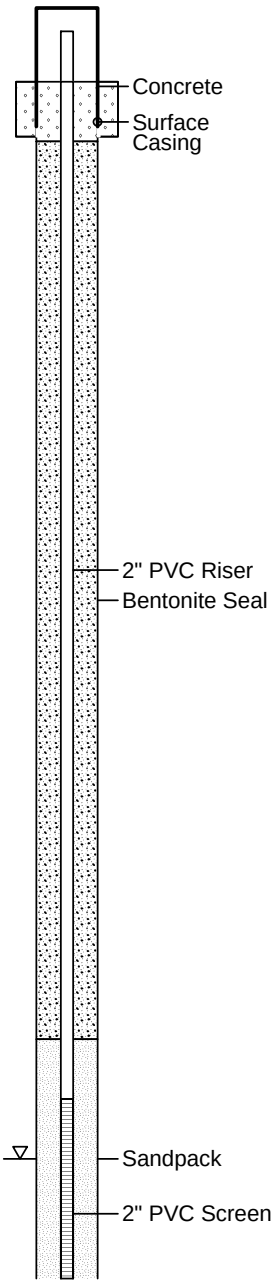
LOG OF BORING AMW-2S

G. Elev. (ft USGS)	: 728.44
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-2S was blank drilled adjacent to AMW-2D. See log of well AMW-2D for a description of soils. No soil samples from AMW-2S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 27'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.40

LOG OF BORING AMW-2S

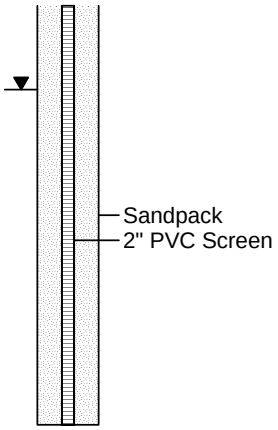
G. Elev. (ft USGS)	: 728.44
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–27							End of Boring

Well: AMW-2S
Elev.: 730.70



Remarks:
AMW-2S was blank drilled adjacent to AMW-2D. See log of well AMW-2D for a description of soils. No soil samples from AMW-2S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

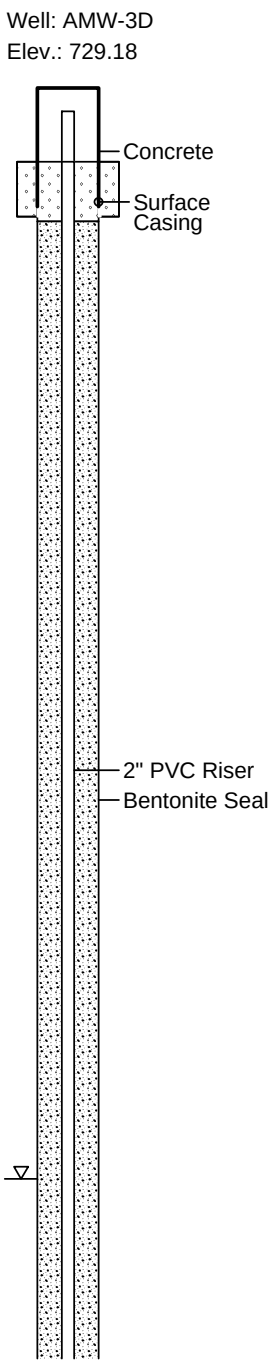
Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 50'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.54

LOG OF BORING AMW-3D

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	2.0/1.5	SP1/SS1	0.0	4-4-6-6			0.0 to 0.5 - Loose dark brown TOPSOIL., dry.
1							0.5 to 1.5 - Loose light brown SAND, trace gravel, dry.
2	2.0/1.0	SP2/SS2	0.0	4-4-7-6			2.0 to 3.0 - Loose light brown SAND, trace gravel, dry.
3							
4	2.0/1.4	SP3/SS3	0.0	2-2-4-5			4.0 to 5.4 - Same as Above (SAA).
5							
6	2.0/0.9	SP4/SS4	0.0	5-7-10-12			6.0 to 6.9 - SAA
7							
8	2.0/1.3	SP5/SS5	0.0	4-7-7-8			8.0 to 9.3 - SAA
9							
10	2.0/1.1	SP6/SS6	0.0	3-8-7-7			10. to 11.1 - SAA
11							
12	2.0/1.3	SP7/SS7	0.0	4-4-5-2			12.0 to 13.3 - SAA
13							
14	2.0/1.3	SP8/SS8	0.0	3-4-5-5			14.0 to 15.3 - SAA
15							
16	2.0/1.6	SP9/SS9	0.0	3-3-5-6			16.0 to 17.6 - Loose light brown SAND, trace silt, moist.
17							
18	2.0/0.8	SP10/SS10	NA	4-4-5-6			18.0 to 18.8 - Loose brown SAND, trace silt, wet.
19							
20							



Remarks:
Soil samples SBI068:AMW3D:S040054 and SBI068:AMW3D:S160176 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 50'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.54

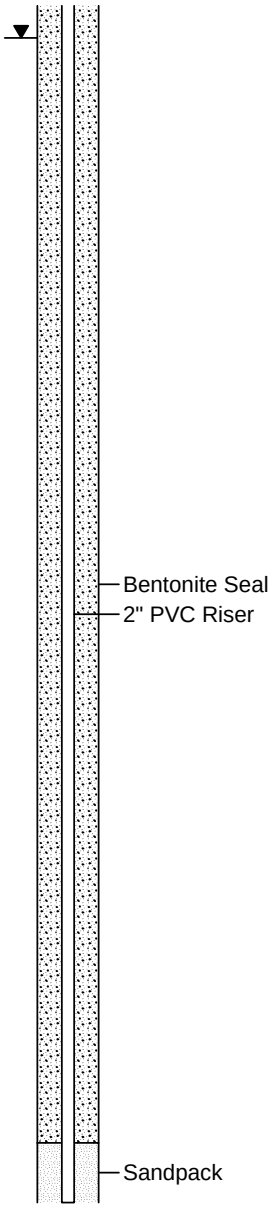
LOG OF BORING AMW-3D

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-3D
Elev.: 729.18

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20	2.0/1.3	SP11/SS11	NA	7-8-10-12	⊠		20.0 to 21.3 - SAA
22	2.0/1.7	SP12/SS12	NA	3-4-4-5	⊠		22.0 to 23.7 - Loose brown SAND & GRAVEL, wet.
24	2.0/1.8	SP13/SS13	NA	3-4-4-6	⊠		24.0 to 25.8 - SAA
26	2.0/1.7	SP14/SS14	NA	2-2-4-4	⊠		26.0 to 27.7 - SAA
28	2.0/1.3	SP15/SS15	NA	2-4-5-7	⊠		28.0 to 29.3 - SAA
30	2.0/0.5	SP16/SS16	NA	2-2-1-2	⊠		30.0 to 30.5 - SAA
32	2.0/0.0	SP17/SS17	NA	4-4-5-6			32.0 to 34.0 - No recovery.
34	2.0/0.8	SP18/SS18	NA	2-4-6-9	⊠		34.0 to 34.8 - Loose brown SAND & GRAVEL, wet.
36	2.0/0.7	SP19/SS19	NA	5-5-4-7	⊠		36.0 to 36.7 - SAA
38	2.0/0.7	SP20/SS20	NA	4-4-6-8	⊠		38.0 to 38.7 - SAA
40							



Remarks:
Soil samples SBI068:AMW3D:S040054 and SBI068:AMW3D:S160176 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 50'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.54

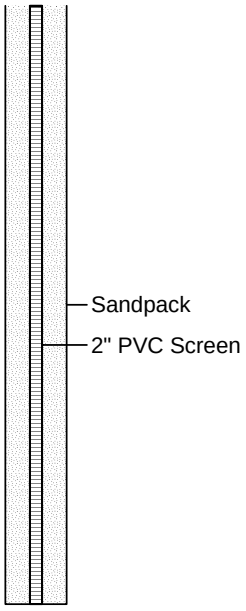
LOG OF BORING AMW-3D

G. Elev. (ft USGS)	: NA
PID/FID Model	: MiniRae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40	2.0/0.5	SP21/SS21	NA	4-2-5-6	☒		40.0 to 40.5 - SAA
42	2.0/0.0	SP22/SS22	NA	7-8-10-12			42.0 to 44.8 - No recovery.
44	2.0/0.8	SP23/SS23	NA	3-3-7-6	☒		44.0 to 44.0 - Loose brown SAND & GRAVEL, wet.
46	2.0/1.3	SP24/SS24	NA	7-8-10-13	☒		46.0 to 47.3 - SAA
48	2.0/0.7	SP25/SS25	NA	7-7-10-12	☒		48.0 to 48.7 - SAA
50							End of Boring

Well: AMW-3D
Elev.: 729.18



Remarks:
Soil samples SBI068:AMW3D:S040054 and SBI068:AMW3D:S160176 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 38'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.61

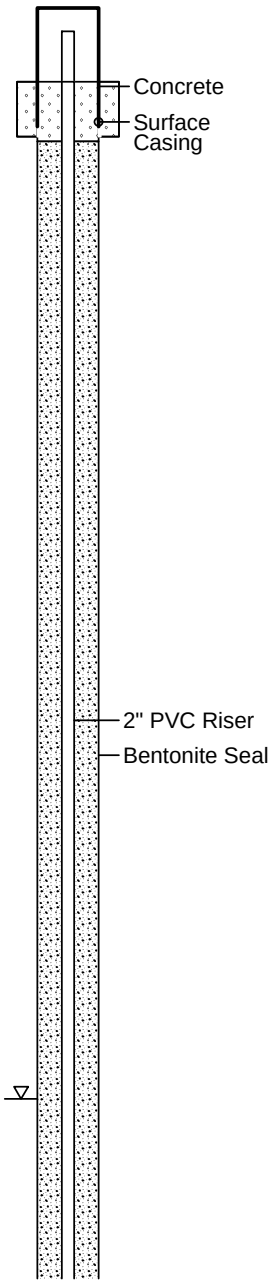
LOG OF BORING AMW-3I

G. Elev. (ft USGS)	: 727.65
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-3I was blank drilled adjacent to AMW-3D. See log of well AMW-3D for a description of soils. No soil samples from AMW-3I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 38'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.61

LOG OF BORING AMW-3I

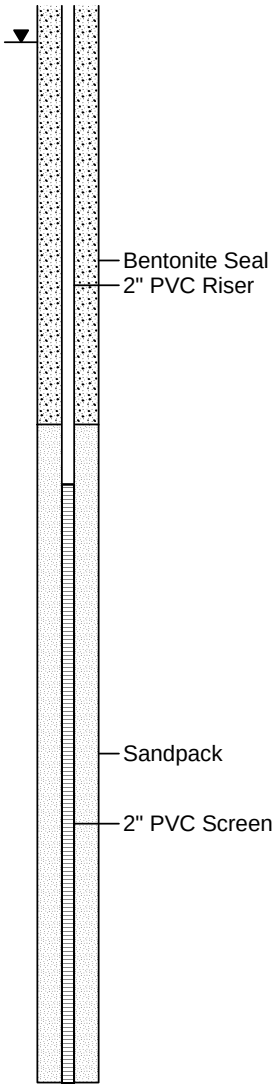
G. Elev. (ft USGS)	: 727.65
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring

Well: AMW-3I
Elev.: 729.27



Remarks:
AMW-3I was blank drilled adjacent to AMW-3D. See log of well AMW-3D for a description of soils. No soil samples from AMW-3I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 26'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.51

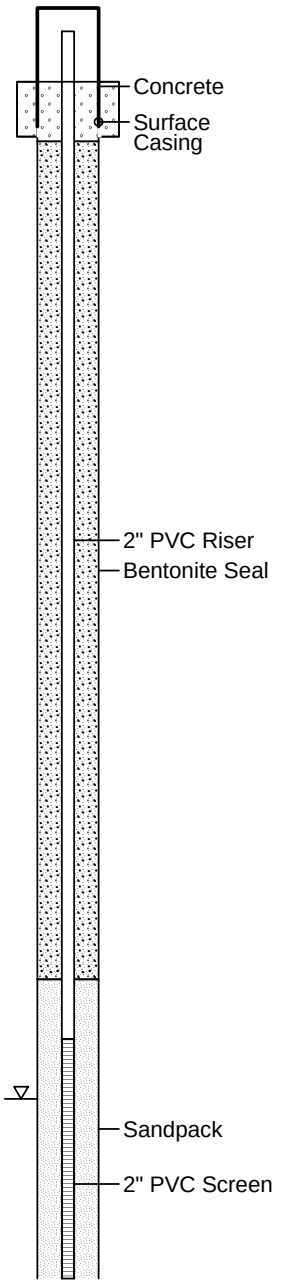
LOG OF BORING AMW-3S

G. Elev. (ft USGS)	: 727.54
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-3S was blank drilled adjacent to AMW-3D. See log of well AMW-3D for a description of soils. No soil samples from AMW-3S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/29/2012
Date Completed	: 5/29/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 26'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 21.51

LOG OF BORING AMW-3S

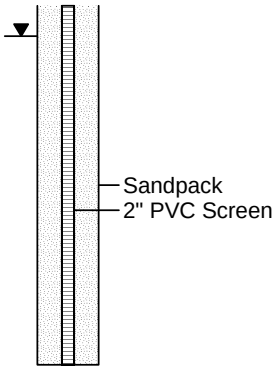
G. Elev. (ft USGS)	: 727.54
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20							
21							
22							
23							
24							
25							
26							End of Boring
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

Well: AMW-3S
Elev.: 729.18



Remarks:
AMW-3S was blank drilled adjacent to AMW-3D. See log of well AMW-3D for a description of soils. No soil samples from AMW-3S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

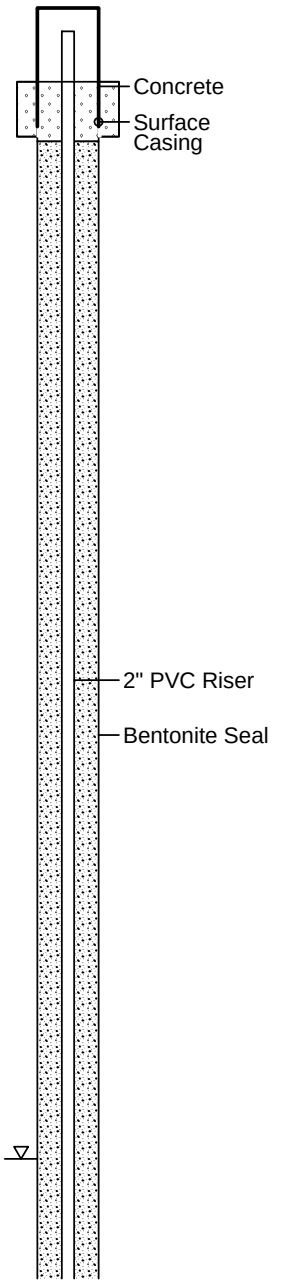
Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.10

LOG OF BORING AMW-4D

G. Elev. (ft USGS)	: 727.73
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	2.0/1.3	SP1/SS1	6.6	4-5-5-7			0.0 to 0.3 - Loose dark brown TOPSOIL.
1							0.3 to 1.3 - Loose dark brown SAND, trace silt, trace gravel, dry.
2	2.0/1.2	SP2/SS2	4.6	6-7-7-10			2.0 to 2.3 - Same as Above (SAA).
3							
4	2.0/1.2	SP3/SS3	7.5	6-10-12-13			4.0 to 4.9 - SAA
5							4.9 to 5.0 - Loose light tan SAND & GRAVEL, dry.
6	2.0/1.2	SP4/SS4	9.3	2-3-5-7			5.0 to 5.2 - Loose dark bown SAND & GRAVEL, dry
7							6.0 to 7.2 - Loose brown SAND, trace silt, dry.
8	2.0/1.4	SP5/SS5	8.3	4-4-2-2			8.0 to 9.4 - SAA
9							
10	2.0/0.7	SP6/SS6	8.8	2-2-2-3			10.0 to 10.7 - Loose brown SAND & GRAVEL, dry.
11							
12	2.0/1.1	SP7/SS7	8.9	2-3-4-7			12.0 to 13.1 - SAA
13							
14	2.0/1.0	SP8/SS8	9.6	4-6-7-10			14.0 to 15.0 - Loose brown SAND, dry.
15							
16	2.0/1.2	SP9/SS9	9.8	7-7-9-10			16.0 to 17.2 - SAA
17							
18	2.0/1.0	SP10/SS10	10.5	4-4-7-10			18.0 to 18.5 - SAA
19							18.5 to 19.0 - Loose brown SAND & GRAVEL, wet.
20							



Remarks:
Soil samples SBI068:AMW4D:S160172 and SBI068:AMW4D:S180185 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.10

LOG OF BORING AMW-4D

G. Elev. (ft USGS)	: 727.73
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-4D
Elev.: 729.95

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20	2.0/1.5	SP11/SS11	NA	5-5-6-6			20.0 to 20.5 - SAA
21							20.5 to 21.5 - Loose brown SAND, trace silt, wet.
22	2.0/2.0	SP12/SS12	NA	4-4-5-7			22.0 to 24.0 - Loose brown SAND & GRAVEL, wet.
23							
24	2.0/2.0	SP13/SS13	NA	2-2-3-5			24.0 to 26.0 - SAA
25							
26	2.0/1.4	SP14/SS14	NA	2-2-1-2			26.0 to 27.4 - SAA
27							
28	2.0/1.6	SP15/SS15	NA	3-3-4-3			28.0 to 29.6 - SAA
29							
30	2.0/1.0	SP16/SS16	NA	2-3-5-7			30.0 to 31.0 - SAA
31							
32	2.0/1.6	SP17/SS17	NA	2-2-3-5			32.0 to 33.6 - SAA
33							
34	2.0/0.0	SP18/SS18	NA	3-3-5-7			34.0 to 36.0 - No recovery
35							
36	2.0/1.4	SP19/SS19	NA	4-4-5-6			36.0 to 37.4 - Loose brown SAND & GRAVEL, wet.
37							
38	2.0/0.5	SP20/SS20	NA	4-4-5-7			38.0 to 38.5 - SAA
39							
40							

2" PVC Riser
Bentonite Seal

Remarks:
Soil samples SBI068:AMW4D:S160172 and SBI068:AMW4D:S180185 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 51'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.10

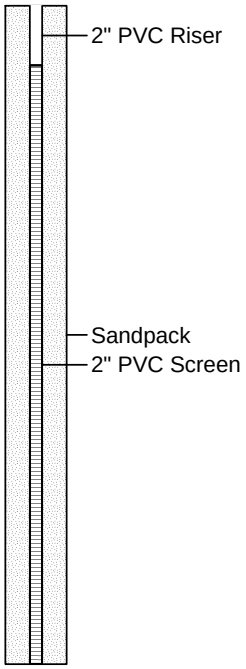
LOG OF BORING AMW-4D

G. Elev. (ft USGS)	: 727.73
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-4D
Elev.: 729.95

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40	2.0/1.7	SP21/SS21	NA	3-5-6-7			40.0 to 41.7 - SAA
42	2.0/1.1	SP22/SS22	NA	7-10-12-14			42.0 to 43.1 - SAA
44	2.0/0.0	SP23/SS23	NA	5-6-8-9			44.0 to 46.0 - No recovery.
46	2.0/1.5	SP24/SS24	NA	3-7-9-13			46.0 to 47.5 - Loose brown SAND & GRAVEL, wet, increased gravel.
48	2.0/1.2	SP25/SS25	NA	5-6-7-9			48.0 to 49.2 - SAA
50	NA	SP26/SS26	NA	NA			50.0 to 51.0 - SAA
51							End of Boring



Remarks:
Soil samples SBI068:AMW4D:S160172 and SBI068:AMW4D:S180185 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 39'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.61

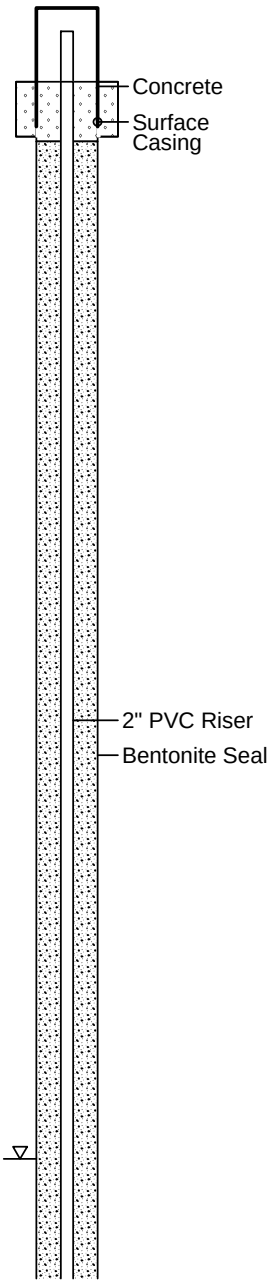
LOG OF BORING AMW-4I

G. Elev. (ft USGS)	: 728.33
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-4I was blank drilled adjacent to AMW-4D. See log of well AMW-4D for a description of soils. No soil samples from AMW-4I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 39'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.61

LOG OF BORING AMW-4I

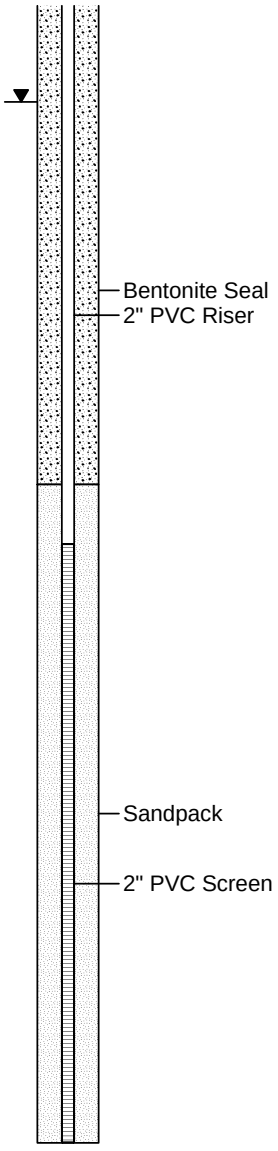
G. Elev. (ft USGS)	: 728.33
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring

Well: AMW-4I
Elev.: 730.49



Remarks:
AMW-4I was blank drilled adjacent to AMW-4D. See log of well AMW-4D for a description of soils. No soil samples from AMW-4I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 27'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.88

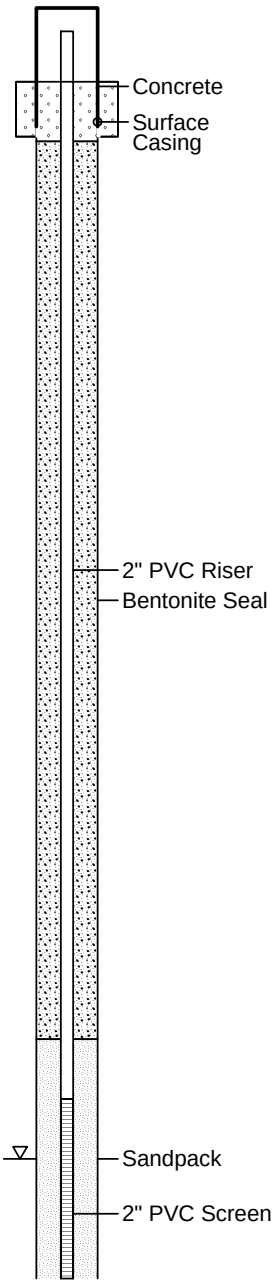
LOG OF BORING AMW-4S

G. Elev. (ft USGS)	: 728.49
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-4S was blank drilled adjacent to AMW-4D. See log of well AMW-4D for a description of soils. No soil samples from AMW-4S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/23/2012
Date Completed	: 5/23/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 27'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 22.88

LOG OF BORING AMW-4S

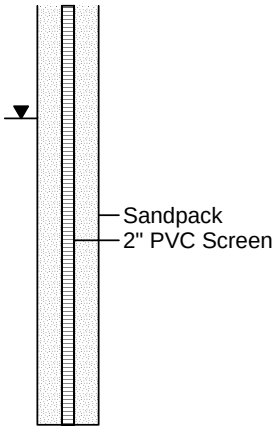
G. Elev. (ft USGS)	: 728.49
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–27							End of Boring

Well: AMW-4S
Elev.: 730.77



Remarks:
AMW-4S was blank drilled adjacent to AMW-4D. See log of well AMW-4D for a description of soils. No soil samples from AMW-4S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

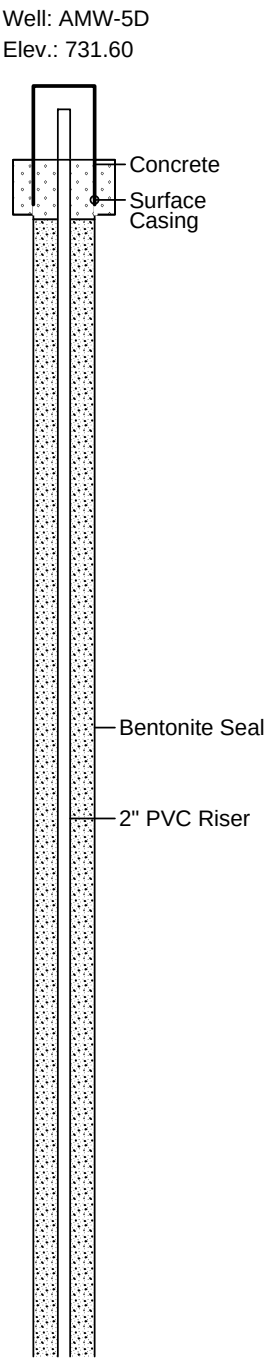
Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 54'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.81

LOG OF BORING AMW-5D

G. Elev. (ft USGS)	: 729.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
0	2.0/0.5	SP1/SS1	NA	8-10-10-15	0.0 to 0.5 - Loose dark brown TOPSOIL, dry.
2	2.0/2.0	SP2/SS2	NA	4-5-7-9	2.0 to 4.0 - Loose dark brown SAND & GRAVEL, dry.
4	2.0/1.3	SP3/SS3	NA	5-8-10-12	4.0 to 5.3 - Same as Above (SAA).
6	2.0/1.6	SP4/SS4	NA	5-7-5-5	6.0 to 7.6 - SAA
8	2.0/1.1	SP5/SS5	NA	4-6-9-10	8.0 to 9.1 - SAA
10	2.0/1.3	SP6/SS6	NA	6-8-9-10	10.0 to 11.3 - SAA
12	2.0/1.1	SP7/SS7	NA	4-5-4-4	12.0 to 13.1 - Loose light brown SAND, moist.
14	2.0/1.1	SP8/SS8	NA	4-4-3-5	14.0 to 15.1 - SAA
16	2.0/1.2	SP9/SS9	NA	5-7-10-14	16.0 to 17.2 - SAA
18	2.0/1.1	SP10/SS10	NA	7-7-10-9	18.0 to 19.1 - SAA
20					



Remarks:
Soil samples SBI068:AMW5D:S160172 and SBI068:AMW5D:S220225 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 54'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.81

LOG OF BORING AMW-5D

G. Elev. (ft USGS)	: 729.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-5D
Elev.: 731.60

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20	2.0/1.1	SP11/SS11	NA	6-7-7-9			20.0 to 21.1 - SAA
22	2.0/1.2	SP12/SS12	NA	NA			22.0 to 22.5 - SAA
23							22.5 to 23.2 - Coarse brown SAND & GRAVEL, trace cobble, wet
24	2.0/0.9	SP13/SS13	NA	5-5-4-5			24.0 to 24.9 - SAA
26	2.0/1.4	SP14/SS14	NA	4-7-9-8			26.0 to 27.4 - SAA
28	2.0/0.6	SP15/SS15	NA	7-7-10-12			28.0 to 28.6 - SAA
30	2.0/0.8	SP16/SS16	NA	6-7-7-12			30.0 to 30.8 - SAA
32	2.0/1.0	SP17/SS17	NA	5-5-6-8			32.0 to 33.0 - SAA
34	2.0/1.1	SP18/SS18	NA	6-6-6-9			34.0 to 35.1 - SAA
36	2.0/1.1	SP19/SS19	NA	4-6-5-6			36.0 to 37.1 - Loose brown SAND & GRAVEL, wet
38	2.0/1.3	SP20/SS20	NA	5-7-7-10			38.0 to 39.3 - SAA
40							

Bentonite Seal

2" PVC Riser

Remarks:
Soil samples SBI068:AMW5D:S160172 and SBI068:AMW5D:S220225 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 54'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.81

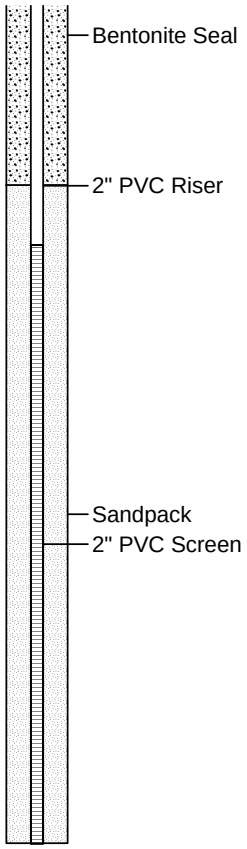
LOG OF BORING AMW-5D

G. Elev. (ft USGS)	: 729.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40	2.0/0.8	SP21/SS21	NA	5-7-7-9	☒		40.0 to 40.8 - SAA
42	2.0/0.7	SP22/SS22	NA	4-6-6-8	☒		42.0 to 42.7 - SAA
44	2.0/0.8	SP23/SS23	NA	4-6-6-8	☒		44.0 to 44.8 - SAA
46	2.0/1.4	SP24/SS24	NA	5-7-8-11	☒		46.0 to 47.4 - SAA
48	2.0/0.4	SP25/SS25	NA	4-4-6-8	☒		48.0 to 48.4 - SAA
50	2.0/0.9	SP26/SS26	NA	5-8-5-9	☒		50.0 to 50.9 - SAA
52	2.0/0.8	SP27/SS27	NA	5-6-5-9	☒		52.0 to 52.8 - SAA
54							End of Boring

Well: AMW-5D
Elev.: 731.60



Remarks:
Soil samples SBI068:AMW5D:S160172 and SBI068:AMW5D:S220225 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.69

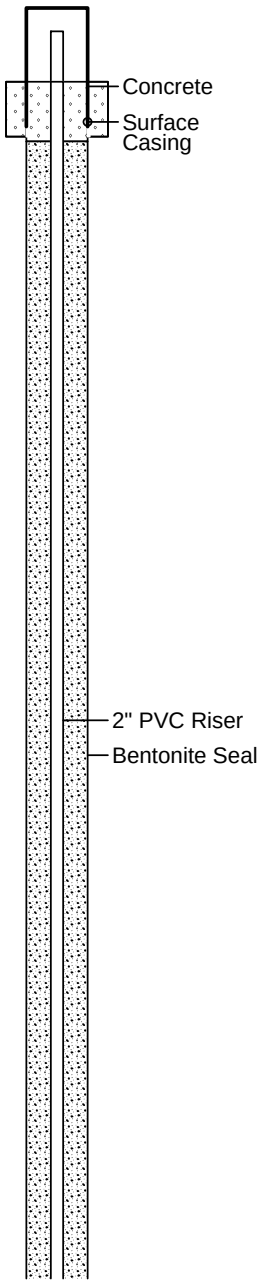
LOG OF BORING AMW-5I

G. Elev. (ft USGS)	: 729.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-5I was blank drilled adjacent to AMW-5D. See log of well AMW-5D for a description of soils. No soil samples from AMW-5I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.69

LOG OF BORING AMW-5I

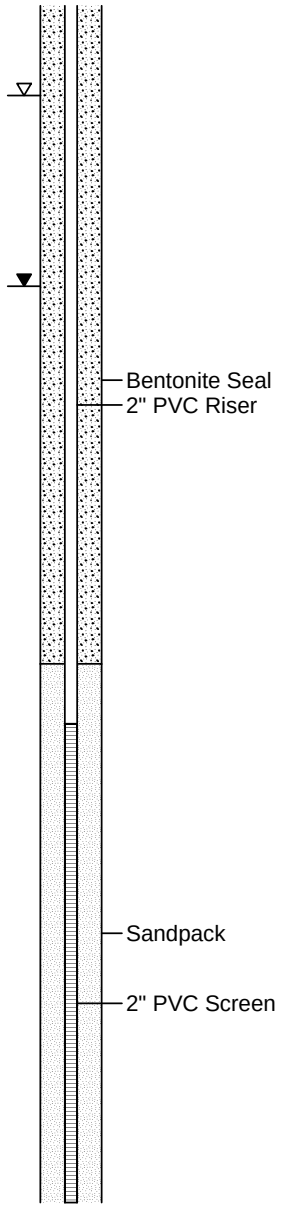
G. Elev. (ft USGS)	: 729.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Well: AMW-5I
Elev.: 731.49

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							



Remarks:
AMW-5I was blank drilled adjacent to AMW-5D. See log of well AMW-5D for a description of soils. No soil samples from AMW-5I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.69

LOG OF BORING AMW-5I

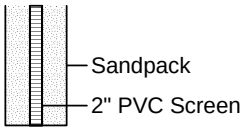
G. Elev. (ft USGS)	: 729.36
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Well: AMW-5I
Elev.: 731.49

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40							
41							
42							End of Boring



43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

Remarks:
AMW-5I was blank drilled adjacent to AMW-5D. See log of well AMW-5D for a description of soils. No soil samples from AMW-5I were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 30'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.88

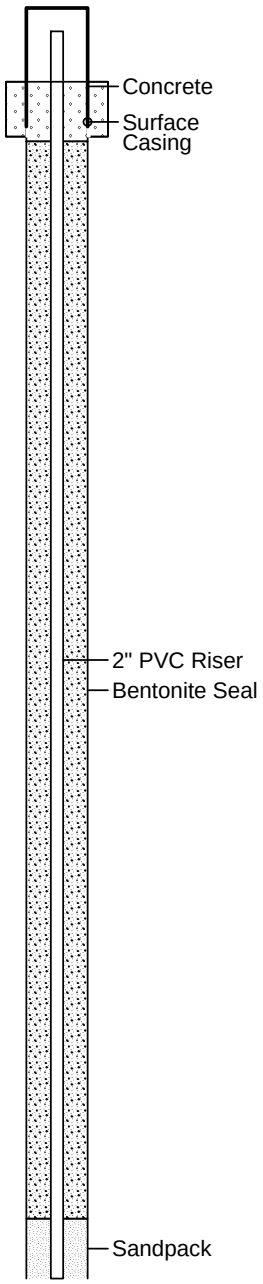
LOG OF BORING AMW-5S

G. Elev. (ft USGS)	: 729.40
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-5S was blank drilled adjacent to AMW-5D. See log of well AMW-5D for a description of soils. No soil samples from AMW-5S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/31/2012
Date Completed	: 5/31/2012
Logged By	: Ryan Sievers
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 30'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.88

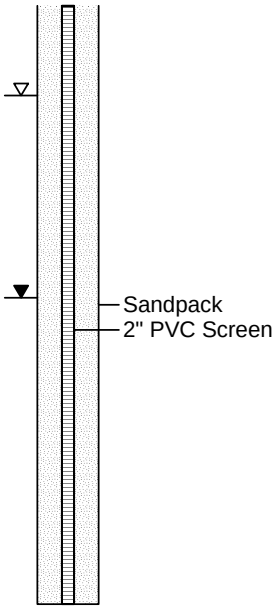
LOG OF BORING AMW-5S

G. Elev. (ft USGS)	: 729.40
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring



Remarks:
AMW-5S was blank drilled adjacent to AMW-5D. See log of well AMW-5D for a description of soils. No soil samples from AMW-5S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/21/2012
Date Completed	: 5/21/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.03

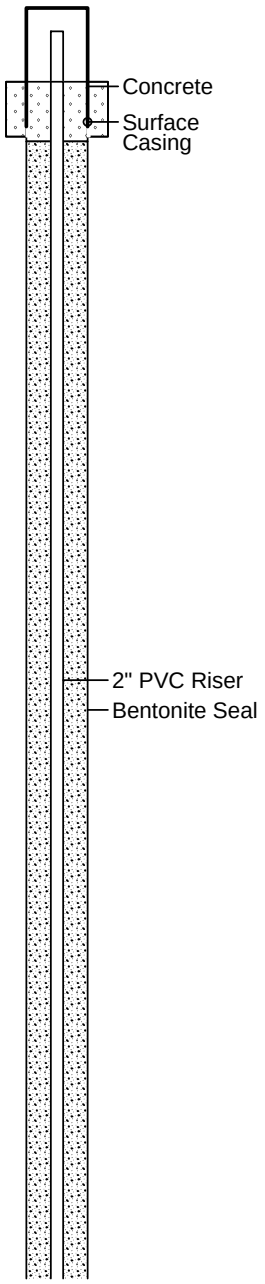
LOG OF BORING AMW-6I

G. Elev. (ft USGS)	: 726.70
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0	2.0/1.5	SP1/SS1	NA	10-10-8-5			0.0 to 1.5 - Loose brown SAND, trace silt, dry
2	2.0/1.0	SP2/SS2	NA	6-6-4-4			2.0 to 3.0 - Loose light brown SAND, trace gravel, dry.
4	2.0/1.3	SP3/SS3	NA	4-4-5-5			4.0 to 5.3 - Same as Above (SAA).
6	2.0/1.0	SP4/SS4	NA	2-3-4-3			6.0 to 7.0 - SAA
8	2.0/0.5	SP5/SS5	NA	1-2-2-4			8.0 to 8.5 - SAA
10	2.0/1.0	SP6/SS6	NA	3-2-2-4			10.0 to 11.0 - SAA
12	2.0/1.3	SP7/SS7	NA	2-3-3-3-4			12.0 to 13.3 - SAA
14	2.0/0.7	SP8/SS8	NA	6-7-9-10			14.0 to 14.7 - Loose light brown SAND & GRAVEL, dry.
16	2.0/1.0	SP9/SS9	NA	6-6-9-8			16.0 to 17.0 - SAA
18	2.0/1.0	SP10/SS10	NA	9-9-10-11			18.0 to 19.0 - SAA
20							

Well: AMW-6I
Elev.: 728.84



Remarks:
Soil samples SBI068:AMW6I:S040053 and SBI068:AMW6I:S200210 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/21/2012
Date Completed	: 5/21/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.03

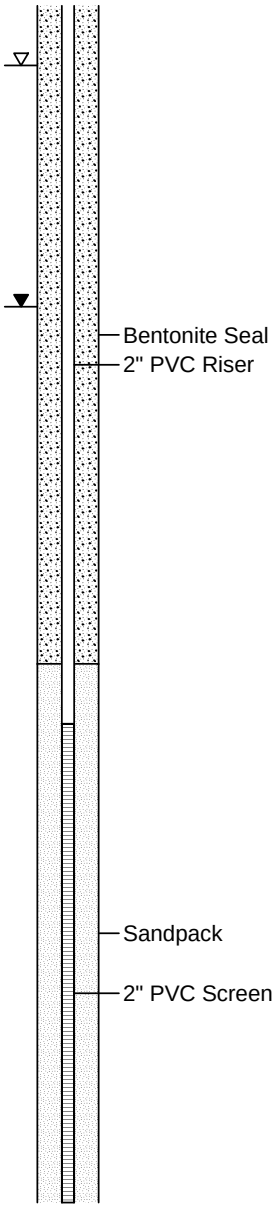
LOG OF BORING AMW-6I

G. Elev. (ft USGS)	: 726.70
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-6I
Elev.: 728.84

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
20	2.0/1.3	SP11/SS11	NA	5-6-8-8	20.0 to 21.3 - SAA, slightly moist.
22	2.0/0.8	SP12/SS12	NA	6-6-8-4	22.0 to 22.8 - SAA, very moist.
24	2.0/1.2	SP13/SS13	NA	4-3-6-6	24.0 to 24.6 - SAA 24.6 to 25.2 - SAA, wet
26	2.0/0.7	SP14/SS14	NA	3-4-6-6	26.0 to 26.7 - SAA
28	2.0/0.7	SP15/SS15	NA	4-4-5-7	28.0 to 28.7 - SAA
30	2.0/1.0	SP16/SS16	NA	4-6-6-7	30.0 to 31.0 - SAA
32	2.0/0.5	SP17/SS17	NA	4-4-4-5	32.0 to 32.5 - SAA
34	2.0/1.0	SP18/SS18	NA	3-3-4-6	34.0 to 35.0
36	2.0/1.3	SP19/SS19	NA	4-4-5-8	36.0 to 37.3 - SAA
38	2.0/1.0	SP20/SS20	NA	4-4-6-8	38.0 to 38.6 - SAA 38.6 to 39.0 - Loose dark gray SAND & GRAVEL, slight odor, wet.
40					



Remarks:
Soil samples SBI068:AMW6I:S040053 and SBI068:AMW6I:S200210 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/21/2012
Date Completed	: 5/21/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.03

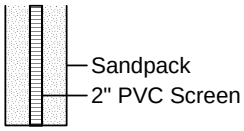
LOG OF BORING AMW-6I

G. Elev. (ft USGS)	: 726.70
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-6I
Elev.: 728.84

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
40	2.0/1.0	SP21/SS21	NA	3-3-4-4	⊠		40.0 to 41.0 - SAA
41							
42							End of Boring
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							



Remarks:
Soil samples SBI068:AMW6I:S040053 and SBI068:AMW6I:S200210 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/21/2012
Date Completed	: 5/21/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 30'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.03

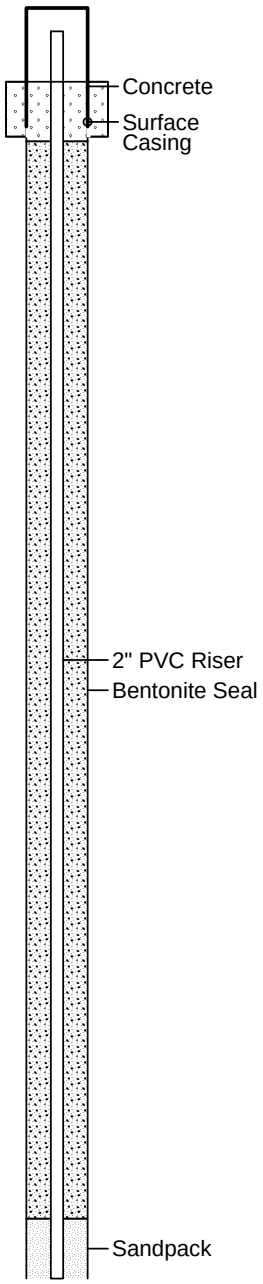
LOG OF BORING AMW-6S

G. Elev. (ft USGS)	: 726.69
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-6S was blank drilled adjacent to AMW-6I. See log of well AMW-6I for a description of soils. No soil samples from AMW-6S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/21/2012
Date Completed	: 5/21/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 30'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.03

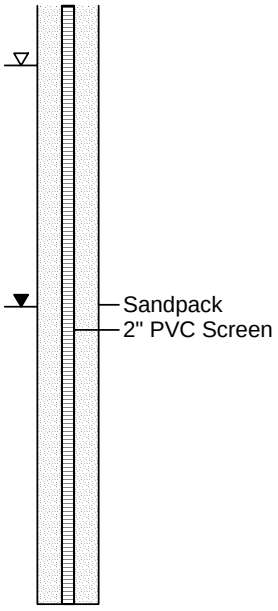
LOG OF BORING AMW-6S

G. Elev. (ft USGS)	: 726.69
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples
- Sample Interval
- Lab Sample

Water Levels
- Static
- During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring



Remarks:
AMW-6S was blank drilled adjacent to AMW-6I. See log of well AMW-6I for a description of soils. No soil samples from AMW-6S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

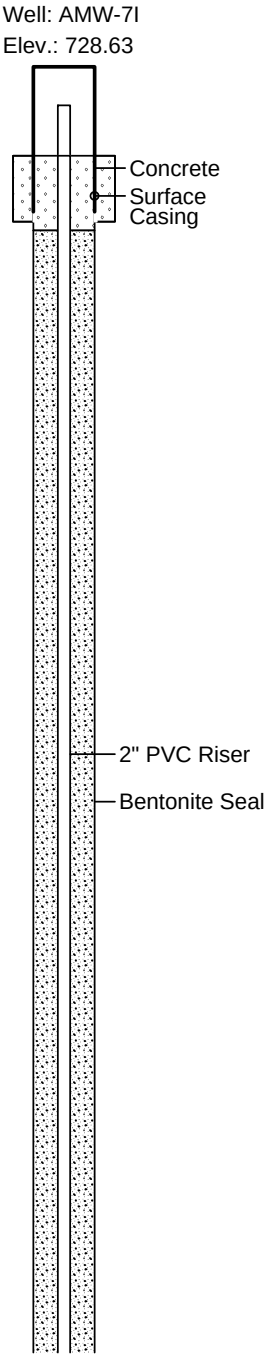
Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.96

LOG OF BORING AMW-7I

G. Elev. (ft USGS)	: 726.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
0	2.0/1.1	SP1/SS1	NA	7-8-10-10	0.0 to 0.3 - Loose dark brown TOPSOIL, dry. 0.3 to 1.1 - Loose dark brown SAND, trace silt, trace gravel, dry.
2	2.0/1.5	SP2/SS2	NA	4-4-6-4	2.0 to 2.3 - Same as Above (SAA). 2.3 to 3.5 - Loose light brown SAND & GRAVEL, dry.
4	2.0/1.5	SP3/SS3	NA	4-5-5-7	4.0 to 5.5 - SAA
6	2.0/1.1	SP4/SS4	NA	3-3-4-4	6.0 to 7.1 - SAA
8	2.0/0.8	SP5/SS5	NA	2-3-3-3	8.0 to 8.8 - SAA
10	2.0/0.8	SP6/SS6	NA	4-4-6-6	10.0 to 10.8 - SAA
12	2.0/1.2	SP7/SS7	NA	4-6-8-11	12.0 to 13.2 - SAA
14	2.0/1.0	SP8/SS8	NA	4-6-7-4	14.0 to 15.0 - SAA
16					



Remarks:
Soil samples SBI068:AMW7I:S040055 and SBI068:AMW7I:S200211 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.96

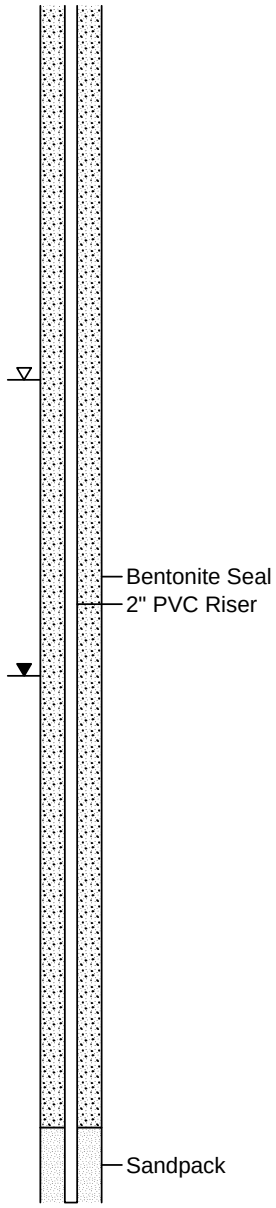
LOG OF BORING AMW-7I

G. Elev. (ft USGS)	: 726.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-7I
Elev.: 728.63

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
16	2.0/1.0	SP9/SS9	NA	7-9-10-14			16.0 to 17.0 - SAA
18	2.0/0.9	SP10/SS10	NA	7-8-10-12			18.0 to 18.9 - SAA
20	2.0/1.1	SP11/SS11	NA	4-6-8-10			20.0 to 21.1 - SAA
22	2.0/1.3	SP12/SS12	NA	6-7-10-12			22.0 to 23.3 - Loose light brown SAND & GRAVEL, very moist.
24	2.0/0.9	SP13/SS13	NA	5-6-6-6			24.0 to 24.9 - Loose brown SAND & GRAVEL, wet.
26	2.0/1.3	SP14/SS14	NA	8-14-8-8			26.0 to 27.3 - SAA
28	2.0/0.9	SP15/SS15	NA	6-6-7-10			28.0 to 28.9 - SAA
30	2.0/0.9	SP16/SS16	NA	5-5-8-8			30.0 to 30.9 - SAA
32							



Remarks:
Soil samples SBI068:AMW7I:S040055 and SBI068:AMW7I:S200211 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 42'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 25.96

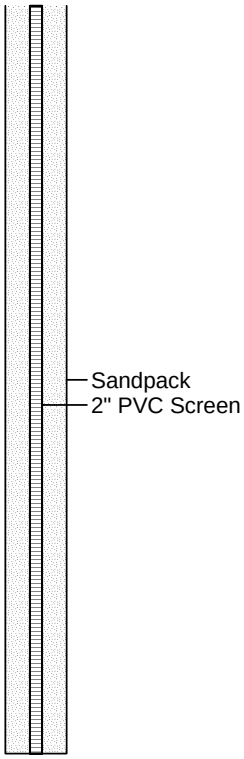
LOG OF BORING AMW-7I

G. Elev. (ft USGS)	: 726.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-7I
Elev.: 728.63

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
32	2.0/1.0	SP17/SS17	NA	4-4-5-6	⊠		32.0 to 33.0 - SAA
34	2.0/0.9	SP18/SS18	NA	5-5-6-7	⊠		34.0 to 34.9 - SAA
36	2.0/1.3	SP19/SS19	NA	5-5-7-9	⊠		36.0 to 37.3 - SAA
38	2.0/0.9	SP20/SS20	NA	5-7-9-13	⊠		38.0 to 38.7 - SAA 38.7 to 38.9 - Loose dark gray SAND & GRAVEL, strong odor, wet.
40	2.0/1.1	SP21/SS21	NA	6-6-6-7	⊠		40.0 to 41.1 - SAA
42							End of Boring



Remarks:
Soil samples SBI068:AMW7I:S040055 and SBI068:AMW7I:S200211 were submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 30'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.20

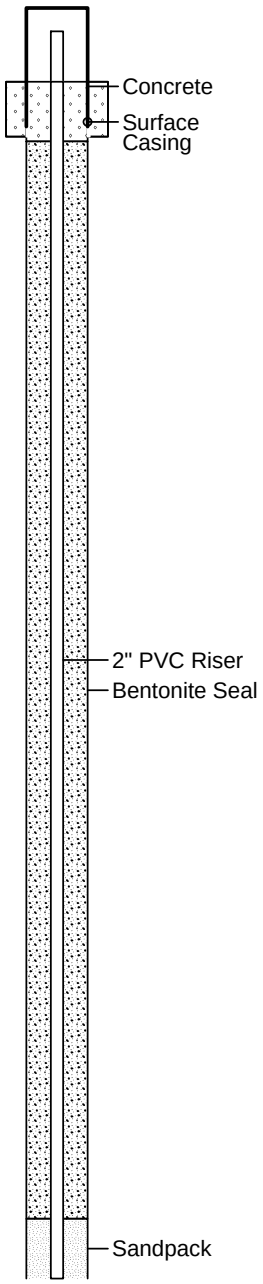
LOG OF BORING AMW-7S

G. Elev. (ft USGS)	: 726.02
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
0 – 20							



Remarks:
AMW-7S was blank drilled adjacent to AMW-7I. See log of well AMW-7I for a description of soils. No soil samples from AMW-7S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068

Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 30'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 26.20

LOG OF BORING AMW-7S

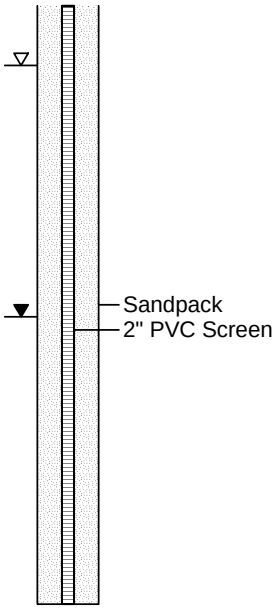
G. Elev. (ft USGS)	: 726.02
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample

Water Levels: Static; During drilling

Well: AMW-7S
Elev.: 728.37

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
20–40							End of Boring



Remarks:
AMW-7S was blank drilled adjacent to AMW-7I. See log of well AMW-7I for a description of soils. No soil samples from AMW-7S were submitted for laboratory analyses.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

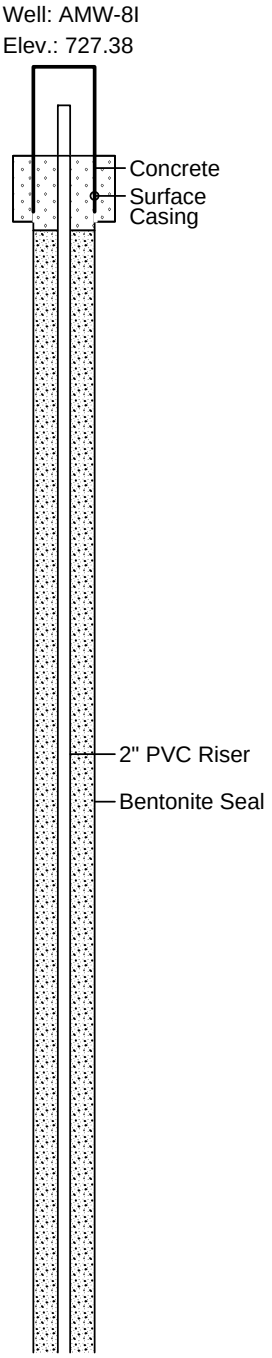
Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 41'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 24.30

LOG OF BORING AMW-8I

G. Elev. (ft USGS)	: 725.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
0	2.0/1.0	SP1/SS1	NA	10-12-15-19	0.0 to 0.2 - Loose brown TOPSOIL, dry. 0.2 to 1.0 - Loose dark brown SAND, trace silt, dry.
2	2.0/1.0	SP2/SS2	NA	5-7-9-13	2.0 to 3.0 - Same as Above (SAA).
4	2.0/0.9	SP3/SS3	NA	11-13-13-15	4.0 to 4.9 - Loose light brown SAND & GRAVEL, dry.
6	2.0/1.3	SP4/SS4	NA	2-5-8-8	6.0 to 7.3 - SAA
8	2.0/1.1	SP5/SS5	NA	5-5-7-9	8.0 to 9.1 - SAA
10	2.0/1.0	SP6/SS6	NA	4-4-3-3	10.0 to 11.0 - SAA
12	2.0/1.2	SP7/SS7	NA	7-7-9-8	12.0 to 13.2 - SAA
14	2.0/1.2	SP8/SS8	NA	6-6-7-6	14.0 to 15.2 - SAA



Remarks:
Soil sample SBI068:AMW8I:S200212 was submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 41'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 24.30

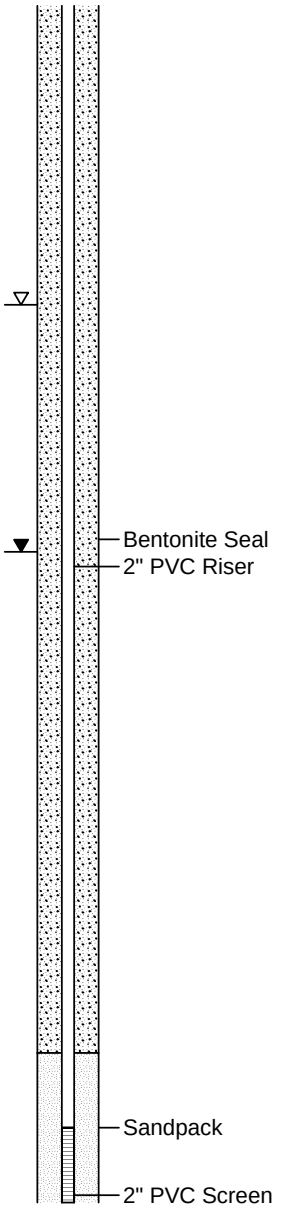
LOG OF BORING AMW-8I

G. Elev. (ft USGS)	: 725.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-8I
Elev.: 727.38

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	DESCRIPTION
16	2.0/0.8	SP9/SS9	NA	6-7-10-14	16.0 to 16.8 - SAA
18	2.0/1.1	SP10/SS10	NA	6-6-7-9	18.0 to 19.1 - SAA
20	2.0/1.2	SP11/SS11	NA	4-5-7-7	20.0 to 20.5 - SAA 20.5 to 21.2 - Loose light brown SAND & GRAVEL, wet.
22	2.0/1.0	SP12/SS12	NA	7-7-7-9	22.0 to 23.0 - SAA
24	2.0/1.3	SP13/SS13	NA	5-5-7-8	24.0 to 25.3 - SAA
26	2.0/0.4	SP14/SS14	NA	4-4-6-6	26.0 to 26.9 - SAA
28	2.0/1.3	SP15/SS15	NA	6-7-5-7	28.0 to 29.3 - SAA
30	2.0/0.9	SP16/SS16	NA	6-6-6-7	30.0 to 30.4 - SAA



Remarks:
Soil sample SBI068:AMW8I:S200212 was submitted to laboratory for analysis.

Hull & associates, inc.

Ignition Park Site
South Bend, Indiana

Project Number: SBI068
Project Manager: Doug Stuart

Date Started	: 5/22/2012
Date Completed	: 5/22/2012
Logged By	: B. Anderson
Reviewed By	: Doug Stuart
Drilling Contractor	: D&T Drilling
Drilling Method	: 4.25" HSA
Sampling Method	: Split Spoon
Total Depth	: 41'
S. Water Level Date	: 6/5/2012
S. Water Level (ft)	: 24.30

LOG OF BORING AMW-8I

G. Elev. (ft USGS)	: 725.08
PID/FID Model	: Mini Rae 3000
PID/FID Calibration	: 0=0.0 / 100ppm=100.1

Soil Samples: Sample Interval; Lab Sample
Water Levels: Static; During drilling

Well: AMW-8I
Elev.: 727.38

Depth in Feet	Sample Interval/ Sample Recovery	Sampler Type/ Sample Number	PID/FID (ppm)	Blow Count (6"-6"-6")	Samples	GRAPHIC	DESCRIPTION
32	2.0/1.0	SP17/SS17	NA	6-9-9-7			32.0 to 33.0 - SAA
34	2.0/0.6	SP18/SS18	NA	4-4-9-7			34.0 to 34.6 - SAA
36	2.0/1.3	SP19/SS19	NA	4-4-6-7			36.0 to 36.8 - SAA
37							36.8 to 37.3 - Loose dark gray SAND & GRAVEL, strong odor, wet.
38	2.0/1.5	SP20/SS20	NA	6-6-6-7			38.0 to 39.5 - SAA
40	2.0/1.0	SP21/SS21	NA	6-5-8-6			40.0 to 41.0 - SAA
41							End of Boring
42							
43							
44							
45							
46							
47							
48							

Sandpack
2" PVC Screen

Remarks:
Soil sample SBI068:AMW8I:S200212 was submitted to laboratory for analysis.