

Appendix D

Soil Boring Logs & Well Records

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota	BORING: ST-1 LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 6/22/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
0.0						
0.5	FILL	3" Bituminous over 3" Aggregate Base.				
1.0	FILL	Silty Clay, with brick fragments, dark brown, moist.				
2.5			5		1.1	
3.0	FILL	Poorly Graded Sand, fine to medium grained, brown to light brown, moist.				
5.0			10		0.3	
END OF BORING. REFUSAL AT 5 FEET.						

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 14:59

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota				BORING: ST-1A			
DRILLER: Scott McLean		METHOD: 3 1/4" HSA Autohammer		DATE: 6/22/04		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes	
0.0		Drilled directly to 7 feet and then started sampling.					
7.0	FILL	Poorly Graded Sand, fine to medium grained, with concrete fragments, brick, brown-gray, moist.	16		0.3		
			100		0.7		
12.0	SP	POORLY GRADED SAND, fine to medium grained, light brown, moist.	5		0.0		
			16		0.0		
			13		0.0		
22.0	SP	POORLY GRADED SAND, fine to medium grained, with Sandstone, brown-orange, moist.					
			45		0.0		
26.0	SP	POORLY GRADED SAND, fine to medium grained, with Granite fragments, brown, moist.					
27.5			100		0.3		
		END OF BORING. REFUSAL AT 27 FEET.					

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00
 (See Descriptive Terminology sheet for explanation of abbreviations)

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota				BORING: ST-2 (cont.) LOCATION: See attached sketch.			
DRILLER: Scott McLean		METHOD: 3 1/4" HSA Autohammer		DATE: 6/22/04		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes	
32.0		LEAN CLAY with SAND, brown-gray, moist. <i>(continued)</i>					
34.0	SC	CLAYEY SAND, fine to medium grained, brown, wet to waterbearing.	13		0.8		
39.0	CL	LEAN CLAY with SAND and GRAVEL, orange-brown, moist.	59		1.3		
40.5		END OF BORING. Installed temporary well in borehole. Groundwater down 33 feet. Collected groundwater sample from temporary well. Boring was then backfilled with bentonite grout.					

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota	BORING: ST-3 LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 6/22/04	SCALE: 1" = 4'
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(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
0.0	FILL	Silty Sand with Silt, fine to medium grained, with organics, black, moist.				
3.0	FILL	Silty Sand, fine to coarse grained, black, moist.	2		0.3	
7.0	FILL	Poorly Graded Sand with Silt, fine grained, light brown, moist.	4		0.3	
	FILL	Poorly Graded Sand with Silt, fine grained, light brown, moist.	7		0.0	
	FILL	Poorly Graded Sand with Silt, fine grained, light brown, moist.	7		0.0	
	FILL	Poorly Graded Sand with Silt, fine grained, light brown, moist.	14		0.3	
	FILL	Poorly Graded Sand with Silt, fine grained, light brown, moist.	15		0.7	
19.0	SP	POORLY GRADED SAND, fine to coarse grained, light brown, moist.	4		0.0	
	SP	POORLY GRADED SAND, fine to coarse grained, light brown, moist.	8		0.3	
31.0	SP	POORLY GRADED SAND, fine to coarse grained, light brown, moist.	21		0.7	

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota			BORING: ST-3 (cont.) LOCATION: See attached sketch.			
DRILLER: Scott McLean		METHOD: 3 1/4" HSA Autohammer		DATE: 6/22/04	SCALE: 1" = 4'	
Depth feet 32.0	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
		POORLY GRADED SAND, fine to coarse grained, with Gravel, brown, moist to waterbearing. <i>(continued)</i>				
			25		0.7	
40.5			42		1.3	
		END OF BORING. Installed temporary well in borehole. Groundwater down 38.2 feet. Collected groundwater sample from temporary well. Boring was then backfilled with bentonite grout.				

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota	BORING: ST-4 LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 6/23/04	SCALE: 1" = 4'
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(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
0.0						
0.5	FILL	3" Bituminous over 3" Aggregate Base.				
	FILL	Silty Sand, fine to medium grained, with a trace of Gravel, black, moist.	3		0.7	
4.5	FILL	Silty Sand, fine grained, brown, moist.	9		0.3	
7.0	SP-SM	POORLY GRADED SAND with SILT, fine grained, light brown, moist.	14		0.0	
			4		0.3	
			6		0.0	
14.5	SP	POORLY GRADED SAND, fine grained, light brown, moist.	7		0.3	
19.5	SP	POORLY GRADED SAND, medium to coarse grained, with a trace of Gravel, brown, moist.	20		0.3	
24.5		No sample recovery.	100			
29.5	SC	CLAYEY SAND, fine to medium grained, brown, moist.	7		1.1	

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota	BORING: ST-4 (cont.) LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 6/23/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
32.0		CLAYEY SAND, fine to medium grained, brown, moist. <i>(continued)</i>				
34.5		No sample recovery.	100			
39.5	CL	LEAN CLAY with SAND and GRAVEL, gray, moist.	100		0.9	
44.5	SP	POORLY GRADED SAND, medium to coarse grained, with Gravel, orange -brown, waterbearing.	30		0.9	
45.5		END OF BORING. Installed temporary well in borehole. Groundwater down 31.3 feet. Collected groundwater sample from temporary well. Boring was then backfilled with bentonite grout.				

(See Descriptive Terminology sheet for explanation of abbreviations)

 BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota				BORING: ST-5 LOCATION: See attached sketch.			
DRILLER: Scott McLean		METHOD: 3 1/4" HSA Autohammer		DATE: 6/23/04		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes	
0.0	SC-SM	Silty Clayey Sand, fine to medium grained, dark brown-black, moist.					
9.0	SP-SM	POORLY GRADED SAND with SILT, fine grained, light brown, moist.					
19.0	SP	POORLY GRADED SAND, fine to coarse grained, light brown, moist.					
24.0	SP	POORLY GRADED SAND, fine to medium grained, brown, moist.					

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota				BORING: ST-5 (cont.)			
DRILLER: Scott McLean		METHOD: 3 1/4" HSA Autohammer		DATE: 6/23/04		SCALE: 1" = 4'	
Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes	
32.0		POORLY GRADED SAND, fine to medium grained, brown, moist. (continued)					
34.0	SC	CLAYEY SAND, fine to medium grained, brown-gray, moist.	18		19.5		
39.0	CL	LEAN CLAY, with Gravel, brown-gray, moist.	100		1.3		
44.0	CLS	SANDY LEAN CLAY, with Gravel, brown-gray, moist.	49		0.3		
49.0	SC	CLAYEY SAND, fine to medium grained, gray, wet.					
49.5	CLS	SANDY LEAN CLAY, with Gravel, brown, moist.	59		0.0		
54.0	SC-SM	SILTY CLAYEY SAND, fine to medium grained, brown, waterbearing.	17		1.3		
55.5		END OF BORING. Installed temporary well in borehole. Groundwater down 39.7 feet. Collected groundwater sample from temporary well. Boring was then backfilled with bentonite grout.					

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

Appendix E

Water Supply Well Logs

Unique No. 00201086	MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING RECORD <i>Minnesota Statutes Chapter 1031</i>	Update Date 1991/09/11
County Name Hennepin		Entry Date 1991/08/24
Township Name Township Range Dir Section Subsection 29 24 W 36 CAACDD	Well Depth 700 ft. Depth Completed 700 ft. Date Well Completed 1905/00/00	
Well Name C.M. ST. P. AND P. RR CO	Drilling Method	
Contact's Name C.M. ST. P. AND P. RR CO 650 MINNEAPOLIS MN	Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From ft. to ft.
	Use Industrial	
	Casing Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> N	Hole Diameter
GEOLOGICAL MATERIAL COLOR HARDNESS FROM TO	Casing Diameter Weight(lbs/ft)	
SOIL AND SURFACE MATE 56	0 in. to 20 ft	
TRENTON LIMESTONE 56 84	0 in. to 50 ft	
ST. PETER SANDSTONE 84 250	0 in. to 234 ft	
SHAKOPEE DOLOMITE 250 260		
NEW RICHMOND SANDSTO 260 267	Screen	Open Hole From ft. to ft.
ONEOTA DOLOMITE 267 390	Make	Type
JORDAN SANDSTONE 390 478		
ST. LAWRENCE SANDSTON 478 655	Static Water Level ft. from	Date
FRANCONIA SANDSTONE 655 700		
	PUMPING LEVEL (below land surface)	
	ft. after hrs. pumping g.p.m.	
	Well Head Completion	
	Pitless adapter mfr Model	
	Casing Protection <input type="checkbox"/> 12 in. above grade	
	<input type="checkbox"/> At-grade(Environmental Wells and Borings ONLY)	
	Grouting Information Well grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Nearest Known Source of Contamination	
	ft. direction type	
	Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Pump <input type="checkbox"/> Not Installed Date Installed	
	Mfr name	
	Model HP 0 Volts	
	Drop Pipe Length ft. Capacity g.p.m	
	Type	
	Any not in use and not sealed well(s) on property? <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Was a variance granted from the MDH for this Well? <input type="checkbox"/> Yes <input type="checkbox"/> No	
USGS Quad: St Paul West Elevation 845	Well CONTRACTOR CERTIFICATION Lic. Or Reg. No.	
Aquifer: MTPL Alt Id:	License Business Name	
	Name of Driller	

Report Copy

Unique No. 00201087	MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING RECORD <i>Minnesota Statutes Chapter 1031</i>	Update Date 1991/09/11
County Name Hennepin		Entry Date 1991/08/24
Township Name Township Range Dir Section Subsection 29 24 W 36 CABACD	Well Depth 995 ft. Depth Completed 995 ft. Date Well Completed 1917/00/00	
Well Name CM. ST. P AND P. RR CO.	Drilling Method	
Contact's Name CM. ST. P AND P. RR CO. 200 MINNEAPOLIS MN	Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From ft. to ft.
	Use Industrial	
	Casing Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> N	Hole Diameter
GEOLOGICAL MATERIAL COLOR HARDNESS FROM TO	Casing Diameter Weight(lbs/ft)	
SAND AND GRAVEL 16	20 in. to 54 ft	
HARDPAN AND BOULDERS 16 55	12 in. to 243 ft	
LIMESTONE 55 96	6 in. to 512 ft	
SHALE AND SANDSTONE 96 104		
SANDSTONE 104 210	Screen Open Hole From ft. to ft.	
SHALE 210 225	Make Type	
SHALE AND SANDSTONE 225 255		
HARDROCK 255 295	Static Water Level 55 ft. from Land surface Date 1917/00/00	
SANDSTONE 295 300	PUMPING LEVEL (below land surface)	
HARDROCK 300 370	ft. after hrs. pumping g.p.m.	
SANDSTONE SOFT 370 426	Well Head Completion	
WHITE SHALE AND SANDS 426 450	Pitless adapter mfr Model	
COARSE SANDSTONE 450 460	Casing Protection <input type="checkbox"/> 12 in. above grade	
SHALE AND SAND 460 500	<input type="checkbox"/> At-grade(Environmental Wells and Borings ONLY)	
SHALE 500 645	Grouting Information Well grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No	
SANDSTONE 645 715		
SHALE 715 805	Nearest Known Source of Contamination	
SANDSTONE 805 844	ft. direction type	
SHALE AND SANDSTONE 844 865	Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No	
SANDSTONE 865 920	Pump <input type="checkbox"/> Not Installed Date Installed	
SANDSTONE RED/Y 920 955	Mfr name	
SANDSTONE RED 955 975	Model HP 0 Volts	
SANDSTONE YELLO 975 985	Drop Pipe Length ft. Capacity g.p.m.	
SANDSTONE RED 985 990	Type	
SANDSTONE YELLO 990 995	Any not in use and not sealed well(s) on property? <input type="checkbox"/> Yes <input type="checkbox"/> No	
REMARKS, ELEVATION, SOURCE OF DATA, etc.	Was a variance granted from the MDH for this Well? <input type="checkbox"/> Yes <input type="checkbox"/> No	
CASING: 020 TO 0054;012 TO 0243;006 TO 0512.	Well CONTRACTOR CERTIFICATION Lic. Or Reg. No.	
USGS Quad: St Paul West Elevation 845	License Business Name	
Aquifer: MTPAL Alt Id:	Name of Driller	

Report Copy

Unique No. 00201088

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD

Update Date 1991/09/11

County Name Hennepin

Minnesota Statutes Chapter 1031

Entry Date 1991/08/24

Township Name Township Range Dir Section Subsection
29 24 W 36 DCCBAC

Well Depth Depth Completed Date Well Completed
427 ft. 427 ft. 1949/01/31

Well Name MPLS MOLINE

Drilling Method

Contact's Name MPLS MOLINE
LAKEST & HIAWATHA LM
MINNEAPOLIS MN

Drilling Fluid Well Hydrofractured? Yes No
From ft. to ft.

Use Industrial

Casing Drive Shoe? Yes N Hole Diameter

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT SAND AND ROCKS				48
PLATTEVILLE LIME			48	81
ST. PETER SAND			81	248
SHAKOPEE LIME			248	365
JORDAN SAND			365	425
ST. LAWRENCE			425	427

Casing Diameter Weight(lbs/ft)
16 in. to 51 ft
12 in. to 256 ft

Screen Open Hole From ft. to ft.
Make Type

Static Water Level ft. from Date

PUMPING LEVEL (below land surface)
ft. after hrs. pumping g.p.m.

Well Head Completion
Pitless adapter mfr Model
Casing Protection 12 in. above grade
 At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? Yes No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? Yes No

Pump Not Installed Date Installed
Mfr name
Model HP Volts
Drop Pipe Length ft. Capacity g.p.m.
Type

REMARKS, ELEVATION, SOURCE OF DATA, etc.

CASING: 016 TO 0051;012 TO 0256.

Any not in use and not sealed well(s) on property? Yes No

Was a variance granted from the MDH for this Well? Yes No

USGS Quad: St Paul West Elevation 840
Aquifer: MTPL Alt Id:

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No. 27010
License Business Name
Name of Driller

Report Copy

INTERTEC

Braun Project BL-04-04733 Hi-Lake Shopping Center 21st Avenue and East Lake Street Minneapolis, Minnesota	BORING: ST-5
	LOCATION: See attached sketch.

DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 6/23/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
0.0	SC-SM	Silty Clayey Sand, fine to medium grained, dark brown-black, moist.				
			3		25.3	
			9		3.7	
			11		29.7	
9.0	SP-SM	POORLY GRADED SAND with SILT, fine grained, light brown, moist.				
			13		0.9	
			18		0.7	
			16		1.0	
19.0	SP	POORLY GRADED SAND, fine to coarse grained, light brown, moist.				
			20		1.8	
24.0	SP	POORLY GRADED SAND, fine to medium grained, brown, moist.				
			8		1.3	
			18		0.8	

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

INTERTEC

Braun Project BL-04-04733
Hi-Lake Shopping Center
21st Avenue and East Lake Street
Minneapolis, Minnesota

BORING: ST-5 (cont.)

LOCATION: See attached sketch.

DRILLER: Scott McLean

METHOD: 3 1/4" HSA Autohammer

DATE: 6/23/04

SCALE: 1" = 4'

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG BL-04-04733.GPJ BRAUN.GDT 6/29/04 15:00

Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	PID ppm	Tests or Notes
32.0		POORLY GRADED SAND, fine to medium grained, brown, moist. <i>(continued)</i>				
34.0	SC	CLAYEY SAND, fine to medium grained, brown-gray, moist.	18		19.5	
39.0	CL	LEAN CLAY, with Gravel, brown-gray, moist.	100		1.3	
44.0	CLS	SANDY LEAN CLAY, with Gravel, brown-gray, moist.	49		0.3	
49.0	SC	CLAYEY SAND, fine to medium grained, gray, wet.				
49.5	CLS	SANDY LEAN CLAY, with Gravel, brown, moist.	59		0.0	
54.0	SC-SM	SILTY CLAYEY SAND, fine to medium grained, brown, waterbearing.	17		1.3	
55.5		END OF BORING. Installed temporary well in borehole. Groundwater down 39.7 feet. Collected groundwater sample from temporary well. Boring was then backfilled with bentonite grout.				

Braun Project BL-04-03622 GEOTECHNICAL EVALUATION Hi-Lake Shopping Center Redevelopment Hiawatha and Lake Street Minneapolis, Minnesota	BORING: ST-K LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 5/12/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
0.0					
1.0	FILL	FILL: 4 inches of Bituminous over 7 inches of Aggregate Base.			
6.0	FILL	FILL: Silty Sand, fine- to medium-grained, with a layer of Clayey Sand, dark brown, moist.	7		
6.0	SP	POORLY GRADED SAND, fine-grained, brown, moist, loose to medium dense. (Alluvium)	8		
24.0	SP	POORLY GRADED SAND, fine- to medium-grained, with a trace of Gravel, brown, moist, medium dense. (Alluvium)	14		
29.0	SP-SM	POORLY GRADED SAND with SILT, fine-grained, reddish-brown, waterbearing, medium dense. (Alluvium)	29	▽	

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG 0403622.GPJ BRAUN.GDT 7/20/04 09:48

Braun Project BL-04-03622 GEOTECHNICAL EVALUATION Hi-Lake Shopping Center Redevelopment Hiawatha and Lake Street Minneapolis, Minnesota	BORING: ST-K (cont.) LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 5/12/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
32.0					
34.0		POORLY GRADED SAND with SILT, fine-grained, reddish-brown, waterbearing, medium dense. (Alluvium) <i>(continued)</i>			
	SP-SM	POORLY GRADED SAND with SILT, fine- to coarse-grained, with Gravel and cobbles, brown, wet, very dense. (Glacial Outwash)	51		
			64		
44.0	CL	SANDY LEAN CLAY, with a trace of Gravel, dark gray, moist, very stiff. (Glacial Till)	29		
49.0	SHALE	WEATHERED SHALE, gray, moist, hard.	59		
54.1		END OF BORING. Spoon refusal on bedrock at 54.1 feet. Water observed at 29 feet with 30 feet of hollow-stem auger in the ground. Boring immediately backfilled with bentonite grout.	100-1/2"		

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG 0403622.GPJ BRAUN.GDT 7/20/04 09:48

Braun Project BL-04-03622 GEOTECHNICAL EVALUATION Hi-Lake Shopping Center Redevelopment Hiawatha and Lake Street Minneapolis, Minnesota	BORING: ST-N LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 5/12/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
0.0					
0.7	FILL	FILL: 4 inches of Bituminous over 4 inches of Aggregate Base.			
1.0	FILL	FILL: Silty Sand, fine- to medium-grained, with Gravel, with a layer of Clayey Sand, black, moist.			
	FILL	FILL: Silty Sand, fine-grained, dark brown, moist.	4		
			7		
			7		
9.0	SP	POORLY GRADED SAND, fine- to medium-grained, brown, moist, medium dense. (Alluvium)	10		
			18		
			9		
19.0	SP	POORLY GRADED SAND, fine- to coarse-grained, with a trace of Gravel, brown, moist, medium dense. (Alluvium)	24		
24.0	SM	SILTY SAND, fine-grained, brown, moist, medium dense. (Alluvium)	19		
29.0	SP	POORLY GRADED SAND, fine-grained, reddish-brown, waterbearing, medium dense. (Alluvium)	16	▽	

(See Descriptive Terminology sheet for explanation of abbreviations)

BRAUN BASIC LOG 0403622.GPJ BRAUN.GDT 7/20/04 09:48

Braun Project BL-04-03622 GEOTECHNICAL EVALUATION Hi-Lake Shopping Center Redevelopment Hiawatha and Lake Street Minneapolis, Minnesota	BORING: ST-N (cont.) LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 5/12/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
32.0					
34.0		POORLY GRADED SAND, fine-grained, reddish-brown, waterbearing, medium dense. (Alluvium) (continued)			
39.0	SM	SILTY SAND, with Gravel and cobbles, reddish-brown, moist, dense. (Glacial Till)	34		
40.0	CL	SANDY LEAN CLAY, with a trace of Gravel, olive, wet, hard. (Glacial Till)	100/8"		
49.0	SP	POORLY GRADED SAND, fine- to coarse-grained, with Gravel and cobbles, grayish-brown, waterbearing, very dense. (Glacial Outwash)	100/7"		
50.5	CL	SANDY LEAN CLAY, with a trace of Gravel, dark gray, wet, hard. (Glacial Till)	68		
		END OF BORING. Water observed at 29 feet with 50 feet of hollow-stem auger in the ground. Boring immediately backfilled with bentonite grout.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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Braun Project BL-04-03622 GEOTECHNICAL EVALUATION Hi-Lake Shopping Center Redevelopment Hiawatha and Lake Street Minneapolis, Minnesota	BORING: ST-P
	LOCATION: See attached sketch.

DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 5/12/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
0.0	FILL	FILL: Silty Sand, fine- to medium-grained, with a trace of Gravel, black, moist.			
4.0	SP-SM	POORLY GRADED SAND with SILT, fine- to medium-grained, with a trace of Gravel, brown, moist. (Possible Fill)	4		
7.0	SP	POORLY GRADED SAND, fine-grained, brown, moist, loose to medium dense. (Alluvium)	6		
12.0			7		
19.0			12		
			11		
			6		
	SM	SILTY SAND, fine- to medium-grained, with Gravel, reddish-brown, moist, very dense. (Glacial Till)	79		
				▽	
			100/5"		
			58		

(See Descriptive Terminology sheet for explanation of abbreviations)

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INTERTEC

Braun Project BL-04-03622 GEOTECHNICAL EVALUATION Hi-Lake Shopping Center Redevelopment Hiawatha and Lake Street Minneapolis, Minnesota	BORING: ST-P (cont.) LOCATION: See attached sketch.
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DRILLER: Scott McLean	METHOD: 3 1/4" HSA Autohammer	DATE: 5/12/04	SCALE: 1" = 4'
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Depth feet	ASTM Symbol	Description of Materials (ASTM D2488 or D2487)	BPF	WL	Tests or Notes
32.0					
34.0		SILTY SAND, fine- to medium-grained, with Gravel, reddish-brown, moist, very dense. (Glacial Till) <i>(continued)</i>			
39.0	CL	SANDY LEAN CLAY, wet, gray, hard. (Glacial Till)	36		
44.0	SP	POORLY GRADED SAND, fine- to coarse-grained, with Gravel, grayish-brown, waterbearing, very dense. (Glacial Outwash)	58		
50.5	CL	SANDY LEAN CLAY, with a trace of Gravel, gray, moist to wet, very stiff. (Glacial Till)	26		
		END OF BORING. Water observed at 23 feet with 50 feet of hollow-stem auger in the ground. Boring immediately backfilled with bentonite grout.	30		

(See Descriptive Terminology sheet for explanation of abbreviations)

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