



October 7, 2007

Mr. Tim Austin, P.E.
Poe & Associates
5940 E. Central, Suite 200
Wichita, Kansas 067208

SUBJECT: Geotechnical Drilling Services
Pearson Ponds
Wichita, Kansas
GSI Job No. 077281

Dear Mr. Austin:

At your request, GSI has performed a soil and ground water investigation for a proposed wet detention urban fishery and a dry detention pond. The investigation included the advancement of three borings to a depth of 20 feet, visual classification of the soil types encountered in the borings, the installation of temporary piezometers in each boring, and performing ground water measurements.

The project site is located near the southeast corner of 29th Street North intersecting North Maize Road in Wichita, Kansas. A General Vicinity Map and Boring Location Plan are included for reference.

The drilling was performed on September 26, 2007, with subsequent ground water levels and borehole plugging performed on October 5, 2007. The three borings were advanced using a CME 55 truck mounted drill rig with 6.0-inch diameter continuous flight augers. Soil samples were collected from the auger cuttings at changes in soil type. The soil samples were transported to GSI's laboratory for visual classification in accordance with ASTM D 2488.

Temporary piezometers were installed in each of the boreholes to facilitate future ground water measurements. The piezometers were constructed of one inch diameter PVC pipe with 10 feet of 0.010 slot screen threaded to riser pipe.

Groundwater measurements were taken from the piezometers at the end of drilling and nine days following drilling. After the nine day water level measurements were performed the piezometers were removed and the boreholes plugged with bentonite in accordance with Kansas State law. The following table summarizes the groundwater measurements noted in feet below grade.



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Table 1: Ground Water Depth Measurements

Borehole No.	Groundwater Depth (end of drilling) (ft)	Groundwater Depth (9 days after drilling) (ft)
BH-1	17.2	Dry
BH-2	Dry	Dry
BH-3	Dry	Dry

The field boring logs were reviewed to outline the depth, thickness, and extent of soil strata. The enclosed typed boring logs represent our interpretation of the field logs and reflects additional information obtained from the laboratory soil classification. A summary of the Unified Soil Classification System (USCS) is also included for reference.

The subsurface soil conditions generally consisted of lean clay to sandy lean clay (USCS symbol CL), fat clay to sandy fat clay (CH), clayey sand (SC), and poorly graded sand (SP). A graphical representation of the subsurface conditions is shown on the attached boring logs.

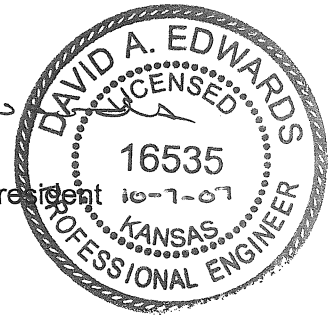
During drilling, ground water was only encountered in boring BH-1. The piezometers were installed and the water level was allowed to stabilize for a period of nine days. After nine days none of the three borings contained ground water.

We appreciate this opportunity to be of service in the drilling phase of this project and are prepared to assist you as the project progresses. Please contact us if you have any questions concerning this report or if we may be of assistance.

Respectfully submitted,
Geotechnical Services, Inc.

Ky Louanghaksaphone, E.I.
Staff Engineer

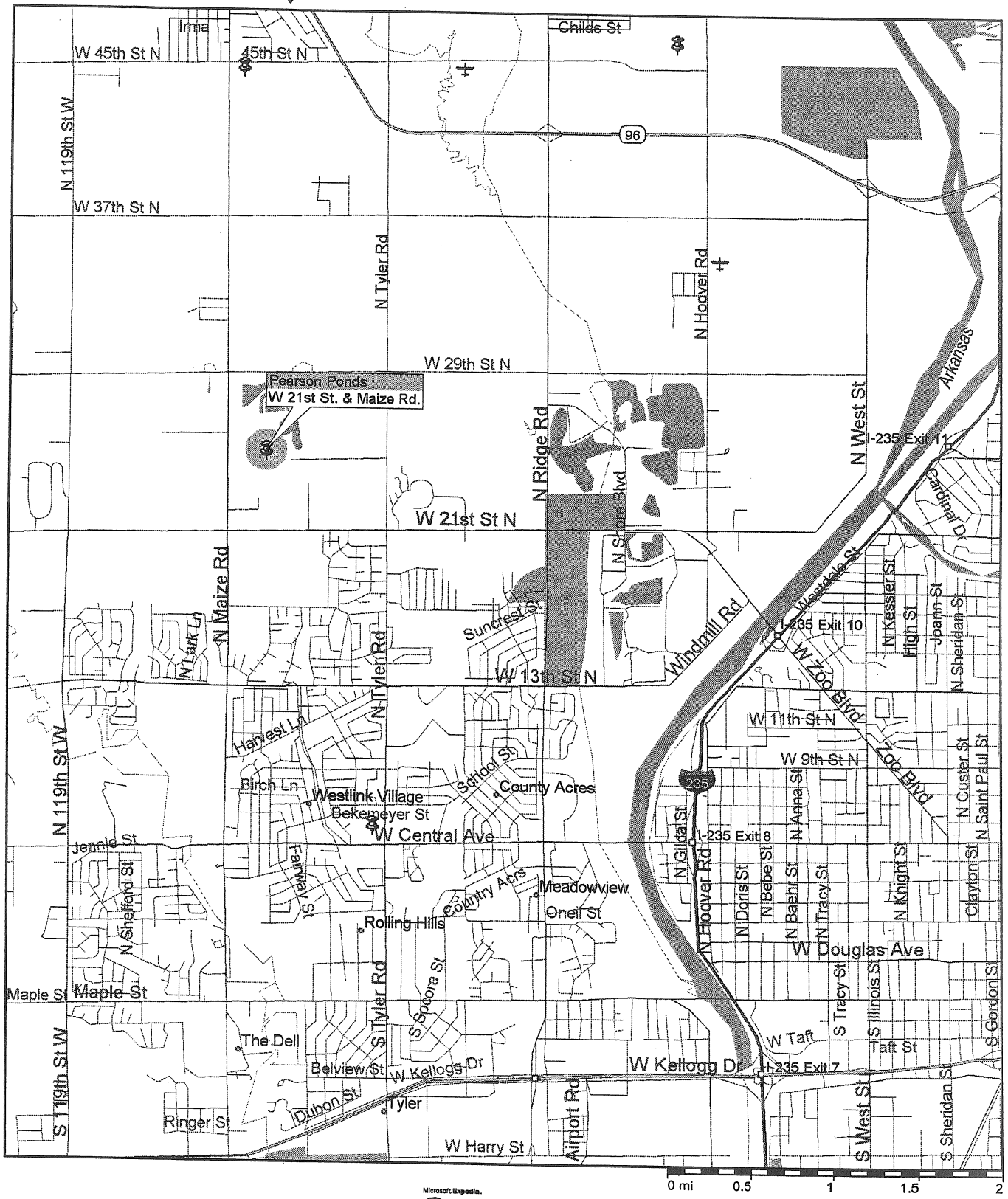
David A. Edwards, P.E.
Principal Engineer/ Vice President



KL/DAE

Enclosures: General Vicinity Map
Boring Location Plan
Boring Logs
Key to Symbols
Unified Soil Classification System

General Vicinity Map Pearson Ponds



Microsoft Expedia
Streets98

BORING LOG No. BH-1

BORING NO.		LOCATION OF BORING		ELEVATION	DATUM	DRILLER	LOGGER			
BH-1		Northern Area of Dry Detention				M. Benda	F. Ibarra			
WATER LEVEL OBSERVATIONS					TYPE OF SURFACE		DRILL RIG			
WHILE DRILLING	END OF DRILLING	9 DAYS AFTER DRILLING			Grass		CME-55			
None	17.2	None			6" Continuous Flight Augers		20			
DEP. FT.	SAMPLE DATA			SOIL DESCRIPTION			LABORATORY DATA			ELEV. FT.
	SAMPLE NO. & TYPE	"N" BLOWS (FT)	% REC.	COLOR, CONSISTENCY, MOISTURE GEOLOGIC DESCRIPTION & OTHER REMARKS	USCS CLASS.	% MC	DRY UNIT WEIGHT pcf	Qu tsf		
5	A-1			TOPSOIL- 6 inches thick FAT CLAY- very dark brown, slightly moist	CH					
10	A-2			- dark gray brown, moist, with iron stains - gray brown	CH					
15	A-3									
15	A-4			SANDY LEAN CLAY- gray brown to dark brown, slightly moist	CL					
20	A-5			SAND- poorly graded, with clay, brown, moist	SP					
20				Bottom of Boring @ 20'						
25										
30										
35										

BORING LOG No. BH-2

BORING NO.		LOCATION OF BORING		ELEVATION	DATUM	DRILLER	LOGGER			
BH-2		Southern Portion of Dry Detention				M. Benda	F. Ibarra			
WATER LEVEL OBSERVATIONS					TYPE OF SURFACE		DRILL RIG			
WHILE DRILLING	END OF DRILLING	9 DAYS AFTER DRILLING			Grass		CME-55			
None	None	None			6" Continuous Flight Augers		20			
DEP. FT.	SAMPLE DATA			SOIL DESCRIPTION			LABORATORY DATA			ELEV. FT.
	SAMPLE NO. & TYPE	"N" BLOWS (FT)	% REC.	COLOR, CONSISTENCY, MOISTURE GEOLOGIC DESCRIPTION & OTHER REMARKS	USCS CLASS.	% MC	DRY UNIT WEIGHT pcf	Qu tsf		
	A-1			TOPSOIL- 6 inches thick FAT CLAY- very dark brown, slightly moist	0.5'					
5	A-2			- dark gray brown, slightly moist, with iron stains		CH				
10	A-3			FAT CLAY- with sand, brown, slightly moist	8.0'	CH				
15	A-4			SANDY FAT CLAY- brown, slightly moist	12.0'	CH				
20				Bottom of Boring @ 20'	20.0'					
				No Free Water Encountered						
25										
30										
35										

BORING LOG No. BH-3

BORING NO.		LOCATION OF BORING		ELEVATION	DATUM	DRILLER	LOGGER		
BH-3		Wet Detention Urban Fishery				M. Benda	F. Ibarra		
WATER LEVEL OBSERVATIONS					TYPE OF SURFACE		DRILL RIG		
WHILE DRILLING	END OF DRILLING	9 DAYS AFTER DRILLING			Grass		CME-55		
None	None	None			6" Continuous Flight Augers		20		
DEP. FT.	SAMPLE DATA			SOIL DESCRIPTION			LABORATORY DATA		
	SAMPLE NO. & TYPE	"N" BLOWS (FT)	% REC.	COLOR, CONSISTENCY, MOISTURE GEOLOGIC DESCRIPTION & OTHER REMARKS	USCS CLASS.	% MC	DRY UNIT WEIGHT pcf	Qu tsf	ELEV. FT.
5	A-1			TOPSOIL- 6 inches thick FAT CLAY- dark gray brown, slightly moist	CH				
10	A-2			LEAN CLAY- brown, slightly moist, with iron stains	CL				
15	A-3			FAT CLAY- brown, slightly moist	CH				
	A-4			CLAYEY SAND- brown, slightly moist	SC				
20	A-5			SAND- poorly graded, brown, slightly moist	SP				
25				Bottom of Boring @ 20'					
30				No Free Water Encountered					
35									

KEY TO SYMBOLS

Symbol Description

Strata symbols



Topsoil



High plasticity
clay



Low to moderate plasticity
clay



Poorly graded sand



Clayey sand

Misc. Symbols



Water table at
boring completion

Notes:

1. Exploratory borings were drilled on 09/26/07 using 6-inch diameter continuous flight augers.
2. These logs are subject to the limitations, conclusions, and recommendations in this report.
3. Results of tests conducted on samples recovered are reported on the logs.

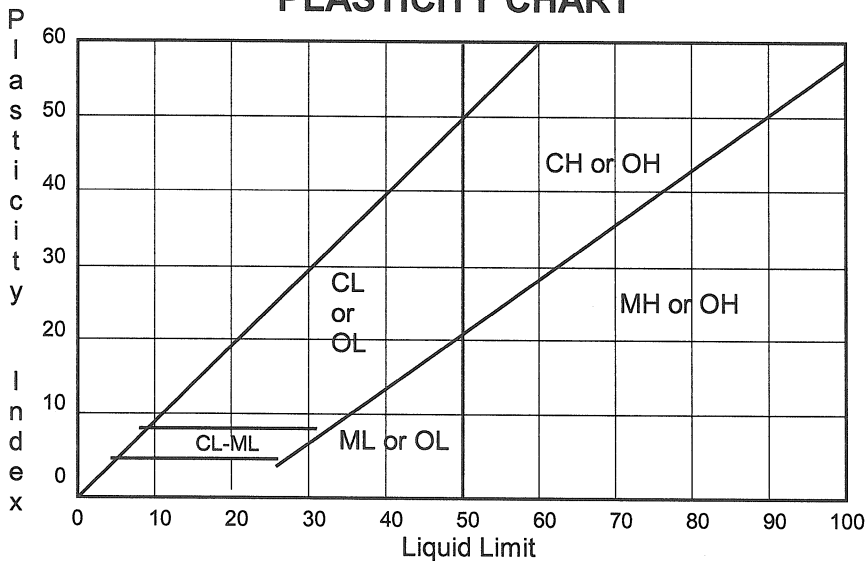
UNIFIED SOIL CLASSIFICATION SYSTEM

GROUP NAME	GROUP SYMBOL	SOIL DESCRIPTION	COMMENTS
Peat	Pt	Highly organic soils	50% or more is smaller than No. 200 sieve
Fat Clay	CH	Clay - Liquid limit => 50 *	
Elastic Silt	MH	Silt - Liquid limit => 50 *	
Lean Clay	CL	Clay - Liquid limit < 50 *	
Silt	ML	Silt - Liquid limit < 50 *	
Silty Clay	CL-ML	Silty Clay *	
Clayey Sand	SC	Sands with 12 to 50 percent smaller than No. 200 sieve *	More than 50% is larger than No. 200 sieve and % sand > % gravel
Silty Sand	SM		
Poorly-graded Sand with Clay	SP-SC	Sands with 5 to 12 percent smaller than No. 200 sieve *	
Poorly-graded Sand with Silt	SP-SM		
Well-graded Sand with Clay **	SW-SC		
Well-graded Sand with Silt **	SW-SM		
Poorly-graded Sand	SP	Sands with less than 5 percent smaller than No. 200 sieve	
Well-graded Sand **	SW		
Clayey Gravel	GC	Gravels with 12 to 50 percent smaller than No. 200 sieve *	More than 50% is larger than No. 200 sieve and % gravel > % sand
Silty Gravel	GM		
Poorly-graded Gravel with Clay	GP-GC	Gravels with 5 to 12 percent smaller than No. 200 sieve *	
Poorly-graded Gravel with Silt	GP-GM		
Well-graded Gravel with Clay **	GW-GC		
Well-graded Gravel with Silt **	GW-GM		
Poorly Graded Gravel	GP	Gravels with less than 5 percent smaller than No. 200 sieve	
Well-graded Gravel **	GW		

* See Plasticity Chart for definition of silts and clays. If organic use OL or OH.

** See definition for well graded.

PLASTICITY CHART



LEGEND OF TERMS

MOISTURE CONDITIONS Dry, Slightly Moist, Moist, Very Moist, Wet (Saturated)
SOIL CONSISTENCY <u>Fine Grained Soils</u> Very Soft, Soft, Firm, Hard, Very Hard <u>Coarse Grained Soils</u> Very Loose, Loose, Medium Dense, Dense, Very Dense

CLASSIFICATION CRITERIA FOR SANDS AND GRAVELS

Well graded sands (SW) $C_u = D_{60}/D_{10} \geq 6$ and $C_c = (D_{30})^2 / (D_{10} \times D_{60}) \leq 3$ and ≥ 1							
Well graded gravels (GW) $C_u = D_{60}/D_{10} \geq 4$ and $C_c = (D_{30})^2 / (D_{10} \times D_{60}) \leq 3$ and ≥ 1							
Boulders	Cobbles	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	FINES (silt or clay)
Sieve sizes 10"	3"	3/4"	#4	#10	#40	#200	

