

Datum: WGS 84 Lat: 38.9460191
 Long: -94.7407717

3-13-24E SE SW NW SW

HNTB		LOG OF BORING		BORING NO. B-34	
				PAGE 1	OF 2

PROJECT <u>Gateway</u>	STATION / NORTHING <u>/ 239824.401</u>
LOCATION <u>Johnson County, Kansas</u>	OFFSET / EASTING <u>/ 2239104.501</u>
DATE STARTED <u>04/03/2012</u> DATE COMPLETED <u>04/03/2012</u>	SURFACE ELEVATION <u>1003.2 ft</u>
EXPLORATION CONTRACTOR <u>Terracon</u>	DATUM <u>NAVD 88</u>
DRILLER <u>J. Johnson</u> DRILL RIG <u>CME-75</u>	GROUND WATER LEVELS:
HAMMER TYPE <u>Auto</u> HAMMER EFFICIENCY _____	▽ AT TIME OF DRILLING <u>NATD</u>
LOGGED BY <u>J. Martens</u> REVIEWED BY <u>L. Wagner</u>	▽ AFTER <u>N/A</u>

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RCD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	GRAPHIC LOG	MATERIAL DESCRIPTION Unified (Visual) Classification System	GEOLOGIC NAME	ELEVATION (ft)
HSA 3.25" ID	0							Topsoil, Tan, Firm, LEAN CLAY, Slightly Moist (CL) Mottled Red Brown and Gray, Firm to Stiff, LEAN to FAT CLAY, Trace Rootlets, Moist (CL/CH) (Residuum)		1003.2
	5	SPT S1	12		3-5-8 (13)	2.0				1000
CORE BARREL NO2	6.0							LIMESTONE, Brownish Gray, Medium Grained, Thin to Medium Bedded, Weathered, Moderately Hard, with Wavy Shale Laminae at 8 - 12" Spacing	Plattsburg LS	997.2
	7	NQ C1		92% (48%)						995
	10									
	11	NQ C2		100% (90%)						990
	15									
	16	NQ C3		100% (95%)				Becoming Vuggy at 10.4' LIMESTONE, Gray, Medium Grained, Medium to Thick Bedded, Slightly Weathered to Fresh, Moderately Hard, Fossiliferous 1" SHALE Seam at 12.5' 3 - 4" Brownish Gray, Argillaceous Seams at 13.2' and 13.8' Becoming "Banded" Gray and Dark Gray at 14.5'	Plattsburg LS	985
	19.3							4" Gray SHALE Seam at 17.6' Healed Solution Feature 17.9 - 18.6'	Plattsburg LS	983.9
	20							SHALE, Gray to Blue Gray, Laminated, Fresh, Moderately Hard Calcareous, Fossiliferous Seam 19.6 - 20.2' With Abundant Wavy, Calcareous SANDSTONE Partings	Bonner Springs SH	980
	21									
	24.7	NQ C4		100% (60%)						980

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BORING LOG 2 W/O LAB DATA - GATEWAY_TEMPLATE.GDT - 4/6/12 12:42 - O:\55921\GEO\GEOLOGY\BORINGS\BPJ

PROJECT Gateway

STATION / NORTHING / 239824.401

LOCATION Johnson County, Kansas

OFFSET / EASTING / 2239104.501

DRILLING METHOD	DEPTH (ft)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY (in)	CORE REC % (RQD %)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	GRAPHIC LOG	MATERIAL DESCRIPTION Unified (Visual) Classification System	GEOLOGIC NAME	ELEVATION (ft)
	25									
	26	NQ						Grading to SANDSTONE with Interbedded Shale Partings, Gray, Laminated to Thin Bedded, Fresh, Moderately Hard <i>(continued)</i>	26.0	
								SHALE, Bluish Gray, Laminated, Fresh, Moderately Hard, with Occasional Limestone Inclusions		
								2" LIMESTONE Seam at 27.3'		
								Note: RQD calculated in shale may not be applicable.		975
	30	NQ C5		97% (40%)				Becoming with Interbedded SANDSTONE Partings at 29.3'		
	31								31.1	
								Grading to SANDSTONE with Interbedded Shale, Gray, Thin Bedded, Fresh, Cemented/Moderately Hard		
		NQ C6		98% (28%)					33.6	970
	35							SHALE, Gray, Laminated, Fresh, Moderately Hard to Soft		
	36									
		NQ C7		100% (0%)				With Thin, Wavy SANDSTONE Laminae 37.2 - 39.0'		965
								Shale badly disturbed by coring process. "Poker Chipped"		
	40									
	41									
		NQ C8		100% (22%)						960
	45									
	46							2" LIMESTONE Seam at 46.0'		
								Becoming with Calcareous Partings	47.4	955.8
								LIMESTONE, Gray, Medium Bedded, Fresh, Hard	48.0	
		NQ C9		100% (70%)				SHALE with Interbedded 1" Limestone Seams, Gray, Fresh, Soft to Moderately Hard	49.0	955
	50							LIMESTONE, Gray, Medium Grained, Medium to Thick Bedded, Fresh, Hard		
									51.0	
Boring backfilled with cuttings upon completion. Auger Refusal at 7.0 feet. Bottom of borehole at 51.0 feet.										