

Date: 04/05/2012 Lat: 38.9613151 Long: -94.7281029 NWSW NESE 34-12-24E

HNTB

LOG OF BORING

BORING NO.

B-48

PAGE

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PROJECT Gateway

STATION / NORTHING / 245521.617

LOCATION Johnson County, Kansas

OFFSET / EASTING / 2242504.107

DATE STARTED 04/05/2012 DATE COMPLETED 04/05/2012

SURFACE ELEVATION 1054.2 ft

EXPLORATION CONTRACTOR Terracon

DATUM NAVD 88

DRILLER K. Kempton

DRILL RIG CME-55 ATV

GROUND WATER LEVELS:

HAMMER TYPE Auto

HAMMER EFFICIENCY 79%

AT TIME OF DRILLING NATD

LOGGED BY L. Wagner

REVIEWED BY J. Martens

AFTER N/A

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)
	0									1054.2
HSA 3.25" ID								Topsoil		0.3
								Brown, LEAN CLAY with Sand and Silt, Moist (FILL)		
	5	SPT S1	18		3-2-3 (5)	1.0		Brown to Red, Stiff, FAT CLAY, Moist (CH), Trace Rootlets		1050
	10	SPT S2	18		3-5-12 (17)	4.0		Brown to Gray, Very Stiff, FAT CLAY, Moist (CH), with Remnant Bedding at 8.5'		1045
	14.1							SHALE, Brown, Highly Weathered, Soft		1041.7
	15	NQ C1		100% (100%)				LIMESTONE, Gray to Brown, Medium Bedded, Weathered, Moderately Hard, with Mottling from Shale Lenses		1040.7
	15.3							3" SHALE Seam at 15.3'		
								Gray, Some Fossils at 15.9'		
	20	NQ C2		100% (67%)						1035
	20.3							LIMESTONE, Gray to Brown, Thin to Medium Bedded, Weathered, Moderately Hard, with Highly Weathered Red Shale Seams at 20.5'		
	25	NQ C3		100% (45%)						1030

(Continued Next Page)

BORING LOG 2 W/O LAB DATA - GATEWAY_TEMPLATE.GDT - 4/6/12 13:03 - C:\55921\GEO\TECH\GINT\GEOLOGY BORINGS.GPJ



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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									
	25.3	NQ C4		100% (87%)				LIMESTONE, Gray to Brown, Thin to Medium Bedded, Weathered, Moderately Hard, with Highly Weathered Shale Seams (continued)		
									27.1	1027.1
								SHALE, Black, Laminated, Slightly Weathered, Moderately Hard	Eudora SH	
	30									1025
	30.3	NQ C5		100% (77%)				Shale dessicating upon exposure.		
									33.7	1020.5
								LIMESTONE, Gray, Medium Bedded, Slightly Weathered, Moderately Hard, Fossiliferous	Captain Creek LS	1020
	35									
	35.3	NQ C6		100% (93%)						
									39.0	1015.2
								SHALE, Gray, Laminated, Slightly Weathered, Moderately Hard	Vilas SH	1015
	40								40.3	

Boring backfilled with Holeplug upon completion.
Auger Refusal at 14.1 feet.
Bottom of borehole at 40.3 feet.