

Bell Bend Nuclear Power Plant
Boring Logs

(Refer to FSAR Figure 2.5-107 for the Location of Borings)



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
664.4 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
649.4	16	S-9	22-21 13 (34)	0.9		fine to coarse sand, soft, max particle size 1½", nonplastic, dark gray (N4) shale cobble and grayish red (5R 4/6) sandstone, wet, no reaction to HCl, dense to very dense.	gw	
		S-10	17-50/3" (50)	0.8		17.0' Well Graded Gravel (gw) - 75% cobbles, 15% gravel, 5% sand, 5% silt, coarse, subrounded to angular gravel, fine to medium, subangular sand, 1½" max size, hard, nonplastic, medium dark gray (N4) shale, wet, no reaction to HCl, very dense.		
647.9	18	S-11	50/2" (50+)	0.2		18.5' Well-Graded Sand with Gravel (sw) - 15% cobbles, 30% gravel, 55% sand, subangular, fine to coarse gravel, rounded, fine to coarse sand, max particle size 1½", hard, nonplastic, medium-light gray (N6), contains moderate red (5R 5/4) sandstone cobbles, wet, no reaction to HCl, dense.	sw	
		S-12	19-19 22 (41)	1.2		20.0' Well-Graded Gravel with Sand (gw) - 65% gravel, 30% sand, 5% silt, fine to coarse, subrounded to angular gravel, fine to coarse, subangular sand, nonplastic, moderate reddish brown (10 R 4/6) and medium bluish gray (5B 5/1), slight odor, wet, no reaction to HCl, very-dense.		
644.9	22	S-13	20-50 40 (90)	1.0		21.5' Well-Graded Gravel (gw) - 30% cobbles, 55% gravel, 10% sand, 5% silt, coarse, angular shale gravel and cobbles, medium hard, fine to coarse, subangular sand, nonplastic, medium gray (N5) and moderate yellowish brown (10 YR 5/4) wet, no reaction to HCl, very dense.	gw	
		S-14	30-38 40 (78)	1.2		23.0' Well-Graded Gravel with Silt and Sand (gw-gm) - 10% cobbles, 50% gravel, 30% sand, 10% silt, subrounded to subangular, fine to coarse sand, angular shale and sandstone, fine to coarse gravel, elongated and flat, nonplastic, medium gray (N5), wet, no reaction to HCl, medium-dense.		
641.9	24	S-15	18-13 13 (26)	1.1		24.5' Well-Graded Gravel with Sand (gw) - 10% cobbles, 60% gravel, 25% sand, 5% silt, subangular, fine to coarse gravel, elongated and flat, hard, subangular fine to coarse sand, nonplastic, medium gray (N5), moderate red (5R 4/6), and moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, very dense.	gw	
		S-16	35-50/5 (50)	0.9		26.0' Well-Graded Gravel (gw) - 95% cobbles, 5% silt, rounded, spherical cobbles, hard, nonplastic, medium gray (N5) shale cobbles, wet, no reaction to HCl, very dense.		
638.9	28	S-17	50/2 (50+)	0.2		27.5' Well-Graded Gravel with Silt and Sand (gw-gm) - 10% cobbles, 60% gravel, 25% sand, 10% silt, subrounded to subangular, fine to coarse gravel, subrounded, fine to coarse sand, nonplastic, moderate yellowish brown (10 YR 5/4), moist, no reaction to HCl, dense.	gw-gm	
		S-18	15-17 15 (32)	1.0		29.0' Well-Graded Sand with Gravel (sw) - 10% cobbles, 30% gravel, 60%		
637.4							sw	
DATE STARTED: 10/9/07 DATE COMPLETED: 10/11/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 13' DATE/TIME: 10/14/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Brian N.		RIG: CME 850	



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						DESCRIPTION			
634.4	30	S-19	12-13 14 (27)	1.0		sand, subrounded, fine to coarse gravel, hard, subrounded fine to coarse sand, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, slight organic odor, medium dense.		Special care sample at 46.7'-48.5'	
		S-20	15-14 23 (37)	1.2		Well-Graded Sand with Gravel (sw) - 5% cobbles, 30% gravel, 60% sand, 5% silt, subrounded, fine to coarse gravel, hard, subrounded fine to coarse sand, nonplastic, moderate yellowish brown (10 YR 5/4), slight organic odor, wet, no reaction to HCl, dense, contains a few black (N1) coal fragments. 32.0'			
632.9	32	S-21	22-21 14 (35)	1.1		Well-Graded Sand with Gravel and Silt (sw-sm) - 5% cobbles, 25% gravel, 60% sand, 10% silt, subrounded, fine to coarse sand, subrounded to subangular, fine to coarse gravel, nonplastic, moderate yellowish brown (10 YR 5/7), wet, no reaction to HCl, dense. 33.5'	sw-sm		
631.4	34	S-22	18-23 30 (53)	1.2		Well-Graded Gravel with Sand (gw) - 5% cobbles, 60% gravel, 30% sand, 5% silt, subangular to subrounded, fine to coarse sand, subangular to subrounded, fine to coarse gravel, hard nonplastic, moderate yellowish brown (10 YR 5/4) and moderate red (5R 4/6), wet, no reaction to HCl, very-dense. 35.0'	gw		
	629.9	36	S-23	17-26 46 (72)	1.2		Well-Graded Sand with Gravel (sw) - 5% cobbles, 25% gravel 65% sand, 5% silt, subrounded to angular, fine to coarse gravel, hard, subrounded to subangular, fine to coarse sand, nonplastic, moderate brown (5YR 3/4) to dark yellow brown (10YR 4/2), contains medium gray (N5) shale fragments, wet, no reaction to HCl, very-dense. 36.5'		sw
628.4		38	S-24	19-39 15 (54)	1.2		Well-Graded Gravel with Sand (gw) - 65% gravel, 30% sand, 5% silt, subrounded, fine to coarse gravel, hard, subrounded, fine to coarse sand, nonplastic, moderate yellowish brown (10YR 5/4) and medium gray (N5), wet, no reaction to HCl, very-dense. 38.0'		gw
	S-25		30-50 29 (79)	0.6		Well-Graded Gravel (gw) - 60% cobbles, 35% gravel, 5% silt, angular, elongated and flat, cobbles and gravel, nonplastic, moderate red (5R 5/4) and dark yellowish orange (10 YR 6/6) wet, no reaction to HCl, very dense, fine-grained sandstone cobbles. 39.5'	gw		
626.9	40	S-26	25-50/3 (50)	0.6		Well-Graded Gravel (gw) - 90% gravel, 10% sand, subangular fine to coarse gravel, hard, subrounded, fine sand, nonplastic, moderate yellowish brown (10 YR 5/4) moderate red (5R 4/6) and dark greenish yellow (10 Y 6/6), wet, no reaction to HCl, very-dense. 41'	gw		
						Silty Shale - Moderately hard, dark gray (N4) fresh, moderately fractured, fracture located 42.5' - 42.7' not healed, noncalcareous, thickly bedded, no reaction to HCl.			
625.4	42								
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian N.				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



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						DESCRIPTION				
	60	R-4	100% (86%)	5.0		Silty Shale - Moderately hard medium gray (N5) from 59.5'-60.5' than dark gray (N4) fresh, slightly fractured, from 60.9'-61.0' and 61.0'-61.1' approximately 45° to core barrel, noncalcareous, thickly bedded, no reaction to HCl.				
	62									
	64									
	66	R-5	100% (98%)	5.0		Silty Shale - Moderately hard dark gray (N4), fresh, slightly fractured, at 65.5'-65.6' approximately 70°, contains pyrite pockets at 69.3'-69.8', not healed, thickly bedded, noncalcareous, no reaction to HCl.				
	68									
	70									
	72					Silty Shale - Moderately hard, dark gray (N4), fresh, moderately fractured, fracture located from 73.6'-73.9 approximately 60° to core and 70.8' - 70.9' fracture approximately 45° to core, nonhealed, noncalcareous, pyritic inclusion in small fractures, thickly bedded, no reaction to HCl.				
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation			
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian N.					
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS						
						DESCRIPTION								
	74	R-6	100% (95%)	10		Silty Shale - Moderately hard dark gray (N4), fresh, unfractured, noncalcareous, thickly bedded, no reaction to HCl.								
	76													
	78													
	80													
	82				R-7				100% (100%)	5.0	Silty Shale - Moderately hard dark gray (N4), fresh, slightly to moderately fractured, fracture at 87.4' - 87.9' vertical capped on both ends by horizontal fracture, moderately healed with calcite at both ends, fracture at 84.5', 90.5' and 95.5' approximately 45° to rock core, noncalcareous, thickly bedded, no reaction to HCl.			
	84													
	86													
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation							
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A									
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core									
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian N.									
APPROVED BY: RJB							RIG: CME 850							
DRILLING CO.: Terracon														

Bell Bend NPP										PROJECT NO. 07-3891									
LOG OF BORING NO. B-301																			
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38		USCS SYMBOL	REMARKS										
						DESCRIPTION													
	88	R-8	100% (93%)	10		Silty Shale - Moderately hard dark gray (N4), fresh, very slightly fractured, fracture from 103.1'-103.3' approximately 70° to rock core, slightly calcareous to calcareous, thickly bedded, slight reaction to HCl.													
	90																		
	92																		
	94																		
	96																		
	98																		
	100																		
	102																		
DATE STARTED: 10/9/07					GWL: DEPTH: 13'					DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation							
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A					DATE/TIME: N/A									
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core														
CHECKED BY: DAR																			
APPROVED BY: RJB					DRILLER: Scott Zeien					HELPER: Brian N.		RIG: CME 850							
DRILLING CO.: Terracon																			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS										
						DESCRIPTION												
	104	R-10	100% (93%)	6.0		Silty Shale - Moderately hard dark gray (N4), fresh, unfractured, calcareous to slightly calcareous, thickly bedded, slight reaction to HCl.		Special care sample at 107.1'-108.6'										
	106																	
	108																	
	110																	
	112				R-11				100% (100%)	5.0	Silty Shale - Moderately hard dark gray (N4), fresh, unfractured, noncalcareous from 110.5'-110.9', moderately calcareous throughout, contains pockets of fossils 112.1' - 112.8' and pyrite at 114.5'-115.5', thickly bedded, reaction to HCl.							
	114																	
	116																	
DATE STARTED: 10/9/07													GWL: DEPTH: 13'	DATE/TIME: 10/14/07	NOTES: Bedrock part of the Mahantango Formation			
DATE COMPLETED: 10/11/07													GWL: DEPTH: N/A	DATE/TIME: N/A				
FIELD GEOLOGIST: RAK						DRILLING METHOD: SPT/Tricone/NQ Rock Core												
CHECKED BY: DAR						DRILLER: Scott Zeien												
APPROVED BY: RJB						HELPER: Brian N.		RIG: CME 850										
DRILLING CO.: Terracon																		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	118	R-12	100% (100%)	10.0		Silty Shale: Moderately hard dark gray (N4), fresh, unfractured, contains fossils throughout, contains veins of calcite, thickly bedded, noncalcareous, no reaction to HCl.		
	120							
	122							
	124							
	126							
	128							
	130	R-13	100% (100%)	10.0				
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850	
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian N.			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891







LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	132	R-14	100% (95%)	10.0		Silty Shale - Moderately hard dark gray (N4), fresh, moderately to lightly fractured, noncalcareous, calcareous fossils from 144.5' to 145.5, fractured, from 142.4' - 142.6' approximately 60° to rock core, thickly bedded. 		

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PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
510.9	148	R-15	100% (98%)	10.0		microfaulting, no reaction to HCl.		
	150				Silty Shale - Moderately hard dark gray (N4), fresh, slightly fractured, calcareous with pyrite from 145.5'-145.7' then slightly calcareous 145.7'-146.0', fracture at 153.2' totally healed with calcite, microfaulting, no reaction to HCl.			
	152							
	154							
	155.5'							
	156	R-16	100% (95%)	10.0		Siltstone - Hard dark gray (N4) fresh, very slightly fractured, calcareous, seam at 158.5' vertical direction fractures at 165.0' - 165.5' from 165.0'-165.2' approximately 70° to rock core, no reaction to HCl.		
	158							
	160							
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian N.			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

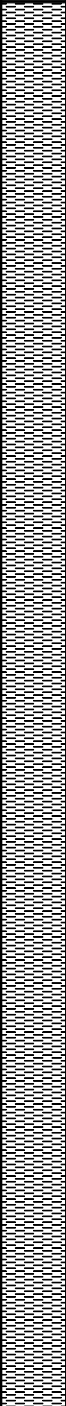
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS					
						DESCRIPTION							
	176	R-18	100% (100%)	10.0		Siltstone - Hard dark gray (N4) fresh, unfractured, noncalcareous, massive bedding, no reaction to HCl.							
	178												
	180												
	182												
	184												
	186					Siltstone - Hard dark gray (N4), fresh, very slightly fractured, massive bedding, fractured at 188.2' approximately 60° to rock core, partial slickenside fracture at 192.6' approximately 60° of rock core, noncalcareous, contains few pockets of calcite, from .193.5'- 195.5', no reaction to HCl.							
	188												
	190												
DATE STARTED: 10/9/07						GWL: DEPTH: 13' DATE/TIME: 10/14/07			NOTES: Bedrock part of the Mahantango Formation				
DATE COMPLETED: 10/11/07						GWL: DEPTH: N/A DATE/TIME: N/A							
FIELD GEOLOGIST: RAK						DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 850				
CHECKED BY: DAR						DRILLER: Scott Zeien HELPER: Brian N.							
APPROVED BY: RJB													
DRILLING CO.: Terracon													



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	192	R-19	100% (98%)	10.0		Siltstone - Hard dark gray (N4), fresh, very slightly fractured, not healed fractures at 196.7' 198.4', 199.4' and 201.4' horizontal fractures, slightly calcareous, massive bedding, slight reaction to HCl.		Special care sample at 196.7'-198.9'.				
	194											
	196											
	198											
	200	R-20	100% (100%)	10.0								
	202											
	204											
DATE STARTED: 10/9/07									GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/11/07									GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK									DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR												
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian N.		RIG: CME 850					
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

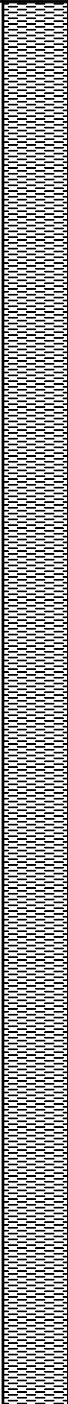
LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	206	R-21	100% (100%)	10.0		Siltstone - Hard dark gray (N4), fresh, very slightly fractured, slightly to moderately calcareous from 205.5'-208.4', remaining noncalcareous, massive bedding, slight reaction to HCl.		
	208							
	210							
	212							
	214							
	216							
	218							
DATE STARTED: 10/9/07 DATE COMPLETED: 10/11/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB						GWL: DEPTH: 13' DATE/TIME: 10/14/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		
DRILLING CO.: Terracon		DRILLER: Scott Zeien HELPER: Brian N.		RIG: CME 850				

Bell Bend NPP

PROJECT NO. 07-3891

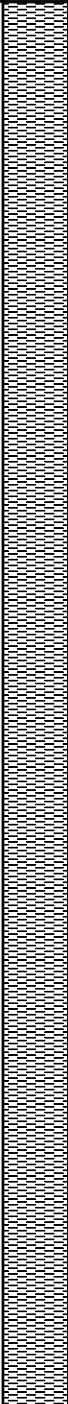
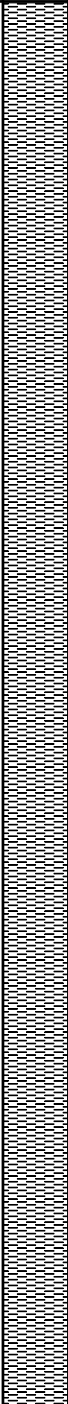
LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	220	R-22	100% (100%)	10.0		Siltstone - Hard dark gray (N4), fresh, very slightly fractured, fractured at 234.0, approximately 45° to rock core, noncalcareous, no reaction to HCl.		
	222							
	224							
	226							
	228							
	230	R-23	100% (95%)	10.0				
	232							
	234							
DATE STARTED: 10/9/07 DATE COMPLETED: 10/11/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 13' DATE/TIME: 10/14/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Brian N.			
RIG: CME 850								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	236	R-24	100% (100%)	10.0		Siltstone - Hard dark gray (N4), fresh, unfractured, noncalcareous, massive bedding, no reaction to HCl.		Special care sample at 240.0'-242.4'.
	238							
	240					Siltstone - Hard dark gray (N4), fresh, unfractured, noncalcareous, massive bedding, no reaction to HCl.		
	242	R-25	100% (100%)	10.0				
	244							
	246							
	248							
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core	NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 10/11/07								
FIELD GEOLOGIST: RAK					DRILLER: Scott Zeien HELPER: Brian N.	RIG: CME 850		
CHECKED BY: DAR								
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	250 <							

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

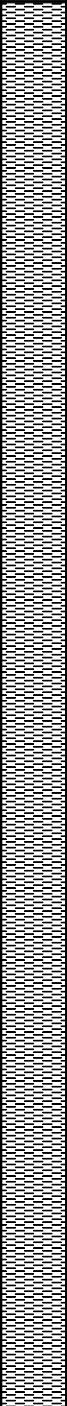
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						DESCRIPTION		
	264 <							



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	278	R-29	100% (100%)	10.0		Siltstone - Hard dark gray (N4), fresh, unfractured, slightly to moderately calcareous, massive bedding, reaction to HCl. 		



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LOG OF BORING NO. B-301

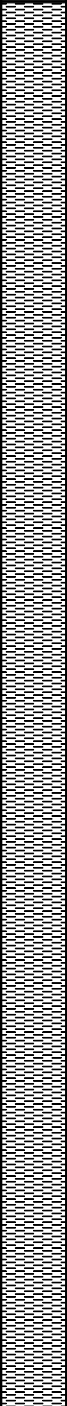
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						DESCRIPTION		
	294 							



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

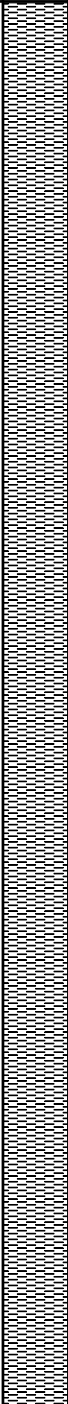
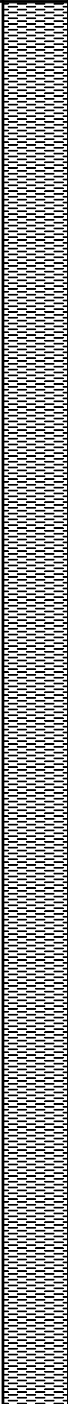
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	308	R-32	100% (85%)	10.0		Siltstone - Hard dark gray (N4), moderately fractured, fresh, noncalcareous, nonhealed, fractured from 315.2'-315.4' and 319.4'-319.5', no reaction to HCl.						
	310											
	312											
	314											
	316											
	318											
	320											
DATE STARTED: 10/9/07									GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/11/07									GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK									DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850	
CHECKED BY: DAR												
APPROVED BY: RJB		DRILLER: Scott Zeien HELPER: Brian N.										
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

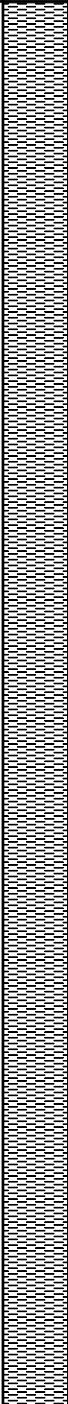
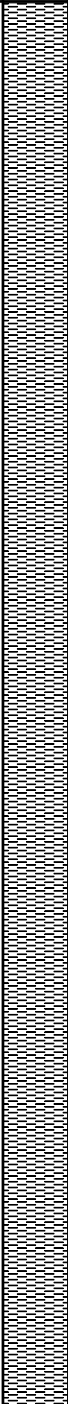
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	322	R-33	100% (100%)	10.0		Siltstone - Hard dark gray (N4), unfractured, fresh, noncalcareous, massive bedding, no reaction to HCl.		
	324							
	326							
	328							
	330							
	332	R-34	100% (100%)	8.5				
	334							
	336							
DATE STARTED: 10/9/07				GWL: DEPTH: 13' DATE/TIME: 10/14/07				NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 10/11/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Rock Core				RIG: CME 850
CHECKED BY: DAR				DRILLER: Scott Zeien HELPER: Brian N.				
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	338	R-35	100% (99%)	7.5		Siltstone - Hard dark gray (N4), very slightly fractured, fresh, fractures horizontal from 340.8'-340.9', noncalcareous, massive bedding.		Special care sample at 338.5'-340.8'.
	340							
	342							
	344							
	346	R-36	100%	10.0		Siltstone - Hard dark gray (N4), unfractured, fresh, noncalcareous, massive bedding, no reaction to HCl.		
	348							
	350							
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian N.			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

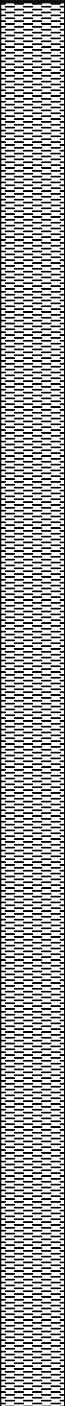
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						DESCRIPTION		
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Bell Bend NPP

PROJECT NO. 07-3891

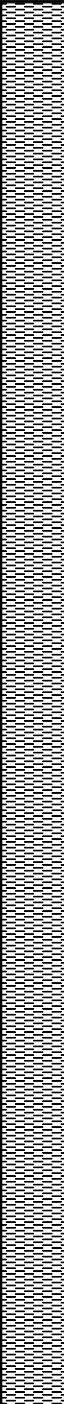
LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS			
						DESCRIPTION					
	366	R-38	98% (45%)	4.9		Siltstone - Hard dark gray (N4), unfractured, fresh, noncalcareous, massive bedding, no reaction to HCl.		Low RQD due to core barrel jamming with core fragments.			
	368										
	370										
	372	R-39	98% (87%)	5.9		Siltstone - Hard dark gray (N4), slightly fractured, fresh, cast located at 374.6' partially filled with calcite, noncalcareous, massive bedding, no reaction to HCl.					
	374										
	376										
	378		Siltstone - Hard dark gray (N4), very slightly fractured, fresh, slightly to moderately calcareous, massive bedding, no reaction to HCl.								
	380										
	DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07			NOTES: Bedrock part of the Mahantango Formation		
	DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850					
CHECKED BY: DAR											
APPROVED BY: RJB				DRILLER: Scott Zeien HELPER: Brian N.							
DRILLING CO.: Terracon											

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

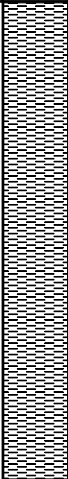
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	382	R-40	100% (100%)	10.0		Siltstone - Hard dark gray (N4), very slightly fractured, fresh, slightly calcareous fractured 395.5'-396.0', not healed, massive bedding, slight reaction to HCl.		Special Care Sample 393.8'-395.4'.				
	384											
	386											
	388											
	390											
	392	R-41	100% (96%)	10.0								
	394											
DATE STARTED: 10/9/07 DATE COMPLETED: 10/11/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB									GWL: DEPTH: 13' DATE/TIME: 10/14/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon									DRILLER: Scott Zeien HELPER: Brian N.		RIG: CME 850	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-301

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339151.791 E 2405430.679 SURFACE EL: 666.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
266.4	396	R-42	100% (100%)	4.0		Siltstone - Hard dark gray (N4), unfractured, fresh, noncalcareous, massive bedding, no reaction to HCl.		
	398							
	400					BOTTOM OF BORING 400'		
	402							
	404							
	406							
	408							
DATE STARTED: 10/9/07					GWL: DEPTH: 13' DATE/TIME: 10/14/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian N.		RIG: CME 850	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302







ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
666.8	0	S-1	4-4 2 (6)	1.1'		Sandy Lean Clay (CL) - 5% cobbles, 75% sand, 20% silt, subangular spherical, fine to coarse sand, coarse gravel, 1.0" max size, hard, nonplastic, grayish brown (5YR, 3/2) to pale brown (5YR 5/2), dry, no reaction HCl, loose.	CL	
						1.5'	CL-ML	
665.3	2	S-2	2-3 22 (25)	1.5'		Sandy Silty Clay (CL-ML) - 5% cobbles, 75% sand, 20% silt, subangular spherical, fine to coarse sand, coarse gravel, 1.0" max size, hard, nonplastic, grayish brown (5YR, 3/2) to pale brown (5YR 5/2), dry, no reaction HCl, medium dense.	CL-ML	
						3.0'	gw	
	4	S-3	22-50/6 (50)	1.0'		Well Graded Gravel with Sand (gw) - 45% cobbles, 30% sand, 25% gravel, fine to coarse sand and gravel, subangular, spherical, hard, 3.0" max size, nonplastic, pale red (10R 6/2) to brownish gray (5YR 4/1), dry, no reaction to HCl, very dense.	gw	
660.3	6	S-4	0-50/3" (50)	0.3'				
	8	S-5	19-26 30 (56)	1.5'		Well Graded Sand with Silt and Gravel (SW-SM) - 70% gravel, 25% sand, 5% silt, fine to coarse, elongated and flat, subangular sand and gravel, 0.75" max size, hard, nonplastic, pale red (10 R 6/2) to grayish red (10R 4/2) dry, no reaction to HCl, very dense.	SW-SM	
658.8						9.5'	GW	
	10	S-6	15-17 22 (39)	1.0		Well Graded Gravel with Sand (GW) - 30% gravel, 65% sand, 5% silt, subangular, fine to coarse sand and gravel, spherical, 0.5" max size, hard, nonplastic, pale red (10 R 6/2), moist, no reaction to HCl, dense.	GW	
655.8	12					12.5'	gp	
		S-7	14-24 26 (50)	1.2'		Poorly Graded Gravel (gp) - 5% cobbles, 65% gravel, 30% sand, subangular, spherical, fine gravel, subrounded, fine to coarse sand, 0.75" max size, hard, nonplastic, grayish red (10 R 6/2), moist, no reaction to HCl, dense.	gp	
655.0						14.0'	sw	
							sw	
654.3	14					Well Graded Sand (sw) - 75% sand, 20% gravel, 5% silt, fine to coarse, rounded, spherical gravel, 0.05" max size, hard, nonplastic, grayish red (10R 6/2) with light gray (N5), moist, no reaction to HCl, very dense.	gw	
							gw	
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891


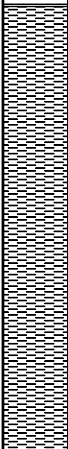
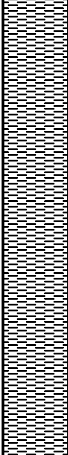
LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS	
						DESCRIPTION			
652.8	16	S-8	32-38 39 (77)	0.8		Well Graded Gravel (gw) - 40% cobbles, 50% gravel, 10% sand, subrounded, elongated and flat gravel, angular to subangular fine to coarse sand, 3.0" max size, hard, nonplastic, grayish red (10R 6/2), moist, no reaction to HCl, very dense. 15.5'	SP-SM		
651.3		S-9	14-7 9 (16)	1.1		Poorly Graded Sand with Silt and Gravel (SP-SM) - 30% gravel, 65% sand, 5% silt, subrounded to subangular, fine to coarse gravel, rounded to subangular, fine to coarse sand, hard, nonplastic, dark yellowish brown (10 YR 4/2), moist, no reaction to HCl, medium dense. 17'			
649.8	18	S-10	13-18 50/5" (68)	1.0		Well Graded Gravel (gw) - 95% cobbles, 5% gravel, subangular, flat and elongated cobbles and gravel, hard, 3.0" max size, nonplastic, dark gray (N3), wet, no reaction to HCl, very dense. 18.5'	GW		
		S-11	13-14 18 (32)	1.1		Well Graded Gravel with Silt and Sand (GW-GM) - 30% gravel, 60% sand, 10% silt, subrounded, spherical, fine to coarse gravel, hard, subrounded, fine to medium sand, 0.75" max size, nonplastic, grayish red (10 R 6/2) and dark yellowish brown (10 YR 4/2), moist, no reaction to HCl, dense. 24.0'	GW-GM		
644.3	22	S-12	28-24 40 (64)	1.4					
		S-13	50/2" (50+)	0.2					
641.8	24	S-14	24-37 50/3" (87)	1.3		Poorly Graded Gravel with Sand (GP) - 25% cobbles, 30% gravel, 45% sand, subangular, elongated and flat, coarse gravel and cobbles, hard, subrounded to subangular fine to coarse sand, 0.75" max size, nonplastic, grayish red (10 R 6/2) and dark gray (N3), wet, no reaction to HCl, very dense. 26.5'	GP		
639.6	26	S-15	50/1" (50+)	0.1		Well Graded Gravel (gw) - 90% gravel, 10% sand, subangular, flat, fine to coarse gravel and sand, 1" max size, nonplastic, dark gray (N3), wet, no reaction to HCl, very dense, moderately weathered, shale fragments. 28.7'	GW		
		S-16	50/2"-0 0 (0)	0.2					
						Shale- Moderately hard, dark gray (N3) slightly weathered to fresh, intensely to moderately fractured, partly healed noncalcareous, no			
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle		RIG: CME 850		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer				
APPROVED BY: RJB									
DRILLING CO.: Terracon									

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

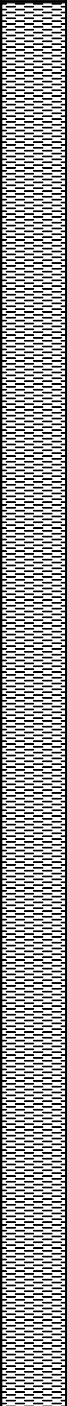
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
633.8	30	R-1	98% (58%)	5.9		reaction to HCl.		
	32							
	34					Siltstone- Moderately hard, dark gray (N3) fresh, very slightly fractured, partly healed, joint located from 44.0' to 44.5', noncalcareous.		
	36							
	38							
	40	R-2	90% (80%)	9.0				
	42							
DATE STARTED: 9/13/07		GWL: DEPTH: +3.0		DATE/TIME: 9/15/07		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/15/07		GWL: DEPTH: N/A		DATE/TIME: N/A				
FIELD GEOLOGIST: RAK		DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle						
CHECKED BY: DAR		DRILLER: Scott Zeien		HELPER: Dave Dwyer		RIG: CME 850		
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

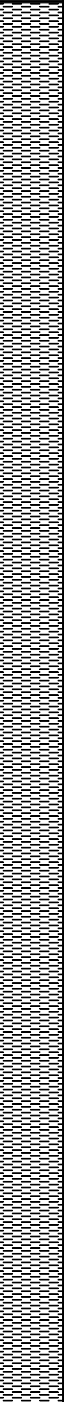
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	44	R-3	91% (82%)	9.1		Siltstone- Moderately hard, dark gray (N3), fresh, very slightly fractured, partly healed, noncalcareous, no reaction to HCl.		Special care sample 51.6' - 52.9'.		
	46									
	48									
	50									
	52									
54										
56										
58		R-4	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3) fresh, very slightly fractured, partly healed, noncalcareous, no reaction to HCl.				
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07	NOTES: Bedrock part of the Mahantango Formation				
DATE COMPLETED: 9/15/07									GWL: DEPTH: N/A DATE/TIME: N/A	
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle					
CHECKED BY: DAR										
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850		
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-5	67% (62%)	6.7		Siltstone- Moderately hard, dark gray (N3), fresh, very slightly fractured, partly healed, noncalcareous, no reaction to HCl.		
	62							
	64							
	66							
	68							
	70							
	72					Siltstone- Moderately hard, dark gray (N3), fresh, slightly fractured, partly healed, noncalcareous, joint located from 74.5' to 74.9', approximately 20° from rock core, no reaction to HCl.		
		R-6	96%	4.8				
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74		(84%)					
	76					Siltstone- Moderately hard, dark gray (N3), fresh, very slightly fractured, partly healed, noncalcareous, joint located at 76.6' to 76.7', fractured zone located from 83.0' to 83.2', no reaction to HCl.		
	78							
	80	R-7	99% (96%)	9.9				
	82							
	84							
	86					Siltstone- Moderately hard to hard, dark gray (N3), fresh, slightly fractured, partly healed, noncalcareous, contains veins of pyrite from 92.5' to 93.1', no reaction to HCl.		
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	88 <							



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	104								
	106					Siltstone- Moderately hard to hard, dark gray (N3), fresh, very slightly fractured, noncalcareous, no reaction to HCl.			
	108								
	110	R-10	99% (92%)	9.9					
	112								
	114								
	116					Siltstone- Moderately hard to hard, dark gray (N3) fresh, very slightly fractured, contains few slightly calcareous veins from 118.8' - 119.5', fossiliferous and few pyrite pockets 123.0' - 123.2', slight reaction to HCl.		Special care sample 109.9' - 111.2'.	
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850	
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

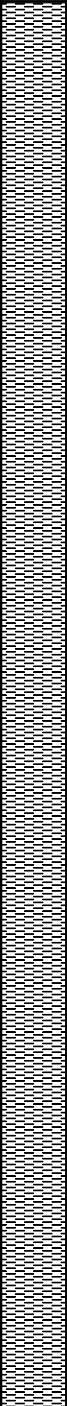
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

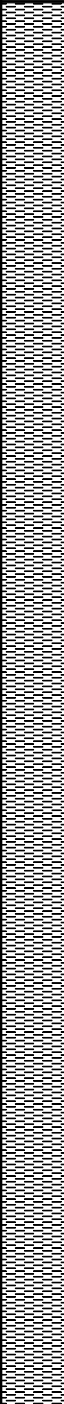
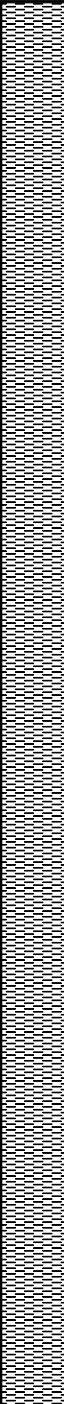
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	132	R-13	99% (94%)	9.9		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, joint at 137.5' - 137.7', noncalcareous, no reaction to HCl. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	148	R-14	97% (94%)	9.7		Siltstone- Hard, dark gray (N3) and with light gray (N7), fresh, unfractured, calcareous, reaction to HCl.		Special Care Sample 160.1' - 161.5'.
	150							
	152							
	154							
	156	R-15	99% (80%)	9.9		Siltstone- Hard, dark gray (N3) and light gray (N7), fresh, slightly fractured, calcareous, reaction to HCl, joints located at 159.8' to 160.1' approximately 70° to rock core and 165.2' to 165.5' approximately 40° to rock core.		Special Care Sample 160.1' - 161.5'.
	158							
	160							
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	162 <							



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PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	176	R-17	100% (100%)	10.0		Siltstone- Hard, dark gray (N3), fresh, unfractured, contains few veins of pyrite throughout core run, noncalcareous, no reaction to HCl.				
	178									
	180									
	182									
	184									
	186					Siltstone- Hard, dark gray (N3), fresh, unfractured, noncalcareous, contains few pockets of pyrite throughout core run, no reaction to HCl.				
	188									
	190									
DATE STARTED: 9/13/07						GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07						GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK						DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR									RIG: CME 850	
APPROVED BY: RJB						DRILLER: Scott Zeien HELPER: Dave Dwyer				
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

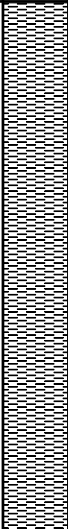
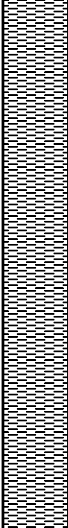
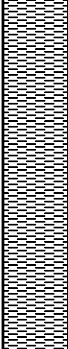
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	192	R-18	90% (90%)	9.0		Siltstone- Hard, dark gray (N3) and light gray (N7) layers, fresh, unfractured, slightly calcareous, slight reaction to HCl.		
	194							
	196							
	198							
	200	R-19	100% (100%)	9.0				
	202							
	204							
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle	NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/15/07								
FIELD GEOLOGIST: RAK					DRILLER: Scott Zeien HELPER: Dave Dwyer	RIG: CME 850		
CHECKED BY: DAR								
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

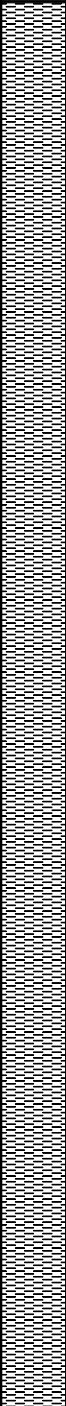
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	206	R-20	100% (100%)	6.0		unfractured, slightly calcareous, slight reaction to HCl.		Preserved sample for laboratory analysis from 213.1' - 215.1'.
	208							
	210							
	212	R-21	100% (100%)	10.0		Siltstone- Hard, dark gray (N3) and light gray (N7) layers, fresh, unfractured, slightly calcareous, slight reaction to HCl.		
	214							
	216							
	218							
DATE STARTED: 9/13/07						GWL: DEPTH: +3.0 DATE/TIME: 9/15/07		NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07						GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: RAK						DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle		
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien	HELPER: Dave Dwyer	RIG: CME 850	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	220	R-22	100% (100%)	10.0		Siltstone- Hard, dark gray (N3) and light gray (N7) layers, fresh, unfractured, slightly calcareous, slight reaction to HCl.		Artesian condition at 230'.				
	222											
	224											
	226											
	228											
	230						Siltstone- Hard, dark gray (N3) with some light gray (N7) fresh, slightly fractured, microfaulting perpendicular to the bedding plane from 233.3' - 233.5, slightly calcareous healing along bedding at 234.1' to 234.7' and perpendicular to bedding at 239.5'.					
	232											
	234											
DATE STARTED: 9/13/07						GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation			
DATE COMPLETED: 9/15/07						GWL: DEPTH: N/A DATE/TIME: N/A						
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle								
CHECKED BY: DAR												
APPROVED BY: RJB				DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850					
DRILLING CO.: Terracon												

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

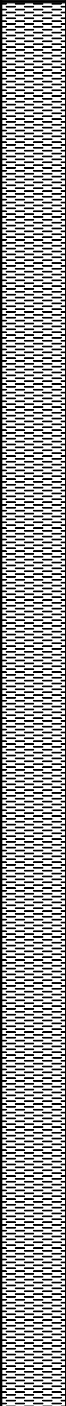
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	236 							



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

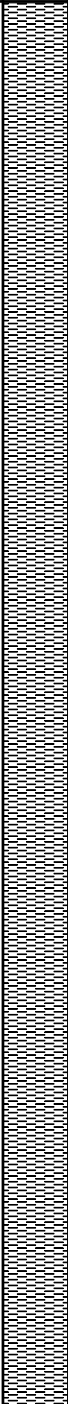
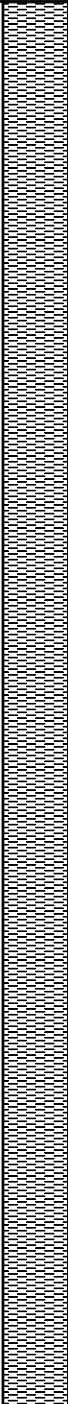
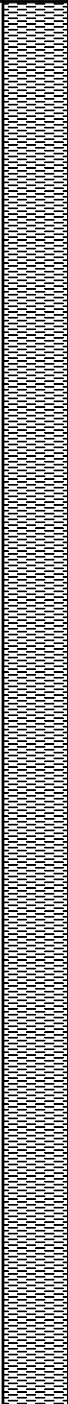
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS					
						DESCRIPTION							
	250	R-25	100% (100%)	10.0		Siltstone- Hard, dark gray (N3) fresh, unfractured, contains slightly calcareous, slight reaction to HCl, inclusions at 250.5' and 252.1' in opposite direction of bedding.							
	252												
	254												
	256												
	258												
	260												
	262												
DATE STARTED: 9/13/07									GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07									GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK									DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR													
APPROVED BY: RJB			DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850							
DRILLING CO.: Terracon													



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	264	R-26	99% (99%)	9.9				Special Care Sample 270.5'-272.3'.	
	266								
	268								
	270								
	272				Siltstone- Hard, dark gray (N3), fresh, unfractured, contains veins of calcite and fossils at 270.5' - 275.0', encountered breccia zone at 275.0', slight reaction to HCl.				
	274								
	276	R-27	100% (97%)	10.0					
DATE STARTED: 9/13/07						GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07						GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK						DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR									
APPROVED BY: RJB						DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

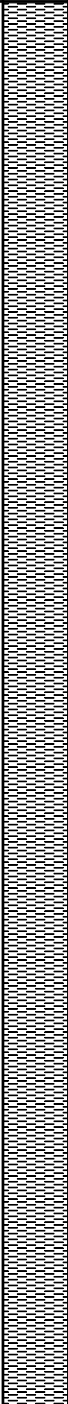
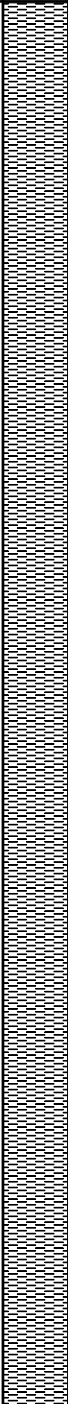
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	278							
	280							
	282							
	284							
	286	R-28	96% (93%)	9.1		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, slightly calcareous vein at 281.4' - 282.1' along bedding plane, slight reaction to HCl.		
	288							
	290					Siltstone- Hard, dark gray (N3), slightly fractured, fresh, fractured zone from 290.0' to 290.6', noncalcareous, no reaction to HCl.		
	292							
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

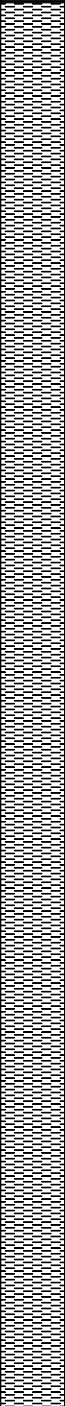
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	294	R-29	99% (90%)	9.9		Siltstone- Hard, dark gray (N3), unfractured, fresh, sections of fossils and pyrite, some pyrite perpendicular to bedding plane from 304.0' to 310.0'.		
	296							
	298							
	300							
	302	R-30	98% (92%)	9.8				
	304							
	306							
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	308	R-31	100% (87%)	5.5		Siltstone- Hard, dark gray (N3), fresh, slightly fractured, fossiliferous, noncalcareous, no reaction to HCl. 		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	322							
	324							
	326					Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, fractured at 327.2', slightly calcareous, slight reaction to HCl.		
	328	R-33	100% (99%)	5.0				
	330							
	332					Siltstone- Hard, dark gray (N3), fresh, very slightly fractured with veins of calcite, fossiliferous, calcareous, reaction to HCl.		
	334							
	336	R-34	100% (100%)	10.0				
DATE STARTED: 9/13/07					GWL: DEPTH: +3.0 DATE/TIME: 9/15/07			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-302

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339243.091 E 2405420.594 SURFACE EL: 668.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
327.8 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
662.2	0					Shelby Tube		
	1.9	U-1				2.0'	SM	
660.2	2					Shelby Tube Silty Sand (SM)		
	4.0	U-2		1.0		4.0'		
657.2	4					Well Graded Sand with Silt and Gravel (SW-SM) - 80% sand, 15% gravel, 5% silt, subrounded, fine to coarse gravel, hard, subrounded fine to coarse sand, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), no reaction to HCL, medium dense, moist.	sw-sm	
	6	S-1	8-8 10 (18)	1.0		7.0'	SW-SM	
654.2	6					Well-Graded Gravel with Clay and Sand (GW-GC) - 60% sand, 20% gravel, 20% silt, fine to coarse, subangular, elongated and flat, gravel, hard, fine to coarse, subrounded sand, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction HCL, very-dense.	gw-gc	
	8	S-2	10-9 8 (17)	0.9		10.0'	GW-GC	
651.2	8					Well Graded Gravel with Silt and Sand (GW-GM) - 55% gravel, 15% sand, 30% silt, subrounded to subangular, elongated and flat, fine to medium gravel, hard, fine to coarse, subrounded sand, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction HCL, dense.	gw-gm	
	10	S-3	13-22 33 (55)	1.3		13.0'	GW-GM	
649.7	10					Well Graded Gravel with Silt and Sand (gw-gm) - 70% gravel, 20% sand, 10% silt, subangular to subrounded, fine to coarse gravel, hard, subrounded, fine to coarse sand, 1" max size, nonplastic, browninsh black (5YR 2/1), moist, no reaction to HCL, very dense.	gw-gm	
	12	S-4	33-33 28 (61)	1.2		14.5'		
	12							
	14	S-5	19-19 19 (38)	0.9				
	12							
	14	S-6	49-30 30 (60)	0.8				
	14							
	14	S-7	40-49 49 (98)	1.0				
DATE STARTED: 9/16/07					GWL: DEPTH: 9.7'	DATE/TIME: 9/17/07 16:50	NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/17/07					GWL: DEPTH: N/A	DATE/TIME: N/A		
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR							RIG: CME 55 Track	
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousley, Mike Steinbrook			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS		
						DESCRIPTION				
643.7	16	S-8	24-50/3 (50)	0.6		Well Graded Gravel with Silt and Sand (GW-GM) - 70% gravel, 20% sand, 10% silt, angular to subangular, fine to coarse gravel, hard, subrounded, fine to coarse sand, 1" max size, nonplastic, moderate yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/2) to dark gray (N2) to grayish red (5R 4/2), wet, no reaction to HCl, very dense.	gw-gm	Top of weathered rock at approximately 26.6 ft.		
		S-9	22-30 27 (57)	0.9						
	18	S-10	39-33 32 (65)	1.0						
	20	S-11	24-25 26 (51)	0.8						
						20.5'				
642.2	22	S-12	40-50/4 (50)	0.1		Well-Graded Gravel with Silt and Sand (gw-gm) - 5% cobble, 65% gravel, 20% sand, 10% silt, fine to coarse, angular to subangular gravel, hard, fine to coarse, subrounded to angular sand, hard, nonplastic, light gray (N7), wet, no reaction to HCl, very dense, intensely fractured.	gw-gm			
						22.0'				
637.7		S-13	16-19 25 (44)	1.2			Well-Graded Gravel with Silt and Sand (GW-GM) - 70% gravel, 20% sand, 10% silt, fine to coarse, subangular to angular, elongated and flat gravel, hard, fine to coarse, subrounded sand, hard, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction HCl, very dense.		gw-gm	
	24	S-14	12-23 19 (42)	0.8						
	26	S-15	17-49 27 (76)	0.8						
							26.5'			
	28	S-16	48-17 12 (29)	1.2		Poorly Graded Gravel with Clay and Sand (GP-GC) - 40% gravel, 40% sand, 10% silt and clay, dark gray (N3) to grayish black (N2), wet, no reaction to HCL, medium dense to very dense.	GP-GC			
	S-17	26-50/4 (50)	0.8							
DATE STARTED: 9/16/07					GWL: DEPTH: 9.7'		DATE/TIME: 9/17/07 16:50		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/17/07					GWL: DEPTH: N/A		DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core				RIG: CME 55 Track	
CHECKED BY: DAR										
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousley, Mike Steinbrook					
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS		
						DESCRIPTION				
634.7	30	S-18	50/0 (50)	0.0		29.5' Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, moderately fractured, slight reaction to HCl.				
		R-1	95% (85%)	1.9						
	32								Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, slightly fractured, fossiliferous zone at 35.5', slight reaction to HCl.	
	34	R-2	98% (92%)	4.9						
		36								
	38									Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded very slightly fractured, fossiliferous zone at 41', slight reaction to HCl.
	40		R-3	100% (94%)		5.0				
42						Siltstone - Dark gray (N3) to grayish black (N2) noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, very slightly fractured, no to very slight reaction to HCl.				
DATE STARTED: 9/16/07					GWL: DEPTH: 9.7' DATE/TIME: 9/17/07 16:50	NOTES: Bedrock part of the Mahantango Formation				
DATE COMPLETED: 9/17/07										
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core					
CHECKED BY: DAR										
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousley, Mike Steinbrook	RIG: CME 55 Track				
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-4	100% (100%)	5.0		Siltstone - Dark gray (3) to grayish black (2) noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded very slightly fractured, no to very slight reaction to HCl. <		



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PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60 							



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-10	96% (96%)	4.8		Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded very slightly fractured, no to little reaction to HCl.		Special care sample taken at 79.0'-81.0'
	76							
	78							
	80	R-11	100% (100%)	5.0		Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded unfractured, no to little reaction to HCl.		
	82							
	84	R-12	100% (100%)	5.0				
	86					Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded unfractured, no to slight reaction to HCl.		
DATE STARTED: 9/16/07					GWL: DEPTH: 9.7'		DATE/TIME: 9/17/07 16:50	
DATE COMPLETED: 9/17/07					GWL: DEPTH: N/A		DATE/TIME: N/A	
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahantango Formation	
CHECKED BY: DAR					DRILLER: Sam Silverman		HELPER: Jason Tousley, Mike Steinbrook	
APPROVED BY: RJB							RIG: CME 55 Track	
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
567.7 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	104	R-16	100% (96%)	5.0		Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded unfractured.		Special care sample taken at 108.8'-110.8'	
	106								
	108	R-17	100% (100%)	5.0					
	110								
	112								
	114	R-18	100% (100%)	5.0					
	116								
							Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered,		
DATE STARTED: 9/16/07					GWL: DEPTH: 9.7' DATE/TIME: 9/17/07 16:50		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/17/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track		
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Jason Tousley, Mike Steinbrook				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div>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Bell Bend NPP

PROJECT NO. 07-3891


LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS
						DESCRIPTION		
132 <								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-303

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339142.987 E 2405338.529 SURFACE EL: 664.18	USCS SYMBOL	REMARKS	
						DESCRIPTION			
512.7	148	R-25	98% (98%)	4.9		Siltstone - Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded very slightly fractured, no to slight reaction to HCl.			
	150								
	152					BOTTOM OF BORING 151.5'			
	154								
	156								
	158								
	160								
DATE STARTED: 9/16/07					GWL: DEPTH: 9.7' DATE/TIME: 9/17/07 16:50			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/17/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 55 Track	
CHECKED BY: DAR									
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousley, Mike Steinbrook				
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS	
						DESCRIPTION			
657.8	0	S-1	2-4 4 (8)	1.5		Clayey Silty Sand (SM-SC) - 40% sand, 60% clay, fine to medium, rounded sand, low plasticity, low dry strength, no dilatancy, low toughness, moderate yellow brown (10YR 5/4) and dusky yellowish brown (10YR 2/2), dry, no reaction to HCL, loose to medium-dense.	sm-sc		
	2	S-2	3-4 9 (13)	1.5			SM-SC		
						3.0'			
654.8	4	S-3	8-9 34 (43)	1.3		Silty Sand (SM) - 5% gravel, 90% sand, 5% silt, angular to subangular gravel, hard, fine to coarse grained, subangular sand, hard, nonplastic, dark yellowish brown (10 YR 4/2) dry, no reaction to HCl, medium dense to dense.	sm		
		S-4	10-9 8 (17)	1.4			SM		
						6.0'			
653.3	6	S-5	15-23 29 (52)	1.5		Clayey Silty Sand with Gravel (SM-SC) - 65% gravel, 25% sand 10% silt, fine to coarse grained, angular to subangular gravel, hard, fine to coarse, subangular sand, 1" max size, nonplastic, dark moderate pink (5R 7/4) and moderate red (5R 5/4), moist, no reaction to HCl, very-dense.	SM-SC		
				7.5'					
651.8	8	S-6	9-17 33 (50)	1.2		Well Graded Gravel with Sand (gw) - 60% gravel, 40% sand, fine to coarse grained, angular to subangular gravel, hard, fine to coarse, subangular sand, 1" max size, nonplastic, yellowish brown (10YR 4/2), moist, no reaction to HCl, dense.	gw		
650.3							9.0'		
	10	S-7	15-18 22 (40)	1.2		Well Graded Sand with Gravel (sw) - 60% sand, 40% gravel, subangular to angular, fine to coarse grained gravel, hard, fine to coarse, subrounded to subangular sand, nonplastic, dark yellowish brown (10 YR 4/2) wet, no reaction to HCl, dense.	sw		
						10.5'			
648.8									
		S-8	9-50/6" (50)	0.8		Poorly Graded Gravel with Sand (gp) - 10% cobble, 50% gravel, 35% sand, 5% silt, very hard sandstone cobble, fine to coarse, subangular to angular gravel, hard, fine to coarse, subangular sand, hard, nonplastic, dark pale brown (5 Y 5/2) wet, no reaction to HCl, dense.	gp		
						12.0'			
647.3	12	S-9	17-22 25 (47)	1.1		Well Graded Sand with Clay and Gravel (SW-SC) - 70% gravel, 30% sand, fine to coarse grained, angular to subangular, hard, gravel, fine to coarse, angular to subangular, hard sand, nonplastic, pale brown (5Y 5/2) wet, no reaction to HCl, dense.	SW-SC		
						13.5'			
	14	S-10	27-21 21 (42)	1.1		Well Graded Sand with Gravel (sw) - 15% cobble, 30% gravel, 55% sand, very hard, fine grained, fractured sandstone cobble, fine to coarse, subangular to angular gravel, elongated and flat, hard, fine to coarse grained, subangular sand, hard, nonplastic, pale brown (5Y 5/2) wet, no reaction to HCl, dense.	sw		
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle		RIG: CME 850		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304






ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
645.8	16	S-11	23-21 19 (40)	1.3		2) to light gray (N7), wet, no reaction to HCl, dense. 15.0'	gp	
		Poorly Graded Gravel with Sand (gp) - 15% cobble, 50% gravel, 30% sand, 5% silt, small sandstone cobbles, fine to coarse grained, subangular to angular, elongated and flat, gravel, hard, fine to coarse grained, hard, subangular sand, nonplastic, pale brown (5Y 5/2), wet, no reaction HCL, dense.						
642.8	18	S-12	22-19 24 (43)	0.9		18'	GW-GM	
		S-13	28-17 12 (29)	1.2		Well Graded Gravel with Silt and Sand (GW-GM) - 15% cobbles, 60% gravel, 25% sand, fine to coarse, subangular to angular, hard gravel, fine to coarse, subangular, sand, hard, nonplastic, pale yellowish brown (10YR 6/2) to dusky yellowish brown (10YR 2/2), wet, no reaction HCl, medium dense.		
641.3	20	S-14	15-22 50/6" (72)	1.3		19.5'	GW-GM	
Well Graded Gravel with Silt and Sand (GW-GM) - 90% gravel, 10% sand, fine to coarse grained, hard, angular to subangular, elongated and flat gravel, fine to coarse, hard sand, nonplastic, moderate brown (5Y 4/4) to grayish brown (5YR 3/2), wet, no reaction HCl, dense.								
639.8	22	S-15	22-26 27 (53)	1.0		21'	sw	
						Well Graded Sand with Gravel (sw) - 10% cobbles, 30% gravel, 60% sand, fine to coarse, subangular to angular, hard gravel, fine to coarse, subangular, hard sand, nonplastic, moderate brown (5Y 4/4), wet, no reaction to HCl, very dense.		
638.3	24	S-16	22-25 50/5" (75)	1.1		22.5'	gw	
						Well Graded Gravel (gw) - 90% gravel, 10% sand, fine to coarse, subangular to angular, hard gravel, fine to coarse, subangular, hard sand, nonplastic, grayish brown (5YR 2/2), wet, no reaction to HCl, very dense.		
635.3	26	S-17	0-50/2" 0 (50)	0.2		25.5'	GW-GM	
						Well Graded Gravel with Silt and Sand (GW-GM) - 10% cobbles, 80% gravel, 10% sand, intensely fractured, fresh, medium hard, shale cobbles, fine to coarse, hard, subangular to angular gravel, fine to coarse, subangular, sand, nonplastic, moderate brown (5YR 2/2) to dark gray (N3), wet, no reaction to HCl, dense,		
632.3	28	S-18	30-21 20 (41)	0.9			gw	
						Well Graded Gravel (gw) - 75% gravel, 20% sand, 5% silt, fine to coarse, subangular to angular, hard, elongated and flat gravel, fine to coarse, subangular sand, nonplastic, moderate brown (5YR 2/2), wet, no reaction to HCl, dense.		
		S-19	20-18 16 (34)	1.0		28.5'	GW-GM	
			12-8			Well Graded Gravel with Silt and Sand (GW-GM) - 30% gravel, 70% sand, fine to coarse, hard, subangular to angular gravel, fine to coarse, hard, subangular sand, nonplastic, moderate brown (5YR 2/		
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle		RIG: CME 850	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304

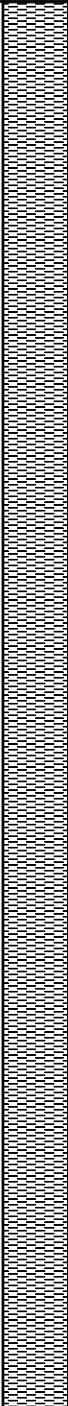
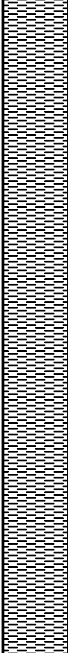
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS	
						DESCRIPTION			
630.8	30	S-20	8 (16)	1.1		2), wet, no reaction to HCl, medium dense. 30'	gw		
		S-21	23-18 16 (34)	0.6		Well Graded Gravel with Sand (gw) - 15% cobbles, 60% gravel, 20% sand, 5% silt, medium hard cobbles with shale fragments, fine to coarse, hard, subangular to angular gravel, fine to coarse, hard, subangular to subrounded sand, nonplastic, moderate brown (5YR 2/2) to dark gray (N3), wet, no reaction to HCl, dense. 31.5'			
629.3	32	S-22	26-21 12 (33)	0.7		Well Graded Gravel (gw) - 100% cobbles, small to large cobbles, hard to very hard, nonplastic, wet, no reaction to HCl, dense. 33'	gw		
		S-23	10-15 16 (31)	1.2		Clayey Gravel with Sand (GC) - 50% silt, 20% clay, 20% sand 10% gravel, fine to coarse grained, hard gravel, fine to coarse, hard, subangular sand, medium plasticity, medium dry strength, slow dilatancy, low toughness, medium gray (N5) to moderate red (5R 4/6), wet, no reaction to HCl, very-stiff to hard. 34.5'	GC		
627.8	34	S-24	10-15 26 (41)	0.9		Silty Clayey Gravel with Sand (GM-GC) - 50% silt, 20% clay, 20% sand 10% gravel, fine to coarse grained, hard gravel, fine to coarse, hard, subangular sand, medium plasticity, medium dry strength, slow dilatancy, low toughness, medium gray (N5) to moderate red (5R 4/6), wet, no reaction to HCl, very-stiff to hard. 36'	GM-GC		
		S-25	21-19 19 (38)	1.2		Well Graded Gravel with Sand (gw) - 70% gravel, 25% sand, 5% silt, fine to coarse, hard, angular to subangular gravel, fine to coarse, subangular, hard sand, nonplastic, moderate brown (5 Y/R 4/4) and medium gray (N5), wet, no reaction to HCl, dense. 37.5'	gw		
626.3	36	S-26	15-16 23 (39)	1.2		Well Graded Sand with Silt and Gravel (sm) - 65% sand, 25% gravel, 10% silt, fine to coarse, hard, subangular to angular gravel, fine to coarse, subangular, hard sand, nonplastic, medium gray (N5), wet, no reaction to HCl, dense. 39'	sm		
		S-27	29-24 50/6" (74)	1.2		Well Graded Gravel with Silt and Sand (GW-GM) - 20% cobbles, 20% gravel, 50% sand, 10% silt, hard, angular, sandstone cobbles, fine to coarse, hard, angular to subangular gravel, fine to coarse, hard, subangular sand, nonplastic, medium gray (N5) wet, no reaction to HCl, very dense. 40.5'	GW-GM		
624.8	38	S-28	50/2 (50+)	0.2		Well Graded Gravel (gw) - 100% gravel, fine to coarse gravel, hard, nonplastic, medium gray (N5), wet, no reaction to HCl, very dense. 42.5'	gw		
		S-29	50/1 (50+)	0.1		Siltstone- Moderately hard, dark gray (N3), fresh, slightly fractured, clean, joints at 43.0' and 47.2', noncalcareous, moderately fractured, no reaction to HCl.			
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07				NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle				RIG: CME 850
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

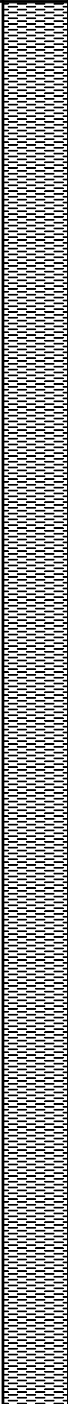
LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	44	R-1	96% (87%)	7.2		Siltstone- Moderately hard, dark gray (N3), fresh, moderately to slightly fractured, joints from 52.5' - 52.9', noncalcareous, moderately fractured, no reaction to HCl.		Preserved sample for laboratory analysis from 52.9' - 53.9'.	
	46								
	48								
	50	R-2	100% (76%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh moderately to slightly fractured, joints from 59.6'-60.0', noncalcareous, no reaction to HCl.			
	52								
	54								
	56								
	58								
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850	
APPROVED BY: RJB									
DRILLING CO.: Terracon									

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	60	R-3	96% (87%)	9.6		Siltstone- Moderately hard, dark gray (N3), fresh, slightly fractured, possible joints from 66.1'-66.3' and 72.8'- 72.9', clean, noncalcareous, moderately bedded, no reaction to HCl.						
	62											
	64											
	66											
	68											
	70	R-4	100% (96%)	10.0								
	72											
DATE STARTED: 9/16/07									GWL: DEPTH: 9.0'	DATE/TIME: 9/16/07	NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07									GWL: DEPTH: N/A	DATE/TIME: N/A		
FIELD GEOLOGIST: RAK									DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle			RIG: CME 850
CHECKED BY: DAR												
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer							
DRILLING CO.: Terracon												



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PROJECT NO. 07-3891

LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74					Siltstone- Moderately hard, dark gray (N3), fresh, slightly fractured, joints from 74.5'-74.9', 77.0'-77.2', 83.9'-84.0', contains very light gray/white intrusion of possible quartz along bedding from 84.1'-84.2', noncalcareous, moderately bedded, no reaction to HCl.		Fractured zone encountered from 74.5'- 74.9.
	76							
	78							
	80	R-5	100% (96%)	10.0				
	82							
	84							
	86					Siltstone- Moderately hard, dark gray (N3), fresh, very slightly fractured, joints from 89.5'-89.7', clean, slightly calcareous throughout, contain few pockets of fossils, moderately bedded, slight reaction to HCl.		
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0'		DATE/TIME: 9/16/07	
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A		DATE/TIME: N/A	
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle		NOTES: Bedrock part of the Mahantango Formation	
CHECKED BY: DAR					DRILLER: Scott Zeien		HELPER: Dave Dwyer	
APPROVED BY: RJB							RIG: CME 850	
DRILLING CO.: Terracon								



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PROJECT NO. 07-3891

LOG OF BORING NO. B-304

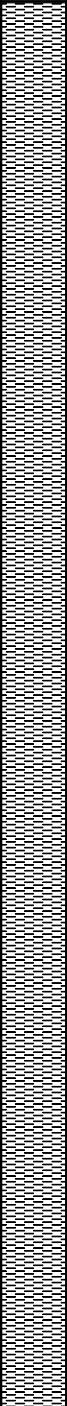
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						DESCRIPTION		
	88 							



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LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	104	R-8	100% (100%)	10.0		Siltstone- Moderately hard to hard, dark gray (N3), fresh, very slightly fractured, joint at 111.9'-112.2', calcareous, moderately bedded, reaction to HCl.		Preserved sample for laboratory analysis from 109.0' - 110.6'.	
	106								
	108								
	110								
	112								
	114								
	116								Siltstone- Moderately hard to hard, dark gray (N3), fresh, very slightly fractured, slightly open from 121.1'-121.3', noncalcareous, moderately bedded, no reaction to HCl.
DATE STARTED: 9/16/07						GWL: DEPTH: 9.0' DATE/TIME: 9/16/07			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/18/07				GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle					
CHECKED BY: DAR									
APPROVED BY: RJB				DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850			
DRILLING CO.: Terracon									



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LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
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LOG OF BORING NO. B-304

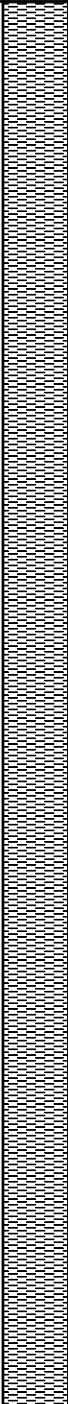
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						DESCRIPTION		
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LOG OF BORING NO. B-304

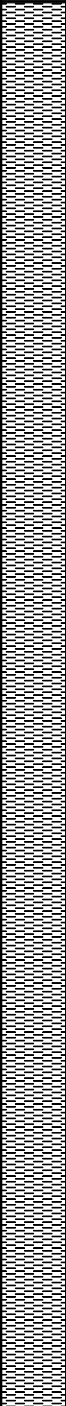
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						DESCRIPTION							
	148	R-12	100% (93%)	10.0		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, contains a slightly calcareous intrusion at 156.6' along bedding plane, very slightly calcareous.							
	150												
	152												
	154												
	156	R-13	100% (91%)	10.0									
	158												
	160												
DATE STARTED: 9/16/07											GWL: DEPTH: 9.0' DATE/TIME: 9/16/07		NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/18/07											GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: RAK											DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle		
CHECKED BY: DAR				RIG: CME 850									
APPROVED BY: RJB		DRILLER: Scott Zeien HELPER: Dave Dwyer											
DRILLING CO.: Terracon													



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PROJECT NO. 07-3891

LOG OF BORING NO. B-304

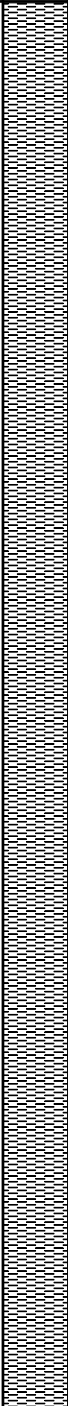
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						DESCRIPTION		
	162	R-14	100% (99%)	5.0		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, contains calcareous intrusion along bedding plane from 165.6'-166.4', moderately bedded, rock very slightly calcareous. 		



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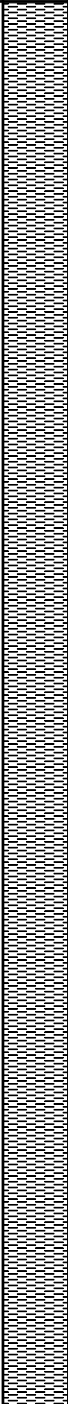
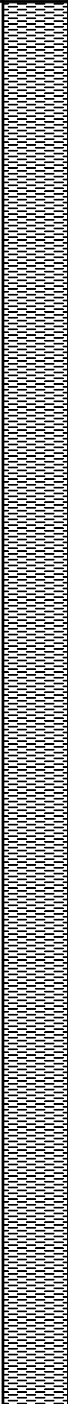
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						DESCRIPTION		
	176	R-16	100% (100%)	5.0		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, very thin fractures, moderately bedded.		
	178							
	180							
	182							
	184							
	186	R-17	100% (100%)	10.0				
	188							
	190							
DATE STARTED: 9/16/07				GWL: DEPTH: 9.0' DATE/TIME: 9/16/07		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/18/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR				DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850		
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

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LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
	192	R-18	100% (96%)	10.0		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, noncalcareous, moderately bedded, no reaction to HCl.		
	194							
	196							
	198							
	200	R-19	100% (92%)	5.0		Siltstone- Hard, dark gray (N3), fresh, very slightly fractured,		
	202							
	204							
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07	NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 9/18/07								
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	
DRILLING CO.: Terracon								



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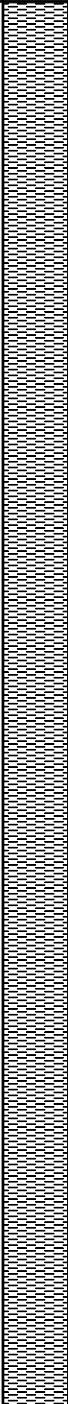
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ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
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LOG OF BORING NO. B-304

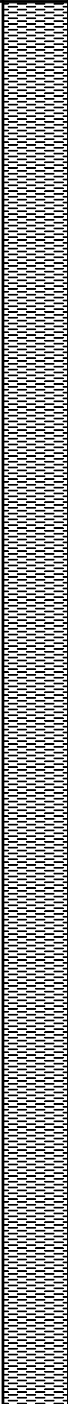
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						DESCRIPTION						
	220	R-21	100% (100%)	10.0		Siltstone- Hard dark gray (N3), fresh, unfractured, non calcareous, moderately bedded, no reaction to HCl.		Preserved sample for laboratory analysis from 230.3' - 232.3'.				
	222											
	224											
	226											
	228											
	230	R-22	100% (95%)	10.0								
	232											
	234											
DATE STARTED: 9/16/07 DATE COMPLETED: 9/18/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB									GWL: DEPTH: 9.0' DATE/TIME: 9/16/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle		NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon									DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	



Bell Bend NPP

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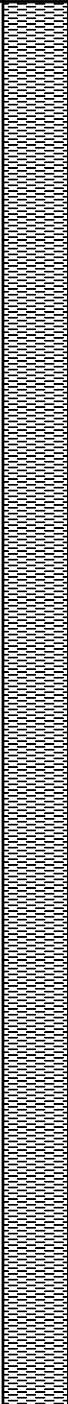
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ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
	236	R-23	100% (100%)			Siltstone- Hard, dark gray (N3), fresh, unfractured, non calcareous, moderately bedded.		
	238							
	240							
	242							
	244							
	246							
	248							
DATE STARTED: 9/16/07				GWL: DEPTH: 9.0' DATE/TIME: 9/16/07			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR				DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850	
APPROVED BY: RJB								
DRILLING CO.: Terracon								

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PROJECT NO. 07-3891

LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
	250	R-24	100% (100%)	10.0		Siltstone- Hard, dark gray (N3), fresh, unfractured, slightly calcareous, moderately bedded, slight reaction to HCl.		
	252							
	254							
	256							
	258							
	260	R-25	100% (100%)	10.0				
	262							
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer		RIG: CME 850	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



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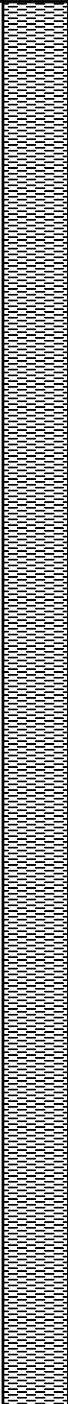
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						DESCRIPTION		
	264	R-26	100% (83%)	10.0		Siltstone- Hard, dark gray (N3), fresh, slightly fractured, clean, fractured at 267.8'-268.0', contains possible ripple marks, moderately bedded. 		



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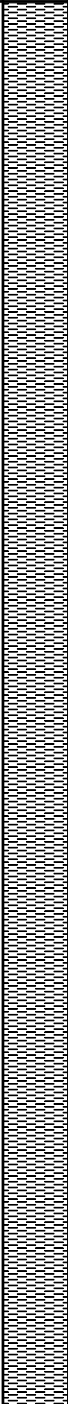
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS						
						DESCRIPTION								
	278	R-27	100% (83%)	10.0		Siltstone: Hard, dark gray (N3), fresh, very slightly fractured, micro faulting occurring from 292.4' slightly calcareous, normal fracturing at 293.6' and 294.6', moderately bedded, slight reaction to HCl.								
	280													
	282													
	284													
	286													
	288													
	290													
	292													
DATE STARTED: 9/16/07									GWL: DEPTH: 9.0'		DATE/TIME: 9/16/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07									GWL: DEPTH: N/A		DATE/TIME: N/A			
FIELD GEOLOGIST: RAK		DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle												
CHECKED BY: DAR														
APPROVED BY: RJB		DRILLER: Scott Zeien		HELPER: Dave Dwyer		RIG: CME 850								
DRILLING CO.: Terracon														



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ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	294	R-29	100% (99%)	10.0		Siltstone- Hard, dark gray, fresh, very slightly fractured, fractured zones at 296.0' - 296.2' and 299.8' - 299.9', moderately bedded, slightly calcareous.			
	296								
	298								
	300								
	302								
	304								
	306								
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07	NOTES: Bedrock part of the Mahantango Formation			
DATE COMPLETED: 9/18/07									GWL: DEPTH: N/A DATE/TIME: N/A
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR									
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850	
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS
						DESCRIPTION		
	308 							



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304

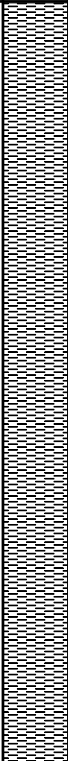
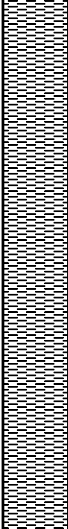
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	322								
	324								
	326					Siltstone- Hard, dark gray (N3), fresh, very slightly fractured, noncalcareous, fractured from 325.5'-325.6', no reaction to HCl.			
	328								
	330	R-32	100% (99%)	10.0					
	332								
	334								
	336					Siltstone- Hard, dark gray (N3), fresh, slightly fractured, fractures at 336.7' and 340.2', rough core texture, fractures clean.		Preserved sample for laboratory analysis from 336.7' - 338.2'.	
DATE STARTED: 9/16/07					GWL: DEPTH: 9.0' DATE/TIME: 9/16/07			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle				
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Dave Dwyer			RIG: CME 850	
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-304

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339060.244 E 2405438.615 SURFACE EL: 660.78	USCS SYMBOL	REMARKS								
						DESCRIPTION										
310.8	338	R-33	100% (94%)	10.0		Siltstone- Hard, dark gray (N3), fresh, slightly fractured, fractures at 336.7' and 340.2', rough along fractures.										
	340															
	342															
	344															
	346															
	348	R-34	100% (100%)	5.5		Siltstone- Hard, dark gray (N3), fresh, unfractured.										
	350															
	BOTTOM OF BORING 350'															
	DATE STARTED: 9/16/07 DATE COMPLETED: 9/18/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB								GWL: DEPTH: 9.0' DATE/TIME: 9/16/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core Incline Boring at 30 Degree Angle		NOTES: Bedrock part of the Mahantango Formation					
	DRILLER: Scott Zeien HELPER: Dave Dwyer								RIG: CME 850							
	DRILLING CO.: Terracon															



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-305

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS	
						DESCRIPTION			
666.8	0	S-1	4-5 5 (10)	1.3		Sandy Silt (ml) - 5% gravel, 55% silt, 40% sand, subrounded to subangular, spherical, fine to coarse gravel, moderate hardness, fine to coarse, rounded sand, low plasticity, low dry strength, slow dilatancy, low toughness, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), odor of manure, moist, no reaction to HCl, loose. 1.5'	ml	Switched to mud rotary	
	2	S-2	10-10 3 (13)	0.9		Poorly Graded Gravel with Silt and Sand (GP-GM) - 35% gravel, 40% silt, 25% sand, subrounded to subangular, spherical, fine to coarse gravel, moderate hardness, fine to coarse, rounded sand, low plasticity, low dry strength, slow dilatancy, low toughness, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), odor of manure, moist, no reaction to HCl, medium-dense. 3.0'	GP-GM		
665.3	4	S-3	15-25 22 (47)	0.9		Well-Graded Sand with Silt and Gravel (SW-SM) - 50% gravel, 40% sand, 10% silt, fine to coarse, subrounded to subangular, spherical gravel, fine to coarse, subrounded to subangular sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), moist, no reaction to HCl, dense to very-dense.	SW-SM		
	662.3	6	S-4	20-20 32 (52)		1.2	Well Graded Gravel with Clay and Sand (GW-GC) - 50% gravel, 40% sand, 10% silt and clay, fine to coarse gravel, fine to coarse sand, dark yellowish brown (10YR 4/2), moist, no reaction to HCL, very dense. 6.0'		GW-GC
8		S-6	40-33 40 (73)	0.0		No Recovery			
657.8	10	S-7	22-24 30 (54)	1.3		Well-Graded Gravel with Clay and Sand (GW-GC) - 40% gravel, 50% sand, 10% silt, subrounded to subangular, spherical, fine to coarse gravel, fine to coarse, subrounded to subangular sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), moist, no reaction to HCl, dense to very-dense. 10.5'	gw-gc		
	12	S-8	23-30 30 (60)	1.3					
		14	S-9	20-27 24 (51)		1.2			GW-GC
			S-10	21-21 16 (37)		1.1			
DATE STARTED: 9/13/07						GWL: DEPTH: 14.9'	DATE/TIME: 15:30 on 9/15/07		NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07					DATE/TIME:				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891


LOG OF BORING NO. B-305

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS	
						DESCRIPTION			
653.3	16	S-11	30-50/5 (50)	0.5		15.0' Well Graded Gravel with Clay and Sand (GW-GC), 70% gravel, 15% sand, 15% clay, coarse, subrounded to rounded, spherical gravel, hard, fine to coarse, angular sand, 1.5" max size, medium plasticity, low dry strength, no dilatancy, low toughness, moderate yellowish brown (10YR 5/4), moist, no reaction to HCL, very dense.	gw-gc		
		S-12	12-22 33 (55)	0.8		GW-GC			
650.3	18	S-13	22-41 26 (67)	0.9		18.0' Well Graded Gravel with Sand (gw) - 80% gravel, 15% sand, 5% clay, coarse, subrounded to rounded, spherical gravel, hard, fine to coarse, angular sand, 1.5" max size, nonplastic, moderate yellowish brown (10YR 5/4), moist, no reaction to HCL, very dense.	gw		
		S-14	70-49 45 (94)	0.9					
647.3	22	S-15	15-40 45 (85)	0.9		21.0' Well Graded Gravel with Sand (gw) - 85% cobble/gravel, 10% sand, 5% silt, subrounded to subangular, elongated, fine to coarse gravel, subrounded to subangular, fine to coarse sand, 0.9" max size, moderately soft, nonplastic, pale yellowish brown (10 YR 6/2) to dark yellowish brown (10 YR 4/2), wet, no reaction HCl, very-dense.	gw		
		S-16	13-17 17 (34)	0.9		22.5' Well-Graded Gravel with Sand (gw) - 5% cobbles, 60% gravel, 30% sand, 5% silt, subrounded to subangular, fine to coarse, spherical gravel, fine to coarse, subrounded to subangular sand, 2.0" max size, moderately hard, nonplastic, dark yellowish brown (10 YR 4/2) with dark reddish brown (10 YR 3/4) wet, no reaction to HCl, dense, fine grained sandstone cobble.	gw		
644.3	26	S-17	10-11 12 (23)	0.4		24.0' Well-Graded Sand with Silt and Gravel (sw-sm) - 25% gravel, 65% sand, 10% silt, fine to coarse, subangular gravel, fine to coarse, subrounded to subangular sand, 1.0" max size, moderately hard, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2) wet, no reaction to HCl, medium-dense.	sw-sm		
		S-18	3-4 4 (8)	0.0		No Recovery			
641.3	28	S-19	6-8 12 (20)	1.3		27.0' Well-Graded Sand with Silt and Gravel (sw-sm) - 20% gravel, 70% sand, 10% sit, subrounded to subangular, fine to coarse gravel, spherical, fine to coarse, subrounded to subangular sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense.	sw-sm		
			7-11			28.5' Well-Graded Gravel with Silt and Sand (GW-GC) - 40% gravel, 50% sand, 10% sit, subrounded to subangular, fine to coarse gravel,	gw-gc		
DATE STARTED: 9/13/07 DATE COMPLETED: 9/15/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 14.9' DATE/TIME: 15:30 on 9/15/07 GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahantango Formation		
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley		RIG: CME 55 Track		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-305

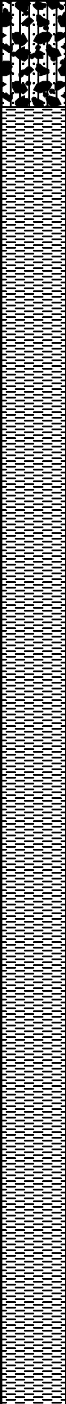
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS	
						DESCRIPTION			
636.8	30	S-20	15 (26)	1.0		spherical, fine to coarse, subrounded to subangular sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense.	GW-GC	Mixed more mud at 34.5'	
		S-21	11-16 20 (36)	0.8		31.5'			
633.8	32	S-22	11-30 25 (55)	0.5		Well-Graded Gravel with Silt and Sand (gw-gm) - 60% gravel, 30% sand, 10% silt, subrounded to subangular, fine to coarse gravel, spherical, subrounded to subangular, fine to coarse sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, dense to very-dense.	gw-gm		
	34	S-23	16-20 25 (45)	0.8		34.5'			
632.3	36	S-24	16-27 48 (75)	0.9		Well Graded Gravel with Silt and Sand (gw-gm) - 65% gravel, 25% sand, 10% silt, subrounded to subangular, spherical, fine to coarse gravel, rounded to subangular, fine to coarse sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, very-dense.	gw-gm		
		S-25	16-27 34 (61)	0.9		36.0'	SW-SM		
629.3	38	S-26	12-16 20 (36)	0.8		Well Graded Sand with Silt and Gravel (SW-SM) - 40% gravel, 50% sand, 10% silt, subrounded to subangular, spherical, fine to coarse gravel, rounded to subangular, fine to coarse sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, dense to very-dense.			
		S-27	16-24 30 (54)	0.9		39.0'			
627.8	40					Well-Graded Gravel with Silt and Sand (gw-gm) - 60% gravel, 30% sand, 10% silt, subrounded to subangular, spherical to elongate, fine to coarse gravel, subrounded to subangular, fine to coarse sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, very dense.	gw-gm		
		S-28	12-26 25 (51)	0.9		40.5'	sw-sm		
626.3	42					Well-Graded Sand with Silt and Gravel (sw-sm) - 20% gravel, 70% sand, 10% silt, subrounded to subangular, spherical to elongate, fine to coarse gravel, subrounded to subangular, fine to coarse sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, very dense.			
		S-29	20-24 29 (53)	0.8		42.0'	GW-GM		
		S-30	50/2 (50+)	0.2		Well-Graded Gravel with Silt and Sand (GW-GM) - 50% gravel, 40% sand, 10% silt, subrounded to subangular, spherical to elongate, fine to coarse gravel, subrounded to subangular, fine to coarse sand, 1.0" max size, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2),dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, very-dense.			
DATE STARTED: 9/13/07					GWL: DEPTH: 14.9'		DATE/TIME: 15:30 on 9/15/07		NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 9/15/07					GWL: DEPTH:		DATE/TIME:		
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR					DRILLER: Sam Silverman		HELPER: Mike Steinbrook, Jason Tousley		RIG: CME 55 Track
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-305

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS				
						DESCRIPTION						
623.3	44	S-31 R-1	50/0 (50+) 100% (80%)	0.0 0.5		45.0'						
	46		Siltstone - Dark gray (3) to grayish black (2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded. Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded.									
	48	R-2	100% (94%)	5.0								
	50											
	52	R-3	100% (42%)	1.2		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded						
	54	R-4	100% (100%)	3.0								
	56											
	58	R-5	100% (100%)	5.0		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded						
	DATE STARTED: 9/13/07					GWL: DEPTH: 14.9' DATE/TIME: 15:30 on 9/15/07			NOTES: Bedrock part of the Mahantango Formation			
	DATE COMPLETED: 9/15/07					GWL: DEPTH: DATE/TIME:						
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track					
CHECKED BY: DAR												
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley							
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-305

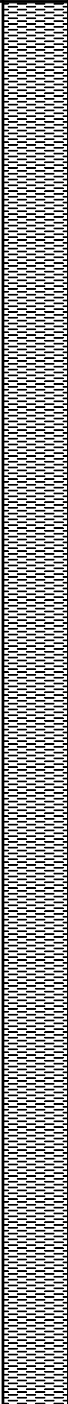
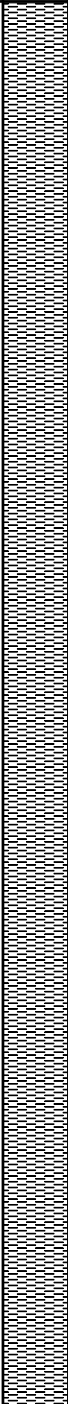
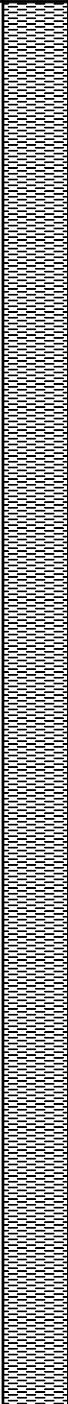
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60					Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded		
	62	R-6	100% (100%)	5.0				
	64							
	66	R-7	100% (100%)	5.0		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded		Special care sample taken at 67.8'- 69.3'
	68							
	70					Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded		
	72	R-8	100% (100%)	5.0				
DATE STARTED: 9/13/07					GWL: DEPTH: 14.9'		DATE/TIME: 15:30 on 9/15/07	
DATE COMPLETED: 9/15/07					GWL: DEPTH:		DATE/TIME:	
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahantango Formation	
CHECKED BY: DAR					DRILLER: Sam Silverman		HELPER: Mike Steinbrook, Jason Tousley	
APPROVED BY: RJB							RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-305

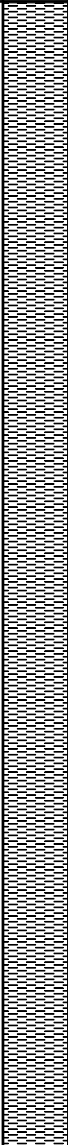
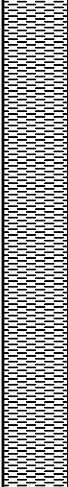
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-9	100% (100%)	5.0		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded		
	76							
	78							
	80	R-10	98% (88%)	4.9		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded		
	82							
	84							
	86	R-11	100% (100%)	5.0		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded		
DATE STARTED: 9/13/07					GWL: DEPTH: 14.9' DATE/TIME: 15:30 on 9/15/07		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 9/15/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley		RIG: CME 55 Track	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-305

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339160.185 E 2405520.631 SURFACE EL: 668.32	USCS SYMBOL	REMARKS							
						DESCRIPTION									
568.6	88	R-12	100% (100%)	5.0		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded									
	90														
	92														
	94														
	96														
	98	R-13	100% (100%)	5.0		Siltstone - Dark gray (N-3) to grayish black (N-2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded									
	100														
	102														
	BOTTOM OF BORING 99.7'														
DATE STARTED: 9/13/07					GWL: DEPTH: 14.9'	DATE/TIME: 15:30 on 9/15/07	NOTES: Bedrock part of the Mahantango Formation								
DATE COMPLETED: 9/15/07					GWL: DEPTH:	DATE/TIME:									
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core										
CHECKED BY: DAR								RIG: CME 55 Track							
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley										
DRILLING CO.: Terracon															



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
666.1	0							
	2	S-1	4-6 5 (11)	1.1		Sandy Silt (ml) - 20% sand, 50% silt, 30% clay, subangular, spherical, fine sand, soft, 0.02" max size, medium plasticity, medium dry strength, low dilatancy, medium toughness, dark yellowish orange (10YR 6/6) to moderate yellowish brown (10YR 5/4), moist, no reaction to HCL, stiff, 3.0'	ml	PPT= 1.0 tsf
664.6	4	S-2	4-5 21 (26)	1.2		Silty Sand (sm) - 10% cobbles, 75% sand, 15% silt, fine to medium, angular to subrounded sand, moderately hard, nonplastic, moderate yellowish brown (10YR 5/4), moist, no reaction to HCl, medium dense, 4.5'	sm	Sandstone cobble encountered at bottom of spoon.
	6	S-3	30-40 47 (87)	1.2		Well Graded Gravel with Sand (gw) - 55% cobbles, 15% gravel, 30% sand, hard sandstone cobble subrounded to angular, fine to coarse gravel and sand, hard, 3.0" max size, nonplastic, light olive gray (5Y 6/1) to brownish gray (5YR 4/1) to pale yellowish, brown (10YR 6/2), dry, no reaction to HCl, very dense.	gw	
658.6	8	S-4	21-31 25 (56)	1.4				
	10	S-5	19-50/4 (50)	0.7				
657.1	12	S-6	23-29 26 (55)	0.9				
		S-7	22-34 32 (66)	1.0		Silty Sand with Gravel (sm) - 20% gravel, 60% sand, 20% silt, fine to coarse gravel, spherical to flat, soft, fine to coarse, subrounded to subangular sand, 0.25" max size, low plasticity, low dry strength, low dilatency, low toughness, dark yellowish brown, (10YR 4/2), moist, no reaction to HCL, dense. 12.0'	sm	
		S-8	50/3 (50+)	0.2		Well Graded Gravel (gw) - 90% cobbles, 10% gravel, subangular to angular, hard, 3.0" max size, nonplastic, dark yellowish orange (10YR 6/6), wet, no reaction to HCl, very dense.	gw	
	14	S-9	50/3 (50+)	0.25		Well Graded Gravel (gw) - 90% cobbles, 10% gravel, fine grained cobble, hard, subangular, gravel, 3.0" max size, hard, nonplastic, yellowish gray (5Y 8/1), wet, no reaction to HCl, very dense.		
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
654.1	16	S-10	28-19 17 (36)	0.8		15.0' Well Graded Gravel with Sand and Clay (gw-gc) - 60% cobbles, 20% gravel, 10% sand, 10% clay, subangular to angular, fine to coarse gravel and cobbles, hard, 3.0" max size, nonplastic, yellowish gray (5Y 7/2), wet, no reaction to HCl, very dense.	gw-gc	Large (1 foot long) sandstone boulder removed from casing advancer.
652.6		S-11	14-29 22 (51)	0.8		16.5' Silty Sand with Gravel (sm) - 15% gravel, 65% sand, 10% silt, 10% clay, fine, subrounded gravel, hard, fine to coarse sand, low plasticity, no dry strength, no dilatancy, no toughness, yellowish gray (5Y 8/1), wet, no reaction to HCl, very dense.	sm	
651.1	18	S-12	8-16 18 (34)	0.6		18.0' Well Graded Gravel with Sand and Clay (gw-gc) - 70% cobbles, 20% sand, 10% clay, fine to coarse, subangular to subrounded sand, hard, nonplastic, grayish brown (5YR 3/2), wet, no reaction to HCl, dense to very dense, contains little dark gray (N3) Shale fragments.	gw-gc	
649.6	20	S-13	4-5 50/3 (55)	0.5		19.5' Well Graded Gravel with Sand (gw) - 50% cobbles, 5% gravel, 40% sand, 5% clay, fine to coarse, subrounded to subangular gravel, fine to coarse, subrounded to subangular sand, hard, nonplastic, olive gray (5Y 4/1), wet, no reaction to HCl, very dense, contains little dark gray (N3) Shale fragments.	gw	
647.5	22	S-14	16-21 50/4 (71)	0.4		21.6' Shale- Slight to moderate weathering, dark gray (N3) to grayish black (N2), moderately fractured, iron staining (possibly slickenside) at most fractures, both parallel and perpendicular to bedding plane, thinly bedded at approximately 30-45° angle to core, otherwise core has massive bedding, no reaction to HCl, medium hard.		
		R-1	100% (47%)	3.6				
	24	R-2	100% (68%)	5.0				
	26							
	28					Few fossils below 28.0' infilled with calcite		
DATE STARTED: 10/8/07 DATE COMPLETED: 10/10/07 FIELD GEOLOGIST: JLO CHECKED BY: DAR APPROVED BY: RJB						GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core	NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon						DRILLER: Craig VanVactor HELPER: Terry Duncan	RIG: CME 75 Truck	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-3	100% (92%)	5.0		Below 29.5' fresh to slightly weathered, slightly fractured to unfractured.		29.5-30.1' preserved for lab analysis at 0900
	32							
	34	R-4	100% (90%)	5.0		Shale- Fresh to slightly weathered, dark gray (N3) to grayish black (N2), slightly fractured to unfractured, fractures parallel and perpendicular to bedding, massive bedding, medium hard, does not react to HCl.		
	36							
	38					Intensely fractured to crushed from 37.7-38.0' due to damage when removing from core barrel shoe Few pyrite inclusions-mostly infilling with calcite.		
	40	R-5	100% (84%)	5.0		39.7' fracture - edges are slightly micaceous		
	42					41.3-42.3' Intensely fractured zone		
						Shale- Fresh to slightly weathered, dark gray (N3) to grayish black (N2), very slightly fractured to fractured, fractures parallel and perpendicular to bedding, massive bedding, medium hard, does not		
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS					
						DESCRIPTION							
	44	R-6	100% (88%)	5.0		react to HCl.							
	46					45.5' Fossil zone parallel to core							
					46.45' calcite vein parallel to core- micro faulted								
	48	R-7	100% (100%)	5.0									
	50									49.0' Rough core texture, slightly calcareous, few fossils infilled with calcite.			
	52	R-8	98% (98%)	4.9						Fractures at 52.4' and 52.9'			
	54									Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh, unfractured, sparse fossils, bedding plane only visible at breaks (approximately 30-45° to core), thin bedded, very slight reaction to HCl, rough core surface texture.			
	56												
	58												
	DATE STARTED: 10/8/07									GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock part of the Mahantango Formation	
	DATE COMPLETED: 10/10/07									GWL: DEPTH: N/A DATE/TIME: N/A			
	FIELD GEOLOGIST: JLO									DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75 Truck	
	CHECKED BY: DAR									DRILLER: Craig VanVactor HELPER: Terry Duncan			
	APPROVED BY: RJB												
	DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	60	R-9	100% (100%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh weathering, unfractured, sparse fossils, rough core surface texture, thinly bedded, very slight reaction to HCl, bedding planes only visible at breaks (approximately 30-45 degree's to core).			
	62								
	64								
	66	R-10	100% (100%)	5.0					
	68								
	70	R-11	100% (100%)	5.0					
	72								
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07		USCS SYMBOL	REMARKS
						DESCRIPTION			
	74	R-12	100% (94%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh weathering, very slightly fractured, alternating rough and smooth core texture, thinly bedded, no reaction to HCl.			
	76		73.4' - fracture						
	78								
	80	R-13	100% (100%)	5.0					
	82		82.2' pyrite inclusion with calcite around the outside.						
	84	R-14	100% (100%)	5.0		Shale- Medium hard, fresh, unfractured, thinly bedded, no reaction to HCl, color change at 83.5' from medium dark gray (N4) to grayish black (N2), pyrite and calcite pocket at 83.6', smooth core texture..			
	86								
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan		RIG: CME 75 Truck		
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
	88	R-15	100% (94%)	5.0		Shale- Grayish black (N2), medium hard, fresh, very slightly fractured, thinly bedded, smooth core texture, no reaction to HCl. Few pyrite veins around 88.8' 		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
	104	R-18	100% (100%)	5.0		Shale- Grayish black (N2), medium hard, fresh, thinly bedded, smooth core texture, no reaction to HCl, few pyrite/calcite inclusions. <		



Bell Bend NPP

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LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
	118	R-21	100% (96%)	5.0		Shale- Grayish black (N2), medium hard, fresh, unfractured, thinly bedded, smooth core texture, no reaction to HCl.		
	120					120.3' Fracture with calcite.		
	122							
	124	R-22	100% (100%)	5.0		123.3' Healed fracture with calcite and pyrite inclusion.		
	126							
	128							
	130	R-23	100% (92%)	5.0				
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core	NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 10/10/07								
FIELD GEOLOGIST: JLO					DRILLER: Craig VanVactor HELPER: Terry Duncan	RIG: CME 75 Truck		
CHECKED BY: DAR								
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS
						DESCRIPTION		
	132	R-24	100% (96%)	5.0		Shale- Grayish black (N2), medium hard, fresh, very slightly fractured, thinly bedded, smooth core texture, no reaction to HCl, few pyrite and calcite inclusion. <		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	148	R-27	90% (90%)	4.5'		Shale- Grayish black (N2), medium hard, fresh weathering, very slightly fractured, thinnly bedded, smooth core texture, no reaction to HCl, pyrite inclusions throughout. Fracture at 149.8'			
	150								
	152								
	154	R-28	56% (32%)	2.8		Shale- Grayish black (N2), medium hard, fresh weathering, very slightly fractured, thinnly bedded, smooth core texture, no reaction to HCl, many pyrite inclusions throughout, pyrite inclusions very concentrated between 161. 2'-162'.			
	156								
	158								
	160	R-29	94% (80%)	4.7					
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75 Truck	
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS						
						DESCRIPTION								
	162	R-30	100% (100%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh, unfractured, no bedding structures visible, many small fossil casts infilled with calcite, some pyrite inclusions and thin veins, slight reaction to HCl.								
	164													
	166													
	168													
	170				R-31				100% (100%)	5.0	Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh, unfractured, no bedding structures visible, many calcite filled fossil casts throughout, some pyrite inclusions and thin veins, slight reaction to HCl.			
	172													
	174													
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock part of the Mahantango Formation							
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A									
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75 Truck							
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan									
APPROVED BY: RJB														
DRILLING CO.: Terracon														

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-306

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	176	R-32	(100%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh weathering, unfractured, no bedding structures visible, many calcite filled fossil casts, few pyrite masses.			
	178								
	180	R-33	100% (100%)	5.0					
	182								
184									
186	R-34	94% (94%)	4.7						
188					Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh, unfractured, no bedding structures visible, few calcite filled fossil casts, few pyrite masses.				
	190								
DATE STARTED: 10/8/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock part of the Mahantango Formation		
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75 Truck		
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									

Bell Bend NPP						PROJECT NO. 07-3891			
LOG OF BORING NO. B-306									
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339313.213 E 2405413.688 SURFACE EL: 669.07		USCS SYMBOL	REMARKS
						DESCRIPTION			
466.1	192	R-35	98% (98%)	4.9		Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh, unfractured, no bedding structures visible, few calcite filled fossil casts, few pyrite inclusions. <			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-307


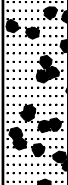
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
663.8	0	S-1	2-3 6 (9)	1.1		Silty Sand (sm) - 75% sand, 25% silt, hard, subrounded, fine to coarse sand, 0.04" max size, low plasticity, medium dry strength, low dilatancy, low toughness, moderate yellowish brown (10 YR 5/4), slight organic odor, dry, no reaction to HCl, loose, traces of roots. 1.5'	sm	
	2	S-2	4-5 6 (11)	1.1		Silty Sand with Gravel (sm) - 15% gravel, 65% sand, 20% silt, subangular, elongated and flat, coarse gravel, hard, fine to coarse, rounded to subrounded sand, 0.75" max size, low plasticity, medium dry strength, no dilatancy, low toughness, moderate yellowish brown (10 YR 5/4), dry, no reaction to HCl, medium dense. 3.0'	sm	
662.3						Well-Graded Sand with Cobbles (sw) - 30% cobbles, 60% sand, 10% gravel, subangular to subrounded cobbles, fine to coarse, elongated and flat gravel, hard, fine to coarse sand, 2" max size, nonplastic, pale brown (5 YR 5/2), dry, no reaction to HCl, dense. 4.5'	sw	
	4	S-3	13-22 20 (42)	1.0		No Recovery - No SPT Sample 6.0'		
659.3	6					Well-Graded Sand with Gravel (gw) - 10% cobbles, 25% gravel, 65% sand, fine to coarse gravel, elongated and flat, subrounded, fine to coarse sand, hard, 1.5" max size, nonplastic, pale brown (5 YR 5/2), dry, no reaction HCl, medium dense. 7.5'	gw	
		S-5	6-10 15 (25)	1.0		Well Graded Gravel with Sand (gw) - 35% cobbles, 20% gravel, 45% sand, fine grained sandstone cobbles, fine to coarse subangular, elongated and flat, hard gravel, subangular to subrounded, fine to coarse sand, 3.0" max size, nonplastic, moderate brown (5YR 5/2) and light gray (N7), dry, no reaction HCl, very dense. 9.0'	gw	
657.8	8	S-6	17-31 25 (56)	1.2		Poorly graded Sand with Gravel (sp) - 20% cobbles, 25% gravel, 55% sand, hard, fine grained sandstone cobbles, fine to coarse, subrounded to subangular, elongated and flat gravel, subangular to subrounded, fine to coarse sand, 3.0" max size, nonplastic, moderate brown (5YR 5/2) and pale red (5R 6/2), dry, no reaction HCl, very dense. 10.5'	sp	
	10	S-7	40-50/5" (50)	0.9		Well Graded Gravel with Sand (gw) - 45% cobbles, 30% gravel, 25% sand, 5% silt, fine grained sandstone cobbles, fine to coarse, subrounded to subangular, elongated and flat gravel, hard, fine to coarse, subrounded to subangular sand, 3.0" max size, nonplastic, very pale orange (10 YR 8/2), moderate yellowish brown (10 YR 5/4), and medium gray (N5), wet, no reaction HCl, very dense. 12.0'	gw	
656.3		S-8	25-24 23 (47)	1.0		Well Graded Gravel with Sand and Silt (gw-gm) - 25% cobbles, 40% gravel, 25% sand, 10% silt, fine-grained sandstone cobbles, fine to coarse, subrounded, elongate and flat gravel, hard, subangular to subrounded, fine to coarse sand, 3.0" max size, nonplastic, medium dark gray (N4) and moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, dense. 13.5'	gw-gm	
	12	S-9	22-24 26 (50)	1.1		Well Graded Sand with Gravel (sw) - 15% cobbles, 25% gravel, 60% sand, fine to coarse, hard, elongated and flat gravel, subangular to subrounded, fine to coarse sand, 3.0" max size, nonplastic, medium dark gray (N4) and moderate brown (5Y4/4), wet, no reaction to HCl.		
651.8	14	S-10	30-32 21 (53)	1.3		Well Graded Sand with Gravel (sw) - 15% cobbles, 25% gravel, 60% sand, fine to coarse, hard, elongated and flat gravel, subangular to subrounded, fine to coarse sand, 3.0" max size, nonplastic, medium dark gray (N4) and moderate brown (5Y4/4), wet, no reaction to HCl.		
DATE STARTED: 10/17/2007					GWL: DEPTH: 10.8 DATE/TIME: 10/17/2007 07:30		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/17/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-307

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
650.3	16	S-11	23-18 23 (41)	0.5		very-dense, contains few coal fragments. 15.0'	gw	Driller lost all fluid from 15.0'-16.5'
						Well Graded Gravel (gw)- 90% cobbles, 10% sand, subrounded, elongated and flat, fine-grained sandstone cobbles, hard, subangular, medium to coarse sand, 3.0" max size, nonplastic, greenish gray (5GY 6/1), moderate red (5R 4/6), wet, no reaction to HCl, dense.		
648.8	18	S-12	16-19 31 (50)	1.0		Well Graded Sand with Cobbles (sw) - 45% cobbles, 55% sand, fine grained sandstone cobbles, hard, elongated and flat, subangular to subrounded, fine to coarse sand, 2" max size, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, dense.	sw	Driller regained fluid from 16.5'-18.0'
645.8	20	S-14	18-23 23 (46)	1.4		Well-Graded Sand (sw)- 20% cobbles, 15% gravel, 60% sand, 5% silt, subrounded, spherical cobbles and gravel, hard, angular, fine to coarse sand, medium hard, 1.5" max size, nonplastic, moderate yellowish brown (10 YR 5/4), moderate red (5Y 4/6) and medium gray (N3), wet, no reaction to HCl, dense.	sw	
						642.8		
639.8	24	S-17	43-28 23 (51)	0.2		Well Graded Gravel with Sand (gw) - 75% cobbles, 25% sand, fine to coarse, subrounded, spherical, cobbles, fine to coarse subangular to rounded sand, 3.0" max size, nonplastic, moderate red (5Y 4/6) and medium gray (N3), wet, no reaction HCl, very dense, shale fragments.	gw	
					637.8	26		S-18
DATE STARTED: 10/17/2007					GWL: DEPTH: 10.8 DATE/TIME: 10/17/2007 07:30			NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 10/17/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 850
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP										PROJECT NO. 07-3891									
LOG OF BORING NO. B-307																			
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31		USCS SYMBOL	REMARKS										
						DESCRIPTION													
	30	R-1	100% (77%)	7.5		Shale- Moderately hard, dark gray (N3), slightly fractured, fresh, fracture located from 35.8' horizontal, 38.7' - 39.0' and 40.6' - 40.9' approximately 70° of rock core, very thickly bedded, noncalcareous, contains pockets of calcareous fossils from 42.0' - 45.0', not healed, no reaction to HCl.													
	32																		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-307

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-3	100% (96%)	10.0	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	Shale- Moderately hard, dark gray (N3), slightly fractured, fresh, not healed, fractured from 45.5'-45.7', 50.8'-51.1' approximately 60° to rock core, noncalcareous, except for small inclusion from 50.0'-55.0', very thickly bedded, no reaction to HCl. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-307

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	60	R-4	100% (99%)	10.0		Shale- Moderately hard, dark gray (N3), fresh, slightly fractured, at 71.4' - 71.6' approximately 60° of rock core, not healed, noncalcareous, very thickly bedded.			
	62								
	64								
	66								
	68					Shale- Moderately hard, dark gray (N3), fresh, slightly fractured, at 71.4' - 71.6' approximately 60° of rock core, not healed, noncalcareous, very thickly bedded, no reaction to HCl.			
	70	R-5	100% (96%)	10.0					
	72								
DATE STARTED: 10/17/2007					GWL: DEPTH: 10.8 DATE/TIME: 10/17/2007 07:30			NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/17/2007					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 850	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891


LOG OF BORING NO. B-307

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-6	100% (99%)	10.0		Shale- Moderately hard, dark gray (N3), fresh, very slightly fractured, not healed, very slightly calcareous, with few pockets of pyrite, from 84.0' - 85.0', very thickly bedded, slight reaction to HCl.		
		R-7	100% (68%)	5.0		Shale- Moderately hard, dark gray (N3), fresh, not healed, noncalcareous, very thickly bedded, massive bedding, no reaction to HCl.		
DATE STARTED: 10/17/2007				GWL: DEPTH: 10.8 DATE/TIME: 10/17/2007 07:30				NOTES: Bedrock part of the Mahantango Formation
DATE COMPLETED: 10/17/2007				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK				DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR				DRILLER: Scott Zeien HELPER: Brian Nabholz				RIG: CME 850
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-307

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339193.328 E 2405276.098 SURFACE EL: 665.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
565.3	88	R-8	100% (100%)	10.0		Shale- Moderately hard, dark gray (N3), fresh, unfractured, not healed, noncalcareous, massive bedding, no reaction to HCl.		
	90							
	92							
	94							
	96							
	98							
	100					BOTTOM OF BORING 100'		
	102							
DATE STARTED: 10/17/2007 DATE COMPLETED: 10/17/2007 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 10.8 DATE/TIME: 10/17/2007 07:30 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core			NOTES: Bedrock part of the Mahantango Formation RIG: CME 850
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Brian Nabholz			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS
						DESCRIPTION		
660.4 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS		
						DESCRIPTION				
646.9	16	S-9	16-50/5" (50)	0.8		15.5'	GW			
		S-10	16-15 13 (28)	0.9		Well Graded Gravel with Sand (GW) - 60% gravel, 30% sand, 10% silt, fine to coarse, angular to subangular gravel, hard, fine to medium, subangular sand, 0.5" max size, nonplastic, dark reddish brown (10 R 3/4), wet, no reaction to HCl, medium dense.				
645.4	18	S-11	12-12 13 (25)	0.9		17.0'	sw-sm			
		S-12	18-16 17 (33)	0.7		Well Graded Sand with Gravel and Silt (sw-sm) - 35% gravel, 55% sand, 10% silt, fine to coarse, hard, angular to subangular gravel, fine to medium, angular to subangular sand, 0.5" max size, nonplastic, dark reddish brown (10 R 3/4), wet, no reaction to HCl, medium dense.				
643.9	20	S-13	19-16 24 (40)	0.9		18.5'	GP-GM			
		S-14	17-30 30 (60)	1.0		Poorly Graded Gravel with Sand and Silt (GP-GM) - 65% gravel, 25% sand, 10% silt, fine to coarse, angular to subangular gravel, elongated and flat, hard, fine subangular sand, 0.5" max size, nonplastic, dark reddish brown (10 R 3/4), wet, no reaction to HCl, dense.				
640.9	22	S-15	15-19 20 (39)	1.3		21.5'	gc			
		S-16	14-18 21 (39)	0.7		clayey gravel (gc) - 40% cobbles, 20% gravel, 10% sand, 30% clay, rounded to angular, elongated and flat, medium hard gravel and cobbles, fine to coarse, angular sand. 0.75" max size, low plasticity, no dry strength, low dilatency, medium toughness, dark gray (N3) and pale yellowish brown (10 YR 6/2), wet, no reaction to HCl, very dense to dense.				
636.4	26	S-17	0-50/4 (50)	0.5		26.0'	gw			
		S-18	18-17 17 (34)	0.7		Well Graded Gravel with Sand (gw) - 80% gravel and cobbles, 20% sand, very hard, unweathered, fine grained sandstone cobbles, very soft, slightly weathered, intensely fractured shale gravel, fine to coarse, angular sand, soft, 2" max size, nonplastic, pale yellowish brown (10 YR 6/2) to dark gray (N3), wet, no reaction to HCl, very dense.				
634.9	28					27.5'	gw-gc			
DATE STARTED: 9/26/07						GWL: DEPTH: 7.19 DATE/TIME: 10/1/07 1200			NOTES: Bedrock part of the Mahantango Formation.	
DATE COMPLETED: 10/1/07						GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/NQ Rockcore			RIG: MTS 1500	
CHECKED BY: DAR						DRILLER: Bob Hansen HELPER: Dan Green				
APPROVED BY: RJB										
DRILLING CO.: Aquadrill										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS
						DESCRIPTION		
631.4	30	S-19	48-50/3" (50)	0.6		31.0'	gw	
						Well Graded Gravel with Sand (gw) - 60% gravel, 35% sand, 5% silt, fine to coarse, subangular to well rounded, elongated and flat gravel, hard, rounded to subangular, fine to coarse sand, 1.5" max size, nonplastic, moderate brown (5 YR 4/4), wet, no reaction to HCl, very dense.		
629.9	32	S-20	12-14 50/4" (64)	1.0		32.5'	GP-GM	
						Poorly Graded Gravel with Silt and Sand (GP-GM) - 90% gravel, 10% sand, fine to coarse grained, subangular, gravel, hard, fine to medium, rounded to subangular sand, 0.5" max size, nonplastic, moderate brown (5 YR 4/4), wet, no reaction to HCl, dense.		
628.4	34	S-21	16-29 19 (48)	0.8		34'	gw	
						Well Graded Gravel (gw) - 90% gravel, 10% sand, fine to coarse, subangular to angular, flat and elongated, gravel, hard, fine to medium, rounded to subrounded sand, 0.5" max size, nonplastic, medium gray (N5), wet, no reaction to HCl, very dense.		
626.9	36	S-22	29-39 44 (83)	0.7		35.5'	SP-SM	
						Poorly Graded Sand with Silt and Gravel (SP-SM) - 70% gravel, 20% sand, 10% silt, fine to coarse, subangular to subrounded, elongated and flat, gravel, hard, medium to coarse, subangular to subrounded sand, 0.5" max size, nonplastic, medium gray (N5), wet, no reaction to HCl, very dense.		
625.4	38	S-23	44-27 28 (55)	0.8		37.0'	gw	
						Well Graded Gravel (gw) - 100% gravel, fine to coarse, well rounded to subangular, gravel, hard, very soft shale, very hard, unweathered, lightly fractured quartz-rich sandstone, 0.5" max particle size, nonplastic, medium gray (N5) to pale olive (10 Y 6/2), wet, no reaction to HCl, very dense.		
623.4	40	S-24	21-50/2" (50)	0.6		39'		
						Shale- Dark gray (N4), medium hard to hard, slightly to very slightly fractured, slightly weathered in upper zone, noncalcareous, contains vertical bedding planes, moderately thick bedding.		
	42	S-25	50/5 (50+)	0.5				
						Shale- Dark gray (N3), medium hard to hard, fresh, very slightly fractured, fractures occurring at 45° of bedding, no healing, vertical bedding, noncalcareous.		
		R-1	71% (44%)	2.5				
DATE STARTED: 9/26/07 DATE COMPLETED: 10/1/07 FIELD GEOLOGIST: PFW CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 7.19 DATE/TIME: 10/1/07 1200 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock part of the Mahantango Formation.	
DRILLING CO.: Aquadrill					DRILLER: Bob Hansen HELPER: Dan Green		RIG: MTS 1500	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	44	R-2	100% (100%)	5.0		Shale- Dark gray (N3), medium hard to hard, fresh, very slightly fractured, fractures low angle 20° - 30°, no healing, noncalcareous.		Preserved Sample for Laboratory Analysis from 50.7' - 52.4'.	
	46								
	48								
	50								
	52	R-3	94% (82%)	4.7		Shale- Dark gray (N3), medium hard to hard, slightly fractured, noncalcareous, vertical bedding planes.			
	54								
	56								
	58								
DATE STARTED: 9/26/07					GWL: DEPTH: 7.19 DATE/TIME: 10/1/07 1200 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore	NOTES: Bedrock part of the Mahantango Formation.			
DATE COMPLETED: 10/1/07									
FIELD GEOLOGIST: PFW						DRILLER: Bob Hansen HELPER: Dan Green	RIG: MTS 1500		
CHECKED BY: DAR									
APPROVED BY: RJB									
DRILLING CO.: Aquadrill									



Bell Bend NPP

PROJECT NO. 07-3891


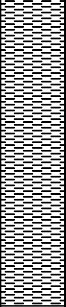

LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	60	R-5	97% (97%)	5.8		Shale- Dark gray (N3), medium hard to hard, slightly fractured, vertical bedding.				
	62									
	64									
	66									
	68	R-6	97% (97%)	9.7						
	70									
	72									
DATE STARTED: 9/26/07					GWL: DEPTH: 7.19 DATE/TIME: 10/1/07 1200	NOTES: Bedrock part of the Mahantango Formation.				
DATE COMPLETED: 10/1/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rockcore					
CHECKED BY: DAR										
APPROVED BY: RJB					DRILLER: Bob Hansen HELPER: Dan Green			RIG: MTS 1500		
DRILLING CO.: Aquadrill										

Bell Bend NPP

PROJECT NO. 07-3891



LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS
						DESCRIPTION		
580.1	74	R-7	100% (96%)	9.8				
	76							
576.9	78	R-8	100% (88%)	3.2		Siltstone- Dark gray (N3), medium hard to hard, very little fractures, silty, very fine grained.		
	80							
	82	R-9	95% (65%)	1.9		Shale- Dark gray (N3), medium hard to hard, very slightly fractured, noncalcareous, no reaction to HCl.		
	84							
	86							
DATE STARTED: 9/26/07 DATE COMPLETED: 10/1/07 FIELD GEOLOGIST: PFW CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 7.19 DATE/TIME: 10/1/07 1200 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock part of the Mahantango Formation.	
DRILLING CO.: Aquadrill					DRILLER: Bob Hansen HELPER: Dan Green		RIG: MTS 1500	

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-308

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339069.298 E 2405288.632 SURFACE EL: 662.41	USCS SYMBOL	REMARKS	
						DESCRIPTION			
561.1	88	R-10	100% (100%)	5.0		Shale- Dark gray (N3), medium hard to hard, very slightly fractured, noncalcareous, no reaction to HCl.			
	90								
	92								
	94								
	96	R-11	95% (92%)	8.4					
	98								
	100								
	102								
						BOTTOM OF BORING 101.3'			
DATE STARTED: 9/26/07					GWL: DEPTH: 7.19 DATE/TIME: 10/1/07 1200			NOTES: Bedrock part of the Mahantango Formation.	
DATE COMPLETED: 10/1/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rockcore				
CHECKED BY: DAR									
APPROVED BY: RJB					DRILLER: Bob Hansen HELPER: Dan Green			RIG: MTS 1500	
DRILLING CO.: Aquadrill									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
656.6 <								







Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS				
						DESCRIPTION						
643.1	16	S-10	3-4 6 (10)	0.8		16.5'	GW-GM					
		S-11	26-18 17 (35)	0.4		Well Graded Gravel with Silt and Sand (GW-GM) - 45% Gravel, 45% sand, 10% Silt, angular, elongated and flat, 1.5" max size, hard, nonplastic, medium gray (N5), wet, no reaction HCL, dense.						
641.6	18	S-12	10-11 14 (25)	0.8		18.0'	SW					
						Well Graded Sand with Gravel (sw) - 25% gravel, 70% sand, 5% silt, fine to coarse, angular, elongated and flat gravel, fine to coarse, angular to subrounded sand, 1.5" max size, hard, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCL, medium-dense to dense.						
638.6	20	S-13	6-16 26 (42)	0.9		21.0'	gw					
		S-14	5-15 28 (43)	0.7		Well Graded Gravel with Sand (gw) - 25% cobbles, 45% gravel, 25% sand, 5% silt, fine to coarse, angular, elongated and flat gravel, coarse, subangular sand, hard, 1.5" max size, nonplastic, medium gray (N5), wet, no reaction HCL, dense.						
635.6	24	S-15	21-25 18 (43)	1.2		24.0'	gc					
		S-16	28-50/2" (50)	0.6		Clayey Gravel with Sand (gc) - 60% gravel, 15% sand, 25% clay, fine to coarse, subrounded to subangular, elongate to spherical gravel, fine to coarse, angular to subrounded sand, 1" max size, hard, low plasticity, low dry strength, low dilatancy, medium toughness, dusky brown (5YR 2/2), wet, no reaction to HCL, very dense.						
634.9	26	R-1	74% (0%)	2.9		24.7'						
						Cobbles and Boulders - About 100% cobbles, angular, elongated and flat, hard, 2.0" max size, nonplastic, no toughness, no dilatancy, no dry strength, medium dark gray (N4) and dark yellowish brown (10 YR 4/2), no odor, no reaction HCL, no odor, no reaction HCL, wet.						
631.2	28					28.4'						
						Cobbles and Boulders - About 100% cobbles, 5% clay, angular, elongated and flat, hard, 2.0" max size, nonplastic, no toughness, no dilatancy, no dry strength, medium dark gray (N4), no odor, no						
DATE STARTED: 9/24/07					GWL: DEPTH: DATE/TIME:	NOTES: Bedrock part of the Mahatango Formation.						
DATE COMPLETED: 9/27/07					GWL: DEPTH: N/A DATE/TIME: N/A							
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 75				
CHECKED BY: DAR												
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Terry Duncan							
DRILLING CO.: Terracon												

Bell Bend NPP					LOG OF BORING NO. B-309			PROJECT NO. 07-3891	
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS	
						DESCRIPTION			
626.2	30	R-2	34% (0%)	1.7		reaction HCL, no odor, no reaction HCL, wet.			
	32					33.4'			
	621.2	34	R-3	70% (0%)	3.5				Cobbles and Boulders - About 100% cobbles, 5% clay, angular, elongated and flat, hard, 2.0" max size, nonplastic, no toughness, no dilatancy, no dry strength, medium dark gray (N4), no odor, no reaction HCL, no odor, no reaction HCL, wet.
36		38.4'							
616.2		38	R-4	80% (24%)	4.0		Cobbles and Boulders - About 100% cobbles, 5% clay, angular, elongated and flat, hard, 2.0" max size, nonplastic, no toughness, no dilatancy, no dry strength, medium dark gray (N4), no odor, no reaction HCL, no odor, no reaction HCL, wet.		
	40	43.4'							
		42					Shale, dark gray (N3), medium hard, moderately fractured		
DATE STARTED: 9/24/07 DATE COMPLETED: 9/27/07 FIELD GEOLOGIST: JLO CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: DATE/TIME: GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahatango Formation.		
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: Terry Duncan		RIG: CME 75		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64		USCS SYMBOL	REMARKS	
						DESCRIPTION				
611.2	44	R-5	84% (22%)	4.2					Intensely fractured from 49.3' to 50.2'. All	
		46	R-6	92% (74%)	4.6					
	48	R-7	100% (98%)	6.0		48.4'				
	50									
	52									
	54				53.4'					
	56									
	58				58.4'					
DATE STARTED: 9/24/07					GWL: DEPTH:		DATE/TIME:		NOTES: Bedrock part of the Mahatango Formation.	
DATE COMPLETED: 9/27/07					GWL: DEPTH: N/A		DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core					
CHECKED BY: DAR										
APPROVED BY: RJB					DRILLER: Craig VanVactor		HELPER: Terry Duncan		RIG: CME 75	
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
596.2	60	R-8	100% (92%)	6.0		Shale, dark gray (N3), medium hard, moderately fractured, noncalcareous, fractures at 30 degrees to rock core at 62.4' to 62.7', pyritic veins, calcareous healed fractures		
	64	R-10	100% (100%)	5.0		Silty Shale: noncalcareous, hard, unfractured, fresh.		
DATE COMPLETED: 9/27/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO				DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR				DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB								RIG: CME 75
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS		
						DESCRIPTION				
586.2	74	R-11	98% (98%)	4.9		73.4'				
						Shale: Dark gray (N3) medium-hard, calcite healed fractures, calcite, oriented at 30° to rock core, slightly fractured, calcareous, fresh.				
581.2	76	R-11	98% (98%)	4.9		78.4'				
						Shale; Dark gray (N3) pyrite and calcite veins, noncalcareous and very slightly fractured, medium hard, slickenlines present at 80.65.'				
576.2	78	R-12	100% (100%)	5.0		83.4'				
						Shale: Dark gray (N3) slightly weathered, slightly fractured, medium hard, calcareous.				
	80	R-13	100% (70%)	5.0						
DATE STARTED: 9/24/07					GWL: DEPTH: DATE/TIME:	NOTES: Bedrock part of the Mahatango Formation.				
DATE COMPLETED: 9/27/07									GWL: DEPTH: N/A DATE/TIME: N/A	
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core					
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75		
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
571.2	88	R-14	98% (94%)	5.0		88.4'		
						Shale: Dark gray (N3) slightly weathered, thinly laminated bedding plane, slightly fractured, calcareous.		
566.2	90	R-15	100% (100%)	5.0		93.4'		
						Shale: Dark gray (N3) slightly weathered, thinly laminated bedding plane, slightly fractured, calcareous.		
561.2	92	R-16	98% (98%)	4.9		98.4'		
						Shale: dark gray (N3) fossils (brachiopods and crinoid), calcareous, nonfractured, hard, fresh, thin bedding planes, fossiliferous.		
DATE STARTED: 9/24/07				GWL: DEPTH: DATE/TIME:			NOTES: Bedrock part of the Mahatango Formation.	
DATE COMPLETED: 9/27/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO				DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR				DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB							RIG: CME 75	
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
556.2	104	R-17	100% (100%)	5.0		103.4' Shale: dark gray (N3), fresh, unfractured, hard, fresh, non weathered, thin bedding planes, fossiliferous.		Special care sample taken at 116.6'-118.4'
551.2	108					108.4' Shale: dark gray (N3), fresh, unfractured, hard, fresh, nonweathered, thin bedding planes, fossiliferous.		
	110	R-18	100% (100%)	5.0				
	112							
546.2	114					113.4' Shale: dark gray (N3), fresh, unfractured, hard, fresh, nonweathered, thin bedding planes, fossiliferous.		
	116	R-19	98% (98%)	4.9				
DATE STARTED: 9/24/07 DATE COMPLETED: 9/27/07 FIELD GEOLOGIST: JLO CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: DATE/TIME: GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core			NOTES: Bedrock part of the Mahatango Formation.
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
541.2	118	R-20	100% (100%)	5.0		118.4'		
						SILTSTONE: Medium-hard to hard, grayish-black (N2) fresh, unfractured, slightly calcareous, thin bedding planes		
536.2	120	R-21		5.0		123.4'		
						SILTSTONE: Medium-hard to hard grayish-black (N2) fresh, unfractured, calcareous, thinly laminated bedding planes, thinly laminated, fresh, unweathered.		
531.2	122	R-22	100% (100%)	5.0		128.4'		
						SILTSTONE: Medium-hard to hard, slightly fractured, healed with calcite, grayish black (N2), thinly laminated bedding plane, calcareous.		
DATE STARTED: 9/24/07					GWL: DEPTH: DATE/TIME:		NOTES: Bedrock part of the Mahatango Formation.	
DATE COMPLETED: 9/27/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75	
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

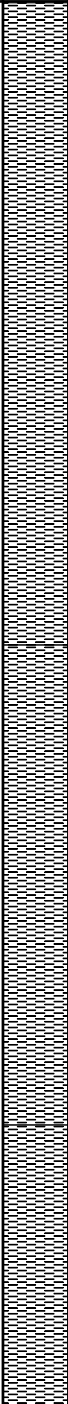
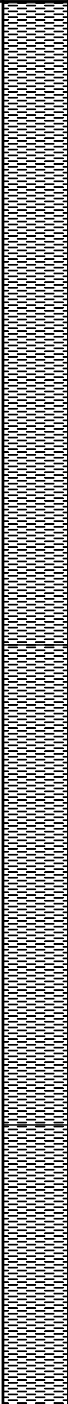
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
526.2 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
506.6	148	R-27	100% (100%)	5.0				
						SILTSTONE: grayish black to black (N2 - N1) medium-hard, thinly bedded, fresh to slightly weathering, slightly fractured.		
501.6	158	R-28	100% (96%)	5.0				
						SILTSTONE: grayish black to black (N2 - N1) medium-hard, thinly bedded, fresh to slightly weathering, slightly fractured.		
DATE STARTED: 9/24/07					GWL: DEPTH:		NOTES: Bedrock part of the Mahatango Formation.	
DATE COMPLETED: 9/27/07					DATE/TIME:			
FIELD GEOLOGIST: JLO					GWL: DEPTH: N/A		RIG: CME 75	
CHECKED BY: DAR					DATE/TIME: N/A			
APPROVED BY: RJB					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
DRILLER: Craig VanVactor					HELPER: Terry Duncan			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
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Bell Bend NPP

PROJECT NO. 07-3891

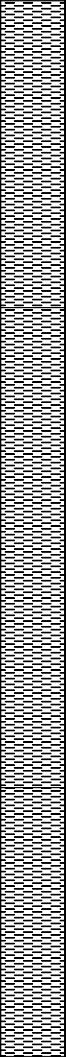
LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
481.2 <								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-309

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338998.802 E 2405333.716 SURFACE EL: 659.64	USCS SYMBOL	REMARKS
						DESCRIPTION		
466.2	192	R-34	100% (100%)	5.0		193.4' SILTSTONE: grayish black (N3), medium-hard, slightly fractured, unweathered, thinly bedded.		
461.2	194	R-35	94% (86%)	4.7		198.4' SILTSTONE: grayish black (N3), medium-hard, slightly fractured, unweathered, thinly bedded.		
458.4	196	R-36	100% (100%)	2.8		BOTTOM OF BORING 201.2'		
	200							
	202							
	204							
DATE STARTED: 9/24/07 DATE COMPLETED: 9/27/07 FIELD GEOLOGIST: JLO CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: DATE/TIME: GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core			NOTES: Bedrock part of the Mahatango Formation.
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS
						DESCRIPTION		
652.5	0	U-1						Shelby tube 0-2.0' 500 psi downpressure
	2	U-2						Shelby tube 2.0-4.0' 500 psi downpressure
	4	U-3						Shelby tube 4.0-6.0' 1500 psi downpressure for 1.0'- no recovery
	6	S-1	6-7 8 (15)	2.0'		Silty Sand (sm) - 60% Sand, 40% silty clay, fine to medium, subrounded to rounded, spherical sand, nonplastic, soft, grayish brown (5YR 3/2) to dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense.	sm	
	8	S-2	3-4 8 (12)	1.3'			SM	
	10	S-3	8-8 8 (16)	1.1'			sm	
649.5	12	S-4	6-5 6 (11)	1.2'			SM	
	14	S-5	4-5 4 (9)	1.3'			SM	
		S-6	5-6 7 (13)	1.1'			SM	
DATE STARTED: 9/27/07					GWL: DEPTH: DATE/TIME:		NOTES: Bedrock part of the Mahatango Formation.	
DATE COMPLETED: 9/30/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB								
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously		RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310




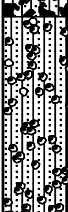

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS	
						DESCRIPTION			
643.5	16	S-7	4-4 5 (9)	1.3'		15.0' Poorly Graded Sand with Silt (SP-SM) - 85% sand, 15% silt, fine to medium, rounded sand, low plasticity, low dry strength, rapid dilatancy, low toughness, brownish gray (5YR 4/1) to dark yellowish brown (10YR 4/2), moist, no reaction to HCL, very loose to loose.	sp-sm		
		S-8	5-4 4 (8)	1.2'			SP-SM		
		S-9	3-3 3 (6)	1.2'					
		S-10	3-2 1 (3)	1.4'					
637.5	22	S-11	6-7 10 (17)	1.2'		21.0' Silty Gravel with Sand (GM) - 45% gravel, 20% sand, 35% silt and clay, fine to coarse gravel, fine to medium sand, dark yellowish brown (10YR 4/2), moist, no reaction to HCL, medium dense.	GM		
		636.0	24	S-12		9-20 22 (42)	0.9'		22.5' Well Graded Gravel with Clay and Sand (GW-GC) - 80% gravel, 15% sand, 5% silt, fine to coarse, subrounded gravel, hard, coarse, subrounded to subangular sand, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense to dense.
S-13	9-15 9 (24)			1.2'					
26	S-14		15-16 17 (33)	1.2'			GW-GC		
	28		S-15	17-11 22 (33)	0.9'	Well Graded Gravel with Clay and Sand (gw-gc) - 65% gravel, 30% sand, 5% silt, fine to coarse, subrounded gravel, hard, coarse, subrounded to subangular sand, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense to dense.	gw-gc		
630.0						28.5' Well Graded Sand with Silt and Gravel (sw-sm) - 20% gravel, 70% sand, 10% silt, fine to coarse, subrounded gravel, fine to coarse, subrounded sand, nonplastic, Pale yellowish brown (10YR 6/2) to	sw-sm		
DATE STARTED: 9/27/07					GWL: DEPTH: DATE/TIME:		NOTES: Bedrock part of the Mahatango Formation.		
DATE COMPLETED: 9/30/07					GWL: DEPTH: DATE/TIME:				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously		RIG: CME 55 Track		
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS		
						DESCRIPTION				
627.0	30	S-16	25 (41)	1.0'		moderate yellowish brown (10YR 5/4), moist, no reaction to HCL, dense to very dense.	GW-GM	This is not bedrock but siltstone boulders with a few hints of glacially linked "soils" such as rounded non-siltstone (quartz and Sandstone) constituents		
		S-17	50/5 (50+)	0.2'						
622.5	32	S-18	12-13 14 (27)	1.1'		Well Graded Gravel with Silt and Sand (GW-GM) - 90% gravel, 5% sand, 5% silt, coarse, subrounded to subangular gravel, hard, fine to coarse, subrounded sand, nonplastic, grayish brown (5YR 3/2) to dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense.	SM			
	34	S-19	7-8 13 (21)	0.2'						
619.5	36	S-20	12-13 14 (27)	0.9'			sm			
		S-21	10-10 7 (17)	1.0'		Silty Sand with Gravel (sm) - 20% gravel, 70% sand, 10% silt, coarse, subrounded gravel, hard, fine to medium, rounded sand, nonplastic, brownish gray (5YR 2/1), wet, no reaction to HCL, medium dense.				
619.5	38	S-22	3-5 7 (12)	1.1'			GP-GC			
	40	S-23	12-12 20 (32)	0.8'		Poorly Graded Gravel with Clay and Sand (GP-GC) - 85% gravel, 10% sand, 5% silt, fine to coarse, subrounded to angular gravel, hard, coarse angular sand, 2" max size, nonplastic, dark gray (N3) to grayish red (10R 4/2), wet, no reaction to HCL, dense to very dense, sandstone, siltstone and shale pieces.				
	42	S-24	10-15 18 (33)	1.0'						
		S-25	5-10 50 (60)	1.1'						
DATE STARTED: 9/27/07 DATE COMPLETED: 9/30/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: DATE/TIME: GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone/NQ Rock Core				NOTES: Bedrock part of the Mahatango Formation.	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously				RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310

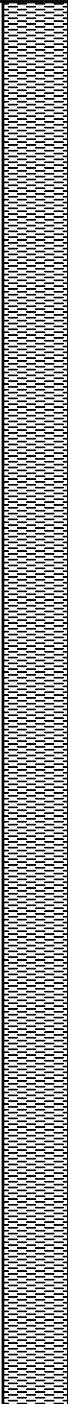
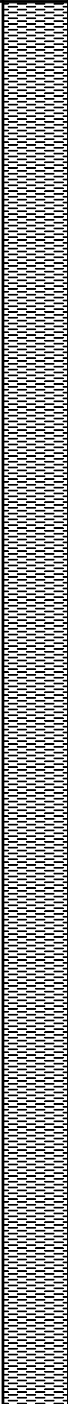
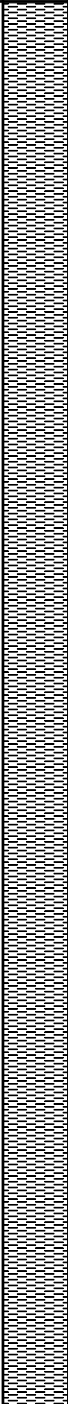
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS			
						DESCRIPTION					
612.0	44	S-26	14-19 22 (41)	1.3'		Silty Clayey Gravel with Sand (GM-GC), 75% gravel, 10% sand, 15% silt, fine to coarse, subrounded to subangular gravel, fine to coarse, angular sand, 2" max size, nonplastic, dark gray (N3), wet, no reaction to HCL, very dense.	GM-GC	Shale in tip			
	46	S-27	13-15 13 (28)	0.7'							
	48	S-28	26-25 25 (50)	1.3'							
	50	S-29	20-25 26 (51)	1.5'							
	50	S-30	50/5 (50+)	0.5'							
	607.5	52	R-1	100% (82.5%)					4.0'	Dark gray (N3) to grayish black (N2) SILTSTONE, noncalcareous to very slightly calcareous, very slightly weathered to mostly fresh, slightly fractured, thickly to very thickly bedded	gm-gc
		54								53.5-53.9' moderately fractured	
		56								55.6-60.0' Intensely fractured	
		58									
	DATE STARTED: 9/27/07		GWL: DEPTH:						DATE/TIME:		NOTES: Bedrock part of the Mahatango Formation.
DATE COMPLETED: 9/30/07		GWL: DEPTH:		DATE/TIME:							
FIELD GEOLOGIST: WMP		DRILLING METHOD: SPT/Tricone/NQ Rock Core									
CHECKED BY: DAR											
APPROVED BY: RJB		DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously									
DRILLING CO.: Terracon		RIG: CME 55 Track									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-3	100% (100%)	5.0'				
	62							
	64							
	66	R-4	100% (100%)	5.0'				
	68							
	70							
	72	R-5	100% (100%)	5.0'		Microfaulting in calcareous lens at 70.9'		
DATE STARTED: 9/27/07					GWL: DEPTH: DATE/TIME:		NOTES: Bedrock part of the Mahatango Formation.	
DATE COMPLETED: 9/30/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-6	96% (96%)	4.8'		Calcareous filled fossil casts from 73.8-74.3'		
	76							
	78							
	80	R-7	100% (94%)	5.0'		Dark gray (N3) to grayish black (N2) SILTSTONE, noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, thickly to very thickly bedded		
	82					Intensely fractured from 82.1-82.4'		
	84					R-8	100% (100%)	
	86							
DATE STARTED: 9/27/07						GWL: DEPTH: DATE/TIME:		
DATE COMPLETED: 9/30/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-310

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338987.788 E 2405445.974 SURFACE EL: 658.46	USCS SYMBOL	REMARKS
						DESCRIPTION		
	88							
	90					Very slightly to slightly calcareous		
	92	R-9	100% (100%)	5.0'		Calcareous fossil casts below 92.2'		Special care sample 93.3-95.0'
	94							
	96					Slightly to very slightly calcareous Pyrite inclusions from 95.0-96.0' Calcareous fossil casts from 95.6-96.6'		
	98	R-10	100% (100%)	5.0'				
558.5	100					BOTTOM OF BORING 100'		
	102							
DATE STARTED: 9/27/07					GWL: DEPTH:		DATE/TIME:	
DATE COMPLETED: 9/30/07					GWL: DEPTH:		DATE/TIME:	
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock part of the Mahatango Formation.	
CHECKED BY: DAR					DRILLER: Sam Silverman		HELPER: Mike Steinbrook/ Jason Tousey	
APPROVED BY: RJB							RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-311

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339099.648 E 2405592.490 SURFACE EL: 668.43	USCS SYMBOL	REMARKS	
						DESCRIPTION			
666.9	0	S-1	5-8 15 (23)	1.4'		Clayey Silty Sand with Gravel (SM-SC) - 25% gravel, 50% sand, 25% silt, fine to coarse, subangular, gravel, fine to coarse, subangular sand, hard, 0.25" max particle size, low plasticity, low dry strength, no dilatancy, low toughness, light brown (5YR 6/4), moist to dry, no reaction to HCl, medium dense.	SM-SC		
						1.5'			
	2	S-2	16-21 24 (45)	1.0'		Well Graded Gravel with Silt and Sand (GW-GM) - 25% gravel, 75% sand, hard, fine to coarse, subrounded to angular gravel, fine to coarse, rounded to subangular sand. 1.5" max size, nonplastic, pale yellowish brown (10YR 6/2) to moderate brown (5YR 4/4) to moderate red (5R 4/6), moist, no reaction to HCl, dense to very dense.	gw-gm		
	4	S-3	24-37 24 (61)	1.0'					GW-GM
662.4		S-4	20-22 33 (55)	1.2'					GW-GM
	6								SW-SM
660.9		S-5	5-12 21 (33)	1.2'		Well-Graded Sand with Silt and Gravel (SW-SM) - 25% gravel, 65% sand, 10% silt, fine, subangular, flat and elongated gravel, fine to medium, subrounded sand, 0.25" max size, nonplastic, grayish red (10R 4/2), dry, no reaction to HCl, dense.		SW	
	8	S-6	23-23 28 (51)	1.3'		Well-Graded Sand (sw) - 25% gravel, 75% sand, fine to coarse, subangular to subrounded gravel, hard, fine to coarse, subangular to subrounded sand, nonplastic, grayish red (10R 4/2), dry, no reaction to HCl, very dense.		sw	
657.9	10	S-7	14-15 24 (39)	1.3'				sw	
								gw	
656.4	12	S-8	32-23 21 (44)	1.2'		Well-Graded Gravel with Sand (gw) - 55% gravel, 45% sand, fine to coarse, subangular to subrounded gravel, hard, fine to coarse, subrounded to subangular sand, 1" max size, nonplastic, pale yellowish brown (10YR 6/2) and moderate red (10R 4/2) dry, no reaction to HCL, dense.		gw	
								sw	
654.9		S-9	42-50/1 (50)	0.6'		Well Graded Sand with Gravel (sw) - 35% gravel, 60% sand, 5% silt, fine, angular, flat gravel, hard, fine to coarse subangular to subrounded sand, nonplastic, moderate reddish brown (10YR 4/6) and medium gray (N3), dry, no reaction to HCl, very dense, fine grained sandstone.		sw	
								GW-GM	
	14	S-10	17-17 16 (33)	0.9'		Poorly Graded Gravel with Silt and Sand (GW-GM) - 10% cobble, 65% gravel, 25% sand, fine to coarse, subangular gravel, coarse, subangular to subrounded sand, hard, 1.5" max particle size, nonplastic, pale yellowish brown (10YR 6/2), dry, no reaction to HCl,			
DATE STARTED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock part of Mahantango Formation		
DATE COMPLETED: 10/12/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rockcore		RIG: CME 850 Track		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-311

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339099.648 E 2405592.490 SURFACE EL: 668.43	USCS SYMBOL	REMARKS
						DESCRIPTION		
653.4	16	S-11	17-12 50/4 (62)	0.5'		dense. 15.0'	gw	
		S-12	0-50/4 (50)	0.3'		Well Graded Gravel with Sand (gw) - 70% gravel, 30% sand, fine to coarse, angular, flat gravel, soft to hard, fine to coarse, angular sand, nonplastic, moderate red (10YR 4/2) and medium gray (N3) shale, wet, no reaction to HCl, medium dense to very dense, fine grained sandstone.		
		S-13	13-17 13 (30)	0.5'				
648.4	20	S-14	15-17 15 (32)	0.8'		20.0'	gw	
						Well Graded Gravel with Sand (gw) - 60% gravel, 40% sand, fine to coarse, angular, flat gravel, soft to hard, fine to coarse, angular sand, nonplastic, moderate red (10YR 4/2) and medium gray (N3) shale, wet, no reaction to HCl, medium dense to very dense, fine grained sandstone.		
646.9	22	S-15	11-11 13 (24)	0.9'		21.5'	gw	
						Well Graded Gravel with Sand (gw) - 40% cobbles, 20% gravel, 40% sand, coarse, subangular gravel, fine to coarse, subangular to angular sand, max size 1.5", nonplastic, grayish red (5 R 4/2), wet, no reaction to HCl, medium dense to very dense.		
	24	S-16	19-19 39 (58)	0.6'				
						No recovery		
640.9	26	S-17	0-50/5 (50)	0.0'				
						No recovery		
	28	S-18	21-26 24 (50)	0.0'				
		S-19	14-25 25 (50)	1.1'		27.5'	gw	
						Well Graded Gravel with Sand (gw) - 20% cobbles, 50% gravel, 30% sand, fine to coarse, angular, flat gravel, soft, max size 1.5", nonplastic, grayish red (5R 4/2) to dark yellow brown (10YR 4/2), wet, no reaction to HCl, dense, shale fragments.		
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock part of Mahantango Formation	
DRILLER: Scott Zeien HELPER: Brian Nabholz					RIG: CME 850 Track			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-311

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339099.648 E 2405592.490 SURFACE EL: 668.43	USCS SYMBOL	REMARKS
						DESCRIPTION		
636.4	30	S-20	13-24 13 (37)	0.6'		No recovery	GC	
		S-21	25-50/2 (50)	0.0'				
633.4	32	S-22	12-14 14 (28)	1.0'		32.0'	GC	
						Clayey Gravel with Sand (GC) - 25% cobbles, 10% sand, 5% silt, 60% clay, subrounded to rounded, fine to medium sand, low plasticity, medium dry strength, slow dilatancy, medium toughness, dark yellowish orange (10 YR 6/6) to medium gray (N5), wet, no reaction to HCl, very stiff.		
631.9	36	S-23	12-28 50 (78)	0.6'		35.0'	gw	
			Well-Graded Gravel with Sand (gw) - 70% gravel, 30% sand, fine to coarse, subrounded to subangular, elongated and flat gravel, hard, fine to coarse, well rounded sand, nonplastic, medium gray (N5), wet, no reaction to HCl, very dense.					
630.4	38	S-24	22-12 11 (23)	0.5'		36.5'	sp-sm	
			Poorly Graded Sand with silt (sp-sm) - 10% gravel, 75% sand, 15% silt, fine to coarse, subrounded to subangular, hard, elongated and flat gravel, fine to coarse, rounded sand, nonplastic, medium gray (N5), wet, no reaction to HCl, medium dense.					
627.4	40	S-25	11-10 11 (21)	0.7'		38.0'	sw	
			Well-Graded Sand with Gravel (sw) - 25% gravel, 70% sand, 5% silt, fine to coarse, subangular, flat and elongated gravel, soft, fine to coarse, subrounded sand, nonplastic, medium gray (N5), wet, no reaction to HCl, medium dense.					
	42	S-26	11-12 11 (23)	0.9'		41.0'	gw-sw	
				Well-Graded Gravel with Sand (gw) - 60% gravel, 30% sand, fine to coarse, subrounded, flat and elongated gravel, fine, subrounded sand, nonplastic, medium gray (N5), wet, no reaction to HCl, medium dense.				
		S-27	7-11 10 (21)	0.5'			gw	
		S-28	8-9 9 (18)	0.8'				
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore			NOTES: Bedrock part of Mahantango Formation
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Brian Nabholz			
								RIG: CME 850 Track



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-311

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339099.648 E 2405592.490 SURFACE EL: 668.43	USCS SYMBOL	REMARKS
						DESCRIPTION		
622.9	44	S-29	9-14 11 (25)	0.5'		45.5'	SW-SM	
	Well Graded Sand with Silt and Gravel (SW-SM) - 40% gravel, 50% sand, 10% silt and clay, fine to coarse gravel, fine to coarse sand, medium gray (N5), wet, no reaction to HCL, very dense.							
621.4	46	S-30	18-19 49 (68)	1.5'		47.0'	gw	
	Well Graded Gravel (gw) - 20% cobbles, 80% gravel, fine to coarse, angular, hard gravel, dark gray (N3) to pale red (10 YR 6/2), wet, nonplastic, no reaction to HCL, very dense.							
618.4	48	S-31	14-7 50/2 (57)	1.7'		No Recovery		
		S-31b	50/0 (50+)	0.0				
	50	S-32 R-1	50/4 (50+) 75% (0%)	0.5'		Shale - Dark gray (N3), soft, noncalcareous, weathered, intensely fractured, fractures moderately thick, staining, unhealed, wet, no reaction to HCl. Shale - Dark gray (N3), soft, noncalcareous, thinly bedded, intensely fractured, fractures moderately thick, unhealed, intensely weathered, no reaction to HCl. Shale - Dark gray (N3), soft to moderately hard, noncalcareous, moderately thick bedding, slightly fractured, fractures thin, slightly weathered, rock non-weathered, no reaction to HCl.		
				0.6'				
	52							
	54							
56	R-2	100% (85%)	10.0'					
58								
DATE STARTED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock part of Mahantango Formation	
DATE COMPLETED: 10/12/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rockcore		RIG: CME 850 Track	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-311


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339099.648 E 2405592.490 SURFACE EL: 668.43	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	60					Shale - Dark gray (N3), moderately hard, noncalcareous, moderately thick bedding, slightly to very slightly fractured, fractures thin, unhealed, rock nonweathered, foliated calcite layer at 69.8'.			
	62								
	64								
	66	R-3	100% (100%)	10.0'					
	68								
	70								
	72					Shale - Dark gray (N3), moderately hard to hard, noncalcareous, moderate bedding plane, slightly to very slightly fractured, unweathered, wet, no reaction to HCl.			
DATE STARTED: 10/11/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock part of Mahantango Formation	
DATE COMPLETED: 10/12/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/NQ Rockcore			RIG: CME 850 Track	
CHECKED BY: DAR									
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian Nabholz				
DRILLING CO.: Terracon									

BORING NO. B-311
SHEET 6 OF 7

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-311

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339099.648 E 2405592.490 SURFACE EL: 668.43	USCS SYMBOL	REMARKS
						DESCRIPTION		
567.6	88	R-6	99% (91%)	9.9'		Shale - Dark gray (N3), moderately hard to hard, moderate thickness in bedding plane, slightly to very slightly fractured, unweathered, fossiliferous (crinoids, brachiopods), highly calcareous, no reaction to HCl.		
	90					Shale - Dark gray (N3), moderately hard to hard, moderate thickness in bedding plane, slightly to very slightly fractured, unweathered, fossiliferous (crinoids, brachiopods), highly calcareous, no reaction to HCl.		
	92							
	94							
	96							
	98							
	100							
	102							
						BOTTOM OF BORING 100.8'		
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: RAK CHECKED BY: DAR APPROVED BY: RJB DRILLING CO.: Terracon					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore DRILLER: Scott Zeien HELPER: Brian Nabholz			NOTES: Bedrock part of Mahantango Formation RIG: CME 850 Track



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312a

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS		
						DESCRIPTION				
667.6	0	S-1	2-2 5 (7)	1.0		Silt with Sand (ml) - 5% cobbles, 20% sand, 70% silt, 5% organics, hard cobbles, fine, subangular to rounded sand, low plasticity, low dry strength, high dilatancy, low toughness, moderate yellowish brown (10YR 5/4) to light gray (N7), organic odor, damp, no reaction to HCl, medium stiff. 1.5'	ml			
	2	S-2	5-15 14 (29)	1.1		Silty Sand (sm) - 10% gravel, 60% sand, 30% silt, subangular, fine to coarse gravel, fine to medium, subrounded to subangular sand, low plasticity, low dry strength, high dilatancy, low toughness, moderate yellowish brown (10 YR 5/4), dry, no reaction to HCl, medium dense. 3.0'	sm			
666.1		S-3	50/4 (50+)	0.6		Silty Sand with gravel (sm) - 20% gravel, 60% sand, 20% silt, subangular, fine to coarse gravel, fine to medium, subrounded to subangular sand, low plasticity, low dry strength, high dilatancy, low toughness, moderate yellowish brown (10 YR 5/4), dry, no reaction to HCl, medium dense. 4.9'	sm			
	4	S-4	25-50-4" (50)	0.8		Well Graded Gravel (gw) - 90% cobble, 5% gravel, 5% sand, subangular, coarse gravel and cobbles, hard, subrounded to sudangular, fine to coarse sand, nonplastic, light gray (N7), dry, no reaction to HCl, very dense. 6.0'	gw			
664.2		S-5	18-31 21 (52)	1.5		Sandy Silt (ml) - 10% cobble, 10% gravel, 30% sand, 50% silt, large grain, subangular gravel and cobbles, hard, 10% fine, subrounded sand, nonplastic, light brown (5YR 6/4) to pale pink (5RP 8/2), dry, no reaction to HCL, hard. 10.5'	ml			
	6					S-6	8-15 12 (27)		1.2	
663.1	8	S-7	3-13 7 (20)	0.6		Sandy Silt (ml) - 10% gravel, 40% sand, 50% silt, angular to subangular, coarse gravel, angular to subangular, fine to coarse sand, nonplastic, grayish red (10R 4/2), wet, no reaction to HCl, medium dense. 13'	ml			
	10	S-8	31-21 16 (37)	1.0						
658.6		S-9	11-9 12 (21)	1.1		Poorly Graded Sand (sp) - 5% gravel, 90% sand, 5% silt, coarse, subangular, spherical, gravel, fine to coarse, subrounded to subangular sand, 0.5 max size, nonplastic, dark yellowish brown (10YR 2/2), wet, no reaction to HCL, medium dense. 13'	sp			
	12					Well-Graded Sand with Gravel (sw) - 15% gravel, 80% sand, 5% silt, angular to subangular sand and gravel, nonplastic, grayish red (10R 4/2), wet, no reaction to HCl, medium dense. 13.5'			sw	
657.1		S-10	12-14 17 (31)	1.3		Poorly Graded Sand (sp) - 100% sand, coarse grained, angular to subangular sand, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, medium dense.	sp			
	14									
DATE STARTED: 10/16/07					GWL: DEPTH: 14.2'		DATE/TIME: 10/18/07		NOTES: Bedrock part of the Mahatango Formation	
DATE COMPLETED: 10/18/07					GWL: DEPTH:		DATE/TIME:			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone NQ Rock Core					
CHECKED BY: DAR					DRILLER: Crain VanVactor		HELPER: Logan Shipman			
APPROVED BY: RJB							RIG: CME 75 Truck			
DRILLING CO.: Terracon Inc.										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312a

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS	
						DESCRIPTION			
653.6	16	S-11	9-10 10 (20)	1.1		15.5'	sw	Significant decrease in water circulation of mud rotary at 24.5'	
		Well Graded Sand with Gravel (sw) - 25% gravel, 70% sand, 5% silt, fine to coarse, angular gravel, fine to medium, subangular to subrounded sand, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, medium dense.							
651.1	18	S-12	3-8 15 (23)	0.4		18.0'	gw-gm		
		Well Graded Gravel with Sand and Silt (gm-gw) - 60% gravel, 30% sand, 10% silt, angular to subangular, fine to coarse gravel, moderately soft, angular to subangular, fine to coarse sand, nonplastic, dark yellowish brown (10YR 4/2) to dark gray (N3), wet, no reaction to HCl, dense to very dense.							
648.1	20	S-13	21-38 31 (69)	0.9		21.0'	sp-sm		
		Poorly Graded Sand with Silt (sp-sm) - 75% sand, 15% gravel, 10% silt, coarse, angular to subangular gravel, fine to medium, subrounded to subangular sand, nonplastic, grayish red (5R 4/2), wet, no reaction to HCl, medium dense.							
646.6	22	S-14	16-23 26 (49)	0.6		22.5'	gw-gm		
		Well Graded Gravel with Silt (gw-gm) - 80% gravel, 10% sand, 10% silt, angular to subangular gravel, fine to coarse, angular sand, nonplastic, dark yellowish brown (10YR 4/2) to dark reddish brown (10R 3/4), wet, no reaction to HCl, dense, fine grained sandstone cobble at 22.5'-22.7'.							
643.6	24	S-15	10-15 7 (22)	0.0		No Recovery	gw		
642.1	26	S-16	31-50/4" (50)	0.8		25.5'	gw		
		Well Graded Gravel with Sand (gw) - 75% gravel, 20% sand, 5% silt, fine grained, angular to subangular gravel, fine to medium, subrounded to subangular sand, nonplastic, dark yellowish brown (10YR 4/2),wet, dense, no reaction to HCl, very dense.							
640.6	28	S-17	50/3 (50+)	0.1		27.0'	gw		
		Well Graded Gravel (gw) - 100% cobble, intensely fractured, very hard, nonplastic, grayish olive green (5GY 3/2), wet, no reaction to HCl, very dense.							
			23-40			28.5'	gw		
						Well Graded Gravel (gw) - 90% gravel, 10% sand, fine, angular to subangular gravel, fine to medium, angular to subangular sand, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl,			
DATE STARTED: 10/16/07					GWL: DEPTH: 14.2' DATE/TIME: 10/18/07			NOTES: Bedrock part of the Mahatango Formation	
DATE COMPLETED: 10/18/07					GWL: DEPTH: DATE/TIME:				
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone NQ Rock Core			RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Crain VanVactor HELPER: Logan Shipman				
APPROVED BY: RJB									
DRILLING CO.: Terracon Inc.									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312a

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
639.1	30	S-20	46 (86)	0.7		dense. 30.0'	gw	An approximately 3' long piece of 3" OD Steel Casing and tricone bit were unretrievable at 34.5'. Boring terminated and abandoned.
		S-21	38-38 29 (67)	0.8		Well Graded Gravel with Sand (gw) - 70% gravel, 30% sand angular, coarse gravel, fine to coarse, subangular sand, nonplastic, moderate red (5R 4/6) to grayish red (10R 4/2) to dark gray (N3), wet, no reaction to HCl, very dense. 31.5'		
637.6	32	S-22	23-19 18 (37)	0.9		Poorly Graded Gravel (gp) - 15% cobble, 70% gravel, 5% sand, 10% silt, very hard, intensely fractured, medium grained cobbles, angular gravel, fine, angular to subangular sand, nonplastic, moderate red (5R 4 6) to grayish red (10R 4/2) to grayish olive green (5GY 3/2), wet, no reaction to HCl, dense, sandstone boulder. 33.0'	gp	
636.1	34	S-23	22-17 15 (32)	0.8		Silty Gravel (gm) - 60% gravel, 10% sand, 30% silt, coarse, subrounded, gravel, fine to coarse sand, nonplastic, moderate yellowish brown (10YR 5/4) and dark gray (N2), wet, no reaction to HCl, dense.	gm	
634.6						BOTTOM OF BORING 34.5' BORING TERMINATED AT 34.5' DUE TO UNRETRIEVABLE STEEL CASING DOWNHOLE		
	36							
	38							
	40							
	42							
DATE STARTED: 10/16/07 DATE COMPLETED: 10/18/07 FIELD GEOLOGIST: JTM CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 14.2' DATE/TIME: 10/18/07 GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone NQ Rock Core		NOTES: Bedrock part of the Mahatango Formation	
DRILLING CO.: Terracon Inc.					DRILLER: Crain VanVactor HELPER: Logan Shipman		RIG: CME 75 Truck	

BORING NO. B-312b
SHEET 1 OF 7



Bell Bend NPP

PROJECT NO. 07-3891



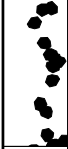




LOG OF BORING NO. B-312b

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
648.1	16	R-1	100% (38%)	1.2		21.0'		
	18							
	20							
	22					Cobbles - About 100% cobbles, medium gray (N5) to dark gray (N3), siltstone.		
	24					Cobbles - About 100 % cobbles, very light gray (N8) to medium gray (N5) mixture of fine to medium grained sandstones, rounded edges, medium bluish gray (5B 5/1), sandstone, moderate brown (5YR 4/4), limestone, fossiliferous (brachiopods), medium gray (N5) fine to medium grained limestone, light gray (N7) to white (N9) mixture of fine to medium graded sandstone, dark reddish brown (10R 3/4) fine to medium grained sandstone, dark gray (N3) highly fossiliferous limestone, mixture of gravel, well rounded, fine to coarse grained.		
	26							
	28	R-2	26% (0.0%)	3.3				
DATE STARTED: 10/16/07					GWL: DEPTH: DATE/TIME:		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/19/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Craig Vanvactor HELPER: Logan Shipman			
APPROVED BY: RJB								
DRILLING CO.: Terracon Inc.								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312b

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
634.3	30							
	32							
	34							
	34.8'					Shale - Medium gray (N5) to dark gray (N3), intensely fractured to very slightly fractured, fresh vertical bedding planes, no reaction to HCl, medium to hard.		
	36							
	38	R-3	98% (86%)	4.9				
	40							
	42	R-4	100% (94%)	5.0				
DATE STARTED: 10/16/07 DATE COMPLETED: 10/19/07 FIELD GEOLOGIST: JTM CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: DATE/TIME: GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon Inc.					DRILLER: Craig Vanvactor HELPER: Logan Shipman		RIG: CME 75 Truck	



Bell Bend NPP

PROJECT NO. 07-3891




LOG OF BORING NO. B-312b

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-5	100% (100%)	5.0	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> 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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312b

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-8	100% (50%)	5.0		Shale - Dark gray (N3), moderately hard, very slightly fractured, unhealed, no reaction to HCl, moderately thick bedding, large vertical fracture from 62.3' to 64.6', unhealed, very slightly weathered.		
	62							
	64							
	66	R-9	100% (100%)	5.0		Shale - Dark gray (N3), moderately hard, very slightly fractured, unhealed, no reaction to HCl, moderately thick bedding.		
	68							
	70							
	72	R-10	100% (90%)	5.0		Shale - Dark gray (N3), moderately hard, very slightly fractured, unhealed, no reaction to HCl, moderately thick bedding, horizontal fracture at 70.5', thin, unhealed, fresh.		
DATE STARTED: 10/16/07 DATE COMPLETED: 10/19/07 FIELD GEOLOGIST: JTM CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: DATE/TIME: GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock part of the Mahantango Formation	
DRILLING CO.: Terracon Inc.					DRILLER: Craig Vanvactor HELPER: Logan Shipman		RIG: CME 75 Truck	

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312b


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-11	100% (90%)	5.0		Shale - Dark gray (N3), moderately hard, very slightly fractured, unhealed, no reaction to HCl, fresh, moderately thick bedding.		
	76							
	78							
	80							
	82	R-12	98% (98%)	4.9		Shale - Dark gray (N3), moderately hard, unfractured, very slight reaction to HCl, moderately thick bedding.		
	84							
	86							
		R-13	98% (98%)	4.9				
DATE STARTED: 10/16/07					GWL: DEPTH: DATE/TIME:		NOTES: Bedrock part of the Mahantango Formation	
DATE COMPLETED: 10/19/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Craig Vanvactor HELPER: Logan Shipman			
APPROVED BY: RJB								
DRILLING CO.: Terracon Inc.								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-312b

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339230.045 E 2405581.980 SURFACE EL: 669.08	USCS SYMBOL	REMARKS			
						DESCRIPTION					
568.4	88	R-14	100% (100%)	5.0		Shale - Dark gray (N3), moderately hard, unfractured, moderate reaction to HCl, moderately thick bedding, fresh.					
	90										
	92										
	94										
	96										
	98	R-15	100% (100%)	5.0		Shale - Dark gray (N3), moderately hard, unfractured, moderate reaction to HCl, moderately thick bedding, fresh.					
	100										
	102	R-16	100% (100%)	1.2'		BOTTOM OF BORING 100.7'					
	DATE STARTED: 10/16/07					GWL: DEPTH:			DATE/TIME:		
DATE COMPLETED: 10/19/07					GWL: DEPTH:		DATE/TIME:				
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock part of the Mahantango Formation				
CHECKED BY: DAR					DRILLER: Craig Vanvactor		HELPER: Logan Shipman				
APPROVED BY: RJB							RIG: CME 75 Truck				
DRILLING CO.: Terracon Inc.											



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42		USCS SYMBOL	REMARKS
						DESCRIPTION			
654.7	0						Silt (ml) - 10% cobbles, 10% sand, 80% silt, fine, subrounded to subangular sand, medium plasticity, low dry strength, rapid dilatancy, low toughness, moderate yellowish-brown (10 YR 5/4), pale yellow brown (10 YR 6/2), and medium dark gray (N4), wet, no reaction to HCl, soft.	ml	
	2						2.7'		
		S-1	2-2 2 (4)	1.5			Silty Sand (sm) - 5% cobbles, 75% sand, 20% silt, fine, subangular to subrounded sand, low plasticity, no to low dry strength, no to slow dilatancy, low toughness, brownish gray (5YR 4/1), wet, no reaction to HCl, very loose to medium dense.	sm	
	4	S-2	3-4 6 (10)	1.4					
	6								
8	S-3	4-5 6 (11)	1.3						
10									
12	S-4	5-6 5 (11)	1.1						
14									
644.9							12.5'	sm	
		S-5	4-4 3 (7)	1.2			Silty Sand (sm) - 5% cobbles, 85% sand, 10% silt, subrounded to subangular, fine to medium sand, nonplastic, brownish gray (5YR 4/1) to medium-dark gray (N4), wet, no reaction HCl, very loose to loose.		
DATE STARTED: 9/30/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/02/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 55 Track rig		
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42	USCS SYMBOL	REMARKS
						DESCRIPTION		
634.9 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42	USCS SYMBOL	REMARKS
						DESCRIPTION		
624.9	30	S-12	7-7 9 (16)	0.9			gm	
	32							
		S-13	13-13 13 (26)	0.7		Silty Gravel with Sand (gm) - 65% gravel, 20% sand, 15% silt, fine to coarse gravel, fine to coarse, subrounded to subangular sand, nonplastic, moderate yellowish-brown (10 YR 5/4) to moderate brown (5YR 4/4), wet, no reaction to HCl, medium-dense to dense.		
	34							
	36	S-14	30-15 8 (23)	0.0		No Recovery		
38	S-15				24-20 13 (33)	0.7		
40		S-16	9-19 17 (36)	0.6				
42								
614.9		S-17	9-8 16 (24)	1.1		Silty Gravel with Sand (gm) - 65% gravel, 20% sand, 10% silt, 5% clay, fine to coarse, subangular gravel, fine to coarse, subangular to subrounded sand, nonplastic, medium gray (N5) to medium dark gray (N4) and moderate brown (5YR 3/4), wet, no reaction to HCl, medium-dense to dense.	gm	
DATE STARTED: 9/30/07 DATE COMPLETED: 10/02/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously		RIG: CME 55 Track rig	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42	USCS SYMBOL	REMARKS
						DESCRIPTION		
609.9	44						sm	
	46	S-18	21-17 18 (35)	1.2				
	48	S-19	32-90 33 (123)	1.2		Silty Sand with Gravel (sm) - 20% gravel, 65% sand, 10% silt, 5% clay, coarse, subangular, flat gravel, fine to coarse, subangular to subrounded sand, nonplastic, medium gray (N5) to medium dark gray (N4), wet no reaction HCl, very dense.		
	50	S-20	16-22 35 (57)	1.1				
	52							
		S-21	37-60 50/4" (110)	1.2				
	54	R-1	80% (0%)	0.8		Siltstone - Dark gray (N3) with grayish-red (10R 4/2), non-calcareous to very slightly calcareous.		
						Siltstone - Dark gray (N3), intensely to moderately fractured, weathered, with assorted gravel and sand infilling joints, non-calcareous to very slightly calcareous.		
	56							
603.4	58	R-2	82% (10%)	3.3				
DATE STARTED: 9/30/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/02/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 55 Track rig	
CHECKED BY: DAR								
APPROVED BY: RJB								
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tously			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

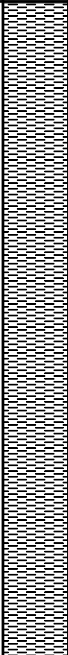


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-3	90% (40%)	0.9		Siltstone - Dark gray (N3), moderately to slightly fractured, non-calcareous to very slightly calcareous, intensely fractured zones between 60.1' to 60.2', 60.8' to 61.3', and 61.5' to 61.9', intensely fractured zones exhibit clay and rock fragments in fractures.		
	62	R-4	82% (38%)	4.1				
	64							
	66					Siltstone - Dark gray (N3), slightly to very slightly fractured, non-calcareous to very slightly calcareous, fresh to slightly weathered, calcitic vein at 65.5', very thickly bedded.		
	68	R-5	100% (96%)	5.0				
	70					Siltstone - Dark gray (N3), very slightly fractured, very slightly to slightly calcareous, fresh to slightly weathered, very thickly bedded.		Special Care Sample 70.0' - 71.2'
	72	R-6	100% (96%)	5.0				
DATE STARTED: 9/30/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/02/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tousely			RIG: CME 55 Track rig
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42	USCS SYMBOL	REMARKS
						DESCRIPTION		
577.4	74	R-7	100% (98%)	5.0		Siltstone - Dark gray (N3), very slightly fractured, very slightly to slightly calcareous, slightly weathered in fractures, very thickly bedded.		
	76							
	78							
	80	R-8	98% (98%)	4.9		80.0' Shale - Dark gray (N3), very thickly bedded, unfractured, slightly to moderately calcareous, calcite filled fossil at 81.8'.		
	82							
	84							
	86	R-9	100% (100%)	5.0		Shale - Dark gray (N3), very thickly bedded, very slightly fractured, very slightly calcareous to slightly calcareous, calcite layer microfaulted at 86.4', with calcite-filled fossils.		
	DATE STARTED: 9/30/07					GWL: DEPTH: N/A DATE/TIME: N/A		
DATE COMPLETED: 10/02/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 55 Track rig	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tousely			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-313

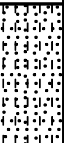









ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338917.237 E 2405379.263 SURFACE EL: 657.42	USCS SYMBOL	REMARKS													
						DESCRIPTION															
557.4	88	R-10	98% (98%)	4.9		Shale - Dark gray (N3), very thickly bedded, very slightly fractured, fossiliferous with calcite-filled fossils throughout, random pyrite at 91.5'.		Special Care Sample 95.0'-96.8'.													
	90																				
	92																				
	94																				
	96																				
	98	R-11	100% (100%)	5.0		Shale - Moderately hard, dark gray (N3), thickly to very thickly bedded, fresh, unfractured to very slightly fractured, noncalcareous to very slightly calcareous.															
	100																				
	102																				
	BOTTOM OF BORING 100'																				
	DATE STARTED: 9/30/07 DATE COMPLETED: 10/02/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB DRILLING CO.: Terracon									GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core DRILLER: Sam Silverman HELPER: Mike Steinbrook/ Jason Tousely		NOTES: Bedrock Part of the Mahantango Formation RIG: CME 55 Track rig									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314





ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
655.3	0	S-1	1-3 3 (6)	1.5		Poorly-Graded Sand with Silt (sp-sm) - 90% sand, 10% silt, well rounded, fine to medium sand, low plasticity, low dry strength, moderate dilatancy, and low toughness, Grayish brown (5YR 3/2) to moderate brown (5YR 3/4), slight organic odor, moist, weak reaction to HCl, loose.	sp-sm	
	2	S-2	2-3 3 (6)	1.2				
						3.0'		
653.8	4	S-3	2-3 3 (6)	1.0		Clayey Sand (sc) - 60% sand, 20% clay, 10% silt, fine to medium, rounded to subrounded sand, moderate plasticity, moderate dry strength, rapid dilatancy, moderate toughness, light brown (5YR 6/4), moist, no reaction to HCl, loose.	sc	
						4.5'		
650.8	6	S-4	10-13 7 (20)	0.9		Silty Sand (sm) - 85% sand, 15% silt, subrounded to subangular, fine to coarse sand, max size 25 mm, nonplastic, brownish gray (5YR 4/1), wet to moist, no reaction to HCl, medium-dense.	sm	
		S-5	4-5 5 (10)	0.9				
						7.5'		
646.3	8	S-6	9-8 5 (13)	1.2		Well-Graded Sand with Gravel (sw) - 20% gravel, 80% sand, fine to coarse, subangular gravel, hard, fine to coarse, subrounded sand, max size 25 mm, nonplastic, yellow brown (10 YR 5/4), moist, no reaction to HCl, dense.	sw	
		S-7	11-11 21 (32)	0.5				
		S-8	11-15 15 (30)	1.0				
	12	S-9	17-17 38 (55)	1.0		Well-Graded Sand with Gravel (sw) - 10% gravel, 80% sand, 5% silt, 5% clay, fine to coarse, subangular gravel, fine to coarse, hard, subrounded sand, max size 25 mm, nonplastic, yellow brown (10 YR 5/4), moist, no reaction HCl, very dense.	sw	
	14	S-10	35-23 36 (59)	0.9				
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12 DATE/TIME: 10/13/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314











ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS		
						DESCRIPTION				
643.3	16	S-11	15-17 18 (35)	0.8		15.0' Well-Graded Gravel (gw) - 90% gravels, 10% sand, subrounded to rounded, fine to coarse, hard gravel, subrounded to rounded, fine to coarse sand, nonplastic, moderate yellowish brown (10 Y/R 5/4), wet, no reaction to HCl, dense.	gw			
		S-12	23-25 31 (56)	0.9						
	18	S-13	19-20 19 (39)	0.3						
	20	S-14	8-11 16 (27)	0.5						
637.3	22	S-15	3-9 16 (25)	0.9		21' Well-Graded Gravel (gw) - 100% gravel, subrounded to rounded, fine to coarse, hard, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, dense.	gw			
		S-16	11-5 18 (23)	0.7		22.5' Well-Graded Gravel with Sand (gw) - 80% gravel, 15% sand, 5% silt, subrounded to subangular, fine to coarse gravel, subrounded to subangular, fine to coarse sand, hard, nonplastic, light brown (10 YR 5/6) to moderate yellowish brown (10YR 5/6), wet, no reaction to HCl, dense.				gw
635.8	24	S-17	2-15 14 (29)	0.7						
		26	S-18	7-8 10 (18)		0.6				
	28	S-19	50/5 (50+)	0.2						
		S-20	15-50/4" (50)	0.2						
DATE STARTED: 10/13/07						GWL: DEPTH: 5.12 DATE/TIME: 10/13/07		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/15/07						GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: DAR						DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850		
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
628.3	30	S-21	6-7 8 (15)	1.0		30.0'	gw	
						Well-Graded Gravel (gw) - 90% gravel, 10% sand, fine to coarse, angular, elongated and flat gravel, fine to coarse, rounded, sand, soft, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, medium dense, weak cementation.		
626.8	32	S-22	5-11 18 (29)	0.9		31.5'	gw	
						Well-Graded Gravel (gw) - 85% gravel, 10% sand, 5% clay, fine to coarse, rounded gravel, fine to coarse, subangular sand, soft, nonplastic, dark gray (N3) wet, no reaction to HCl, medium dense.		
625.3	34	S-23	11-14 18 (32)	1.5		33'	gc	
						Clayey Gravel (gc) - 70% gravel, 10% sand, 5% silt, 15% clay, fine to coarse, rounded gravel, fine to coarse, subangular sand, nonplastic, dark gray (N3), wet, no reaction to HCL, dense.		
623.8	36	S-24	16-30 50/4" (80)	0.9		34.5'	sw	
						Well-Graded Sand with gravel (sw) - 15% gravel, 80% sand 5% silt, fine to coarse, elongated and flat, subangular gravel, soft, fine to coarse, rounded to subangular sand, nonplastic, dark gray (N3), wet, no reaction to HCl, very dense.		
619.3	38	S-25	10-50/2" (50)	0.2		39'	gw	
	40	S-26	18-21 10 (31)	0.8		39'	gw	
	42	S-27	22-50/4" (50)	0.6		39'	gw	
		S-28	30-38 50/4" (88)	0.6		39'	gw	
614.8		S-29	22-50/4" (50)	0.5		43.5'	gw	
		R-1	60%	1.2		Cobbles- About 100%, comprised of medium gray (N5) siltstone,		
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12 DATE/TIME: 10/13/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS	
						DESCRIPTION			
603.8	44	R-2	(55%)	1.4		unfractured, no odor, medium hardness, no reaction to HCl.	SM		
	46		(47%) (17%)			Cobbles- About 100%, comprised of sandstone from 45.5'-46.0', fine to medium grained, medium hardness, shale from 46.0'-46.9', dark gray (N3), moderate hardness, no odor, no reaction to HCl.			
	48	(16%) (0%)	R-3	0.4		Cobbles- About 100%, fine to coarse grained, subrounded to subangular, dark gray (N3), moderate hardness, no reaction to HCl, no odor.			
	50	0% (0%)	R-4	0.0		No Recovery			
	52								
	54								
	56								
	58	S-30		0.6		54.5'			Silty Sand with Gravel (sm) - 15% gravel, 60% sand, 15% silt, 10% clay, fine to coarse, rounded to angular gravel, elongated and flat, rounded, fine sand, nonplastic, Dark gray (N3), wet, no reaction to HCl, very dense.
	S-31	40-50/5" (50)	0.7						
	S-32	30-50/5" (50)	0.8						
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12 DATE/TIME: 10/13/07			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 850	
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS		
						DESCRIPTION				
594.8	60	S-33	34-50/4" (50)	0.8		63.51'				
		S-34	50/4" (50)	0.4					No Recovery Shale- Moderately hard, dark gray (N3), moderately fractured, fresh, moderately healed with calcite, noncalcareous, thinly bedded, no reaction to HCl.	
	62	S-35	50/3" (50)	0.3						
		S-36		0						
	64	R-4	87% (53%)	1.3						
	66									Shale- Highly brecciated, highly fractured and healed with calcite, reaction to HCl, contains quartz inclusions, hard, medium gray (N5).
	68	R-5	97% (91%)	3.4						
	70									
	72									
	DATE STARTED: 10/13/07									GWL: DEPTH: 5.12
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A	DATE/TIME: N/A				
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 850		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz					
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-6	99% (99%)	9.9		Shale- Moderately hard, dark gray (N3), fresh, calcareous, fossiliferous, unfractured, reaction to HCl.		
	76							
	78							
	80	R-7	99% (97%)	9.9				
	82							
	84							
	86							
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12 DATE/TIME: 10/13/07			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz			RIG: CME 850
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	88								
	90								
	92								
	94								
		R-8	100% (100%)	10.0					
	96								
	98								
	100								
	102								
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12		DATE/TIME: 10/13/07		
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A		DATE/TIME: N/A		
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			NOTES: Bedrock Part of the Mahantango Formation	
CHECKED BY: DAR									
APPROVED BY: RJB					DRILLER: Scott Zeien		HELPER: Brian Nabholz		
DRILLING CO.: Terracon								RIG: CME 850	

BORING NO. B-314
SHEET 8 OF 14

Bell Bend NPP

PROJECT NO. 07-3891

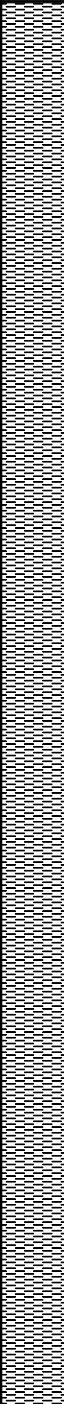
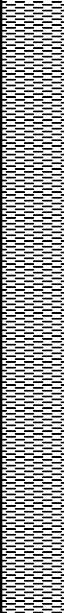
LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
	118 <							

Bell Bend NPP

PROJECT NO. 07-3891


LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS					
						DESCRIPTION							
	132	R-12	100% (100%)	10.0		Siltstone- Moderately hard, dark gray (N3), noncalcareous, to slightly calcareous, fresh, thickly bedded, very slightly fractured, no reaction to HCl.							
	134												
	136												
	138												
	140	R-13	100% (100%)	10.0		Siltstone- Moderately hard, dark gray (N3), noncalcareous, to slightly calcareous, fresh, thickly bedded, very slightly fractured, no reaction to HCl.							
	142												
	144												
	146												
DATE STARTED: 10/13/07									GWL: DEPTH: 5.12		DATE/TIME: 10/13/07		NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/15/07									GWL: DEPTH: N/A		DATE/TIME: N/A		
FIELD GEOLOGIST: PFW		DRILLING METHOD: SPT/Tricone/NQ Rock Core											
CHECKED BY: DAR		DRILLER: Scott Zeien		HELPER: Brian Nabholz		RIG: CME 850							
APPROVED BY: RJB													
DRILLING CO.: Terracon													

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
498.3	148	R-14	100% (100%)	10.0				
	150							
	152							
	154							
	156							
	158							
	160							
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12 DATE/TIME: 10/13/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850	
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

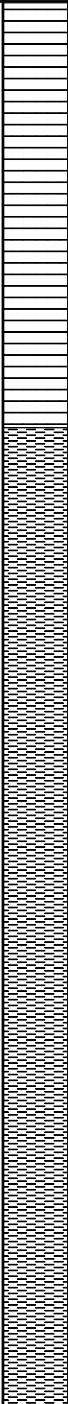
LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	162	R-15	100% (100%)	10.0		Shale- Moderately hard, dark gray (N3), noncalcareous, no fractures, thinly laminated vertical bedding planes, no reaction to HCl.						
	164											
	166	R-16	100% (100%)	10.0								
	168											
	170	R-16	100% (100%)	10.0								
	172											
	174	R-16	100% (100%)	10.0								
DATE STARTED: 10/13/07					GWL: DEPTH: 5.12 DATE/TIME: 10/13/07				NOTES: Bedrock Part of the Mahantango Formation			
DATE COMPLETED: 10/15/07					GWL: DEPTH: N/A DATE/TIME: N/A							
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core							
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz				RIG: CME 850			
APPROVED BY: RJB												
DRILLING CO.: Terracon												

Bell Bend NPP

PROJECT NO. 07-3891

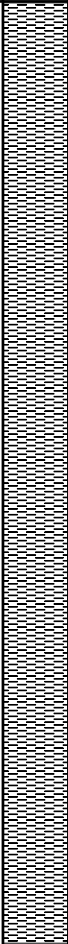
LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
478.3	176	R-17	100% (100%)	10.0		Siltstone- Moderately hard, dark gray (N3), noncalcareous, no fractures, thin vertical bedding planes, micaceous grains, no reaction to HCl. <		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-314

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338916.472 E 2405288.197 SURFACE EL: 658.29	USCS SYMBOL	REMARKS							
						DESCRIPTION									
458.3	192	R-18	100% (100%)	10.0											
	194														
	196														
	198														
	200														
	202														
	204														
	BOTTOM OF BORING 200'														
	DATE STARTED: 10/13/07 DATE COMPLETED: 10/15/07 FIELD GEOLOGIST: PFW CHECKED BY: DAR APPROVED BY: RJB								GWL: DEPTH: 5.12 DATE/TIME: 10/13/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core			NOTES: Bedrock Part of the Mahantango Formation			
	DRILLING CO.: Terracon								DRILLER: Scott Zeien HELPER: Brian Nabholz			RIG: CME 850			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315



ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS	
						DESCRIPTION			
654.4	0	S-1	1-2 2 (4)	0.8		Sandy Clay (cl) - 50% clay, 20% silt, 30% sand, spherical, rounded, fine sand, medium plasticity, medium dry strength, no dilatancy, low toughness, dark yellowish orange (10YR 6/6), dry, no reaction to HCl, soft.	cl		
	2					2.5'	sm		
651.9	4	S-2	5-6 8 (14)	1.3		Silty Sand (sm) - 75% sand, 25% silt, fine sand, hard, 0.07" max size, nonplastic, moderate yellowish brown (10 YR 5/4) dry, no reaction to HCl. medium-dense.			5.0'
	6					S-3	15-20 20 (40)		
649.4	8	S-4	50/0" (50)	0.0					No Recovery
	10					S-5	27-33 35 (68)		1.1
644.4	12	S-6	31-50/4" (50)	0.3					
	14								
DATE STARTED: 10/16/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of Mahantango Formation.		
DATE COMPLETED: 10/17/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 850		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS
						DESCRIPTION		
639.4	16	S-7	9-17 23 (40)	0.8		17.5'	gw	
	18	S-8	24-18 13 (31)	0.8		Well-Graded Gravel with Sand (gw) - 10% cobbles, 65% gravel, 25% sand, subangular to subrounded, coarse gravel, fine to coarse, subangular to subrounded, sand, 1.0" max size, nonplastic, moderate yellowish brown (10 YR 5/4) and moderate red (5R 4/6), wet, no reaction to HCl, dense to very dense.		
634.4	20	S-9	15-24 46 (70)	0.8		22.5'	sw-sm	
	22	S-10	13-8 9 (17)	0.8		Well-Graded Sand with Silt and Gravel (sw-sm) - 25% gravel, 65% sand, 10% silt, subrounded, elongated and flat, hard, fine to coarse gravel, fine to coarse sand, 1" max size, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, medium dense to dense.		
	24	S-11	19-16 16 (32)	1.1				
	26	S-12	15-15 13 (28)	0.5				
DATE STARTED: 10/16/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of Mahantango Formation.
DATE COMPLETED: 10/17/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			RIG: CME 850
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian Nabholz			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS	
						DESCRIPTION			
626.9	30	S-13	10-8 6 (14)	0.4		30.0'	sp		
						Poorly-Graded Sand with Gravel (sp) - 15% cobbles, 15% gravel, 70% sand, subangular, fine gravel, subrounded to subangular, medium to coarse sand, 0.75" max size, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, medium-dense.			
624.4	32	S-14	15-9 8 (17)	0.8		32.5'	sc		
						Clayey Sand with Gravel (sc) - 15% gravel, 60% sand, 25% silty clay, subangular, elongated and flat, fine to coarse gravel, hard, fine to coarse sand, 0.25 max size, hard, medium plasticity, low dry strength, low dilatancy, low toughness, moderate yellowish brown (10 YR 5/4) and medium gray (N5), wet, no reaction to HCl, medium-dense.			
621.9	36	S-15	10-11 11 (22)	0.8		35.0'	sw		
						Well-Graded Sand with Gravel (sw) - 20% gravel, 75% sand, 5% silt, subangular to subrounded, fine to coarse gravel, elongated and flat, subangular to subrounded, fine to coarse sand, hard, 0.25" max size, nonplastic, medium gray (N5), wet, no reaction to HCl, medium-dense.			
616.9	40	S-17	10-8 6 (14)	0.5		40.0'	gw		
						Well-Graded Gravel with Sand (gw) - 10% cobbles, 65% gravel, 25% sand, subangular to subrounded, elongated and flat, fine to coarse, hard gravel, fine to coarse, subangular to subrounded, sand, 0.75" max size, nonplastic, medium gray (N5), wet, no reaction to HCl, medium-dense.			
614.4	42	S-18	21-15 14 (29)	0.9		42.5'	sw		
						Well-Graded Sand (sw) - 10% gravel, 85% sand, 5% silt, fine to coarse, elongated and flat, subangular to subrounded gravel, fine to coarse, subangular to subrounded sand, 0.75" max size, hard, nonplastic, medium gray (N5), wet, no reaction to HCl, medium-dense.			
DATE STARTED: 10/16/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of Mahantango Formation.		
DATE COMPLETED: 10/17/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 850		
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS
						DESCRIPTION		
611.9 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS
						DESCRIPTION		
596.9	60	S-25	0-50/2" 0 (50)	0.2		60.0' Shale - Very-soft dark gray (N3), noncalcareous, no odor, low strength and toughness, no dilatancy, nonplastic, wet, no reaction to HCl.		
595.4	62	S-26	0-50/0" 0 (50)	0.0		61.5' No Recovery		
593.9	64					63' Shale - Moderately hard, dark gray (N3), fresh, intensely fractured, nonhealed, noncalcareous, fractures approximately located at 63.5'-63.7', 64.5'-64.7', 65.7'-66.0', 67.0'-67.2' and 68.2'-68.4' horizontal fractures at 68.9', 65.0', 68.8', very thickly bedded, few pockets of pyrite from 78.0'-80.0'.		
	66	R-2	100% (81%)	7.0				
	68							
	70					Shale - Moderately hard, dark gray (N3), fresh, noncalcareous, moderately to slightly fractured, slightly to moderately calcareous, fossils throughout fracture approximately 70° opposite core from 75.5'-75.8', very thickly bedded.		
	72							
DATE STARTED: 10/16/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of Mahantango Formation.
DATE COMPLETED: 10/17/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			RIG: CME 850
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Brian Nabholz			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	74	R-3	100% (84%)	10.0		Shale - Moderately hard dark gray (N3), fresh, unfractured, noncalcareous, pockets of calcareous fossils, very thickly bedded, no reaction to HCl.				
	76									
	78									
	80									
	82									
	84	R-4	100% (100%)	10.0						
	86									
DATE STARTED: 10/16/07					GWL: DEPTH: N/A	DATE/TIME: N/A	NOTES: Bedrock Part of Mahantango Formation.			
DATE COMPLETED: 10/17/07					GWL: DEPTH: N/A	DATE/TIME: N/A				
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core					
CHECKED BY: DAR					DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850			
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-315

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338820.623 E 2405297.698 SURFACE EL: 656.90	USCS SYMBOL	REMARKS					
						DESCRIPTION							
	88												
	90												
	92												
	94												
	96												
	98												
	100												
	102												
556.9	100	R-5	100% (95%)	10		Shale - Moderately hard, dark gray (N3), fresh, slightly fractured, horizontal fracture at 92.9', 45° fracture at 93.3' (opposite direction than bedding), very thickly bedded, contains few pockets of calcareous fossils, rock noncalcareous.							
						BOTTOM OF BORING 100'							
DATE STARTED: 10/16/07		GWL: DEPTH: N/A		DATE/TIME: N/A		NOTES: Bedrock Part of Mahantango Formation.							
DATE COMPLETED: 10/17/07		GWL: DEPTH: N/A		DATE/TIME: N/A									
FIELD GEOLOGIST: RAK		DRILLING METHOD: SPT/Tricone/ NQ Rock Core											
CHECKED BY: DAR		DRILLER: Scott Zeien		HELPER: Brian Nabholz		RIG: CME 850							
APPROVED BY: RJB													
DRILLING CO.: Terracon													



Bell Bend NPP

PROJECT NO. 07-3891

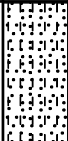
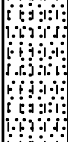

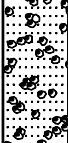


LOG OF BORING NO. B-316

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS
						DESCRIPTION		
651.8	0					Silty Sand (sm)- 75% sand, 25% silt, rounded, spherical, hard sand, 0.05" max size, low plasticity, low dry strength, low dilatancy, medium toughness, moderate yellowish brown (10 YR 5/4) and dark yellowish orange (10YR 7/4), no reaction to HCl, loose.	sm	
	2							
	4	S-1	3-4 4 (8)	1.2				
	6	S-2	7-5 5 (10)	1.5		Poorly Graded Sand with Silt (sp-sm)- 90% sand, 10% silt, rounded, spherical, fine to medium sand, 0.05" max size, low plasticity, low dry strength, low dilatancy, medium toughness, brownish gray (5 YR 4/1) to olive gray (5Y 4/1), wet, no reaction to HCl, loose.	sp-sm	
	8	S-3	5-5 5 (10)	1.0				
	10	S-4	3-3 2 (5)	1.3				
	12							
	14	S-5	1-1 1 (2)	1.2		Silty Sand (sm)- 75% sand, 25% silt, rounded, spherical, fine to medium sand, hard, 0.05" max size, low plasticity, low strength, low dilatancy, medium toughness, brownish gray (5 YR 4/1) and dark yellowish orange (10YR 7/4), wet, no reaction to HCl, very loose.	sm	
DATE STARTED: 10/11/07					GWL: DEPTH: 4.0 DATE/TIME: 10/12/07 09:00		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/12/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Jason Tousley,Michael Steinbrook			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-316






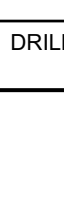
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS
						DESCRIPTION		
636.8	16	S-6	0-0 0 (0)	1.5		Silty Sand (sm) - 65% sand, 20% silt, 15% clay, fine sand, hard, 0.02 max size, low plasticity, low dry strength, low dilatancy, medium toughness, medium dark gray (N4), wet, no reaction to HCl, very loose.	sm	
	18	S-7	1-3 8 (11)	0.7		Silty Sand (sm) - 5% gravel, 70% sand, 20% silt, 5% clay, angular, hard fine gravel, fine, subrounded to subangular sand, hard, 0.02 max size, low plasticity, low dry strength, rapid dilatancy, medium toughness, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, medium-dense.	sm	
	20	S-8	9-17 14 (31)	0.6		Well Graded Gravel with Sand (gw) - 5% cobbles, 75% gravel, 15% sand, 5% silt, fine to coarse, subrounded gravel, fine to coarse, subangular to subrounded sand, 0.75" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, dense.	gw	
	22	S-9	11-19 13 (32)	1.0		Well Graded Sand with Gravel (sw) - 25% gravel, 70% sand, 5% silt, coarse, angular gravel, hard, subrounded to subangular fine to coarse sand, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, dense.	sw	
	26	S-10	10-20 26 (46)	0.9		Well Graded Gravel (gw)- 5% cobbles, 85% gravel, 10% sand, 5% silt, fine to coarse gravel, 0.75" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium dense.	gw	
634.3								
631.8	28	S-11	8-8 11 (19)	0.9				
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 4.0 DATE/TIME: 10/12/07 09:00 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Jason Tousley,Michael Steinbrook		RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-316

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS
						DESCRIPTION		
626.8	30	S-12	9-16 12 (28)	0.6		30'	gw	
						Well Graded Gravel with Sand (gw) 5% cobbles, 75% gravel, 20% sand, fine to coarse gravel, fine to coarse, subrounded to subangular sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense.		
624.3	32	S-13	18-14 18 (32)	0.8		32.5'	gw	
						Well Graded Gravel (gw)- 95% gravel, 5% sand, subangular, fine to coarse, elongated and flat gravel, fine to coarse sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, dense.		
621.8	36	S-14	9-7 7 (14)	0.6		35'	sw	
						Well Graded Sand with Gravel (sw)- 55% sand, 45% gravel, 5% silt, subrounded, fine to coarse, spherical gravel, hard, subrounded to subangular, fine to coarse sand, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense.		
619.3	38	S-15	6-9 13 (22)	0.8		37.5'	sw-sm	
						Well Graded Sand with Silt and Gravel (sw-sm)- 55% sand, 35% gravel, 10% silt, fine to coarse gravel, fine to coarse, subrounded to subangular sand, nonplastic, dark yellowish brown (10 YR 4/2) to moderate brown (10 YR 5/4), wet, no reaction to HCl, medium dense.		
616.8	40	S-16	14-24 8 (32)	0.0		40'	gm	
						No Recovery		
614.3	42	S-17	8-9 6 (15)	0.4		42.5'	gm	
						Silty Gravel with Sand (gm) - 50% gravel, 25% sand, 25% silt, elongated and flat, subrounded, fine to coarse gravel, fine to coarse, subrounded to subangular sand, 0.75" max size, hard, nonplastic, grayish brown (5 YR 3/2), wet, no reaction to HCl, medium dense.		
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 4.0 DATE/TIME: 10/12/07 09:00 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Jason Tousley,Michael Steinbrook		RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-316

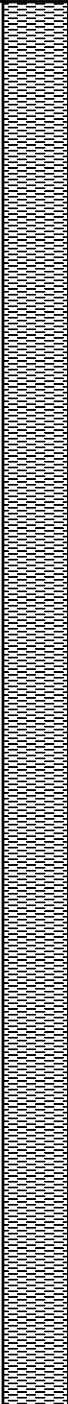
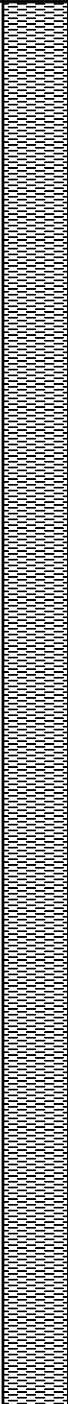
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS
						DESCRIPTION		
611.8	44	S-18	7-7 10 (17)	0.4		45.0'	gw	
	46					Well Graded Gravel with Sand (gw) - 5% cobbles, 65% gravel, 20 % sand, 10% silt, subangular, fine to coarse, elongated and flat gravel, rounded to angular, fine to coarse sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense.		
609.3	48	S-19	8-10 14 (24)	0.6		47.5'	gw	
	50					Well Graded Gravel with Sand (gw)- 5% cobbles, 65% gravel , 25% sand, 5% silt, elongated and flat, subangular, fine to coarse gravel, fine to coarse, subrounded to subangular sand, 0.75" max size, hard, nonplastic, dark gray (N3), wet, no reaction to HCl, medium-dense to dense.		
602.8	52	S-20	16-32 17 (49)	0.4				
	54							
	54	R-1	80% (80%)	0.8		54'		
	56					Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, slightly calcareous, fresh, to very slightly weathered, slight reaction to HCl. Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, slightly calcareous, fresh to very slightly weathered, pyrite inclusion at 59.6', slight reaction to HCl.		
	58	R-2	100% (100%)	5.0				
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 4.0 DATE/TIME: 10/12/07 09:00 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Jason Tousley,Michael Steinbrook		RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-316

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	60	R-3	100% (94%)	5.0		Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, slightly calcareous, fresh to very slightly weathered, slight reaction to HCl.						
	62											
	64											
	66	R-4	100% (100%)	5.0								
	68											
	70											
	72	R-5	100% (100%)	5.0								
DATE STARTED: 10/11/07									GWL: DEPTH: 4.0 DATE/TIME: 10/12/07 09:00		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/12/07									GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP									DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR									DRILLER: Sam Silverman HELPER: Jason Tousley,Michael Steinbrook		RIG: CME 55 Track	
APPROVED BY: RJB												
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-316

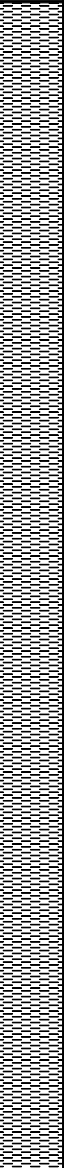
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	74	R-6	100% (100%)	5.0		Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, slightly calcareous, fresh, to very slightly weathered, calcareous fossil at 76.2', slight reaction to HCl.			
76									
78									
80	R-7	98% (92%)	4.9	Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, calcareous slightly, fresh, calcareous fossil from 82.5'- 83.0', moderately fractured from 82.4'- 83.4', slight reaction to HCl.					
82									
84									
86	R-8	100% (94%)	5.0						Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, slightly calcareous, fresh, moderately fractured from 85.4'-89.8', slight reaction to HCl.
DATE STARTED: 10/11/07 DATE COMPLETED: 10/12/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 4.0 DATE/TIME: 10/12/07 09:00 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation		
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Jason Tousley,Michael Steinbrook			RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-316



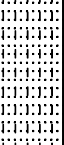
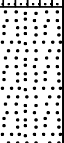
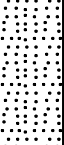
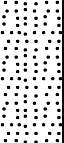
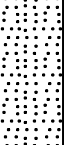
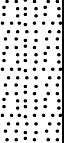
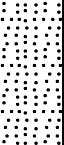

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338882.235 E 2405513.386 SURFACE EL: 656.82	USCS SYMBOL	REMARKS
						DESCRIPTION		
556.8	88	R-9	100% (100%)	5.0		Siltstone- Dark gray (N3), thickly bedded to very thickly bedded, moderately hard, very slightly fractured, slightly calcareous, slight reaction to HCl. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-317

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS	
						DESCRIPTION			
655.1	0	S-1	1-2 3 (5)	1.3		Silty Clay with Sand (CL-ML) - 25% sand, 50% silt, 25% clay, fine, spherical, rounded sand, 0.1" max size, low plasticity, no dry strength, slow dilatancy, high toughness, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, soft.	CL-ML	PP= 1.0 tsf	
						1.5'			
652.1	2	S-2	4-3 3 (6)	1.5		Well Graded Sand with Silt (SW-SM) - 75% sand, 25% silt, fine, spherical, rounded to subrounded sand, soft, 0.2" max size, low plasticity, no dry strength, rapid dilatancy, high toughness, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2) to medium dark gray (N4), moist to wet, no reaction to HCl, loose.	sw-sm		
						SW-SM			
	4	S-3	2-3 2 (5)	1.2					
						4.5'			
643.1		S-4	2-3 3 (6)	1.5		Poorly Graded Sand (sp) - 95% sand, 5% silt, spherical, rounded, fine to medium sand, soft, 0.2" max size, nonplastic, medium dark gray (N4), moist to wet, no reaction to HCl, loose to medium dense.	sp		
	6								
		S-5	4-5 6 (11)	1.5					
	8								
		S-6	8-8 8 (16)	1.2					
	10								
		S-7	5-4 5 (9)	0.9					
	12								
	S-8	5-4 5 (9)	1.0						
	S-9	2-2 2 (4)	0.9						
	14	S-10	2-2 2 (4)	1.1			SM		
DATE STARTED: 10/3/07					GWL: DEPTH: 4.0'		DATE/TIME: 10/10/07 at 16:50		NOTES: Bedrock Part of Mahantango Formation.
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A		DATE/TIME: N/A		
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core				
CHECKED BY: DAR									
APPROVED BY: RJB					DRILLER: Sam Silverman		HELPER: Jason Tousely, Mike Steinbrook		RIG: CME 55 track rig
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891



LOG OF BORING NO. B-317

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS	
						DESCRIPTION			
638.6	16	S-11	3-3 3 (6)	1.3		Silty Sand (sm) - 90% sand, 10% silt, spherical, rounded, fine to medium sand, soft, 0.2" max size, low plasticity, no dry strength, rapid dilatancy, low toughness, medium dark gray (N4), moist to wet, no reaction to HCl, very loose.	sm		
									SM
	18	S-12	1-2 1 (3)	1.3			18.0'		ML
		S-13	2-0 0 (0)	1.5		Sandy Silt (ML) - 10% gravel, 55% sand, 35% silt, fine, rounded to subrounded, gravel, spherical, rounded to subrounded, fine sand, soft, 2" max size, low plasticity, no dry strength, high dilatancy, high toughness, medium dark gray (N4), moist to wet, no reaction with HCl, very loose.	ML		
20	S-14	0-0 0 (0)	1.5				21.0'		ML
	22	S-15	2-3 6 (9)	1.0		Silty Sand (sm)- 70% sand, 20% silt, 10% clay, fine, rounded to subrounded sand, low plasticity, low dry strength, high dilatancy, low toughness, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, loose.	sm		
24		S-16	5-6 8 (14)	0.6					22.5'
	26	S-17	4-6 10 (16)	0.4		Well Graded Gravel with Silt and Sand (GW) - 60% gravel, 35% sand, 5% silt, subangular, elongated and flat, fine to coarse gravel, coarse, subangular sand, 0.5" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense.	gw		
28		S-18	13-13 13 (26)	1.2					27.0'
		S-19	20-13 15 (28)	1.3		Well Graded Sand with Gravel (sw) - 35% gravel, 60% sand, 5% silt, subangular, fine gravel, elongated and flat, subangular, fine to coarse sand, 0.5 max size, hard, nonplastic, medium dark gray (N4) and yellowish brown (10 YR 4/2), wet, no reaction to HCl, dense.			
		14-14							
DATE STARTED: 10/3/07					GWL: DEPTH: 4.0' DATE/TIME: 10/10/07 at 16:50		NOTES: Bedrock Part of Mahantango Formation.		
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core				
CHECKED BY: DAR							RIG: CME 55 track rig		
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousely, Mike Steinbrook				
DRILLING CO.: Terracon									

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-317









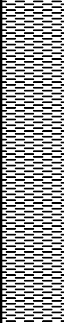
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS
						DESCRIPTION		
626.6	30	S-20	24 (38)	1.1		30.0'	gw-gm	
		S-21	12-20 28 (48)	0.4		Well Graded Gravel with Silt and Sand (gw-gm) - 65% gravel, 25% sand, 10% silt, subangular, elongated and flat, fine to coarse gravel, subangular to angular, fine to coarse sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl. dense.		
623.6	32	S-22	20-30 25 (55)	0.7		33.0'	gp	
	34	S-23	62-62 69 (131)	0.2		Poorly Graded Gravel (gp) - 95% cobbles, 5% gravel, subangular, elongated and flat, fine to coarse gravel 1.0" max size, hard, nonplastic, dark gray (N3) wet, no reaction to HCl. very-dense,		
622.1		36	S-24	12-13 15 (28)		0.4	34.5'	
	38		S-25	20-11 10 (21)		0.7	Well-Graded Gravel with Silt and Sand (gw-gm) - 10% cobbles, 65% gravel, 15% sand, 10% silt, subangular, elongated and flat, fine to coarse gravel, fine to coarse, subangular sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2) and dark gray (N3), wet, no reaction to HCl, medium dense.	
617.6		40	S-26	7-9 11 (20)		0.5	39.0'	
	S-27		20-26 11 (37)	1.0		Well-Graded Sand with Silt and Gravel (sw-sm) - 10% cobbles, 20% gravel, 60% sand, 10% silt, subangular, elongated and flat, fine to coarse gravel, fine to coarse, subangular sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, dense.		
614.6	42	S-28	11-10 6 (16)	0.6		42.0'	gw-gm	
		S-29	20-30 35 (65)	0.6	Well-Graded Gravel with Sand and Silt (gw-gm) - 10% cobbles, 60% gravel, 20% sand, 10% silt, subangular, elongated and flat, fine to coarse gravel, fine to coarse, subangular to subrounded sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, very dense.			
613.1						43.5'	GW-	
DATE STARTED: 10/3/07						GWL: DEPTH: 4.0' DATE/TIME: 10/10/07 at 16:50		NOTES: Bedrock Part of Mahantango Formation.
DATE COMPLETED: 10/10/07						GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: WMP						DRILLING METHOD: SPT/Tricone/ NQ Rock Core		
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousely, Mike Steinbrook		RIG: CME 55 track rig	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-317

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS	
						DESCRIPTION			
611.6	44	S-30	11-31 13 (44)	0.8		gravel, 45% sand, 5% silt, subangular, elongated and flat, fine to coarse gravel, subangular ro subrounded, fine to coarse sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, dense. 45.0'	GM		
	46	S-31	4-11 9 (20)	0.9		Clayey Sand with Gravel (sc)- 25% gravel, 60% sand, %15 clay, subangular, elongated and flat, fine to coarse gravel, subangular to subrounded, fine to coarse sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium dense. 46.5'	sc		
610.1		48	S-32	8-15 13 (28)	0.3		Well-Graded Sand with Silt and Gravel (sw-sm)- 20% gravel, 70% sand, 10% silt, subangular to subrounded, elongated and flat, fine to coarse gravel, subrounded to subangular, fine to coarse sand, 0.75" max size, hard, nonplastic, dark gray (N3), wet, no reaction to HCl, medium-dense to dense. 49.5'		sw-sm
	S-33		15-15 20 (35)	1.0		Well-Graded Gravel with Sand (GW)- 65% gravel, 25% sand, 10% silt, subangular, elongated and flat, fine to coarse gravel, subangular to subrounded, fine to coarse sand, 0.5" max size, hard, nonplastic, dark gray (N3), wet, no reaction to HCl, dense. 51.0'	GW		
607.1	50	S-34	13-16 15 (31)	1.0		Well-Graded Sand with Silt and Gravel (sw-sm) - 25% gravel, 65% sand, 10% silt, subangular, elongated and flat, fine to coarse gravel, rounded to angular, fine to coarse sand, 0.75" max size, hard, nonplastic, dark gray (N3), wet, no reaction to HCl, dense. 52.5'	sw-sm		
		52	S-35	27-15 30 (45)	1.2		Well Graded Gravel with Sand (gw)- 15% cobbles, 60% gravel, 20% sand, 5% silt, angular to subrounded, elongated and flat, fine to coarse gravel, subrounded to angular, fine to coarse sand, 1" max size, hard, nonplastic, dark gray (N3), wet, no reaction to HCl, very-dense. 54.0'		gw
605.6	54		S-36	13-49 35 (84)	1.1		Well Graded Sand with Silt (sw-sm) - 10% gravel, 80% sand, 10% silt, elongated and flat, subagnular gravel, fine to coarse, subrounded to subangular sand, 1.0" max size, hard, nonplastic, dark gray (N3), wet, no reaction to HCl, very dense. 55.0'		sw-sm
		S-37	25-50/4" (50)	0.8		Siltstone- Dark gray (N3), moderately hard, slightly to very weathered to fresh, moderately fractured at 56.4' to 56.8', very slightly calcareous, thickly to very thickly bedded, slight reaction to HCl.			
604.1	56	R-1	100% (100%)	5.0					
DATE STARTED: 10/3/07 DATE COMPLETED: 10/10/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 4.0' DATE/TIME: 10/10/07 at 16:50 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core		NOTES: Bedrock Part of Mahantango Formation.		
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Jason Tousely, Mike Steinbrook		RIG: CME 55 track rig		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-317

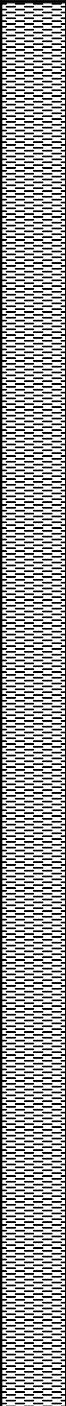
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	60	R-2	96% (96%)	2.4		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, unfractured, very slightly calcareous, thickly bedded, slight reaction to HCl.			
	62	R-3	100% (100%)	2.0		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, unfractured, very slightly calcareous, thickly bedded, slight reaction to HCl.			
	64	R-4	100% (100%)	5.0		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, very slightly fractured, very slightly calcareous, thickly bedded, slight reaction to HCl.			
	66								
	68								
	70	R-5	100% (100%)	5.0		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, very slightly fractured at 70.1 - 71.3, very slightly calcareous, thickly bedded, slight reaction to HCl.			
	72								
DATE STARTED: 10/3/07						GWL: DEPTH: 4.0' DATE/TIME: 10/10/07 at 16:50		NOTES: Bedrock Part of Mahantango Formation.	
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 55 track rig		
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Jason Tousely, Mike Steinbrook				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-317

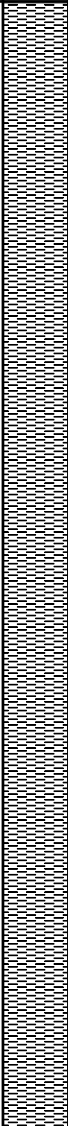
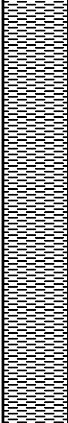
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	74	R-6	100% (100%)	5.0		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, very slightly fractured, very slightly to slightly calcareous, thickly bedded, slight reaction to HCl, fossiliferous 74.5'-82.0', fossils replaced by pyrite 78.8'-79.5'.				
	76									
	78									
	80	R-7	100% (100%)	5.0					Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, very slightly fractured, very slightly to slightly calcareous, thickly bedded, slight reaction to HCl, fossiliferous 79.5'-82.0, few veins of pyrite.	
	82									
	84									
	86	R-8	100% (100%)	5.0						Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, very slightly fractured, very slightly calcareous, thickly bedded, slight reaction to HCl.
DATE STARTED: 10/3/07					GWL: DEPTH: 4.0' DATE/TIME: 10/10/07 at 16:50		NOTES: Bedrock Part of Mahantango Formation.			
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core					
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Jason Tousely, Mike Steinbrook		RIG: CME 55 track rig			
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-317

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338888.053 E 2405571.696 SURFACE EL: 656.59	USCS SYMBOL	REMARKS							
						DESCRIPTION									
557.1	88	R-9	98% (98%)	4.9		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, unfractured, very slightly calcareous, thickly bedded, slight reaction to HCl.									
	90														
	92														
	94														
	96	R-10	100% (100%)	5.0		Siltstone- Dark gray (N3), moderately hard, slightly to very slightly weathered to fresh, very slightly fractured, very slightly to slightly calcareous, thickly bedded, slight reaction to HCl, pyritic fossil 95.3', calcite replaced fossil 97.7', few veins of pyrite.									
	98														
	100														
	102														
	BOTTOM OF BORING 99.5'														
	DATE STARTED: 10/3/07								GWL: DEPTH: 4.0'	DATE/TIME: 10/10/07 at 16:50	NOTES: Bedrock Part of Mahantango Formation.				
DATE COMPLETED: 10/10/07					GWL: DEPTH: N/A	DATE/TIME: N/A									
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core										
CHECKED BY: DAR								RIG: CME 55 track rig							
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Jason Tousely, Mike Steinbrook										
DRILLING CO.: Terracon															



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-318

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS	
						DESCRIPTION			
669.3	0	S-1	3-4 5 (9)	1.5		Sandy Silt (ML) - 75% sand, 25% silt, fine to medium, rounded to subangular sand, 0.04" max size, low plasticity, low dry strength, slow dilatancy, low toughness, dark yellow orange (10YR 6/6) to moderate yellow brown (10YR 5/4), dry, no reaction to HCL, loose to medium dense.	ML		
	2	S-2	4-3 3 (6)	1.1					
666.3	4	S-3	7-8 7 (15)	1.4		Silty Clayey Sand (SC-SM) - 75% sand, 25% silt and clay, fine to coarse sand, moderate yellow brown (10YR 5/4), dry, no reaction to HCL, loose to medium dense.	SM-SC		
	6	S-4	4-4 4 (8)	1.4					
663.3	8	S-5	4-9 18 (27)	1.2		Well Graded Sand with Gravel and Silt (sm-sw) - 25% gravel, 65% sand, 10% silt, fine to coarse, subangular to angular, elongated gravel, fine to coarse, subrounded to angular sand, hard, nonplastic, grayish pale brown (5YR 5/2), dry, no reaction to HCL, medium dense to very dense.	sw-sm		
	10	S-6	13-30 50/4" (80)	1.2					
661.8	12	S-7	50/4 (50+)	0.2		Well Graded Gravel with Sand (gw) - 75% gravel, 25% sand, angular, flat, fine to coarse gravel, very hard, fine to coarse, subangular sand, hard, 3.0" max size, nonplastic, light gray (N7), dry, no reaction to HCL, very dense.	gw		
	14	S-8	13-39 50/5 (89)	0.5					
658.8	16	S-9	7-21 33 (54)	0.7		Well Graded Sand with Gravel and Silt (sw-sm) - 5% cobbles, 25% gravel, 60% sand, 10% silt, very hard fine-grained sandstone cobbles and shale fragments, angular to subrounded, elongated and flat gravel, subangular to subrounded, fine to coarse sand, 1" max size, nonplastic, very dark red (5R 2/6) to dark gray (N4) shale fragments, and grayish orange (10YR 7/4), wet, no reaction to HCL, very dense.	sw-sm		
	18	S-10	10-15 28 (43)	0.5		Well Graded Sand (sw) - 10% gravel, 90% sand, fine to coarse angular to subangular, elongated and flat, gravel, medium hardness, angular to subangular, fine to coarse sand, nonplastic, dark gray (N4), very dark red (5R 2/6) and pale brown (5YR 5/2), wet, no	sw		
DATE STARTED: 10/5/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/7/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/ NQ Rockcore		RIG: CME 75 Truck		
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-318

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS
						DESCRIPTION		
651.3	16	S-11	50/6" (50+)	0.3		reaction to HCl, dense.	sp-sm SP-SM gm sp	
		S-12	50/5" (50+)	0.5				
	18	S-13	50/1" (50+)	0.0		No Recovery		
		S-14	20-50/6" (50+)	0.0		21.0'		
	22	S-15	21-13 12 (25)	0.4		Poorly Graded Sand with Silt (SP-SM) - 5% gravel, 95% sand, angular to subangular gravel, moderately hard, fine to medium, rounded to angular sand, nonplastic, dark reddish brown (10R 3/4) and medium dark gray (N4), wet, no reaction to HCl, medium dense.		
		S-16	8-8 8 (16)	0.7		24.0'		
	24					No Recovery		
		S-17	16-16 18 (34)	0.0		25.5'		
	26	S-18	27-50/4" (50+)	0.5		Silty Gravel (gm) - 70% gravel, 10% sand, 20% silt, spherical, rounded to angular gravel, soft, fine, subrounded to angular sand, 0.1" max size, nonplastic, medium gray (N5), wet. no reaction to HCl, very dense.		
						27.0'		
645.3	28	S-19	13-50/3" (50+)	0.8	Poorly Graded Sand with Gravel (sp) - 25% gravel, 70% sand, 5% silt, fine to coarse, elongated and flat, subrounded gravel, coarse, subrounded to subangular sand, medium hardness, 1.0" max size, nonplastic, moderate red (5R 4/2) and medium gray (N4), wet, no reaction to HCl, very dense.	sp		
		S-20	50/4" (50+)	0.4	28.0'			
644.3						28.4'		
643.9						Shale - 90% hard, fractured angular shale, 10% highly plastic clay, subangular, medium strength, slow dilatancy, low toughness, dark gray (N3), wet no reaction to HCl, very dense.		
DATE STARTED: 10/5/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/7/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/ NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-318

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-1	90% (16%)	3.9		Siltstone - Soft, dark gray (N3), thinly bedded, intensely fractured, fresh, very intensely fractured zone from 31.0' 32.0', fracture at 31.6 displays medium grain quartz healing, contains grayish-olive (10 Y 4/ 2) sandstone lenses from 29.0'-29.1', fresh.		Special Care Sample 39.6' - 42.1'
	32							
	34	R-2	100% (74%)	1.9		Siltstone - Soft, dark gray (N3), thinly bedded, moderately to intensely fractured, fresh, very intensely fractured zone from 34.3'-34.6', fracture at 34.5' thin, totally healed with calcite, no reaction to HCl.		
	36							
	38	R-3	80% (46%)	4.0		Siltstone - Soft, dark gray (N3), thinly bedded, moderately to intensely fractured, fresh, totally healed, 34.6 - 35.0 brecciated zone, healed, vuggy at 35.5', no reaction to HCl.		
	40					Siltstone - Moderately soft, dark gray (N3), fresh, moderately thick bedding, very slightly to slightly fractured, no reaction to HCl.		
	42	R-4	92% (80%)	4.6				
DATE STARTED: 10/5/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/7/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/ NQ Rockcore			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-318

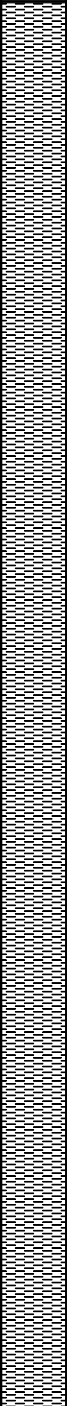
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	44	R-5	90% (88%)	4.5		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, clean, no reaction to HCl.						
	46											
	48											
	50	R-6	98% (98%)	4.9		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, very slightly fractured, fracture at 50.1' moderately thin, fractures at 52.1', no reaction to HCl.						
	52											
	54											
	56	R-7	100% (86%)	5.0		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, no reaction to HCl.						
	58											
	DATE STARTED: 10/5/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation			
	DATE COMPLETED: 10/7/07					GWL: DEPTH: N/A DATE/TIME: N/A						
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/ NQ Rockcore		RIG: CME 75 Truck					
CHECKED BY: DAR												
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Terry Duncan							
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-318

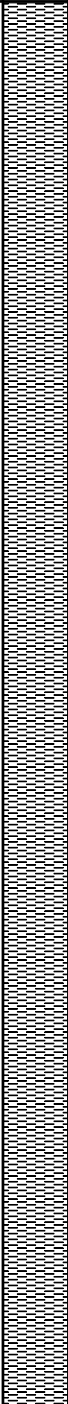
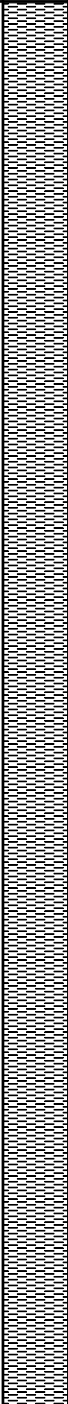
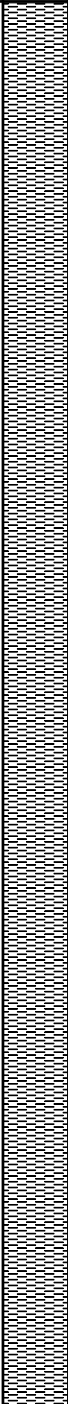
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS			
						DESCRIPTION					
	60	R-8	100% (96%)	5.0		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, clean, very intensely fractured zone from 62.7' - 62.9', no reaction to HCl.					
62											
64											
66	R-9	100% (100%)	5.0	Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, no reaction to HCl.							
68											
70											
72	R-10	98% (98%)	5.0								
DATE STARTED: 10/5/07						GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/7/07						GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: JTM						DRILLING METHOD: SPT/Tricone/ NQ Rockcore					
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan		RIG: CME 75 Truck				
APPROVED BY: RJB											
DRILLING CO.: Terracon											



Bell Bend NPP

PROJECT NO. 07-3891

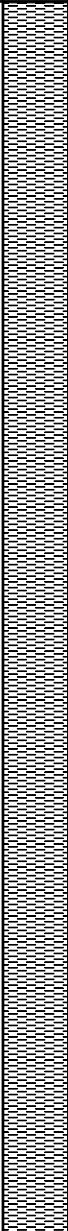
LOG OF BORING NO. B-318

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-11	98% (98%)	4.9		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, very slightly fractured, calcite healed fracture at 76.0' totally healed, thin, no reaction to HCl.		
	76							
	78							
	80	R-12	100% (96%)	5.0		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, no reaction to HCl.		
	82							
	84							
	86	R-13	92% (90%)	4.6		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, clean, totally healed calcite fracture, no reaction to HCl.		
DATE STARTED: 10/5/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/7/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/ NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-318

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339436.134 E 2405520.540 SURFACE EL: 672.30	USCS SYMBOL	REMARKS		
						DESCRIPTION				
571.7	88	R-14	98% (92%)	4.9		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, brecciated zone at 94.2' totally healed with calcite, no reaction to HCl.		Special Care Sample 92.7' - 94.2'.		
	90									
	92									
	94									
	96	R-15	98% (96%)	4.9		Siltstone - Moderately soft, dark gray (N3), fresh, thinly bedded, slightly to very slightly fractured, no reaction to HCl.				
	98									
	100	R-16	100% (100%)	1.0						
		BOTTOM OF BORING 100.6'								
	102									
DATE STARTED: 10/5/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation			
DATE COMPLETED: 10/7/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/ NQ Rockcore		RIG: CME 75 Truck			
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: Terry Duncan					
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS
						DESCRIPTION		
669.2	2	U-1		2.0		Shelby Tube	SM	
						3.0'		
664.7	4	U-2		2.0		Shelby Tube Silty Sand (SM)	SW- SM	
						7.5'		
659.7	8	S-1	20-31 50/2 (81)	1.1		Well-Graded Sand with Silt and Gravel (SW-SM)- 5% cobbles, 45% gravel, 40% sand, 10% silt, subangular, fine to coarse, elongated and flat sand and gravel, 1.5" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/2), and grayish red (5R 4/2), moist to wet, no reaction to HCl, very dense.	SW- SM	
	10	S-2	14-19 22 (41)	1.0				
657.2	12	S-3	17-24 50/3 (74)	1.1		Well-Graded Gravel with Silt and Sand (GW-GM)- 5% cobbles, 45% gravel, 40% sand, 10% silt, subangular, fine to coarse, elongated and flat sand and gravel, 1.5" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/2), and grayish red (5R 4/2), moist to wet, no reaction to HCl, very dense.	GW- GM	
	14					12.5'		
			29-20			Poorly Graded Gravel with Clay and Sand (GP-GC) - 5% cobbles, 50% gravel, 40% sand, 5% silt, subangular, fine to coarse, elongated	gp- gc	
DATE STARTED: 9/18/07					GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

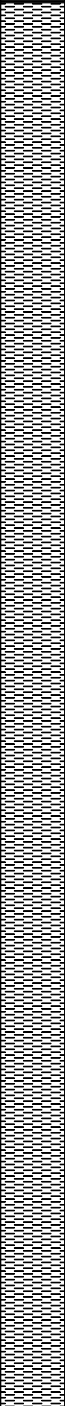
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS
						DESCRIPTION		
649.7	16	S-4	50/2 (70)	0.8		and flat gravel, subrounded to subangular, fine to coarse sand, 1.5" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium dense to very dense.	GP-GC	
	18	S-5	18-18 19 (37)	1.1				
	20	S-6	13-12 12 (24)	0.6				
647.2	22	S-7	7-7 7 (14)	1.0		22.5' Well-Graded Sand with Gravel (sw) - 5% cobbles, 30% gravel, 60% sand, 5% silt, subangular, fine to coarse, elongated and flat gravel, fine to coarse, subrounded to subangular sand, 1.5" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium dense.	SW	
	24					25.0' Well-Graded Sand with Silt and Gravel (SW-SM) - 5% cobbles, 50% gravel, 40% sand, 5% silt, subrounded, fine to coarse, elongated and flat gravel and sand, 1.5" max size, hard, nonplastic, moderate yellowish brown (10 YR 5/4), dark yellowish brown (10 YR 4/2) and blackish red (5R 2/2), wet, no reaction to HCl, very dense.		
644.7	26	S-8	8-12 50 (62)	1.1		27.5' No Recovery	SW-SM	
642.6	28	S-9	50/0 (50+)	0.0		Well Graded Gravel (gw) - 100% cobbles, dark gray (N3) to grayish black (N2) moderately hard siltstone, pale yellowish brown (10YR 6/2) to light olive gray (5Y 5/2), fine grained, very hard sandstone, moderately fractured, fresh to very slightly weathered, a brecciated calcite and quartz zone in siltstone below 28.5'		
	30	R-1	100% (71.4%)	2.1		29.6' Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered,	gw	
DATE STARTED: 9/18/07 DATE COMPLETED: 9/19/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley		RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

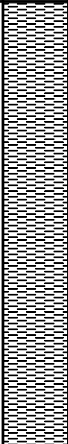
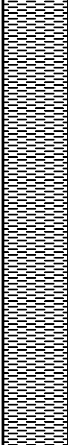
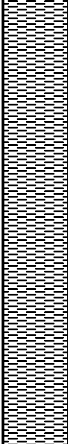
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS
						DESCRIPTION		
	32	R-2	100% (80%)	5.0		moderately hard, with calcite and quartz brecciated zones, moderately fractured, no reaction to weak reaction to HCl.		Special care sample taken at 40.2'-41.9'
	34							
	36	R-3	100% (94%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, moderately fractured, no reaction to weak reaction to HCl.		
	38							
	40					Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, no reaction to weak reaction to HCl.		
	42	R-4	100% (100%)	5.0				
	44							
DATE STARTED: 9/18/07					GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB								
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley			RIG: CME 55 Track



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

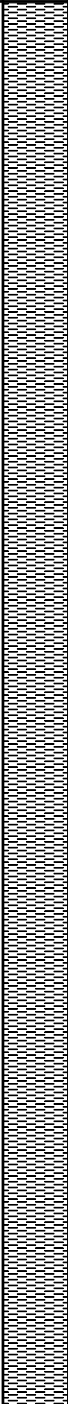
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS
						DESCRIPTION		
	46	R-5	100% (100%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, no reaction to weak reaction to HCl.		Calcite and quartz filled layer at 54.2'
	48							
	50	R-6	100% (100%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, moderately fractured, no reaction to weak reaction to HCl.		
	52							
	54	R-7	100% (100%)	5.0				
	56							
	58							
DATE STARTED: 9/18/07					GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason		RIG: CME 55 Track	
APPROVED BY: RJB					Tousley			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

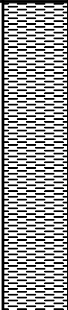
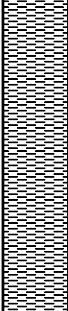
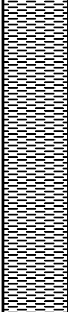
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	60	R-8	100% (100%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, very slightly fossiliferous, moderately fractured.		Calcite filled layer at 62.6'.		
	62									
	64									
	66	R-9	100% (100%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, very slightly fossiliferous, no reaction to weak reaction to HCl.				
	68									
	70								Calcite filled layer at 70.5'	
	72	R-10	98% (98%)	4.9						
	74									
DATE STARTED: 9/18/07						GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 9/19/07										
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 55 Track		
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley					
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

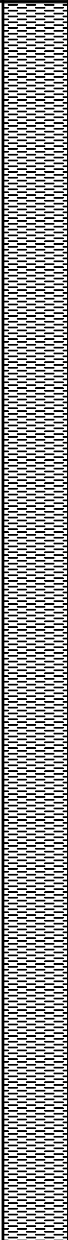
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS
						DESCRIPTION		
	76	R-11	100% (94%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous,no reaction to weak reaction to HCl, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, very slightly fossiliferous, brecciated zone from 75.8' to 79.0'.		
	78							
	80	R-12	100% (100%)	5.0		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, no reaction to weak reaction to HCl, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded, highly brecciated.		
	82							
	84	R-13	92% (90%)	4.6		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, no reaction to slight reaction to HCl, mostly fresh to slightly weathered, moderately hard, thickly to very thickly bedded.		Fracture along bedding plane at 84.6'
	86							
	88							
DATE STARTED: 9/18/07					GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason		RIG: CME 55 Track	
APPROVED BY: RJB					Tousley			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-319

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339429.847 E 2405462.375 SURFACE EL: 672.20	USCS SYMBOL	REMARKS			
						DESCRIPTION					
570.5	90	R-14	96% (96%)	4.8		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, no reaction to slight reaction to HCl, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded.		Special care sample taken at 89.7'- 91.3'			
	92										
	94	R-15	100% (100%)	5.0							
	96										
570.5	98	R-16	100% (100%)	2.1		Siltstone- Dark gray (N3) to grayish black (N2), noncalcareous to very slightly calcareous, no reaction to slight reaction to HCl, mostly fresh to very slightly weathered, moderately hard, thickly to very thickly bedded.					
	100										
	102					BOTTOM OF BORING 101.7'					
DATE STARTED: 9/18/07					GWL: DEPTH: 16.5' DATE/TIME: 0800 on 9/19/07			NOTES: Bedrock Part of the Mahantango Formation			
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A DATE/TIME: N/A						
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 55 Track			
CHECKED BY: DAR											
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook, Jason Tousley						
DRILLING CO.: Terracon											



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-320




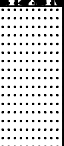






ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS
						DESCRIPTION		
656.0 656.0	0	S-1	1-1 2 (3)	0.4		Sandy Silt (ml) - 70% silt, 30% sand, subrounded, spherical, fine sand, moderate hardness, low plasticity, no dry strength, slow dilatancy, low toughness, moderate yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 6/6), wet, no reaction to HCl, very soft, with trace organics.	ml	PP= 0.0 TSF
	1.5'	S-2A		0.5		Silty Sand (sm) - 60% sand, 40% silt, fine to medium sand, moderate hardness, low plasticity, no dry strength, slow dilatation, low toughness, pale yellowish brown (10 YR 6/2) to moderate yellowish brown (10 YR 5/4), moist, no reaction to HCl, loose.	sm	PP=0.0 TSF
2		S-2B	2-2 4 (6)	1.0		Silty Sand (sm) - 80% sand, 20% silt, fine to medium, subrounded, spherical sand, moderate hardness, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, loose.	sm	
	4	S-3	4-4 2 (6)	1.4		Silty Sand (sm)- 85% sand, 15% silt, fine to medium, subrounded, spherical sand, moderate hardness, no plasticity, moderate brownish gray (5YR 4/1) to grayish brown (5 YR 3/2), wet, no reaction to HCl, loose.	sm	
651.5	6	S-4	2-5 5 (10)	0.9		Poorly Graded Sand (sp) - 95% sand, 5% silt, fine to medium, subrounded, spherical sand, moderate hardness, no plasticity, dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium-dense, becoming less silty with depth, coarser sand.	sp	
	8	S-5	7-9 9 (18)	1.1		Poorly Graded Sand (sp) - 5% gravel, 90% sand, 5% silt, fine to coarse, subrounded to subangular gravel, spherical, fine to coarse, subrounded to subangular sand, moderate hardness, nonplastic, dark yellowish brown (10 YR 4/2), moist to wet, no reaction to HCl, medium dense.	9'	
648.5	10	S-6	9-10 14 (24)	1.0		Silty Sand (sm) - 80% sand, 20% silt, subrounded, spherical, fine to medium sand, moderate hardness, rapid dilatancy, dark yellowish brown (10 YR 4/2) to grayish brown (5 YR 3/2) wet, no reaction to HCl, dense.	sm	Encountered medium dark gray (N3) cobble from 10. 0'-10.5'.
647.0	12	S-7	21-18 23 (41)	1.1		Silty Sand with Gravel (sm) - 20% gravel, 60% sand, 20% silt, subrounded to subangular, spherical, fine to coarse gravel, subrounded to subangular, fine to coarse sand, moderate hardness, nonplastic, dark yellowish brown (10 YR 4/2), no reaction to HCl, dense.	sm	
	14	S-8	9-12 24 (36)	0.9		Well Graded Gravel (gw) - 80% cobbles, 10% gravel, 5% sand, 5% silt, spherical cobbles, fine to coarse, subangular gravel, subrounded to subangular, fine to coarse sand, nonplastic, grayish orange (10 YR 7/4) and moderate brown (5 YR 4/4), wet, no reaction to HCl, very-	GW	
644.0		S-9	38-50/2" (50)	0.4				
		S-10	22-31 28 (59)	0.8				
DATE STARTED: 10/26/07					GWL: DEPTH: 0.0		DATE/TIME: 11/06/07/09:15	
DATE COMPLETED: 11/07/07					GWL: DEPTH: N/A		DATE/TIME: N/A	
FIELD GEOLOGIST: WMP/RAK					DRILLING METHOD: SPT/Tricone/NQ rock core		NOTES: Bedrock Part of the Mahantango Formation	
CHECKED BY: DAR					DRILLER: Sam Silverman		HELPER: Mike Steinbrook/Russell Whitaker	
APPROVED BY: RJB							RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891


LOG OF BORING NO. B-320

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS
						DESCRIPTION		
641.0	16	S-11	34-49 46 (95)	1.1		dense. Well Graded Gravel (gw) - 85% cobbles, 5% gravel, 5% sand, 5% silt, spherical cobbles, fine to coarse, subangular gravel, subrounded to subangular, fine to coarse sand, nonplastic, medium dark gray (N4), grayish orange (10YR 7/4), moderate brown (5YR 4/4), and dark yellowish brown (5 YR 4/2) wet, no reaction to HCl, very-dense. <div>16.5'</div>	sw-sm	Encountered red sandstone cobble from 24. 0'-25.5'
		S-12	23-24 16 (40)	0.8		Well-Graded Sand with Silt and Gravel (sw-sm)- 40% gravel, 50% sand, 10% silt, fine to coarse gravel, moderately hard, subrounded to subangular, fine to coarse sand, nonplastic, dark yellowish brown (5 YR 4/2), wet, no reaction to HCl, dense.		
638.0	18	S-13	10-9 11 (20)	1.1		Well-Graded Sand with Silt and Gravel (sw-sm) - 20% gravel, 70% sand, 10% silt, fine to coarse, spherical, coarse gravel, subrounded to subangular, fine to coarse sand, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, medium dense. <div>19.5'</div>	sw	
		S-14	8-8 8 (16)	0.4		Well-Graded Sand (sw)- 10% gravel, 85% sand, 5% silt, fine to coarse, spherical gravel, subrounded to subangular, fine to coarse sand, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, medium dense. <div>21.0'</div>		
636.5	20	S-15	20-36 40 (76)	0.8		Well Graded Gravel (gw) - 80% cobbles, 5% gravel, 10% sand, 5% silt, spherical cobbles, fine to coarse gravel, subrounded to subangular, fine to coarse sand, nonplastic, grayish orange (10 YR 7/4), and dark yellowish brown (5 YR 4/2) wet, no reaction to HCl, very-dense. <div>22.5'</div>	gw	
635.0		22	S-16	21-16 50/5" (66)	0.9		Well-Graded Sand with Cobbles and Gravel (sw) - 25% cobbles 20% gravel, 55% sand, subrounded, spherical, fine to coarse gravel, subrounded to subangular, fine to coarse gravel, 0.75 inch max size, hard, nonplastic, moderate brown (5YR 3/4) and medium gray (N5), wet, no reaction to HCl, very-dense. <div>24.0'</div>	
	S-17		50/0 (50+)	0.0		No Recovery <div>25.5'</div>	gw	
633.5	24	S-18	8-13 15 (28)	1.1		Well-Graded Gravel with Sand (gw) - 20% cobbles, 60% gravel, 20% sand, fine to coarse, spherical, subangular to angular gravel, fine to coarse, subrounded to angular sand, 1.0" max size, hard, nonplastic, moderate brown (5 YR 4/2), medium gray (N4), wet, no reaction to HCl, medium dense. <div>27.0'</div>		
		630.5	26	S-19	13-12 23 (35)	1.0		
629.0	28				28-18			
DATE STARTED: 10/26/07 DATE COMPLETED: 11/07/07 FIELD GEOLOGIST: WMP/RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 0.0 DATE/TIME: 11/06/07/09:15 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ rock core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook/Russell Whitaker		RIG: CME 55 Track	

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-320


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS			
						DESCRIPTION					
627.5	30	S-20	35 (53)	1.0		very light gray (N8) and medium gray (N5), wet, no reaction to HCl, very-dense, contains quartz sandstone cobble from 28.5' to 28.8'. 30'	gw				
		No Recovery									
626.0	32	S-21	50/5 (50+)	0		31.5'					
		Well Graded Gravel (gw) - 100% cobbles, subrounded, spherical, 1.0" max size, hard, nonplastic, medium gray (N5), wet, no reaction to HCl, very-dense.									
624.5	34	S-22	50/6 (50+)	0.2		33.0'					
		Well-Graded Gravel with Sand (gw) - 20% cobbles, 60% gravel, 20% sand, subangular, spherical gravel, coarse, subangular sand, 1.5" max size, hard, nonplastic, medium gray (N5) wet, no reaction to HCl, dense.									
623.0	36	S-23	13-15 18 (33)	0.7		34.5'					
		Well-Graded Gravel (gw) - 75% cobbles, 20% gravel, 5% sand, angular, spherical cobbles and gravel, hard, coarse, subangular sand, 1.5" max size, nonplastic, medium gray (N5), wet, no reaction to HCl, dense.									
621.5	38	S-24	13-19 14 (33)	1.0		36'					
		Well Graded Gravel (gw) - 50% cobbles, 40% gravel, 10% sand, fine to coarse, subangular, spherical cobbles and gravel, fine to coarse, subangular sand, 1.5" max size, hard, nonplastic, medium gray (N5), wet, no reaction to HCl, dense.									
620.0	40	S-25	12-17 21 (38)	1.0		37.5'					
		Well-Graded Sand with Gravel (sw) - 80% sand, 15% gravel, 5% silt, spherical, subrounded, fine gravel, hard, 0.5" max size, nonplastic, medium dark gray (N4), wet, no reaction to HCl, medium-dense.									
617.0	42	S-26	12-13 13 (26)	1.0		gw					
		S-27A	10-9 (9)	0.5							
	S-27B	10-10 (10)	0.7	40.5'							
	S-28	13-17 45 (62)	0.8								
614.0	44	S-29	16-34 39 (73)	1.1		Well Graded Gravel with Sand (gw) - 60% cobbles, 25% gravel, 15% sand, hard to medium hard, subangular to angular cobbles, fine to coarse, subangular gravel, medium to coarse, subangular sand, 1.0" max particle size, nonplastic, medium gray (N5) with olive gray (5Y 4/1), wet, no reaction to HCl, very-dense. 43.5'					
						Well Graded Gravel (gw) - 100% cobbles, medium hard to hard,					
DATE STARTED: 10/26/07 DATE COMPLETED: 11/07/07 FIELD GEOLOGIST: WMP/RAK CHECKED BY: DAR APPROVED BY: RJB						GWL: DEPTH: 0.0 DATE/TIME: 11/06/07/09:15 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ rock core			NOTES: Bedrock Part of the Mahantango Formation		
DRILLING CO.: Terracon						DRILLER: Sam Silverman HELPER: Mike Steinbrook/Russell Whitaker			RIG: CME 55 Track		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-320

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS			
						DESCRIPTION					
610.5	44	S-30	30-46 23 (69)	0.9		angular, spherical, 1.0" max size, nonplastic, medium dark gray (N4), wet, no reaction to HCl, very-dense.					
	46	S-31	12-14 50/5" (64)	1.1							
	48	R-1	95% (45%)	1.9	Shale- Soft dark gray (N3), fresh, intensely fractured (FD6), not healed, calcareous, from 47.0'to 47.9', nocalcareous remainder, closely spaced fractures, thinly bedded, moderateley rough fractures.						
	50				Shale- About 75% shale, 25% silty clay, subangular, very-soft, low dilatancy, low toughness, round, high plasticity, low strength, dark gray (N3), no odor, no reaction to HCl, wet.						
	52	R-2	94% (94%)	4.7	Shale- Soft dark gray (N3), slightly to medium weathered, intensely fractured, slightly healed with silty clay, very closely spaced, (FD4) thinly bedded, rough to moderately rough, calcareous with fossils from 51.6'-52.1', fractures located from 51.5'-51.6' and 53.5'-54.0' approximatley 45° of core.						
	54				Shale- Soft to moderately soft, dark gray (N3), slightly weathered, slightly healed with clay, intensely to moderately fractured (FD6) moderately spaced, very thin to slightly open, fracture zone located at 56.4'-56.7', 58.4'- 58.6', fracture at 58.0'-58.4' approximatley 70° of core, noncalcareous except where fossils are located, thinly to moderately bedded.						
	56	R-3	100% (60%)	5.0							
	58										
	DATE STARTED: 10/26/07 DATE COMPLETED: 11/07/07 FIELD GEOLOGIST: WMP/RAK CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: 0.0 DATE/TIME: 11/06/07/09:15 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ rock core			NOTES: Bedrock Part of the Mahantango Formation		
	DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook/Russell Whitaker			RIG: CME 55 Track		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-320




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-4	100% (94%)	5.0		Shale- Moderately soft, dark gray (N3), slightly fractured (FD3) moderately to widely spaced, very thin, open, fresh, not healed fractures at 62.3' - 62.4' approximatley 45° of core, 62.5' horizontal fracture, 63.8'-64.0' approximatley 70° to the core, non calcareous, moderately bedded.		
	62							
	64							
	66							
	68	R-5	100% (90%)	5.0		Shale- Moderately soft to hard, dark gray (N3), moderately fractured to slightly fractured (FD4) moderately spaced, very thin, slightly open to moderately open, fresh, not healed, fracture from 64.0'-64.4', vertical fracture 64.8'-65.3' approximatley 70° to core, noncalcareous, no reaction to HCl, moderatley to thickly bedded.		
	70							
	72							
		R-6	100% (92%)	5.0		Shale- Moderately soft to hard, dark gray (N3), slighlty fractured (FD3) widely spaced, thin becoming very thinly open, rough, fresh, not healed, fracture at 70.8' horizontal, and from 73.8'-74.0 approximately 60° of core, noncalcareous, no reaction to HCl, moderately thick bedding.		
DATE STARTED: 10/26/07					GWL: DEPTH: 0.0 DATE/TIME: 11/06/07/09:15		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/07/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP/RAK					DRILLING METHOD: SPT/Tricone/NQ rock core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook/Russell Whitaker		RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891



LOG OF BORING NO. B-320

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-7	98% (92%)	4.9		Shale- Moderately hard, dark gray (N3), very slightly fractured (FD1) very widely spaced, very thin to slightly open, rough, fresh, not healed, fracture from 74.5'-74.8' approximately 60° of core, contains pockets of calcareous fossils with a strong reaction to HCl, otherwise noncalcareous, moderately bedded.		
	76							
	78							
	80							
	82	R-8	100% (96%)	5.0		Shale- Moderately hard, dark gray (N3), very slightly fractured (FD1) very widely spaced, very thin, slightly open, rough fresh, not healed, fracture from 80.0'-80.2' approximatley 45° of core.		
	84							
	86							
		R-9	100% (100%)	5.0		Shale- Moderately hard, dark gray (N3), unfractured (FD0), fresh, noncalacreous, no reaction to HCl.		
DATE STARTED: 10/26/07 DATE COMPLETED: 11/07/07 FIELD GEOLOGIST: WMP/RAK CHECKED BY: DAR APPROVED BY: RJB						GWL: DEPTH: 0.0 DATE/TIME: 11/06/07/09:15 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ rock core	NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon						DRILLER: Sam Silverman HELPER: Mike Steinbrook/Russell Whitaker		RIG: CME 55 Track

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-320

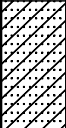
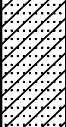

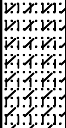

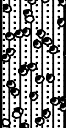
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338748.655 E 2405771.438 SURFACE EL: 657.52	USCS SYMBOL	REMARKS
						DESCRIPTION		
557.5	88	R-10	100% (100%)	5.0		Shale- Moderately hard, dark gray (N3), unfractured (FD0), fresh, contains few calcareous intrusions, noncalcareous, no reaction to HCl.		
	90							
	92							
	94					Shale- Moderately hard, dark gray (N3), unfractured (FD0), fresh, contains few calcareous intrusions.		
557.5	96	R-11	100% (100%)	5.0				
	98							
	100					Shale- Moderately hard, dark gray (N3), unfractured (FD0), fresh.		
	102							
						BOTTOM OF BORING 100'		
DATE STARTED: 10/26/07 DATE COMPLETED: 11/07/07 FIELD GEOLOGIST: WMP/RAK CHECKED BY: DAR APPROVED BY: RJB DRILLING CO.: Terracon					GWL: DEPTH: 0.0 DATE/TIME: 11/06/07/09:15 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ rock core		NOTES: Bedrock Part of the Mahantango Formation	
					DRILLER: Sam Silverman HELPER: Mike Steinbrook/Russell Whitaker		RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-321

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02		USCS SYMBOL	REMARKS	
						DESCRIPTION				
655.5	0								Solid stem augers	
	2						2.5'	sc		
		S-1	4-4 3 (7)	1.4		Clayey Sand (sc) - 80% sand, 15% clay, 5% silt, fine to medium, rounded sand, flat and elongated, low plasticity, low dry strength, low dilatancy, low toughness, no reaction to HCl, low dilatancy, moderate yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/2), moist to wet, no reaction to HCL, loose to medium dense				
	4									
	6	S-2	2-5 6 (11)	1.4						
650.5	8	S-3	5-8 8 (16)	1.0		Well-Graded Sand with Silt (sw-sm) - 85% sand, 5% clay, 5% silt, rounded, fine to coarse, flat and elongated sand, hard, no plasticity, grayish red (5R 4/2), wet, no reaction to HCl, medium dense.	sw-sm		7.5'-8.0 cave in	
645.5	10	S-4	2-5 18 (23)	1.5				sm	Set 10.0', 4" temporary steel casing, mixed mud (QuickTrol LV: Quick gel) with tri-cone bit	
	12					Shale cobble at 11.4'				
	14	S-5	24-27 19 (46)	0.8		Silty Sand with Gravel (sm) - 15% gravel, 70% sand, 15% silt, fine, subangular, flat and elongated gravel, hard, fine to coarse, subrounded to subangular sand, 1/2" maximum particle size, no plasticity, grayish brown (5 YR 3/2) wet, no reaction to HCl, dense.				
DATE STARTED: 10/20/2007					GWL: DEPTH: NA DATE/TIME: NA		NOTES: Bedrock Part of the Mahantango Formation			
DATE COMPLETED: 10/21/2007					GWL: DEPTH: NA DATE/TIME: NA					
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tri-cone/NQ Rockcore			RIG: CME 75 Truck		
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: L. Shipman					
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891






LOG OF BORING NO. B-321

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
643.0	16	S-6	15-16 44 (60)	0.7		15.0' Silty Sand with Gravel (sm) - 50% sand, 30% gravel, 20% silt, fine to coarse, subrounded gravel, flat and elongated, fine to coarse grained, angular to rounded sand, 3/4" maximum particle size hard, nonplastic, grayish brown (5YR 3/2), wet, no reaction to HCl, dense to very dense, larger gravel/cobbles at bottom of spoon.	sm	Switched to casing advancer
640.5	18	S-7	50/4" (50)	0.4		17.5' Well Graded Gravel (gw) - 100% cobbles, subrounded to angular, flat and elongate, 1 1/2" maximum particle size, hard, no plasticity, dark gray (N3), wet, no reaction to HCl, very dense.	gw	
638.0	20	S-8	15-20 17 (37)	1.0		20.0' Well-Graded Sand with Gravel (sw) - 10% cobbles, 45% sand, 40% gravel, 5% silt, fine to coarse grained, subrounded, flat and elongated gravel, fine to coarse grained, subangular to rounded sand, 3/4" maximum particle size, hard, no plasticity, dark gray (N3), wet, no reaction to HCl, dense, some large sandstone cobbles (some with calcite veins).	sw	
635.5	22	S-9	25-34 37 (71)	1.5		22.5' Well Graded Gravel with Sand (gw) - 45% cobbles, 25% gravel, 25% sand, 5% clay, subangular, flat and elongated gravel and cobbles, fine to coarse grained, subangular to rounded sand, 1 1/2" maximum particle size, hard, nonplastic, pale yellowish brown (10YR 6/2), wet, no reaction to HCl, very dense.	gw	22.5'-23.7 cave in
633.0	26	S-10	24-29 23 (52)	1.0		25.0' Well Graded Gravel (gw) - 80% cobbles, 10% gravel, 10% sand, fine to coarse, flat and elongated cobbles and gravel, 1 1/2" maximum particle size, hard, no plasticity, dark gray (N3) to moderately yellowish brown (10YR 6/2), wet, no reaction to HCl, very dense.	gw	25.5', began to loose water (very minimal)
	28	S-11	19-24 32 (56)	0.2				
DATE STARTED: 10/20/2007 DATE COMPLETED: 10/21/2007 FIELD GEOLOGIST: JLO CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: NA DATE/TIME: NA GWL: DEPTH: NA DATE/TIME: NA DRILLING METHOD: SPT/Tri-cone/NQ Rockcore			NOTES: Bedrock Part of the Mahantango Formation
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: L. Shipman			RIG: CME 75 Truck

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-321


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
628.0	30	S-12	2-4 6 (10)	0.7		30.0'	sw	32.0', no water circulation
						Well-Graded Sand (sw) - 90% sand, 5% gravel, 5% silt, fine to coarse sand, flat and elongated, 0.5" maximum particle size, no plasticity, dusky brown (5YR 2/2), wet, no reaction to HCl, loose.		
625.5	32	S-13	10-14 15 (29)	0.6		32.5'	gw	Water returns (not completely) 35.0', water returns (not completely) Used approximately 600 gallons to get from S-14 to S-15 Used 200 gallons total from S-1 to S-14
						Well-Graded Gravel with Sand (gw) - 25% cobbles, 60% gravel, 15% sand, fine to coarse grained, angular, flat and elongated cobbles, fine to coarse, shale and sandstone gravel, 3/4" maximum particle size, hard, no plasticity, dark gray (N3), wet, no reaction to HCl, medium dense to very dense.		
620.5	34	S-14	19-43 27 (70)	0.8		37.5'	gw	Start 10/21/07 R-1 lost 0.6' from above gravel
						Well Graded Gravel (gw) - 75% cobbles, 20% gravel, 5% sand angular, elongated and flat cobbles and sand, 1 1/2" maximum particle size, hard, no plasticity, dark gray (N3), wet, no reaction to HCl dense. Shale and sandstone cobbles - Shale is highly weathered to degraded into clay, sandstone is fairly fresh.		
618.0	40	S-16	50/0 (50+)	0.0		40.0'		No water circulation - Used 500 gallons of water for 5.0'
						No Recovery		
615.6	42	R-1	88% (20%)	4.4		42.4'		
						Shale - Dark gray (N3), medium hard Bedding plane visible at breaks, thinly bedded at 30°-45° to core, no reaction to HCl, closely to intensely fractured, moderate to severely weathered.		
DATE STARTED: 10/20/2007					GWL: DEPTH: NA DATE/TIME: NA		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/21/2007					GWL: DEPTH: NA DATE/TIME: NA			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tri-cone/NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: L. Shipman			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-321

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02	USCS SYMBOL	REMARKS						
						DESCRIPTION								
	44	R-2	94% (74%)	4.7		44.4', fresh weathering, unfractured, little pyrite in thin horizontal vein		At approximately 48.0' water returns, not full return						
	46					45.6', few fossils, calcite highly effervescent little pyrite throughout Shale, dark gray (N3), medium hard, thinly bedded at 30° - 4 5° to core, no reaction to HCL, closely to intensely fractured, moderate to severe weathering								
	48					R-3			100% (92%)	5.5	49.5'-50.0', intensely fractured to crushed due to difficulties removing from shoe of core barrel Shale, dark gray (N3), medium hard, thinly bedded at 30°-45° to core, no reaction to HCL, closely to intensely fractured, moderate to severe weathering			
	50													
	52													
	54													
	56										R-4	100% (100%)	4.5	55.0'-57.0', calcite inclusions are thin, discontinuous and horizontal Shale - Dark gray (N3), medium hard, thinly bedded at 30°-45° to core, no reaction to HCL.
	58													
		58.3'- 60.2', abundant pyrite and fossil zone, pyrite in masses with no												
	DATE STARTED: 10/20/2007					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation					
	DATE COMPLETED: 10/21/2007					GWL: DEPTH: NA DATE/TIME: NA								
	FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tri-cone/NQ Rockcore								
	CHECKED BY: DAR					DRILLER: Craig VanVactor HELPER: L. Shipman								
	APPROVED BY: RJB								RIG: CME 75 Truck					
	DRILLING CO.: Terracon													



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-321

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
						particular orientation, fossils are mainly brachiopods		
	60	R-5	100% (100%)	5.0		59.65', Well-preserved brachiopod Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh, unfractured, few fossils, few pyrite wisps.		
	62							
	64							
	66	R-6	100% (100%)	5.0		Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh, unfractured, few fossils, few pyrite wisps.		
	68							
	70	R-7	100% (100%)	5.0				
	72							
DATE STARTED: 10/20/2007					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/21/2007					GWL: DEPTH: NA DATE/TIME: NA			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tri-cone/NQ Rockcore			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-321

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02	USCS SYMBOL	REMARKS			
						DESCRIPTION					
	74	R-8	100% (100%)	5.0		74.9'-75.0', fracture filled in with clay, nonplastic Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh, few fossils, few pyrite wisps, very slightly fractured, few fossils filled in with calcite.					
	76										
	78										
	80										
		R-9	98% (92%)	4.9		78.8' clean fracture (rounded edges) Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh, few fossils, very slightly fractured.					
	82										
	84										
	86										
		R-10	100% (94%)	5.0		84.0'-84.3' intensely fractured zone Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh, few fossils, very slightly fractured, few calcite inclusions throughout.					
DATE STARTED: 10/20/2007						GWL: DEPTH: NA DATE/TIME: NA GWL: DEPTH: NA DATE/TIME: NA DRILLING METHOD: SPT/Tri-cone/NQ Rockcore	NOTES: Bedrock Part of the Mahantango Formation				
DATE COMPLETED: 10/21/2007											
FIELD GEOLOGIST: JLO						DRILLER: Craig VanVactor HELPER: L. Shipman	RIG: CME 75 Truck				
CHECKED BY: DAR											
APPROVED BY: RJB											
DRILLING CO.: Terracon											



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-321

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338752.662 E 2405830.208 SURFACE EL: 658.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
558.0	88	R-11	100% (100%)	5.0	<div></div>	Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh.		
	90							
	92							
	94							
96	R-12	96% (86%)	4.8	<div></div>	Shale - Grayish black (N2), medium hard, no reaction to HCl, fresh, very slightly fractured.			
98								
100								
102								
DATE STARTED: 10/20/2007					GWL: DEPTH: NA DATE/TIME: NA	NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/21/2007								
FIELD GEOLOGIST: JLO					GWL: DEPTH: NA DATE/TIME: NA			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLING METHOD: SPT/Tri-cone/NQ Rockcore			
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: L. Shipman	RIG: CME 75 Truck		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

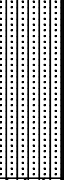











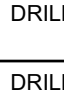
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
655.2	0	S-1	2-3 3 (6)	1.5		Sandy Lean Clay (cl) - 40% sand, 60% clay, subrounded to subangular, spherical, fine to medium sand, low to medium plasticity, low dry strength, slow to no dilatancy, low toughness, mottled dark yellowish orange (10YR 6/6) and light gray (N7), moist, no reaction to HCl, medium stiff, traces of roots.	cl	pp=0.50 tsf
	2	S-2a					2'	
654.2		S-2b	3-3 4 (7)	1.2		Silty Sand (sm) - 5% gravel, 80% sand, 15% silt, subangular to subrounded, spherical, fine gravel, subangular to subrounded, fine to coarse sand, 2" max size, medium hard, nonplastic, dark yellowish brown (10YR 4/2), moist, no reaction to HCl, loose.	sm	
							3.0'	
	4	S-3	1-2 2 (4)	1.5		Silty Sand (sm) - 60% sand, 40% silt, subrounded to subangular, spherical, fine to medium sand, 0.07" max size, medium hard, nonplastic, dark yellowish brown (10YR 4/2) and olive gray (5Y 3/2), wet, no reaction to HCl, very loose.	sm	
		S-4	1-2 3 (5)	1.3			6.0'	
651.2	6					Poorly Graded Sand with Silt (sp-sm) - 90% sand, 10% silt, subrounded to subangular, spherical, fine to medium sand, 0.07" maximum particle size, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2) to grayish brown (5YR 3/2), wet, no reaction to HCl, loose.	sp-sm	
649.7		S-5	3-4 6 (10)	1.0			7.5'	
	8	S-6	3-4 6 (10)	1.0		Poorly Graded Sand (sp)- 95% sand, 5% silt, subrounded to subangular, spherical, fine to medium sand, 0.07" max size, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, loose to medium dense.	sp	
646.7	10	S-7	4-6 7 (13)	0.9			10.5'	
		S-8	3-4 5 (9)	1.0		Silty Sand (sm) - 85% sand, 15% silt, fine sand, subrounded to sub angular, spherical, fine to medium sand, 0.07" max size, moderate hardness, nonplastic to low plasticity, low dry strength, rapid dilatancy, low toughness, brownish gray (5YR 4/1) to dark yellowish brown (10YR 4/2), wet, no reaction to HCl, loose.	sm	
	12	S-9	3-4 4 (8)	1.0				
		14	S-10	3-2 2 (4)	0.9			
DATE STARTED: 10/23/07					GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
640.7	16	S-11	2-2 2 (4)	1.0		16.5'	sm	pp=0.0 tsf
		S-12a	1-0 0 (0)	1.5		17.5'	ch	
639.7	18	S-12b				18.5'	gw	
638.7		S-13a						
	S-13b	0-0 9 (9)	1.0					
	20	S-14	15-49 15 (64)	0.7				
					No Recovery			
	22	S-15	22-14 12 (26)	0.0		22.5'	gw	
634.7		S-16	20-15 15 (30)	0.9				
	24	S-17	10-14 20 (34)	0.8				
	26	S-18	9-15 20 (35)	1.0		27.0'	gw	
630.2								
	28	S-19	9-9 10 (19)	0.8				
			21-14					
DATE STARTED: 10/23/07					GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker		RIG: CME 55 Track	
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
625.7 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

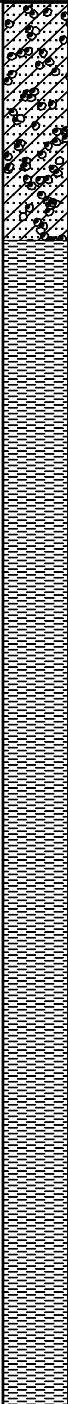
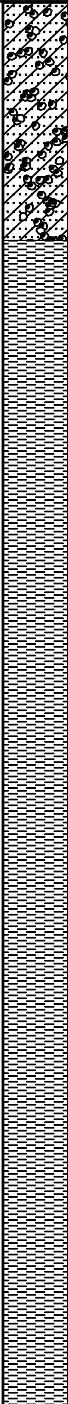
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS		
						DESCRIPTION				
612.2	44	S-30	2-1 3 (4)	0.3		coarse, subrounded to subangular, spherical gravel, fine to coarse, subrounded to subangular sand, 0.5" maximum particle size, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, very loose. 45.0'	sw			
	610.7	46	S-31	5-6 2 (8)	1.5				Well-Graded Sand (sw) - 5% gravel, 90% sand, 5% silt, fine gravel, fine to coarse, subangular to subrounded, spherical sand, 0.25" maximum particle size, moderate hardness, nonplastic, medium gray (N5) and brownish gray (5YR 4/1), wet, no reaction to HCl, loose. 46.5'	
609.2		48	S-32	10-30 25 (55)	1.0		Well-Graded Gravel (gw) - 80% cobbles, 10% sand, 10% gravel, fine to coarse gravel, fine to coarse, subrounded to subangular, spherical sand, 0.5" max size, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2) and lesser moderate yellowish brown (10YR 5/4), wet, no reaction to HCl, very dense. 48.0'		gw	
	606.2	50	S-33	16-34 19 (53)	0.8		Well-Graded Gravel with Silt and Sand (sw-sm) - 60% gravel, 30% sand, 10% silt, fine to coarse, subrounded to subangular, spherical gravel, fine to coarse, subrounded to subangular sand, 1" coarse gravel maximum particle size, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, dense to very dense 51.0'		gw-gm	
604.7		52	S-35	16-22 9 (31)	0.9		Well-Graded Gravel with Silt and Sand (gw-gm) - 30% cobbles, 35% gravel, 20% sand, 15% silt, fine to coarse, subrounded to subangular, spherical gravel, fine to coarse, subrounded to subangular sand, 1" maximum particle size, moderate hardness, nonplastic, dark yellowish brown (10YR 4/2) to medium dark gray (N4), wet, no reaction to HCl, dense. 52.5'		gw-gm	
	603.2	54	S-36	4-8 28 (36)	0.8		Sandy Lean Clay (cl) - 10% gravel, 20% sand, 10% silt, 50% clay, fine to coarse, subrounded to subangular, spherical gravel, fine to coarse subrounded to subangular sand, 0.25" maximum particle size, moderate hardness, medium plasticity, low dry strength, rapid dilatancy, medium toughness, dark yellowish brown (10YR 4/2) to medium dark gray (N4), wet, no reaction to HCl, hard. 54.0'		cl	
		56	S-37	15-16 16 (32)	0.8		Clayey Sand with Gravel (sc) - 25% gravel, 50% sand, 25% clay, subrounded to angular, spherical, coarse gravel, subrounded to angular, fine to coarse sand, 1" max size, moderate hardness, low plasticity, low strength, low dilatancy, low toughness, medium dark gray (N4), moist, no reaction to HCl, dense.		sc	
		58	S-38	11-16 22 (38)	1.2					
		S-39	20-24 35 (59)	1.3						
DATE STARTED: 10/23/07					GWL: DEPTH: 1.8'		DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07					GWL: DEPTH: N/A		DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core				RIG: CME 55 Track	
CHECKED BY: DAR					DRILLER: Sam Silverman		HELPER: M. Steinbrook, R. Whitaker			
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

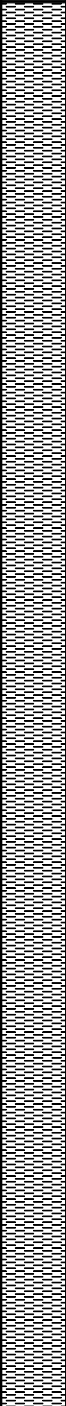
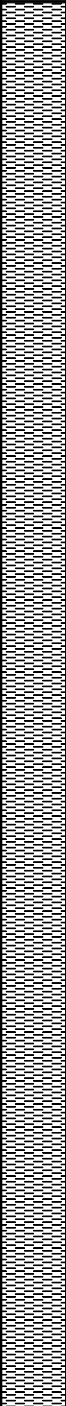
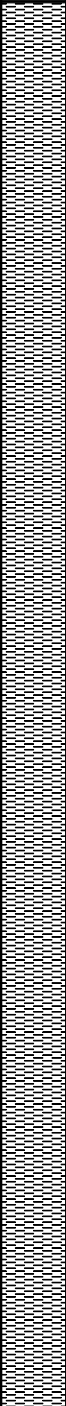
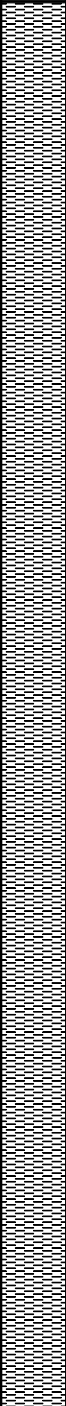
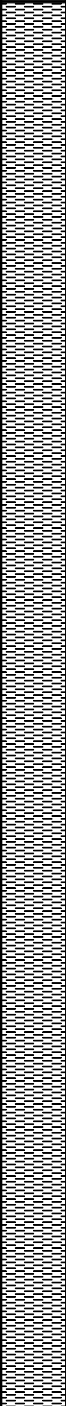
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS	
						DESCRIPTION			
596.2	60	S-40	22-20 26 (46)	1.5					
		S-41	50/2 (50+)	0.2					
	62	R-1	97% (77%)	3.4					61'
		Siltstone- Moderately hard, dark gray (N3), noncalcareous to slightly calcareous, breccia zone from 61.0'-61.9', highly fractured, massive bedding, fresh to slightly weathered.							
	64	R-2	100% (100%)	5.0					Siltstone- Moderately hard, dark gray (N3), slightly calcareous, fresh, massive bedding, few fractures healed with calcite and quartz, slightly calcareous.
	66								
68									
70						Siltstone- Moderately hard, dark gray (N3), fresh, unfractured slightly clacareous, massive bedding.			
72	R-3	100% (100%)	5.0						
DATE STARTED: 10/23/07						GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07						GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP						DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR									
APPROVED BY: RJB						DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker		RIG: CME 55 Track	
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-4	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, very slightly to slightly fractured, massive bedding, fossiliferous, noncalcareous.		
	76							
	78							
	80	R-5	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, very slightly calcareous with pyrite, fractured from 82.5'-84.5, fossiliferous.		
	82							
	84							
	86	R-6	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), noncalcareous, to slightly calacareous, fresh, very slightly fractured, massive bedding.		
DATE STARTED: 10/23/07						GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation
DATE COMPLETED: 10/25/07						GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: WMP						DRILLING METHOD: SPT/Tricone/NQ Rock Core		
CHECKED BY: DAR						DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker		RIG: CME 55 Track
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

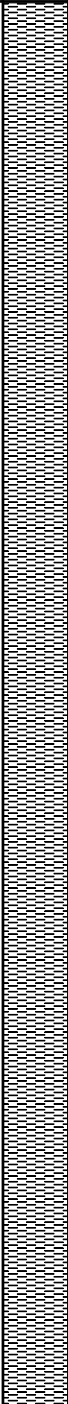
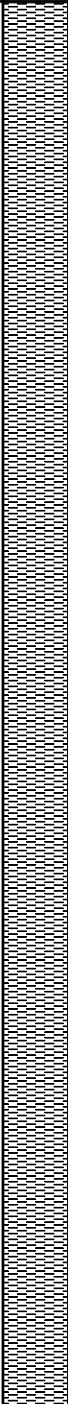
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	88	R-7	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), noncalcareous, to slightly calacareous, fresh, very slightly fractured, massive bedding.						
	90											
	92											
	94											
	96	R-8	98% (98%)	4.9				Siltstone- Moderately hard, dark gray (N3), noncalcareous, to slightly calacareous, fresh, very slightly fractured, massive bedding.				
	98											
	100											
	102	R-9	100% (100%)	5.0				Siltstone- Moderately hard, dark gray (N3), noncalcareous, to slightly calacareous, fresh, very slightly fractured, massive bedding.				
	DATE STARTED: 10/23/07 DATE COMPLETED: 10/25/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB							GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Fotmation		
	DRILLING CO.: Terracon							DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker		RIG: CME 55 Track		



Bell Bend NPP

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LOG OF BORING NO. B-322

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
	104	R-10	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), noncalacareous, fresh, unfractured, massive bedding.		
	106							
	108							
	110	R-11	98% (98%)	4.9		Siltstone- Moderately hard, dark gray (N3), noncalacareous, fresh, unfractured, massive bedding.		
	112							
	114							
	116		100%			Siltstone- Moderately hard, dark gray (N3), fresh, noncalcerous, slightly fractured, healed with calcite, fossiliferous, reaction to HCl, contains pockets of pyrite.		
DATE STARTED: 10/23/07					GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker		RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

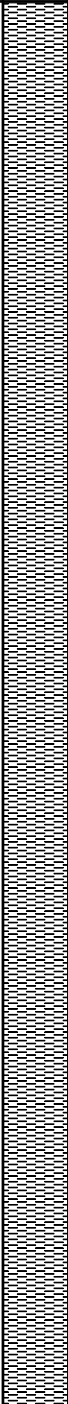
LOG OF BORING NO. B-322

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS			
						DESCRIPTION					
	118	R-12	(100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, noncalcerous, slightly fractured, healed with calcite, fossiliferous, reaction to HCl, contains pockets of pyrite.					
	120										
	122	R-13	100% (100%)	5.0							
	124										
	126										
	128	R-14	100% (100%)	5.0							
	130										
DATE STARTED: 10/23/07 DATE COMPLETED: 10/25/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB									GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Fotmation
DRILLING CO.: Terracon									DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker		
RIG: CME 55 Track											

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

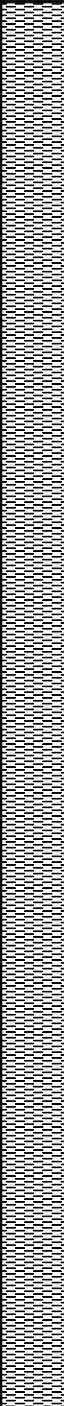
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	132	R-15	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, unfractured to very slightly fractured, massive bedding, noncalcareous.						
	134											
	136	R-16	100% (100%)	5.0								
	138											
	140											
	142	R-17	100% (100%)	5.0								
	144											
	146											
DATE STARTED: 10/23/07									GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07									GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP									DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR												
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker							
DRILLING CO.: Terracon												



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LOG OF BORING NO. B-322

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
	148	R-18	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, unfractured to very slightly fractured, massive bedding, noncalcareous, calcite filled fossils at 153.5'.		
	150							
	152	R-19	100% (100%)	5.0				
	154							
	156							
	158	R-20	100% (100%)	5.0				
	160							
DATE STARTED: 10/23/07					GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07	NOTES: Bedrock Part of the Mahantango Fotmation		
DATE COMPLETED: 10/25/07								
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker	RIG: CME 55 Track		
DRILLING CO.: Terracon								



Bell Bend NPP

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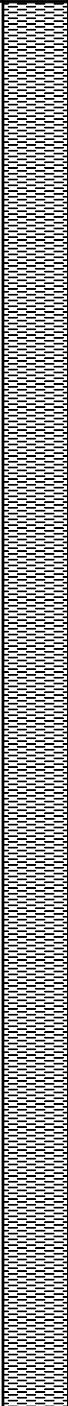
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS				
						DESCRIPTION						
	162	R-21	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, unfractured to very slightly fractured, massive bedding, noncalcareous.						
	164											
	166	R-22	100% (100%)	5.0								
	168											
	170											
	172	R-23	100% (100%)	5.0								
	174											
DATE STARTED: 10/23/07									GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
DATE COMPLETED: 10/25/07									GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP									DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: DAR									DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker			
APPROVED BY: RJB												
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-322

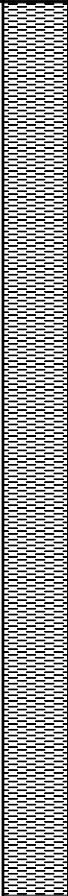
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS
						DESCRIPTION		
	176	R-24	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, unfractured to very slightly fractured, massive bedding, noncalcareous.		
	178							
	180							
	182	R-25	100% (100%)	5.0				
	184							
	186	R-26	100% (100%)	5.0				
	188							
	190							
	DATE STARTED: 10/23/07							
DATE COMPLETED: 10/25/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP				DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track		
CHECKED BY: DAR				DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker				
APPROVED BY: RJB								
DRILLING CO.: Terracon								



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ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338922.541 E 2405754.786 SURFACE EL: 657.24	USCS SYMBOL	REMARKS				
						DESCRIPTION						
457.7	192	R-27	100% (100%)	5.0		Siltstone- Moderately hard, dark gray (N3), fresh, unfractured to very slightly fractured, massive bedding, noncalcareous.						
	194											
	196	R-28	100% (100%)	5.0								
	198											
	200	BOTTOM OF BORING 199.5'										
	202											
	204											
	DATE STARTED: 10/23/07								GWL: DEPTH: 1.8' DATE/TIME: 09:50, 10/26/07		NOTES: Bedrock Part of the Mahantango Fotmation	
	DATE COMPLETED: 10/25/07								GWL: DEPTH: N/A DATE/TIME: N/A			
	FIELD GEOLOGIST: WMP								DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: DAR							RIG: CME 55 Track					
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: M. Steinbrook, R. Whitaker							
DRILLING CO.: Terracon												



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-323





ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338927.919 E 2405815.577 SURFACE EL: 657.68	USCS SYMBOL	REMARKS
						DESCRIPTION		
652.7	0	S-1	2-4 5 (9)	1.3		Silty Sand (sm)- 75% sand, 5% clay, 20% silt, subangular, fine to coarse sand, 0.02" max size, soft, low plasticity, low dry strength, low dilatancy, medium toughness, moderate yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/ 2) to black (N1), dry, no reaction to HCl, loose.	sm	
	2							
	4	S-2	13-47 50/3 (97)	1.0		5.0'	sm	
	6							
	650.2	8	S-3	32-18 20 (38)	0.9		7.5'	
10								
647.7	10	S-4	14-8 7 (15)	0.9		10.0'	sm	
	12							
	14	S-5	5-6 10 (16)	0.5		Silty Sand (sm) - 10% gravel, 65% sand, 25% silt, fine, angular gravel, medium to coarse, subangular sand, hard 0.25" max size, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, medium-dense.		
DATE STARTED: 10/12/07				GWL: DEPTH: N/A DATE/TIME: N/A				
DATE COMPLETED: 10/14/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP				DRILLING METHOD: SPT/Tricone/ NQ Rock Core				
CHECKED BY: DAR				DRILLER: Sam Silverman HELPER: J. Tousely/ M. Steinbrook				RIG: CME 55
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-323


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338927.919 E 2405815.577 SURFACE EL: 657.68	USCS SYMBOL	REMARKS	
						DESCRIPTION			
642.7	16	S-6	7-16 17 (33)	0.8		15.0'	gm		
						Silty Gravel with Sand (gm) - 5% cobbles, 60% gravel, 15% sand, 20% silt, fine to coarse, subangular to subrounded gravel, fine to coarse, subrounded to subangular sand, 1" max size, hard, nonplastic, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, dense.			
637.7	20	S-8	7-7 9 (16)	0.1		20.0'	gw		
						Well Graded Gravel (gw) - 100% cobbles, subangular, 3.0" max size, hard, elongated and flat, nonplastic, medium gray (N5), wet, no reaction to HCl, medium dense.			
635.2	24	S-9	12-40 25 (65)	1.0		22.5'	gw-gm		
						Well Graded Gravel with Sand and Silt (gw-gm) - 5% cobbles, 65% gravel, 20% sand, 10% silt, fine to coarse, subangular to subrounded gravel, fine, subangular to subrounded sand, hard, nonplastic, dark yellowish brown (10YR 5/4) and olive gray (5Y 4/1), wet, no reaction to HCl, very dense.			
630.2	28	S-11	31-17 17 (34)	0.7		27.5'	sw-sm		
						Well Graded Sand with Gravel and Silt (sw-sm) - 40% gravel, 50% sand, 10% silt, fine to coarse, subangular to subrounded gravel, fine, subangular to subrounded sand, hard, 0.75" max size, nonplastic, moderate yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/2), wet, no reaction to HCl, very dense.			
DATE STARTED: 10/12/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/14/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 55		
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: J. Tousely/ M. Steinbrook				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-323

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338927.919 E 2405815.577 SURFACE EL: 657.68	USCS SYMBOL	REMARKS	
						DESCRIPTION			
627.7	30	S-12	16-17 18 (35)	0.7		30.0'	gw-gm		
						Well Graded Gravel with Sand and Silt (gw-gm) - 60% gravel, 30% sand, 10% silt, subrounded to subangular, fine to coarse gravel, subrounded to subangular, fine to coarse sand, 1" max size, hard, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCL, dense to very dense.			
	32	S-13	20-28 20 (48)	0.8					
	34	S-14	21-25 21 (46)	0.8					
	36	S-15	40-50/6 (50)	0.8					
	38	S-16	50/0 (50)	0.0					
40	S-17	13-38 43 (81)	0.9						
615.2	42					42.5'	gw		
						Well Graded Gravel with Sand (gw) - 60% gravel, 30% sand, 10% silt, subangular to subrounded, fine to coarse gravel, subangular to subrounded, fine to coarse sand, 0.75" max size, hard, nonplastic, dark yellowish brown (10YR 4/2) and moderate yellowish brown (10YR 5/4), wet, no reaction to HCl, very dense.			
DATE STARTED: 10/12/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/14/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			RIG: CME 55	
CHECKED BY: DAR					DRILLER: Sam Silverman HELPER: J. Tousely/ M. Steinbrook				
APPROVED BY: RJB									
DRILLING CO.: Terracon									


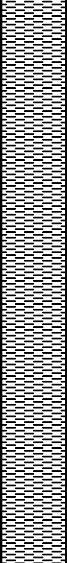
BORING NO. B-323
SHEET 4 OF 7



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-323

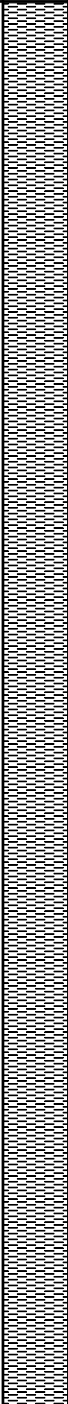
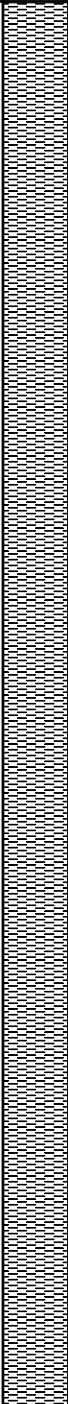
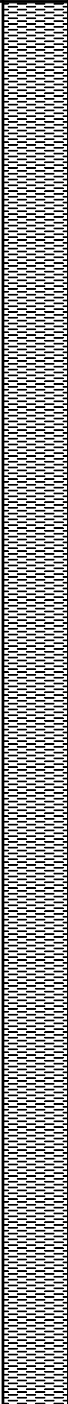
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338927.919 E 2405815.577 SURFACE EL: 657.68	USCS SYMBOL	REMARKS	
						DESCRIPTION			
599.2	60	S-23	12-12 25 (37)	0.9		Well Graded Gravel with Sand (gw) - 80% gravel, 15% sand, 5% silt, fine to coarse, subrounded to angular gravel, fine to coarse, subrounded to angular sand, 1.5" max size, soft, nonplastic, dark gray (N3), wet, no reaction to HCl, dense.	gw		
	62	S-24	14-22 27 (49)	0.9					
595.2		S-25	50/6 (50+)	0.3			Well Graded Gravel (gw) - 95% gravel, 5% silty clay, very soft siltstone cobbles, 1.5" max size, soft, nonplastic, dark gray (N3), no reaction to HCl, dense.		gw
594.7	64	R-1	80% (80%)	0.8		Siltstone- Dark gray (N3), moderately hard, slightly calcareous thin foliated layer within bedding at 63.2' bedding is 60° to rock core.			
	66	R-2	100% (98%)	5.0		Siltstone- Dark gray (N3), moderately hard, calcareous to slightly calcareous, fresh, very thickly bedded, very slightly fractured to unfractured, calcareous filled fracture at 65.0'.			
	68								
	70								
	72	R-3	100% (98%)	5.0		Siltstone- Dark gray (N3), moderately hard, very thickly bedded, slightly calcareous to calcareous, very slightly fractured.			
DATE STARTED: 10/12/07 DATE COMPLETED: 10/14/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation		
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: J. Tousely/ M. Steinbrook		RIG: CME 55		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-323

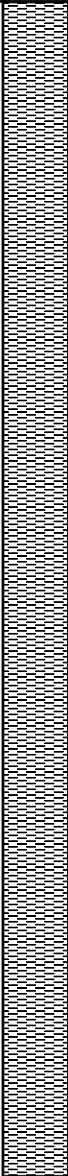
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338927.919 E 2405815.577 SURFACE EL: 657.68	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-4	100% (100%)	5.0		Siltstone- Dark gray (N3), moderately hard, very thickly bedded, slightly calcareous to calcareous, very slightly fractured.		
	76							
	78							
	80	R-5	100% (100%)	5.0		Siltstone- Dark gray (N3), moderately hard, very thickly bedded, very slightly calcareous, very slightly fractured to fractured, calcareous, fossiliferous throughout, very few pyrite viens throughout.		
	82							
	84					R-6		
	86							
DATE STARTED: 10/12/07								
DATE COMPLETED: 10/14/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: WMP					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			
CHECKED BY: DAR								
APPROVED BY: RJB						DRILLER: Sam Silverman HELPER: J. Tousely/ M. Steinbrook		RIG: CME 55
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-323

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 338927.919 E 2405815.577 SURFACE EL: 657.68	USCS SYMBOL	REMARKS		
						DESCRIPTION				
557.7	88	R-7	98% (98%)	4.9		Siltstone- Dark gray (N3), moderately hard, very thickly bedded, slightly calcareous to noncalcareous, very slightly fractured.				
	90									
	92									
	94									
	96	R-8	98% (98%)	4.9		Siltstone- Dark gray (N3), moderately hard, very thickly bedded, fresh, unfractured, noncalcareous.				
	98									
	100	R-9	100% (100%)	1.0		Siltstone- Dark gray (N3), moderately hard, very thickly bedded, fresh, unfractured, noncalcareous.				
	102									
	BOTTOM OF BORING 100'									
	DATE STARTED: 10/12/07 DATE COMPLETED: 10/14/07 FIELD GEOLOGIST: WMP CHECKED BY: DAR APPROVED BY: RJB								NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon						RIG: CME 55				
GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core										
DRILLER: Sam Silverman HELPER: J. Tousely/ M. Steinbrook										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
668.0 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324

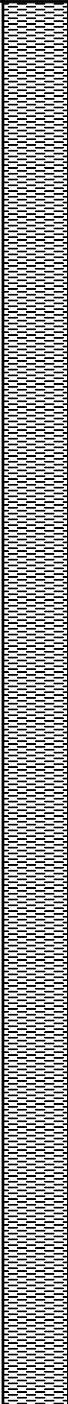
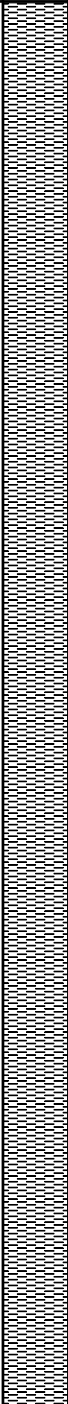
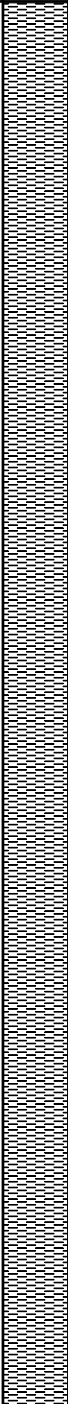
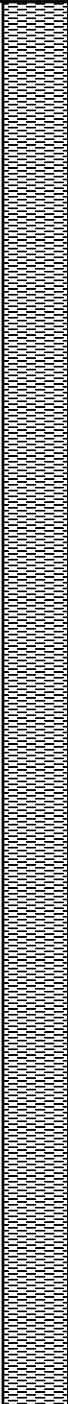
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
654.5	16	S-10	11-14 17 (31)	1.1		15' Poorly Graded Gravel with Silt and Sand (GP-GM) - 55% gravel, 35% sand, 5% silt, 5% clay, subrounded, flat, 1" max size, hard, nonplastic, dark yellowish-brown (10 YR 4/2), wet, no reaction to HCl, dense.	GP-GM	Special Care Sample 27.0' - 28.1'
653.0		S-11	11-24 26 (50)	0.6		16.5' Well-Graded Gravel with Sand (gw) - 55% gravel, 40% sand, 5% silt, subrounded, flat gravel, 1" max size, hard, subrounded to subangular, fine to coarse sand, nonplastic, dark yellowish-brown (10 YR 4/2), wet, no reaction to HCl, dense.	gw	
651.5	18	S-12	18-26 50/2 (76)	0.8		18.0' Poorly Graded Gravel with Sand (gp) - 10% cobbles, 55% gravel, 35% sand, subangular, flat gravel, subrounded to subangular, fine to coarse sand, 1" max size, hard, nonplastic, dark yellowish-brown (10 YR 4/2), wet, no reaction to HCl, very dense.	gp	
	20	S-13	11-50/3" (50)	0.3				
648.5		S-14	28-50/3" (50)	0.6		21.0' Poorly Graded Gravel with Clay and Sand (GP-GC) - 50% gravel, 45% sand, 5% clay, fine to coarse, subangular, flat gravel, 4" max size, hard, nonplastic, grayish-black (N2) to black (N1), wet, no reaction to HCl, very dense.	GP-GC	
647.0	22	S-15	50/0 (50+)	0.0		22.5' Siltstone - Dark gray (N3) to grayish black (N2), medium-hard, fresh to slightly weathered, thinly bedded, calcite veins horizontal to bedding and along bedding, slight reaction to HCl.		
	24	R-1	100% (100%)	1.0				
	26	R-2	100% (92%)	5.0				
	28					29.9'-33.5' veins of pyrite parallel to bedding planes		
DATE STARTED: 10/03/07 DATE COMPLETED: 10/04/07 FIELD GEOLOGIST: JLO CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Craig Vanvactor HELPER: Terry Duncan		RIG: CME 75	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-3	96% (96%)	4.8				
	32							
	34	R-4	100% (100%)	5.0		Siltstone - Dark gray (N3) to grayish black (N2), medium-hard fresh to slightly weathered, rough texture from 36.0-38.5', moderate reaction to HCl, possible natural break at 37.0' (slightly rounded edges), thinly bedded.		
	36							
	38	R-5	100% (100%)	5.0		40.8 - 42.5 fossiliferous, with veins of pyrite oriented along bedding and small brachiopod fossil casts infilled with calcite.		
	40							
	42					Siltstone - Dark gray (N3) to grayish black (N2) medium-hard, fresh to		
DATE STARTED: 10/03/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/04/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig Vanvactor HELPER: Terry Duncan		RIG: CME 75	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324

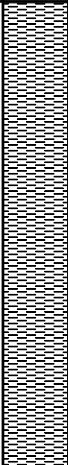
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-6	100% (100%)	5.0		slightly weathered, fossiliferous, veins of pyrite and calcite along bedding below 48.8', moderate reaction to HCl.		
	46							
	48							
	50	R-7	100% (100%)	5.0		Sparse brachiopod fossils and pyrite in masses below 48.5'		
	52							
	54							
	56	R-8	100% (100%)	5.0		Siltstone - Dark gray (N3) to grayish black (N2), medium-hard, fresh to slightly weathered, veins of pyrite and calcite parallel to bedding, bedding and pyrite in masses, moderate reaction to HCl.		
	58							
DATE STARTED: 10/03/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/04/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig Vanvactor HELPER: Terry Duncan		RIG: CME 75	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-9	100% (100%)	5.0		Siltstone - Grayish-black (N2), medium-hard, fresh to slightly weathered, unfractured, fossiliferous veins of pyrite and fossils infilled with calcite, slight reaction to HCl, zones of rough texture react moderately to HCl.		
	62							
	64					Siltstone - Grayish-black (N2), medium-hard, fresh to slightly weathered, unfractured, fossiliferous, veins of pyrite, fossils infilled with calcite, slight reaction to HCl, zones of rough texture react moderately to HCl.		
	66	R-10	98% (98%)	4.8				
	68					67.55'-67.65' - Calcite and pyrite vein subparallel to bedding. Calcite is microfaulted and continues through half the length of the R-11 core.		
	70							
	72	R-11	100% (100%)	5.0				
DATE STARTED: 10/03/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/04/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 75
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig Vanvactor HELPER: Terry Duncan			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324

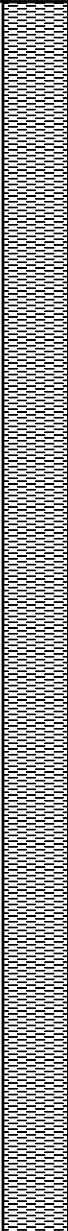
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74					Siltstone - Grayish-black (N2), medium-hard, fresh to slightly weathered, unfractured, fossiliferous - fossil casts infilled with calcite, very slight reaction to HCl.		
	76	R-12	98% (98%)	4.9				
	78							
	80							
	82	R-13	100% (100%)	5.0				
	84					Few pyrite and calcite masses		
	86	R-14	100% (96%)	5.0				
								Very slow advancement 87.0-88.5'
DATE STARTED: 10/03/07 DATE COMPLETED: 10/04/07 FIELD GEOLOGIST: JLO CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Craig Vanvactor HELPER: Terry Duncan		RIG: CME 75	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-324




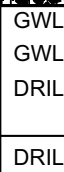
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339323.655 E 2405190.958 SURFACE EL: 669.45	USCS SYMBOL	REMARKS
						DESCRIPTION		
568.9	88	R-15	100% (100%)	5.0		Siltstone - Grayish-black (N2), medium-hard, fresh to slightly weathered, unfractured, very slightly effervescent, with few fossils.		Special Care Sample 91.0' - 92.4'
	90							
	92	R-16	100% (100%)	5.0				
	94							
	96	R-17	100% (100%)	2.1		Siltstone - Grayish-black (N2), medium-hard, fresh to slightly weathered, unfractured, no reaction to HCl, with few fossils, smooth core texture.		
98								
100	BOTTOM OF BORING 100.6'							
102								
DATE STARTED: 10/03/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/04/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75	
CHECKED BY: EVZ					DRILLER: Craig Vanvactor HELPER: Terry Duncan			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-325





ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339328.285 E 2405252.941 SURFACE EL: 668.9	USCS SYMBOL	REMARKS		
						DESCRIPTION				
666.4	0	S-1	1-2 2 (4)	1.5		Silt with Sand (ml)- 60% silt, 30% sand, 10% clay, well rounded, fine sand, 4 mm max size, medium plasticity, slightly organic, low dry strength, low toughness, no dilatancy, medium brown (5YR 5/6), dry, no reaction to HCl, soft.	ml			
	2						2.5'		SC-SM	
	663.9	4	S-2	4-8 8 (16)	0.9		Silty Clayey Sand (SC-SM)- 60% sand, 15% silt, 15% clay, 10% gravel, fine to medium, flat and elongated, subangular gravel, well rounded, fine to coarse sand, max 8 mm size, nonplastic, medium brown (5YR 5/6), no reaction to HCl, medium dense.			5.0'
		6							S-3	
	8	S-4	19-16 21 (37)	1.2		Poorly Graded Sand with Gravel (sp)- 30% gravel, 65% sand, 5% silt, angular, coarse, flat gravel, fine to coarse, rounded sand, 1.0" max size, nonplastic, pale reddish brown (10 R 5/4,) and pale brown (5 YR 5/2), dry, no reaction to HCl, dense to very dense.	13.0'			GW-GM
	10								S-5	
655.9	12	S-6	19-26 22 (48)	0.9						
14										
DATE STARTED: 10/12/07					GWL: DEPTH: 14.00 DATE/TIME: 10/14/07, 1415		NOTES: Bedrock Part of the Mahantango Formation			
DATE COMPLETED: 10/13/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core					
CHECKED BY: EVZ					DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850			
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-325

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339328.285 E 2405252.941 SURFACE EL: 668.9	USCS SYMBOL	REMARKS
						DESCRIPTION		
653.4	16	S-7	10-14 19 (33)	1.1		15.5'	sw	Pressure meter test from 21.0-22.5', no recovery
						Well-Graded Sand (sw)- 30% gravel, 70% sand, well rounded, subangular, coarse gravel, fine to coarse, subrounded to subangular sand, 6 mm max size, nonplastic, pale brown (5YR 5/2), moist, no reaction to HCl, dense.		
650.9	18	S-8	35-25 28 (53)	0.7		18.0'	gw-gm	
						Well-Graded Gravel with Silt (gw-gm) - 80% gravel, 10% sand, 10% silt, angular, elongated and flat gravel, fine to coarse, subrounded to subangular sand, 6 mm max size, low hardness, nonplastic, medium gray (N5), wet, no reaction to HCl, very dense.		
647.9	20	S-9	44-50/1 (50)	0.6		21'		
645.4	24	R-1	71% (40%)	5.0		23.5'		
						Shale- Dark gray (N3)		
DATE STARTED: 10/12/07 DATE COMPLETED: 10/13/07 FIELD GEOLOGIST: PFW CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: 14.00 DATE/TIME: 10/14/07, 1415 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850	

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-325

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339328.285 E 2405252.941	USCS SYMBOL	REMARKS
						SURFACE EL: 668.9		
						DESCRIPTION		
	30							Pressure meter test from 30.5-33.0', no recovery
	32							
	34					Shale- Dark gray (N3)		
	36							
		R-2	100% (91%)	7.5				
	38							
	40					Shale- Dark gray (N3)		
	42							
		R-3	96% (90%)	4.8				
DATE STARTED: 10/12/07					GWL: DEPTH: 14.00 DATE/TIME: 10/14/07, 1415	NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/13/07								
FIELD GEOLOGIST: PFW								
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Scott Zeien	HELPER: Brian Nabholz	RIG: CME 850	
DRILLING CO.: Terracon								

BORING NO. B-325
SHEET 4 OF 7



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-325

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339328.285 E 2405252.941 SURFACE EL: 668.9	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-6	100% (93%)	10.0		Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, slightly fossiliferous throughout, slight reaction to HCl, slightly to very slightly fractured, fresh.		
	62					Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, very few fossils, fresh, slightly fractured, fractures at approximately 30 degrees to the core, rock noncalcareous, no odor.		
	64					Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, very few fossils, fresh, slightly fractured, fractures at approximately 30 degrees to the core, rock noncalcareous, no odor.		
	66					Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, very few fossils, fresh, slightly fractured, fractures at approximately 30 degrees to the core, rock noncalcareous, no odor.		
	68					Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, very few fossils, fresh, slightly fractured, fractures at approximately 30 degrees to the core, rock noncalcareous, no odor.		
	70					Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, very few fossils, fresh, slightly fractured, fractures at approximately 30 degrees to the core, rock noncalcareous, no odor.		
	72					Shale- Dark gray (N3), moderately hard to hard, thinly bedded, bedding vertical, very few fossils, fresh, slightly fractured, fractures at approximately 30 degrees to the core, rock noncalcareous, no odor.		

DATE STARTED: 10/12/07	GWL: DEPTH: 14.00	DATE/TIME: 10/14/07, 1415	NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/13/07	GWL: DEPTH: N/A	DATE/TIME: N/A	
FIELD GEOLOGIST: PFW	DRILLING METHOD: SPT/Tricone/NQ Rock Core		
CHECKED BY: EVZ			
APPROVED BY: RJB	DRILLER: Scott Zeien	HELPER: Brian Nabholz	RIG: CME 850
DRILLING CO.: Terracon			



Bell Bend NPP

PROJECT NO. 07-3891









LOG OF BORING NO. B-325

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339328.285 E 2405252.941 SURFACE EL: 668.9	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-7	100% (100%)	10.0		Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.		Continuous piece
	76							
	78							
	80							
	82							
	84							
	86							
DATE STARTED: 10/12/07				GWL: DEPTH: 14.00 DATE/TIME: 10/14/07, 1415		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/13/07				GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW				DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: EVZ								
APPROVED BY: RJB				DRILLER: Scott Zeien HELPER: Brian Nabholz		RIG: CME 850		
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-325

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339328.285 E 2405252.941 SURFACE EL: 668.9		USCS SYMBOL	REMARKS
						DESCRIPTION			
578.4	88	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
568.4	90	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
	92	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
	94	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
	96	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
	98	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
	100	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
	102	R-9	98% (98%)	9.8		90.5'			
						Shale- Dark gray (N3), moderately hard to hard, thinly bedded bedding vertical, rock noncalcareous, very few fossils, fresh, unfractured, no odor.			
DATE STARTED: 10/12/07					GWL: DEPTH: 14.00 DATE/TIME: 10/14/07, 1415		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 10/13/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 850		
CHECKED BY: EVZ					DRILLER: Scott Zeien HELPER: Brian Nabholz				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-326









ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
667.8 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-326

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
660.3	16	S-11	15-14 15 (29)	1.0		15' Well-Graded Gravel with Sand (gw)- 10% cobbles, 60% gravel, 30% sand, subangular, elongated and flat, fine to coarse gravel, fine to coarse, subangular to subrounded sand, 0.75" max size, nonplastic, moderate yellowish brown (10 YR 5/4), wet, no reaction to HCl, medium dense to dense.	gw	Begin coring at 22.0-ft
		S-12	16-19 20 (39)	1.2				
657.3	18	S-13	14-15 17 (32)	1.4		18.0' Poorly Graded Gravel with Clay and Sand (GP-GC)- 60% gravel, 35% sand, 5% clay, fine to coarse gravel, medium to coarse sand, nonplastic, moderate yellowish brown (10YR 5/4), wet, no reaction to HCL, dense.	GP-GC	
655.8	20	S-14	18-25 50/5" (75)	1.4		19.5' Well-Graded Gravel with Sand (gw) - 20% cobbles, 65% gravel, 15% sand, subangular, elongated and flat, fine to coarse gravel, fine to coarse, subangular to subrounded sand, 1.0" max size, nonplastic, moderate red (5R 4/6) and dark gray (N3), moist, no reaction to HCl, very dense.	gw	
654.3	22	S-15	50/6" (50+)	0.6		21.0' Shale- Very soft, dark gray (N3)- weathered, intensely fractured, fractures clean, moderately hard to hard, vertical bedding.		
	24	R-1	100% (0%)	3.0		Shale- Moderately hard to hard, dark gray (N3), highly fractured, vertical bedding, laminated slightly calcareous, fractures vertically healed with calcite, fractures at 45° fresh, moderately bedded.		
	26							
	28	R-2	95% (8%)	6.2				
DATE STARTED: 9/19/07 DATE COMPLETED: 9/19/07 FIELD GEOLOGIST: RAK CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: 8.90 DATE/TIME: 9/20/07, 0830 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Dave Dyan		RIG: CME 850	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-326

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-3	100% (10%)	4.0		Shale- Moderately hard to hard, dark gray (N3), highly fractured, breccia zone encountered, healed with calcite, calcareous intrusions, vertical bedding planes.		Preserved sample for laboratory analysis from 40.4' - 41.7'.
	32							



Bell Bend NPP

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LOG OF BORING NO. B-326

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-5	93% (84%)	9.3		Shale- Moderately hard to hard, dark gray (N3), highly fractured, breccia zone encountered, healed with calcite, calcareous intrusions, vertical bedding planes.		
					46			
	48							
	50							
	52							
	54							
	56							
	58							
DATE STARTED: 9/19/07					GWL: DEPTH: 8.90 DATE/TIME: 9/20/07, 0830		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 850	
CHECKED BY: EVZ					DRILLER: Scott Zeien HELPER: Dave Dyan			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-326

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-6	100% (94%)	10.0		Shale- Moderately hard to hard, dark gray (N3), slightly to very slightly fractured, fractures occuring at 45L to rock core, vertical fractures completely healed.		
	62							



Bell Bend NPP

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LOG OF BORING NO. B-326


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-8	100% (63%)	10.0		Shale- Moderately hard to hard, dark gray (N3), slightly to moderately fractured, highly fractured zone at 74.0', slightly calcareous, weak reaction to HCl.		
	76							
	78							
	80							
	82							
	84							
	86							
DATE STARTED: 9/19/07					GWL: DEPTH: 8.90	DATE/TIME: 9/20/07, 0830	NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/19/07					GWL: DEPTH: N/A	DATE/TIME: N/A		
FIELD GEOLOGIST: RAK					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Scott Zeien	HELPER: Dave Dyan	RIG: CME 850	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-326

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339454.708 E 2405176.410 SURFACE EL: 675.31	USCS SYMBOL	REMARKS						
						DESCRIPTION								
575.3	88	R-9	88% (67%)	8.8		Shale- Moderately hard to hard, dark gray (N3), moderately to intensely fractured, vertical bedding planes, encountered void from 86.0' - 87.0', slightly calcareous, weak reaction to HCl.		Preserved sample for laboratory analysis from 95.8' - 97.0'.						
	90													
	92													
	94													
	96													
	98													
	100													
	102													
	BOTTOM OF BORING 100'													
	DATE STARTED: 9/19/07 DATE/TIME: 9/20/07, 0830								NOTES: Bedrock Part of the Mahantango Formation					
	DATE COMPLETED: 9/19/07 DATE/TIME: N/A													
	FIELD GEOLOGIST: RAK DRILLING METHOD: SPT/Tricone/ NQ Rock Core													
	CHECKED BY: EVZ													
	APPROVED BY: RJB DRILLER: Scott Zeien HELPER: Dave Dyan								RIG: CME 850					
	DRILLING CO.: Terracon													



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327



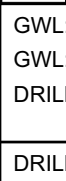
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
673.4	0	ST-1		2.3		SHELBY TUBE	SM	
	2					SHELBY TUBE Silty Sand (SM) - 65% sand, 20% silt, 10% clay, 5% gravel, fine to medium sand, fine gravel.		
670.4	4	ST-2		0.7		5'	sw-sm	
	6					Well-Graded Sand with Silt (sw-sm) - 10% gravel, 80% sand, 10% silt, fine subangular, elongated and flat gravel, well-rounded, fine to coarse sand, 0.5" max size, hard, nonplastic, light brown (5YR 5/6) and moderate brown (5YR 4/4), moist, no reaction to HCl, dense.		
667.9	8	S-1	10-13 18 (31)	1.1		7.5'	sm	
	10					Silty Sand (sm) - 10% gravel, 75% sand, 10% silt, 5% clay coarse to fine, subangular, elongated and flat gravel, well-rounded, fine to medium, subangular sand, nonplastic, light brown (5YR 5/6) and moderate brown (5YR 4/4), moist, no reaction to HCl, medium dense.		
665.4	12	S-2	11-9 18 (27)	1.1		10'	sw	
	14					Well-Graded Sand (sw) - 5% gravel, 85% sand, 10% silt, fine, elongated and flat, subrounded gravel, fine to medium, rounded to subangular sand, light brown (5YR 5/6) and moderate brown (5YR 4/4), dry, no reaction to HCl, medium dense.		
662.9	16	S-3	12-13 12 (25)	1.3		12.5'	gw	
	18					Well-Graded Gravel (gw) - 95% gravel, 5% sand, subangular, fine to coarse gravel, fine to medium sand, nonplastic, moderate red (5R 4/6), wet, no reaction to HCl, dense to very dense.		
DATE STARTED: 9/16/07						GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30	NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/18/07						GWL: DEPTH: DATE/TIME:		
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/ NQ Rock Core	RIG: CME 850	
CHECKED BY: EVZ						DRILLER: Scott Zeien HELPER: Dave Dyan		
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
657.9	16	S-5	17-21 24 (45)	0.8		17.5'	gw	
	18	S-6	15-11 22 (33)	0.7		Well-Graded Gravel (gw) - 90% gravel, 10% sand, subangular, fine to coarse, elongated and flat, gravel, hard, fine to coarse sand, nonplastic, dark yellow brown (10YR 4/2), wet, no reaction to HCl, dense.		
654.9	20	S-7	50/3" (50)	0		20.5'		
	22					Shale - Moderately hard, medium-gray (N4) to dark gray (N3), highly fractured, healed with calcite, vertical fractures ranging from 0.1' to 0.3' in width, bedding planes nearly vertical, broken sections, bedding plane laminated.		
	24	R-1	95% (6%)	6.2				
	26							
	28					Shale - Moderately hard to hard, medium gray (N5), highly fractured, healed with calcite, fractures at 45° from horizontal, breccia zone at 33.5' to 34.5', thinly bedded, vertical bedding.		
DATE STARTED: 9/16/07					GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 9/18/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			RIG: CME 850
CHECKED BY: EVZ					DRILLER: Scott Zeien HELPER: Dave Dyan			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38		USCS SYMBOL	REMARKS					
						DESCRIPTION								
	30	R-2	96% (48%)	7.2		Shale - Moderately hard to hard, dark gray (N3), moderately fractured, healed with calcite, vertical bedding planes, slight reaction to HCl.			Special Care Sample at 33.5' - 34.5'.					
	32													
	34													
	36													
	38													
	40				R-3					100% (78%)	10.0			
	42													
DATE STARTED: 9/16/07				GWL: DEPTH: 7.19						DATE/TIME: 9/18/07 at 08:30		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 9/18/07				GWL: DEPTH:						DATE/TIME:				
FIELD GEOLOGIST: PFW				DRILLING METHOD: SPT/Tricone/ NQ Rock Core										
CHECKED BY: EVZ				DRILLER: Scott Zeien HELPER: Dave Dyan						RIG: CME 850				
APPROVED BY: RJB														
DRILLING CO.: Terracon														

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44					Shale - Moderately hard to hard, dark gray (N3), slightly fractured, fresh to slightly healed fractures (calcareous), vertical bedding planes.		
	46					Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
	48					Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
	50	R-4	100% (83%)	10.0		Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
	52					Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
	54					Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
	56					Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
	58					Shale - Moderately hard to hard, dark gray (N3), slightly to little fractures healed with calcite, noncalcareous, trace fossils, fractures at 45° to rock core, no reaction to HCl.		
DATE STARTED: 9/16/07	GWL: DEPTH: 7.19					DATE/TIME: 9/18/07 at 08:30	NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/18/07	GWL: DEPTH:					DATE/TIME:		
FIELD GEOLOGIST: PFW	DRILLING METHOD: SPT/Tricone/ NQ Rock Core						RIG: CME 850	
CHECKED BY: EVZ	DRILLER: Scott Zeien					HELPER: Dave Dyan		
APPROVED BY: RJB								
DRILLING CO.: Terracon								

BORING NO. B-327
SHEET 5 OF 14



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-7	93% (60%)	9.3		Shale - Hard, dark gray (N3), moderately fractured breccia zone 74.5' to 78.3', highly fractured, noncalcareous, slightly healed, fragmented and vuggy at 80.2' within fracture zone, no reaction to HCl.		Special Care Sample at 80.9' - 82.4'.
						Shale - Moderately hard to hard, dark gray (N3) slightly to very slightly fractured, calcite-filled fractures at 45° to rock core, vertical bedding, slightly fossiliferous.		
DATE STARTED: 9/16/07					GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 850	
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dyan			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS		
						DESCRIPTION				
	88	R-8	100% (100%)	10.0		Shale - Moderately hard to hard, dark gray (N3), slightly to very slightly fractured, vertical bedding, calcareous.				
	90									
	92									
	94	R-9	100% (97%)	10.0						
	96									
	98									
	100									
	102									
DATE STARTED: 9/16/07					GWL: DEPTH: 7.19		DATE/TIME: 9/18/07 at 08:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH:		DATE/TIME:			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core					RIG: CME 850
CHECKED BY: EVZ										
APPROVED BY: RJB					DRILLER: Scott Zeien HELPER: Dave Dyan					
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	104	R-10	85% (72%)	5.1		Shale - Moderately hard to hard, dark gray (N3), fresh, unfractured, thinly bedded, vertical bedding planes, calcareous, no fossils or infills, weak reaction to HCl, laminate bedding planes.		
	106							
	108							
	110							
	112							
	114							
	116	R-11	100% (100%)	10.0				

DATE STARTED: 9/16/07 DATE COMPLETED: 9/18/07 FIELD GEOLOGIST: PFW CHECKED BY: EVZ APPROVED BY: RJB	GWL: DEPTH: 7.19 GWL: DEPTH: DRILLING METHOD: SPT/Tricone/ NQ Rock Core	DATE/TIME: 9/18/07 at 08:30 DATE/TIME: DRILLER: Scott Zeien HELPER: Dave Dyan	NOTES: Bedrock Part of the Mahantango Formation
DRILLING CO.: Terracon			RIG: CME 850



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38		USCS SYMBOL	REMARKS
						DESCRIPTION			
	118					Shale - Moderately hard to hard, dark gray (N3), unfractured, vertical bedding, thinly bedded, calcareous, no fossils or infills, laminated bedding planes.			
	120								
	122								
	124								
	126	R-12	100% (100%)	10.0					
	128								
	130								
DATE STARTED: 9/16/07						GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/18/07						GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/ NQ Rock Core			
CHECKED BY: EVZ									
APPROVED BY: RJB						DRILLER: Scott Zeien HELPER: Dave Dyan		RIG: CME 850	
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	132	R-13	100% (92%)	10.0		Shale - Moderately hard to hard, dark gray (N3), slightly to very slightly fractured, vertical bedding, slightly calcareous, weak reaction to HCl.		
	134							
	136							
	138							
	140							
	142							
	144							
	146	R-14	99% (98%)	9.9				

DATE STARTED: 9/16/07 DATE COMPLETED: 9/18/07 FIELD GEOLOGIST: PFW CHECKED BY: EVZ APPROVED BY: RJB	GWL: DEPTH: 7.19 GWL: DEPTH: DRILLING METHOD: SPT/Tricone/ NQ Rock Core	DATE/TIME: 9/18/07 at 08:30 DATE/TIME: DRILLER: Scott Zeien HELPER: Dave Dyan	NOTES: Bedrock Part of the Mahantango Formation
DRILLING CO.: Terracon			RIG: CME 850

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	148	R-15	90% (86%)	9.0		Shale - Moderately hard to hard, dark gray (N3) fresh, very slightly fractured, vertical bedding planes, healed with calcite, fractured at 45° to rock core.		
DATE STARTED: 9/16/07					GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/18/07					GWL: DEPTH: DATE/TIME:			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 850	
CHECKED BY: EVZ								
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	162	R-16	100% (100%)	10.0		bedding planes laminated. <		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS
						DESCRIPTION		
	176							
	178							
	180							
		R-18	100% (99%)	10.0				
	182							
	184							
	186					Shale - Moderately hard to hard, dark gray (N3), very slightly to slightly fractured, slightly calcareous, weak reaction to HCl.		
	188							
	190							
DATE STARTED: 9/16/07 DATE COMPLETED: 9/18/07 FIELD GEOLOGIST: PFW CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30 GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone/ NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Scott Zeien HELPER: Dave Dyan		RIG: CME 850	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327


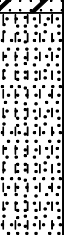




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.089 E 2405233.062 SURFACE EL: 675.38	USCS SYMBOL	REMARKS				
						DESCRIPTION						
474.4	192	R-19	100% (99%)	10.0		Shale - Moderately hard to hard, dark gray (N3), very slightly to slightly fractured, slightly calcareous, weak reaction to HCl.						
	194											
	196											
	198											
	200											
	202											
	204											
	R-20	100% (100%)	5.0	BOTTOM OF BORING 201'								
	DATE STARTED: 9/16/07 DATE COMPLETED: 9/18/07 FIELD GEOLOGIST: PFW CHECKED BY: EVZ APPROVED BY: RJB								GWL: DEPTH: 7.19 DATE/TIME: 9/18/07 at 08:30 GWL: DEPTH: DATE/TIME: DRILLING METHOD: SPT/Tricone/ NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
	DRILLER: Scott Zeien HELPER: Dave Dyan								RIG: CME 850			
	DRILLING CO.: Terracon											



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327A


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.229 E 2405255.487 SURFACE EL: 675.30	USCS SYMBOL	REMARKS
						DESCRIPTION		
672.8	0	S-1	2-1 4 (5)	1.3		Sandy Fat Clay (ch), 50% clay, 50% sand, fine, spherical, rounded, 0.5" max size, soft sand, medium plasticity, medium toughness, low dry strength, medium dilatancy, moderate yellowish brown (5Y 3/4), moist, no reaction to HCl, soft.	ch	
	2					2.5'		
667.8	4	S-2	3-4 5 (9)	1.4		Poorly Graded Sand with Silt (sp-sm), 80% sand, 10% gravel, 10% silt, fine to coarse sand, fine, hard, subangular, elongated, 0.5" max size gravel, nonplastic, moderate yellowish brown (5Y 3/4), dry, no reaction to HCl, loose to medium dense.	sp-sm	
	6					7.5'		
665.3	8	S-3	5-6 5 (11)	1.4		Silty Sand with Gravel (sm), 65% sand, 20% silt, 15% gravel, sub angular, spherical, 0.5" max size, soft gravel, nonplastic, moderate brown (5Y 3/4), dry, no reaction to HCl, loose.	sm	
	10					10.0'		
662.8	12	S-4	4-4 5 (9)	1.5		Well Graded Sand with Gravel (sw), 65% sand, 25% gravel, 5% silt, 5% cobbles, fine to coarse sand and gravel, sub angular, elongated and flat, 0.75" max size sand and gravel, nonplastic, moderate brown (5Y 3/4) and moderate red (5R 4/6), dry, no reaction to HCl, medium dense.	sw	
	14					12.5'		
		S-5	9-10 11 (21)	1.5		Well Graded Gravel with Silt and Sand (gw-gm), 50% gravel, 30% sand, 10% silt, 10% cobbles, fine to coarse, hard, sub angular, elongated, 0.75" max size sand and gravel, nonplastic, moderate brown (5Y 3/4), moderate red (5R 4/6) and light gray (N7), dry, no reaction to HCl, medium dense.	gw-gm	
		S-6	11-11 8 (19)	1.0				
DATE STARTED: 11/14/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Energy Test was Performed on CME 75 Truck Rig By GRL Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/14/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: Continuous Flight Augers		RIG: CME 75 Truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Logan Shipman			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-327A

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339452.229 E 2405255.487 SURFACE EL: 675.30	USCS SYMBOL	REMARKS
						DESCRIPTION		
660.3	16	S-7	6-16 22 (38)	0.9		15.0' Well Graded Gravel with Clay and Sand (gw-gc), 50% gravel, 20% sand, 20% cobbles, 10% fat clay, fine to coarse, subangular, elongated and flat, 1.5" max size, hard sand and gravel, nonplastic, moderate brown (5Y 3/4), moderate red (5R 4/6), and light gray (N7), moist, no reaction to HCl, dense.	gw-gc	
						17.5' Well Graded Gravel with Sand (gw), 70% cobbles, 20% gravel, 10% sand, fine to coarse grained, sub angular, elongated and flat, 3.0" max size, hard sand and gravel, nonplastic, moderate brown (5Y 3/4), light red (5R 6/6), and dusky yellow (5Y 6/4), moist to wet, no reaction to HCl, dense.	gw	
657.8	18	S-8	12-22 16 (38)	0.8				
655.3	20	S-9	50/5 (50)	0.4		20.0' Shale- Dark gray (N3), noncalcareous with silt and sand, medium weathering, low hardness, very dense.		
654.9								
						BOTTOM OF BORING 20.4'		
	22							
	24							
	26							
	28							
DATE STARTED: 11/14/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Energy Test was Performed on CME 75 Truck Rig By GRL Bedrock Part of the Mahantango Formation
DATE COMPLETED: 11/14/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: RAK					DRILLING METHOD: Continuous Flight Augers			RIG: CME 75 Truck
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Logan Shipman			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-328

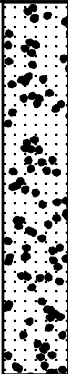


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339176.764 E 2405699.737 SURFACE EL: 667.16	USCS SYMBOL	REMARKS
						DESCRIPTION		
658.7 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-328





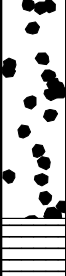

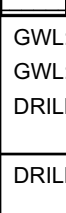
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339176.764 E 2405699.737 SURFACE EL: 667.16	USCS SYMBOL	REMARKS	
						DESCRIPTION			
648.7	16	S-4	12-18 33 (51)	0.8		18.5'	gp		
	Poorly Graded Gravel with Sand (gp)- 75% gravel, 25% sand, rounded to subangular, fine to coarse, flat and elongated gravel, fine to medium, subrounded to subangular sand, nonplastic, light brown (5YR 6/1), wet, no reaction to HCl, very dense.								
643.7	24	S-5	17-21 17 (38)	1.1		23.5'	GM		
	Silty Gravel with Sand (GM)- 45% gravel, 40% sand, 10% silt, 5% clay, rounded to subangular, fine to coarse, flat and elongated gravel, fine to medium, subrounded to subangular sand, nonplastic, brownish gray (5YR 4/1) and brownish black (5YR 2/1), wet, no reaction to HCl, dense.								
638.7			14-15			28.5'	gw		
DATE STARTED: 8/21/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 8/25/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track		
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-328









ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339176.764 E 2405699.737 SURFACE EL: 667.16	USCS SYMBOL	REMARKS
						DESCRIPTION		
635.3	30	S-6	20 (35)	1.1		reaction to HCl, dense.		Because of poor recovery- intervals are extrapolated, interpreted units (top/ bottom) from 31.9-45.3'
	32					31.9'		
	34	R-1	73.5% (13%)	2.5		Cobbles - 100% cobbles, mostly very hard, fine grained sandstone, some soft shale, medium dark gray (N4) very light gray (N8) dark gray (N3) and dark reddish brown (10R 3/4), slight reaction to HCl, slightly weathered throughout, open and clean fractures, unfractured to intensely fractured.		
	36					Cobbles - 100% cobbles, mostly very hard, fine grained sandstone, some soft to moderately soft shale, medium dark gray (N4) very light gray (N8), dark gray (N3), grayish brown (5 YR 3/2), olive gray (5Y 4/1) to dark greenish gray (5G 4/1), slight reaction to HCl, slightly weathered, intensely fractured, unhealed thin to clean fractures.		
626.9	38	R-2	50% (20%)	2.5				
	40					40.3'		
	42	R-3	56% (46%)	2.8		Shale- Soft to moderately soft, dark gray (N3), slightly weathered, slightly to very slightly fractured, very thin to clean fractures.		
DATE STARTED: 8/21/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 8/25/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 55 Track
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-328

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339176.764 E 2405699.737 SURFACE EL: 667.16	USCS SYMBOL	REMARKS
						DESCRIPTION		
621.9	44	R-4	80% (38%)	3.2		45.3'	gw	Due to elevated blow counts returned to rock coring
	46					Cobbles- About 100% cobbles of fine to coarse sandstone, very hard, some soft shale, light brownish gray (5YR 6/1), grayish red (10R 4/2), very dusky red (10R 2/2) medium gray (N5) and dark gray (N3), no reaction to HCl, unfractured to intesley fractured, clean, very thin to open fractures, bottom 2/3 of sample vuggy.		
617.9	48		49.3'					
	50	R-5	43% (0%)	1.5		Shale- Moderately to highly weathered, medium gray (N5) to dark gray (N3), well rounded to subangular, gravel to cobble size fragments.		
614.4	52					52.8'		
	54	S-7	13-8 45 (53)	0.8		Well Graded Gravel (gw)- Fine to coarse gravel, subangular to subrounded, coarse grained sandstone pebbles, low plasticity, medium bluish gray (5B 5/1), moderate reddish brown (10R 4 6) and dark reddish brown (10R 3/4) no odor, no reaction to HCl, moderately dense, wet, no dilatancy.	gw	Due to elevated blow counts returned to rock coring
56					57.6'			
	58					Shale- Soft to moderately soft, dark gray (N3), slightly weathered, slightly to very slightly fractured, very thin to clean, open, not healed, fracture at 58.8' at 30°.		
DATE STARTED: 8/21/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 8/25/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

BORING NO. B-328
SHEET 5 OF 7

BORING NO. B-328
SHEET 6 OF 7



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-328

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339176.764 E 2405699.737 SURFACE EL: 667.16	USCS SYMBOL	REMARKS
						DESCRIPTION		
567.3	88	R-13	98% (94%)	4.9	<div></div>	Shale- Moderately hard to hard, calcareous, some fractures widely spaced, reaction to HCl.		
	90				<div></div>			
	92				<div></div>			
	94				<div></div>			
	96				<div></div>			
	98	R-14	98% (86%)	4.9	<div></div>	Shale- Moderately hard to hard, widely spaced fractures, slightly to very slightly fractured, very thin to clean, open fractures, calcareous, not healed fractures (95.0' and 97.9') angle at 20° from horizontal.		
	100				<div></div>			
					<div></div>			
					<div></div>			
					<div></div>			
	BOTTOM OF BORING 99.9'							
102								
DATE STARTED: 8/21/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 8/25/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-329

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339189.556 E 2405802.664 SURFACE EL: 667.49	USCS SYMBOL	REMARKS
						DESCRIPTION		
664.5	0	S-1	3-7 14 (21)	1.0		Silty Sand (sm)- Fine grained silty sand, trace gravel, light brown (5YR 6/4).	sm	0.0'-3.0' Description gathered via test pit.
	3.0'					Silty Sand (sm)- 10% gravel, 60% sand, 30% silt, fine to coarse, subangular, elongated and flat gravel, fine to medium, subrounded sand, nonplastic, light brown (5YR 5/6), dry, no reaction to HCl, medium dense.	sm	
659.5	8	S-2	22-25 20 (45)	1.1		Well-Graded Sand with Gravel (sw) - 40% gravel, 60% sand, fine to coarse, subangular gravel, medium to coarse, rounded to subrounded sand, nonplastic, moderate brown (5YR 4/4), no reaction to HCl, wet, dense,	sw	
654.5	13'	S-3	23-10 10 (20)	1.0		Poorly Graded Gravel with Silt and Sand (GP-GM)- 50% gravel, 40% sand, 5% silt, 5% clay, fine to coarse subangular to angular gravel, fine to coarse subangular to angular sand, nonplastic, very pale orange (10YR 8/2) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, medium dense.	GP-GM	
14								
DATE STARTED: 8/26/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Approximately 600 gallons of drilling fluid was lost at a depth between 50' and 57'. Bedrock Part of the Mahantango Formation.	
DATE COMPLETED: 8/27/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 550 Track	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-329

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339189.556 E 2405802.664 SURFACE EL: 667.49	USCS SYMBOL	REMARKS
						DESCRIPTION		
649.5	16	S-4	11-5 5 (10)	1.2		18'	sw	
	18					Well-Graded Sand with Gravel (sw) - 15% gravel, 85% sand coarse subangular to subrounded gravel, fine to coarse, subrounded sand, nonplastic, moderate yellowish brown (10YR 5/4) to dark yellowish brown (10 YR 4/2), wet, no reaction to HCl, loose.		
644.5	20	S-5	26-11 18 (39)	0.9		23'	gw	
	24					Well-Graded Gravel with Sand (gw)- 85% gravel, 15% sand, fine to coarse, subrounded to subangular, elongated and flat gravel, fine to medium well rounded sand, nonplastic light brown (5 YR 5/6), dark gray (N3) and very pale orange (10 YR 8/2), wet, no reaction to HCl, dense.		
639.5	26	S-6	12-17 27 (44)	0.4		28.0'	gw	
	28					Well-Graded Gravel (gw) - 10% cobbles, 90% gravel, shale cobbles, fine to coarse, subrounded to subangular gravel, nonplastic, medium brown (5 YR 4/4), dark gray (N3) and moderate orange pink (10 R 7/4), wet, no reaction to HCl, dense.		
DATE STARTED: 8/26/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Approximately 600 gallons of drilling fluid was lost at a depth between 50' and 57'. Bedrock Part of the Mahantango Formation.	
DATE COMPLETED: 8/27/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 550 Track	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-329

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339189.556 E 2405802.664 SURFACE EL: 667.49	USCS SYMBOL	REMARKS
						DESCRIPTION		
630.5	30	S-7	8-5 9 (14)	0.4		Well-Graded Gravel (gw)- 10% cobbles, 90% gravel, subangular to angular shale cobbles, medium to coarse, subangular to angular gravel, elongated, nonplastic, moderate brown (5YR 4/4), wet, no reaction to HCl, medium dense.		
	32							
624.5	34	S-8	6-8 9 (17)	1.0		Silty Clayey Sand with Gravel (SC-SM) - 35% gravel, 45% sand, 10% silt, 10% clay, fine to coarse, subangular gravel, fine to medium, subangular sand, hard, low plasticity, low dry strength, medium bluish gray (5B 5/1), wet, no reaction to HCl, medium dense.	SC-SM	
	36							
624.5	38	S-9	50/3	0.2		Poorly Graded Gravel (gp)- 100% gravel, fine to coarse, subangular, elongated and flat gravel, moderately hard, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCl, very dense.	gp	
	40							
DATE STARTED: 8/26/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Approximately 600 gallons of drilling fluid was lost at a depth between 50' and 57'. Bedrock Part of the Mahantango Formation.	
DATE COMPLETED: 8/27/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 550 Track	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Jason Tousley			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

[illegible]



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-329

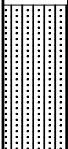
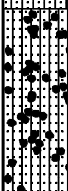

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339189.556 E 2405802.664 SURFACE EL: 667.49	USCS SYMBOL	REMARKS
						DESCRIPTION		
597.5	60	R-5	50% (20%)	0.5'	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> 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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-330

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339200.551 E 2405916.031 SURFACE EL: 668.91	USCS SYMBOL	REMARKS	
						DESCRIPTION			
665.7	0								
	2								
	3.2'								
	4	S-1	6-12 18 (30)	1.2		Silty Sand (sm)- 10% gravel, 70% sand, 20% silt, subangular, elongated and flat, medium hard, 0.75" max size, nonplastic, dark yellowish orange (10YR 6/6) to moderate yellowish brown (10YR 5/4), and dark yellowish brown (10YR 4/2), very pale orange (10YR 8/2) and very light gray (N8), no reaction to HCl, medium dense, pieces of possible brick and charcoal.	sm	Cultural Sample at 4.0'.	
	6								
	8								
660.6	8								
	10	S-2	22-50/5 (50+)	1.0		Poorly Graded Gravel with Silt and Sand (GP-GM) - 60% gravel, 30% sand, 5% silt, 5% clay, fine to coarse gravel, fine to coarse sand, subangular, elongated and flat, medium hard, 0.75" max size, nonplastic, dark yellowish orange (10YR 6/6) and moderate yellowish brown (10YR 5/4), and dark yellowish brown (10YR 4/2), very pale orange (10YR 8/2) and very light gray (N8), dry, no reaction to HCl, very dense.	GP-GM		
	12								
	14								
655.1	14		8-21 27			Silty Gravel with Sand (gm) - 60% gravel, 20% sand, 20% silt, subangular, elongated and flat gravel, angular to subrounded, fine to coarse sand, 0.75" max size, medium hard, nonplastic, dark yellowish	gm		
DATE STARTED: 8/20/07					GWL: DEPTH: NA DATE/TIME: NA		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 8/29/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 75 Truck		
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-330


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339200.551 E 2405916.031 SURFACE EL: 668.91	USCS SYMBOL	REMARKS	
						DESCRIPTION			
650.1	16	S-3	(48)	1.1		orange (10YR 6/6) and moderate yellowish brown (10YR 5/4), and dark yellowish brown (10YR 4/2), very pale orange (10YR 8/2) and very light gray (N8), wet, no reaction to HCl, dense.	GW-GM		
	18.8'								
645.1	20	S-4	6-16 50/6 (66)	1.3		Well Graded Gravel with Silt and Sand (GW-GM) - 50% gravel, 35% sand, 10% silt, 5% clay, fine to coarse, subrounded, elongated and flat gravel, 0.75" max size, hard, nonplastic, dark yellowish orange (10YR 6/6), moderate yellowish brown (10YR 5/4), dark yellowish brown (10YR 4/2), very pale orange (10YR 8/2) and very light gray (N8), wet, no reaction to HCl, very dense.	gm		
	23.8'								
642.2	24	S-5	10-31 50/5 (81)	1.0		Silty Gravel with Sand (gm)- 65% gravel, 15% sand, 20% silt, fine to coarse, subangular, elongated and flat gravel, fine to coarse, subrounded to subangular sand, 0.07" max size, medium hard, nonplastic, dark yellowish brown (10YR 4/2) and grayish brown (5YR 3/2), no reaction to HCl, wet, very dense, gravel mostly shale.	gw		
	26.7'								
	28		40%			Well Graded Gravel (gw) - 100% cobbles, 12" max size elongated, subrounded, hard, high dry strength, nonplastic, no dilatancy, low toughness, grayish red (10R 4/2), light gray (N7) and medium dark gray (N4), no odor, no reaction to HCl, wet.			
DATE STARTED: 8/20/07					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 8/29/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			RIG: CME 75 Truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-330

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339200.551 E 2405916.031 SURFACE EL: 668.91	USCS SYMBOL	REMARKS	
						DESCRIPTION			
632.7	30	R-1	(8%)	2.0			cb		
	32	R-2	51% (20%)	2.3		Cobbles- 100% cobbles, 8" max elongated, sub rounded, hard, high dry strength, nonplastic, no dilatancy, low toughness, grayish red (10R 4/2), light gray (N7) and medium dark gray (N4), no odor, no reaction to HCl, wet.			
	36					36.2'			
	38	R-3	74% (32%)	3.7		Cobbles and Gravel- About 60% cobbles, 40% coarse gravel, 10" max elongated, subrounded to rounded, hard, high dry strength, nonplastic, no dilatancy, low toughness, light olive gray (5Y 6/1), brownish gray (5 YR 4/1), medium light gray (N6), very light gray (N2) and dark gray (N3), no odor, no reaction to HCl, wet.			
	40					Cobbles and Gravel- About 60% cobbles, 40% gravel, 6" max elongated, subrounded, hard, high dry strength, nonplastic, low toughness, light olive gray (5Y 6/1), brownish gray (5 YR 4/1), medium light gray (N4) and very light gray (N2), no odor, no reaction to HCl, wet.			
	42	R-4	60% (19%)	3.2'					
DATE STARTED: 8/20/07					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 8/29/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core				
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan			RIG: CME 75 Truck	
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-330

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339200.551 E 2405916.031 SURFACE EL: 668.91	USCS SYMBOL	REMARKS
						DESCRIPTION		
617.4 								

BORING NO. B-330
SHEET 5 OF 5



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-331

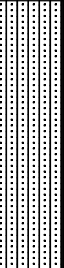
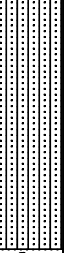




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339872.651 E 2406407.009 SURFACE EL: 683.70	USCS SYMBOL	REMARKS	
						DESCRIPTION			
676.2	0					Sandy Lean Clay (cl) - 40% sand, 10% silt, 50% clay, fine, rounded sand, soft, 0.04" max, low plasticity, slow dilatancy, low toughness, low dry strength, moderate yellowish brown (10YR 5/4) and light gray (N7), dry, no reaction to HCL, stiff.	cl	PPT= 2.75 TSF Shelby Tube 5.0-7.0 Down Pressure 550 psi	
	2								
		S-1	5-6 8 (14)	1.2					
	4								
	6	ST-1							
							7.5'		SM
	8	S-2	8-10 10 (20)	1.3		Silty Sand (SM) - 80% sand, 20% silt, fine to medium, rounded to subrounded sand, soft, 0.04" max, low plasticity, slow dilatancy, low toughness, low dry strength, dark yellowish orange (10YR 6/6) to moderate brown (10YR 5/4), light olive gray (5Y 6/1), grayish black (N2), and moderate brown (5 YR 4/4), moist to wet, no reaction to HCl, medium dense.			
	10	S-3	8-12 12 (24)	1.1					
	12								
	14	S-4	8-10 13 (23)	1.4					
DATE STARTED: 9/19/07							GWL: DEPTH: NA DATE/TIME: NA		NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 9/20/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 75 Truck		
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-331






ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339872.651 E 2406407.009 SURFACE EL: 683.70	USCS SYMBOL	REMARKS	
						DESCRIPTION			
663.7	16	ST-2					SW	Shelby Tube 15.0-17.0	
	18	S-5	7-27 13 (40)	1.0					
	20	S-6	5-15 22 (37)	0.7		20.0'			
	22								
661.2		S-7	5-7 10 (17)	0.6			SC	Shelby Tube 15.0-17.0	
	24					22.5'			
658.7		S-8	11-20 16 (36)	0.5			SW		Shelby Tube 15.0-17.0
	26					25.0'			
656.2		S-9	9-16 10 (26)	0.6			GW	Shelby Tube 15.0-17.0	
	28					27.5'			
DATE STARTED: 9/19/07					GWL: DEPTH: NA DATE/TIME: NA		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 9/20/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 75 Truck		
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-331

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339872.651 E 2406407.009 SURFACE EL: 683.70	USCS SYMBOL	REMARKS	
						DESCRIPTION			
653.7	30	S-10	12-17 13 (30)	0.8		30.0'	sw		
						Well Graded Sand with Gravel (sw) - 30% gravel, 60% sand, fine to coarse, angular, elongated and flat gravel fine to coarse, angular to subangular, 2" max size, hard, nonplastic, moderate red (5R 4/6) to dark reddish brown (10R 3/4) and moderate yellowish brown (10YR 5/4), wet, no reaction to HCl, medium dense.			
651.2	32	S-11	9-17 19 (36)	0.6		32.5'	gw		
						Well Graded Gravel (gw) - 60% cobbles, 30% gravel, 10% sand, fine to coarse, subangular, elongated and flat gravel, fine to coarse, subangular sand, 4" max size, hard, nonplastic, moderate red (5R 4/6) to dark reddish brown (10R 3/4) moderate yellowish brown (10YR 5/4), wet, no reaction to HCl, dense.			
647.2	34	S-12	13-14 17 (31)	0.9		36.5'			
						Well Graded Gravel with Sand (gw) - 40% cobbles, 30% gravel, 30% sand, hard, fine to coarse, subangular, elongated and flat gravel, medium to coarse, subangular sand, 2" max size, nonplastic, moderate red (5R 4/6) to dark reddish brown (10R 3/4) moderate yellowish brown (10YR 5/4) wet, no reaction to HCL, dense.			
643.7	38	R-1	66% (0%)	2.3		40.0'			
						Cobbles- About 80% cobbles, 20% gravel, hard, fine to coarse, sub angular, elongated and flat, 6" max size, nonplastic, no dilatancy, low dry strength, no toughness, moderate reddish orange (10R 6/6) olive gray (5Y 6/1), light gray (N7), medium gray (N5), wet, no reaction to HCl.			
	40	R-2	60% (30%)	3.0					
	42						Cobbles- About 95% cobbles, 5% gravel, hard, fine to coarse, subangular, elongated and flat, 4" max size, nonplastic, no dilatancy, low dry strength, no toughness, brownish gray (5YR 4/1), light gray (N7), medium gray (N5) wet, no reaction to HCl.		
DATE STARTED: 9/19/07					GWL: DEPTH: NA DATE/TIME: NA				NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 9/20/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core			RIG: CME 75 Truck	
CHECKED BY: EVZ									
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Terry Duncan				
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-331

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339872.651 E 2406407.009 SURFACE EL: 683.70	USCS SYMBOL	REMARKS	
						DESCRIPTION			
638.7	44	R-3	100% (100%)	5.0		45.0'			
						Shale- Grayish black (N2), noncalcareous, slightly fractured, medium hardness, thinly bedded, fracture zone at 48.2' and 48.6', no reaction to HCl.			
	46								
	48								
	50	R-4	100% (94%)	5.0					Shale- Dark gray (N3), noncalcareous, medium hardness, slightly fractured, slightly weathered, thinly bedded, fracture zone at 50.4', 50.8' and 54.7', no reaction to HCl.
	52								
	54								
	56								
	58	R-5	100% (92%)	5.0					Shale- Dark gray (N3), calcareous, medium hardness, slightly fractured, slightly weathered, thinly bedded, fracture zone at 59.5, healed fracture at 55.5' and 59.5', reaction to HCl.
	DATE STARTED: 9/19/07					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 9/20/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 75 Truck		
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-331

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339872.651 E 2406407.009 SURFACE EL: 683.70	USCS SYMBOL	REMARKS				
						DESCRIPTION						
613.7	60	R-6	100% (80%)	5.0		Shale- Dark gray (N3), noncalcareous, medium hardness, slightly fractured, thinly bedded, fractures partially healed by calcite, fracture zone at 64.6' to 66.4', no reaction to HCl. Shale- Dark gray (N3), calcareous, medium hardness, slightly fractured, thinly bedded, calcite healed fracture at 69.5', veins of calcite and pyrite, reaction to HCl.						
	62											
	64											
	66											
	68	R-7	98% (72%)	4.9								
70	BOTTOM OF BORING 70'											
72												

DATE STARTED: 9/19/07	GWL: DEPTH: NA	DATE/TIME: NA	NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 9/20/07	GWL: DEPTH: NA	DATE/TIME: NA	
FIELD GEOLOGIST: JLO	DRILLING METHOD: SPT/Tricone/ NQ Rock Core		
CHECKED BY: EVZ			
APPROVED BY: RJB	DRILLER: Craig VanVactor HELPER: Terry Duncan		RIG: CME 75 Truck
DRILLING CO.: Terracon			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-332

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339907.334 E 2406874.307 SURFACE EL: 691.55	USCS SYMBOL	REMARKS
						DESCRIPTION		
684.1	0					Poorly Graded Sand with Gravel and Silt (sp-sm) - 20% gravel, 70% sand, 10% silt, fine to coarse, subangular to angular gravel, elongated and flat, fine to coarse, subangular to angular sand, 0.4" max size, hard, nonplastic, moderate brown (5YR 4/4), dry, no reaction to HCl, loose.	sp-sm	
	2							
	4	S-1	2-3 2 (5)	1.2				
	6	S-2	3-4 5 (9)	1.0				
	7.5'							
681.6	8	S-3	4-4 5 (9)	1.3		Silty Sand (SM)- 80% sand, 10% silt, 5% clay, 5% gravel, fine sand, fine gravel, nonplastic, moderate brown (5YR 4/4) , dry, no reaction to HCL, loose.	SM	
	10							
679.1	10	S-4	2-4 5 (9)	1.5		Poorly Graded Sand with Gravel (sp) - 15% gravel, 80% sand, 5% silt, fine to coarse, angular, elongate and flat gravel, hard, fine, rounded sand, soft, nonplastic, pale yellowish brown (10YR 6/2), dry, no reaction to HCL, loose.	sp	
	12							
	12.5'							
	14	S-5	4-4 5 (9)	0.9		Silty Sand (sm) - 85% sand, 15% silt, fine to coarse subangular to rounded sand, hard, 0.04" max size, nonplastic, dark yellowish brown (10YR 4/2) to grayish brown (5YR 3/2), wet, no reaction to HCl, loose to medium dense.	sm	
DATE STARTED: 9/23/07 DATE COMPLETED: 9/24/07 FIELD GEOLOGIST: JLO CHECKED BY: EVZ APPROVED BY: RJB						GWL: DEPTH: NA DATE/TIME: NA GWL: DEPTH: NA DATE/TIME: NA DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation
DRILLING CO.: Terracon						DRILLER: Craig VanVactor HELPER: Terry Duncan		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-332




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339907.334 E 2406874.307 SURFACE EL: 691.55	USCS SYMBOL	REMARKS
						DESCRIPTION		
671.6 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-332


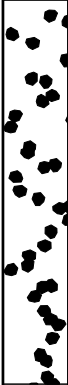



ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339907.334 E 2406874.307 SURFACE EL: 691.55	USCS SYMBOL	REMARKS	
						DESCRIPTION			
652.6	30	R-1	50% (0%)	2.5		4.0" max size, subangular, nonplastic, low toughness, no dilatancy, low dry strength, dark gray (N3), no odor, no reaction to HCl, very-dense, wet.			
	32								
	34	R-2	48% (0%)	2.4					
36									
	38	R-3	0% (0%)	0.0		No Recovery	39.0'		
	40								
	42								
DATE STARTED: 9/23/07					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/24/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 75 Truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-332


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339907.334 E 2406874.307 SURFACE EL: 691.55	USCS SYMBOL	REMARKS	
						DESCRIPTION			
646.6	44	R-4	0% (0%)	0.0		Cobbles - About 90% cobbles, 5% gravel 5% sand, fine to coarse, 4.0" max size, subangular, nonplastic, low toughness, no dilatancy, low dry strength, dark gray (N3), no odor, no reaction to HCl, very-dense, wet. 45.0'			
						No Recovery 49.0'			
642.6	48	R-5	100% (36%)	5.0		Shale - Dark gray (N3), soft, moderately weathered, intensely fractured due to coring activity, noncalcareous, moderately bedded, pyrite lenses between fractures, calcite veins parallel to bedding plane (approximately 30°-40° angle to core). 49.0'			
	50					Pyrite lenses in between bedding planes at break Calcite veins- becoming more parallel to bedding plane (approximately 30-40° angle to core) Shale - Dark gray (N3), moderately hard, fresh, slightly to moderately fractured, slightly calcareous, contains few calcite veins, thickly bedded, very thinly laminated and microfractured calcite layers, thin lenses of pyrite throughout. Very thinly laminated calcite and shale layers - horizontal, microfractures present Thin lens of pyrite sand - horizontal, all breaks mechanical Slight reaction to HCl			
	52	R-6	100% (98%)	5.0					
	54								
	56								
	58								
DATE STARTED: 9/23/07					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/24/07					GWL: DEPTH: NA DATE/TIME: NA				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			RIG: CME 75 Truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-332

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339907.334 E 2406874.307 SURFACE EL: 691.55	USCS SYMBOL	REMARKS		
						DESCRIPTION				
621.6	60	R-7	92% (78%)	4.6		Shale - Dark gray (N3), moderately hard, fresh, slightly to moderately fractured, slightly calcareous, thickly bedded calcite layers parallel to bedding at 59.1', 59.4' and 61.2', bedding planes visible at breaks, slight reaction to HCl.				
	62									
	64									
	66	R-8	100% (98%)	4.5	Shale - Dark gray (N3), moderately hard, fresh, slightly to moderately fractured, slightly calcareous, thickly bedded. 66.0'-67.3' Breccia-like zone of calcite and shale, slight reaction to HCl.	66.0-67.3' Breccia-like zone of calcite and shale				
	68									
	70	R-9	100% (93%)	1.5	Shale - Dark gray (N3), moderately hard, fresh, slightly to moderately fractured, slightly calcareous, thickly bedded, very few, thin calcite veins throughout, Breccia-like zone at 69.0', slight reaction to HCl. 69.0 Breccia-like zone					
	72									
			BOTTOM OF BORING 70'							
	DATE STARTED: 9/23/07					GWL: DEPTH: NA DATE/TIME: NA			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/24/07					GWL: DEPTH: NA DATE/TIME: NA					
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75 Truck			
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Terry Duncan					
APPROVED BY: RJB										
DRILLING CO.: Terracon										



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-333

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339667.255 E 2406421.421 SURFACE EL: 678.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
675.8 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-333

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339667.255 E 2406421.421 SURFACE EL: 678.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
663.3	16	S-6	10-9 9 (18)	0.8		15.0'	gw-gm	
						Well Graded Gravel with Silt and Sand (gw-gm)- 15% cobbles, 55% gravel, 20% sand, 10% silt, fine, flat and elongated, subangular, gravel, fine to coarse subangular sand, 1" max size, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCl, medium dense.		
18	S-7	25-48 20 (68)	0.6	Well Graded Gravel with Silt and Sand (gw-gm)- 20% cobbles, 50% gravel, 20% sand, 10% silt, fine to coarse, subangular flat and elongated gravel, fine to coarse, subrounded to subangular sand, 1.5" max size, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCl, very dense.				
				20.0'				
658.3	20	S-8	9-7 7 (14)	0.8	Well Graded Gravel with Sand (gw)- 20% cobbles, 65% gravel, 10% sand, 5% silt, fine to coarse subangular to subrounded flat and elongated, gravel, fine to coarse, subangular to subrounded sand, 1.5" max size, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCl, medium-dense.			
					22.5'			
655.8	24	S-9	7-13 15 (28)	0.9	Well Graded Gravel with Sand (gw) - 25% cobbles, 50% gravel, 20% sand, 5% silt, fine to coarse, angular to subrounded elongated, gravel, fine to coarse, subangular to subrounded sand, 1.5" max size, nonplastic, moderate brown (5YR 3/4), moist, no reaction to HCl, medium-dense.			
					25.0'			
653.3	26	S-10	10-11 38 (49)	0.8	Poorly Graded Gravel and Sand (gp) - 20% cobbles, 50% gravel, 20% sand, 5% silt, fine to coarse, subangular, flat and elongated gravel, fine to coarse, subangular sand, 1.5" max size, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCl, dense.			
					27.5'			
650.8	28	S-11	15-12 12 (24)	1.0	Well Graded Sand with Silt and Gravel (SW-SM) - 48% sand, 42% gravel, 6% silt, 4% clay, fine to coarse, subangular, flat and elongated gravel, fine to coarse, subangular sand, 1.5" max size, nonplastic, moderate brown (5YR 3/4) to medium dark gray (N4), wet, no reaction to HCl, medium dense to dense.			
DATE STARTED: 9/20/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/21/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 75 truck	
CHECKED BY: EVZ					DRILLER: Craig Van Vactor HELPER: T. Duncan, J. Boulton			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-333

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339667.255 E 2406421.421 SURFACE EL: 678.29	USCS SYMBOL	REMARKS
						DESCRIPTION		
642.8	30	S-12	8-12 15 (27)	0.6		Poorly Graded Gravel with Sand (gp)- 10% cobbles, 75% gravel, 10% sand, 5% silt, fine to coarse, flat and elongated, 35.5' max size, soft shale gravel and cobbles, nonplastic, medium dark gray (N4), wet, no reaction to HCl, very dense. Shale- Dark gray (N3) to grayish black (N2), noncalcareous, mostly fresh to slightly weathered, moderately hard, slightly fractured, thinly bedded with structure only visible at mechanical and natural breaks, large calcareous vein 35.8'-36.5'. Shale- Dark gray (N3) to grayish black (N2), noncalcareous, mostly fresh to slightly weathered, moderately hard, slightly fractured, thinly bedded with structure only visible at mechanical and natural breaks, no reaction to HCl. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-333

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339667.255 E 2406421.421 SURFACE EL: 678.29	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	44	R-3	100% (100%)	5.0					
	46								
	48	R-4	100% (96%)	5.0		Shale- Dark gray (N3) to grayish black (N2), noncalcareous, mostly fresh to slightly weathered, moderately hard, thinly bedded with structure only visible at mechanical and natural breaks, very slightly fractured, no reaction to HCl.		Natural break at 48.8'- all others are mechanical.	
	50								
	52	R-5	100% (92%)	5.0		Shale- Dark gray (N3) to grayish black (N2), noncalcareous, mostly fresh to slightly weathered, moderately hard, thinly bedded with structure only visible at mechanical and natural breaks, very slightly fractured, fossiliferous, zone of calcite infilled cast from 60.9'- 62.3', no reaction to HCl.			
	54								
	56								
	58					Shale- Dark gray (N3) to grayish black (N2), noncalcareous, mostly fresh to slightly weathered, moderately hard, thinly bedded with structure only visible at mechanical and natural breaks, moderately to slightly fractured, foliated calcite layer with pyrite at 64.5', slight reaction to HCl.			
DATE STARTED: 9/20/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/21/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core				
CHECKED BY: EVZ									
APPROVED BY: RJB					DRILLER: Craig Van Vactor HELPER: T. Duncan, J. Boulton			RIG: CME 75 truck	
DRILLING CO.: Terracon									

Bell Bend NPP						PROJECT NO. 07-3891					
LOG OF BORING NO. B-333											
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339667.255 E 2406421.421 SURFACE EL: 678.29		USCS SYMBOL	REMARKS		
						DESCRIPTION					
608.0	60	R-6	100% (96%)	5.0		Shale- Dark gray (N3) to grayish black (N2), noncalcareous, mostly fresh to slightly weathered, moderately hard, thinly bedded with structure only visible at mechanical and natural breaks, no reaction to HCl. <					



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-334

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339700.596 E 2406888.488 SURFACE EL: 671.21	USCS SYMBOL	REMARKS
						DESCRIPTION		
669.7 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-334




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339700.596 E 2406888.488 SURFACE EL: 671.21	USCS SYMBOL	REMARKS
						DESCRIPTION		
656.2	16	S-10	16-26 18 (44)	0.8		15.0' Clayey Gravel with Sand (gc) - 10% cobbles, 45% gravel, 25% sand, 20% fat clay, hard, fine to coarse, subrounded, elongated and flat gravel, fine to coarse, subrounded to subangular sand, low plasticity, high toughness, no dilatancy, high dry strength, dark gray (N3), wet, no reaction to HCl, dense.	gc	Switched to NQ coring at 21.0' due to poor recovery in split spoons.
654.7	18	S-11	23-23 22 (45)	1.0		16.5' Well Graded Gravel with Sand (gw) - 60% cobbles, 20% sand, 15% gravel, 5% silt, fine to coarse, subangular to subrounded, elongated and flat gravel, fine to coarse, subangular to subrounded sand, 2.0" max size, hard, nonplastic, medium gray (N4) to moderate red (5R 5/4), wet, no reaction to HCl, dense.	gw	
	20	S-12	22-50/5 (50+)	0.6		Well Graded Gravel with Sand (gw) - 80% cobbles, 10% gravel, 10% sand, fine to coarse, subangular, elongated and flat gravel, fine to coarse, subangular sand, 2.0" max size, hard, nonplastic, dark gray (N3) and moderate red (5 YR 5/4), wet, no reaction to HCl, dense to very dense.		
	22	S-13	7-15 23 (38)	0.6		21.0' Well Graded Gravel with Sand (gw) - 80% gravel, 20% sand, fine to coarse, subrounded to subangular, elongated and flat gravel, fine to coarse, subrounded to subangular sand, 3.0" max size, hard, nonplastic, light bluish gray (5B 7/1) and greenish gray (5GY 6/1), wet, no reaction to HCl.	gw	
650.2	24	R-1	60% (0%)	2.7		Cobbles with Gravel- About 85% cobbles, 15% gravel, 12" max size, hard, sub rounded, elongated and flat, fine to coarse, nonplastic, no toughness, no dilatancy, high dry strength, light bluish gray (5B 7/1), greenish gray (5GY 6/1), and medium bluish gray (5B 5/1), no odor, no reaction to HCl, wet.		
	28	R-2	56% (0%)	2.8				
DATE STARTED: 9/22/07 DATE COMPLETED: 9/23/07 FIELD GEOLOGIST: JLO CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core			NOTES: Bedrock Part of the Mahantango Formation
DRILLING CO.: Terracon					DRILLER: Craig Van Vactor HELPER: T. Duncan			RIG: CME 75 truck



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-334


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339700.596 E 2406888.488 SURFACE EL: 671.21	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	30	R-3	48% (0%)	2.4		Cobbles with Gravel- About 75% cobbles, 25% gravel, hard, sub rounded to round, elongated and flat, fine to coarse, nonplastic, no toughness, no dilatancy, high dry strength, greenish gray (5GY 6/1), dusky red (5 R 3/4), medium gray (N5), very light gray (N8), no odor, no reaction to HCl, wet.			
	32								
	34								
	36	R-4	46% (0%)	2.3		Cobbles with Gravel- About 95% cobbles, 5% gravel, 6.0" max size, hard, sub angular to angular, elongated and flat, fine to coarse, nonplastic, no toughness, no dilatancy, high dry strength, dusky red (5R 3/4), medium dark gray (N4), no odor, no reaction to HCl, wet.			
	38								
	40								
	42	R-5	28% (0%)	1.4		Cobbles with Gravel- About 85% cobbles, 15% gravel, 3.0" max size, hard, sub rounded to rounded, elongated and flat, fine to coarse, nonplastic, no toughness, no dilatancy, high dry strength, medium dark gray (N4) and light gray (N6), no odor, no reaction to HCl, wet.		No water returns from approximately 43' to 70.5'	
DATE STARTED: 9/22/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 9/23/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core				
CHECKED BY: EVZ									
APPROVED BY: RJB					DRILLER: Craig Van Vactor HELPER: T. Duncan			RIG: CME 75 truck	
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-334

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339700.596 E 2406888.488 SURFACE EL: 671.21	USCS SYMBOL	REMARKS			
						DESCRIPTION					
625.7	44	R-6	82% (66%)	4.1		45.5'					
	46				Shale- Dark gray (N3), noncalcareous to slightly calcareous, mostly fresh to slightly weathered, moderately hard, slightly fractured, thinly bedded with structure only visible at mechanical and natural breaks, no reaction to weak reaction to HCl. 46.0'-46.6' intensely fractured. 47.9' iron staining. 48.3'-49.4' large calcite vein.						
	48										
	50										
	52	R-7	100% (90%)	5.0	Shale- Dark gray (N3), noncalcareous to slightly calcareous, mostly fresh to slightly weathered, moderately hard, slightly fractured, thinly bedded with structure only visible at mechanical and natural breaks, slightly fossiliferous, no reaction to weak reaction to HCl. 51.1'-51.2' calcareous vein with pyrite, perpendicular to bedding. 51.0'-56.6' zone of calcite veins mostly parallel to bedding.						
	54										
	56										
	58				R-8	98% (98%)			4.9	Shale- Dark gray (N3), noncalcareous to slightly calcareous, mostly fresh to slightly weathered, moderately hard, slightly fractured, thinly bedded with structure only visible at mechanical and natural breaks, no reaction to weak reaction to HCl. 55.5'-55.9' calcite vein with breccia appearance.	
	DATE STARTED: 9/22/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation		
	DATE COMPLETED: 9/23/07					GWL: DEPTH: N/A DATE/TIME: N/A					
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/ NQ Rock Core		RIG: CME 75 truck				
CHECKED BY: EVZ					DRILLER: Craig Van Vactor HELPER: T. Duncan						
APPROVED BY: RJB											
DRILLING CO.: Terracon											

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-334

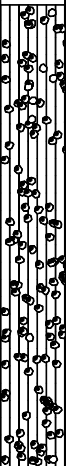


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339700.596 E 2406888.488 SURFACE EL: 671.21	USCS SYMBOL	REMARKS
						DESCRIPTION		
600.7	60	R-9	100% (100%)	5.0		Shale- Dark gray (N3), noncalcareous to slightly calcareous, mostly fresh to slightly weathered, moderately hard, slightly fractured, thinly bedded with structure only visible at mechanical and natural breaks, fractures healed with calcite with a few brachiopods fossils cast near bottom, no reaction to weak reaction to HCl.		Special care sample taken at 63.7'-65.5'.
	62							
	64	R-10	96% (96%)	4.8				
	66							
	68							
	70							
	72							
						BOTTOM OF BORING 70.5'		
DATE STARTED: 9/22/07 DATE COMPLETED: 9/23/07 FIELD GEOLOGIST: JLO CHECKED BY: EVZ APPROVED BY: RJB DRILLING CO.: Terracon					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/ NQ Rock Core DRILLER: Craig Van Vactor HELPER: T. Duncan			NOTES: Bedrock Part of the Mahantango Formation RIG: CME 75 truck



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-335



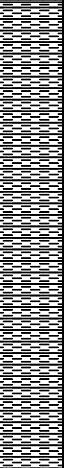
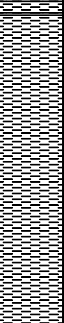
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340767.344 E 2405475.557 SURFACE EL: 793.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
790.7	0							
	2							
	4	S-1	4-5 10 (15)	1.1		Silt with Gravel (ml) - 20% gravel, 60% silt, 20% clay, fine to coarse, angular, shale gravel, low plasticity, low strength, slow dilatancy, medium toughness, dark yellowish orange (10YR 6/6), moist, no reaction to HCl, stiff.	ml	PPT = 1.5 TSF
	6							
785.7	8	S-2	8-13 14 (27)	0.9		Clayey Gravel (gc) - 55% gravel, 10% sand, 35% fat clay, fine to coarse, flat and elongated, angular gravel, fine to coarse subangular sand, low plasticity, low dry strength, no dilatancy, low toughness, dark yellowish orange (10YR 6/6), moist, no reaction to HCl, medium dense, weak cementation.	gc	
	10							
	12							
780.7	14	S-3	11-10 12 (22)	1.0		Clayey Gravel (gc) - 55% gravel, 5% sand, 40% clay, fine to coarse, angular to rounded, flat gravel, fine to coarse, rounded sand, low plasticity, low dry strength, low dilatancy, low toughness, yellowish orange (10YR 6/6), moist, no reaction to HCl, medium dense.	gc	
DATE STARTED: 11/11/2007					GWL: DEPTH: 8.62		DATE/TIME: 11/11/2007, 15:30	
DATE COMPLETED: 11/11/2007					GWL: DEPTH: N/A		DATE/TIME: N/A	
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
CHECKED BY: EVZ					DRILLER: Sam Silverman		HELPER: Mike Steinbach	
APPROVED BY: RJB							RIG: CME 55 truck	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-335

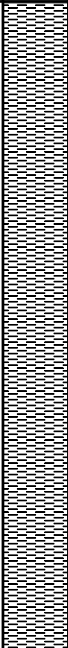

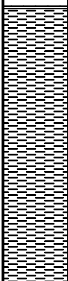
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340767.344 E 2405475.557 SURFACE EL: 793.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
775.7	16	S-4	50/5" (50+)	.4		18.0'	gm	Begin Coring at 19.0-ft
774.7	18					Silty Gravel with Sand (gm) - 55% gravel, 15% sand, 20% silt, 10% clay, fine to coarse, angular, flat and elongated gravel, moderate hardness, fine to coarse, angular sand, soft, low plasticity, low dry strength, low dilatancy, moderate toughness, yellowish orange (10YR 6/6), wet, no reaction to HCl, very dense.		
772.7	20	R-1	50% (25%)	1.0		19.0'		
	22	Silty Shale- Calcareous, medium gray (N4), medium hardness, fractures at 45° to rock core, thinly bedded, reaction to HCl.						
767.7	24	R-2	100% (88%)	5.0		21.0'		
	26	Silty Shale- Medium gray (N4), very little to slightly fractured, medium hardness, fractures at 45° from rock core, 1.0' to 2.0' fracture spacing, vertical bedding planes, laminated thickness, reaction to HCl, calcareous.						
	28	R-3	100% (92%)	5.0		26.0'		
DATE STARTED: 11/11/2007					GWL: DEPTH: 8.62 DATE/TIME: 11/11/2007, 15:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/11/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 truck	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Mike Steinbach			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-335

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340767.344 E 2405475.557 SURFACE EL: 793.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
757.7	30	R-4	100% (90%)	5.0		Siltstone- Dark gray (N3), medium hardness, very slightly to slightly fractured, fracture spacing 1.0' to 1.5', fractures 45° to rock core, slightly weathered on fractures, thickly bedded, calcareous.		
	32							
	34							
752.7	36	R-5	98% (98%)	4.9		Shale- Dark gray (N3), medium hardness, very slightly fractured, fresh, thickly bedded, highly calcareous.		
	38							
	40							
	42	R-6	100% (92%)	5.0		Siltstone- Dark gray (N3), medium to hard, fossiliferous, very slightly fractured at 45° to rock core, calcareous, pyrite and calcite inclusions.		
DATE STARTED: 11/11/2007					GWL: DEPTH: 8.62 DATE/TIME: 11/11/2007, 15:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/11/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 truck	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Mike Steinbach			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-335

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340767.344 E 2405475.557 SURFACE EL: 793.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
747.7	44	R-7	100% (94%)	5.0		46.0' Shale- Dark gray (N3), medium to hard, fossiliferous, calcite inclusions, very slightly fractured, calcareous.		
	46							
	48							
	50							
	52							
	54	R-8	100% (100%)	5.0		Shale- Dark gray (N3), medium to hard, no fractures, fossiliferous, pyrite and calcite inclusions, calcareous.		
	56							
	58							
DATE STARTED: 11/11/2007					GWL: DEPTH: 8.62 DATE/TIME: 11/11/2007, 15:30		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/11/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Mike Steinbach		RIG: CME 55 truck	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-335

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340767.344 E 2405475.557 SURFACE EL: 793.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
732.7	60	R-9	(100%)	5.0				
	62							
	64	R-10	100% (90%)	5.0				
	66							
	68	R-11	100% (100%)	4.0				
	70							
	72							
DATE STARTED: 11/11/2007						GWL: DEPTH: 8.62 DATE/TIME: 11/11/2007, 15:30		NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 11/11/2007						GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/NQ Rock Core		
CHECKED BY: EVZ								
APPROVED BY: RJB						DRILLER: Sam Silverman HELPER: Mike Steinbach		RIG: CME 55 truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-336

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340492.179 E 2405516.324 SURFACE EL: 803.79	USCS SYMBOL	REMARKS
						DESCRIPTION		
801.3	0	S-1	5-5 6 (11)	1.0		Silty Sand with Gravel (sm)- 30% gravel, 40% sand, 30% silt, fine to medium, rounded sand, low plasticity, low dry strength, low dilatancy, no toughness, light brown (5YR 6/4), dry, no reaction to HCl, medium dense.	sm	PP=0.0 TSF
	2					2.5'	Poorly Graded Gravel (gp)- 100% gravel, coarse grained, subrounded, hard, nonplastic, dusky red (5R 4/6), dry, no reaction to HCl, dense.	
798.8	4	S-2	13-16 20 (36)	0.1		5'	sm	
	6					Silty Sand with Gravel (sm)- 15% gravel, 65% sand, 20% silt, fine to coarse, angular gravel, fine to coarse, subrounded sand, low plasticity, low dry strength, low dilatency, no toughness, dusky red (5 R 4/6), dry to moist, no reaction to HCl, dense to very dense.		
793.8	8	S-3	24-20 23 (43)	1.3		10.0'	gw-gm	
	10					Well Graded Gravel with Sand and Silt (gw-gm)- 60% gravel 30% sand, 10% silt, fine to coarse, subrounded to subangular gravel, fine to coarse, subrounded sand, nonplastic, dusky red (5R 4/6), moist, no reaction to HCl. very dense, weak cementation,.		
791.3	12	S-4	40-35 31 (66)	1.3		12.5'	sw	
	14					Well Graded Sand with Gravel and silt (sw) - 20% gravel, 70% sand, 10% silt, fine to coarse, subangular gravel, fine to coarse, subrounded to subangular sand, hard, nonplastic, dusky red (5R 4/ 6), moist, no reaction to HCl, dense, weak cementation.		
DATE STARTED: 11/14/07					GWL: DEPTH: 38.90 DATE/TIME: 11/15/07		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/15/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 55 Track	
CHECKED BY: EVZ					DRILLER: Sam Silverman HELPER: Mike Steinbrook			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-336


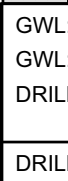
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340492.179 E 2405516.324 SURFACE EL: 803.79	USCS SYMBOL	REMARKS
						DESCRIPTION		
788.8	16	S-7	17-9 7 (16)	0.4		15.0' Sandy Fat Clay with Gravel (ch), 15% gravel, 30% sand, 55% clay, coarse, subangular gravel, hard, fineto coarse, subrounded, hard sand, medium plasticity, medium dry strenght, slow dilatency, low toughness, moderate yellow brown (10YR 5/4), wet, to reaction to HCL, very stiff.	ch	PP=0.25 TSF
786.3	18	S-8	4-8 6 (14)	1.0		17.5' Lean Clay with gravel (cl)- 15% gravel, 5% sand, 20% silt, 60% clay, fine to coarse, subangular gravel, fine to coarse subangular to subrounded sand, high plasticity, medium dry strength, medium dilatancy, medium toughness, soft, light brown (5 YR 6/4), moist, no reaction to HCl, stiff.	cl	
783.8	20	S-9	10-14 10 (24)	1.0		20.0' Well Graded Gravel with Sand (gw) - 80% gravel, 15% sand 5% silt, fine to coarse, spherical, subrounded gravel, hard, fine to coarse, rounded sand, nonplastic, yellowish brown (10 YR 5/4), wet, no reaction to HCl, medium-dense to very dense.	gw	
	22							
	24	S-10	19-17 50/4" (67)	1.1				
779.3		R-1	50% (0%)	0.3		24.5' Cobbles - About 100% sandstone cobbles, fine to medium grained, yellowish brown (5R 4/6), noncalcareous, no reaction to HCl.	cl	
778.8	26					25.0' Lean Clay (cl)- About 60% clay, 30% silt, 10% siltstone gravel, high plasticity, medium toughness, medium dilatancy, medium dry strength, greenish gray (5 GY 6/1), hard, subangular, no reaction to HCl, medium gray (N5).		
	28	R-2	66% (0%)	3.3				
DATE STARTED: 11/14/07 DATE COMPLETED: 11/15/07 FIELD GEOLOGIST: PFW CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: 38.90 DATE/TIME: 11/15/07 GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core			NOTES: Bedrock Part of the Mahantango Formation
DRILLING CO.: Terracon					DRILLER: Sam Silverman HELPER: Mike Steinbrook			



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-336

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340492.179 E 2405516.324 SURFACE EL: 803.79	USCS SYMBOL	REMARKS
						DESCRIPTION		
773.8	30	R-3	100% (0%)	3.5		30.0'		
					Shale- Medium gray (N5), highly fractured, healed with medium green (10 Y 4/2) clay, fractured, oxidized with yellow brown staining, no reaction to HCl.			
	32							
	34	R-4	100% (0%)	1.5		Shale- Medium gray (N5), highly fractured, healed with medium green (10 Y 4/2) clay, oxidized, no reaction to HCl.		
	36					Shale- Medium gray (N5), highly fractured, slightly healed, fractures at 45° and 0° to rock core, oxidized on weathered face, medium hard, thinly bedded, no reaction to HCl.		
	38	R-5	84% (16%)	4.2				
40					Shale- Medium gray (N5), highly fractured, healed with medium green (10 Y 4/2) fatty clay, fractures at 45° and 0° to rock core, oxidized on weathered face, medium hard, thinly bedded, no reaction to HCl.			
42	R-6	100% (24%)	5.0					
DATE STARTED: 11/14/07						GWL: DEPTH: 38.90 DATE/TIME: 11/15/07		NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 11/15/07						GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/NQ Rock Core		
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook		RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-336

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340492.179 E 2405516.324 SURFACE EL: 803.79	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-7	86% (0%)	4.3		Shale- Reddish brown (5 YR 3/4), highly fractured, partly healed, with medium green (10 Y 4/2) clay, fractured at 45° to rock core, oxidized faces are reddish brown, no reaction to HCl, laminated bedding.		
	46	R-8	82% (54%)	4.1				
	48	R-9	100% (62%)	5.0				
50								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-336




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340492.179 E 2405516.324 SURFACE EL: 803.79	USCS SYMBOL	REMARKS			
						DESCRIPTION					
743.8	60	R-10	100% (90%)	5.0		Siltstone- Medium gray (N5), very slightly fractured, contains pyritic zones, fossiliferous, medium to hard hardness, thinly bedded.					
	62										
	64										
	66										
	68										
	70										
	733.8	70	R-11	100% (100%)	5.0				Siltstone- Medium gray (N5), very slightly fractured, contains pyritic zones, fossiliferous, medium to hard hardness, thinly bedded.		
		72									
		BOTTOM OF BORING 70'									
DATE STARTED: 11/14/07					GWL: DEPTH: 38.90 DATE/TIME: 11/15/07		NOTES: Bedrock Part of the Mahantango Formation				
DATE COMPLETED: 11/15/07					GWL: DEPTH: N/A DATE/TIME: N/A						
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core						
CHECKED BY: EVZ							RIG: CME 55 Track				
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Mike Steinbrook						
DRILLING CO.: Terracon											



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS									
						DESCRIPTION											
790.0	0																
	2																
	3.0'	S-1	50/1" (50)	0.0		Well Graded Gravel (gw) - 100% cobbles, elongated, subangular, 3.0" max size, hard, nonplastic, moderate brown (5 YR 4/4), dry, no reaction to HCl, very dense.	gw										
785.0	4																
	6																
	8.0'	S-2	14-16 15 (31)	1.2		Well Graded Gravel with Sand and Silt (gw-gm) - 60% gravel, 30% sand, 10% silt, fine to coarse, rounded sand, fine to coarse, subangular, elongated and flat gravel, nonplastic, moderate brown (5 YR 4/4), moist, no reaction to HCl, dense, weak cementation.	gw-gm										
780.0	10																
	12																
	13.0'	S-3	6-6 8 (14)	1.2		Clayey Gravel with Sand (gc) - 50% gravel, 15% sand, 10% silt, 25% clay, fine to coarse, subangular, elongated and flat gravel, fine to coarse, well rounded, elongated and flat sand, low plasticity, low dry strength, no dilatancy, low toughness, greenish gray (5 GY 6/1), moist, no reaction to HCl, medium dense, weak cementation.	gc										
DATE STARTED: 11/12/07		DATE COMPLETED: 11/13/07		FIELD GEOLOGIST: PFW		CHECKED BY: EVZ		APPROVED BY: RJB		GWL: DEPTH: 74.62 DATE/TIME: 11/13/07, 1345		GWL: DEPTH: N/A DATE/TIME: N/A		DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon				DRILLER: Sam Silverman		HELPER: Michael Steinbrook		RIG: CME 55 Track									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS
						DESCRIPTION		
775.0	16	S-4	50/4" (50+)	0.3		18'	gw	
774.0	18					Well Graded Gravel with Sand (gw) - 80% gravel, 15% sand, 5% silt, fine to coarse, angular, elongated and flat gravel, fine to medium, well rounded sand, nonplastic, medium gray (N3), wet, no reaction to HCl, very dense, weak cementation, homogeneous consistency. 19'		
	20	R-1	100% (43%)	4.0		Siltstone- Medium gray (N5), medium hard, slightly weathered, medium brown staining along fracture faces medium brown, thinly bedded, moderately fractured, 45° and 0° to rock core, fossiliferous, no reaction to HCl.		
	22							
	24	R-2	100% (100%)	1.5		Siltstone- Medium gray (N5), medium hardness, slightly fractured, vertical bedding, no reaction to HCl.		
	26							
	28	R-3	100% (14%)	5.0		Siltstone- Medium gray (N5), medium hard, highly weathered, and highly fractured, noncalcareous, thinly vertical bedding, staining on bedding planes, fractures vertical and at 45° of rock core, no reaction to HCl.		
DATE STARTED: 11/12/07					GWL: DEPTH: 74.62 DATE/TIME: 11/13/07, 1345		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/13/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Michael Steinbrook		RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS
						DESCRIPTION		
763.5						29.5'		
	30					Shale- Medium gray (N5), medium hard, highly weathered and fractured, noncalcareous, fractures 45° and 90° to rock core, vertical bedding planes, no reaction to HCl.		
	32	R-4	90% (0%)	4				
	34							
	36					Shale- Dark gray (N3), medium hard, moderately to highly fractured, vertical fractures and 45° to rock core, slightly weathered, noncalcareous.		
	38							
	40					Shale- Medium gray (N5), medium hard, highly fractured, vertical and 45° to rock core, weathered, noncalcareous.		
	42	R-6	100% (10%)	5.0				
DATE STARTED: 11/12/07					GWL: DEPTH: 74.62 DATE/TIME: 11/13/07, 1345		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/13/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Michael Steinbrook			
DRILLING CO.: Terracon							RIG: CME 55 Track	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS						
						DESCRIPTION								
<div></div>	44	R-7	100% (34%)	5.0	<div></div>	Shale- Medium gray (N5), medium hard, highly fractured vertical and 45° to rock core, highly weathered, noncalcareous, no reaction to HCl.								
	46													
	48													
	50								R-8	100% (0%)	5.0	Shale- Medium gray (N5), medium hard, highly fractured vertical and 45° to rock core, highly weathered, noncalcareous, no reaction to HCl.		
	52													
	54													
	56												R-9	100% (30%)
	58													
	DATE STARTED: 11/12/07								GWL: DEPTH: 74.62 DATE/TIME: 11/13/07, 1345		NOTES: Bedrock Part of the Mahantango Formation			
	DATE COMPLETED: 11/13/07								GWL: DEPTH: N/A DATE/TIME: N/A					
	FIELD GEOLOGIST: PFW								DRILLING METHOD: SPT/Tricone/NQ Rock Core					
	CHECKED BY: EVZ										RIG: CME 55 Track			
	APPROVED BY: RJB								DRILLER: Sam Silverman HELPER: Michael Steinbrook					
	DRILLING CO.: Terracon													



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337

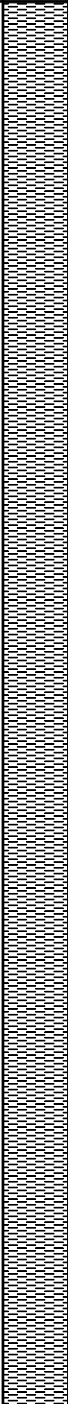
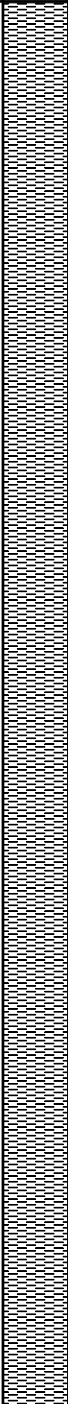
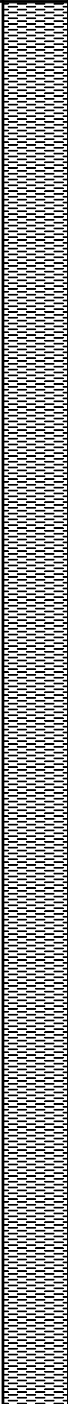
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS
						DESCRIPTION		
728.5	60	R-10	100% (0%)	5.0		Shale- Medium gray (N5), medium hard, highly fractured vertical and 45° to rock core, highly weathered, noncalcareous, no reaction to HCl, medium yellowish brown (5 YR 4/1) staining on fracture face. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337

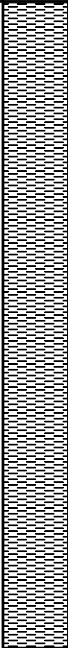

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-13	100% (20%)	5.0		Siltstone- Medium gray (N5), medium to high hardness, medium fractures. fracture faces weathered with reddish brown staining, fractures at horizontal, 45° and 90° to rock core, noncalcareous, no reaction to HCl.		
	76							
	78							
	80	R-14	100% (92%)	5.0		Siltstone- Medium gray (N5), medium to hard, slightly to very slightly fractured, healed fractures with quartz inclusions, no reaction to HCl, fractures at 45° shows reddish brown staining.		
	82							
	84							
	86	R-15	90% (60%)	4.5		Siltstone- Medium gray (N5), medium hard to hard, slightly to medium fractures, 45° angle and horizontal angle to rock core, healed with quartz inclusions, noncalcareous, reddish brown staining along fractures, no reaction to HCl.		
DATE STARTED: 11/12/07					GWL: DEPTH: 74.62 DATE/TIME: 11/13/07, 1345		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/13/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Michael Steinbrook		RIG: CME 55 Track	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-337

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340239.458 E 2405528.135 SURFACE EL: 793.04	USCS SYMBOL	REMARKS	
						DESCRIPTION			
698.5	88	R-16	98% (75%)	4.9		Siltstone- Medium gray (N5), medium hard to hard, slightly to moderate fractures, healed with quartz, no reaction to HCl, fractures having reddish brown (10YR 5/4) staining on fracture face, fractures at 45° and 90° direction of rock core.			
	90								
92									
94									
693.5	94.5'	R-17	100% (72%)	5.0		Shale- Medium gray (N5), medium hard to hard, slightly to moderate fractures, healed with quartz, no reaction to HCl, reddish brown (10YR 5/4) staining on fracture face, fractures at 45° and 90° to direction of rock core.			
	96								
	98								
	100								
						BOTTOM OF BORING 99.5'			
	102								
DATE STARTED: 11/12/07					GWL: DEPTH: 74.62 DATE/TIME: 11/13/07, 1345			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/13/07					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core				
CHECKED BY: EVZ									
APPROVED BY: RJB					DRILLER: Sam Silverman HELPER: Michael Steinbrook			RIG: CME 55 Track	
DRILLING CO.: Terracon									

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-338




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340738.303 E 2406234.464 SURFACE EL: 720.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
717.3	0							
	2							
717.3		S-1	3-3 2 (5)	1.0		Poorly Graded Sand with Silt (sp-sm), 90% sand, 10% silt, fine to medium grained, angular to round, spherical sand, nonplastic silt, moderate yellowish brown (10 YR 5/4) to dark yellowish brown (10 YR 4/2), moist to wet, no reaction to HCL, very-loose to loose.	sp-sm	
	4							
717.3	6							
	8	S-2	1-1 2 (3)	0.8				
717.3	10							
	12							
707.3		S-3	6-4 3 (7)	1.2		Silty Sand (sm), 80 % sand, 20 % silt, fine sand, low plasticity slit, medium dry strength, no dilatancy, low toughness, moderate yellowish brown (10YR 5/4) to light brown (5YR 5/6), moist to wet, no reaction to HCL, loose.	sm	
	14							
DATE STARTED: 10/23/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/23/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Logan Shipman			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-338

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340738.303 E 2406234.464 SURFACE EL: 720.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
702.3	16							
	18	S-4	2-7 6 (13)	1.1		17.8' Clayey Sand with Gravel (sc), 50% sand, 20% clay, 20% gravel, 10% silt, 0.25" max size, elongated and flat, subangular to round, hard sand, nonplastic, dark gray (N4) to medium gray (N5), wet, no reaction to HCL, medium dense.	sc	
697.7	20							
697.3	22	S-5	50/5 (50+)	0.3		22.4' Shale- Grayish black (N2), intensely weathered to degraded, fissile, thinly bedded, medium soft, noncalcareous.		
	24	R-1	100% (78%)	2.2		22.8' Shale- Dark gray (N3) to grayish black (N2), medium hard, fine grained, fresh to slightly weathered, slightly to unfractured, massive bedding, no bedding planes visible, no reaction to HCL.		
	26					Shale- Dark gray (N3) to grayish black (N2), medium hard, fine grained, fresh to slightly weathered, slightly to unfractured, massive bedding, no bedding planes visible, calcite fossils at 28.8'-30.6'.		
	28	R-2	100% (100%)	5.0				
DATE STARTED: 10/23/07					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/23/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JLO					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Logan Shipman			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-338

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340738.303 E 2406234.464 SURFACE EL: 720.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-3	100% (100%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fine grained, fresh to slightly weathered, slightly to unfractured, massive bedding, no bedding planes visible, no reaction to HCl, abundant fossils, calcite, and pyrite veins from 30.6'-38.0'. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-338

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340738.303 E 2406234.464 SURFACE EL: 720.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-6	100% (100%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fine grained, fresh to slightly weathered, slightly to unfractured, massive bedding, no bedding planes visible, no reaction to HCl. <		

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-338


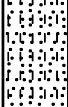
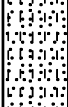
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340738.303 E 2406234.464 SURFACE EL: 720.08	USCS SYMBOL	REMARKS
						DESCRIPTION		
649.5	60	R-9	100% (100%)	5.0		Shale- Dark gray (N3) to grayish black (N2), medium hard, fresh, unfractured, no reaction to HCl, slightly fossiliferous (calcite filled), thinly bedded. 		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-339

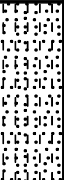
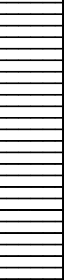


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340479.984 E 2406149.449 SURFACE EL: 710.66	USCS SYMBOL	REMARKS
						DESCRIPTION		
708.7	0							pp=1.5 TSF
	2	S-1	3-14 26 (40)	1.5		Fat Clay with Sand (ch), 60% clay, 20% silt, 20% sand, fine grained sand, medium plasticity fines, high dry strength, rapid dilatancy, medium toughness, light brown (5YR 6/4), wet, no reaction to HCL, hard.	ch	
704.2	6							sp-sm
	6.5'	S-2	7-7 7 (14)	0.8		Poorly Graded Sand with Silt (sp-sm), 90% sand, 10% silt, fine to coarse, rounded, hard sand, nonplastic silt, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense.		
	8							
	10							
	12	S-3	7-6 5 (11)	1.0				
	14							
DATE STARTED: 10/24/07					GWL: DEPTH: 5.02 DATE/TIME: 10/24/07, 12:00			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/24/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: Russel Whitaker			RIG: CME 75 Truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-339

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340479.984 E 2406149.449 SURFACE EL: 710.66	USCS SYMBOL	REMARKS
						DESCRIPTION		
694.2	16	S-4	12-14 52 (66)	0.8		16.5'	gp	
692.7	18				Poorly Graded Gravel with Sand (gp), 75% gravel, 25% sand, trace fines, fine to coarse, subangular, hard gravel, fine to coarse, subangular sand, 1.0" max size gravel, 1/16" max size sand, medium brown (10 Y/R 5/4), fragments of shale, elongated and flat, hard, wet, no reaction HCL, very dense. 18'			
	20	R-1	100% (33%)	3.0		Shale- Dark gray (N3), slightly to little fractured, medium to hard, fresh, laminated bedding, not healed, vertical bedding planes, no reaction to HCl.		
	22	R-2	100% (66%)	5.0				
	24							
	26	R-3	100% (60%)	5.0		Shale- Dark gray (N3), little to some fracturing at 30°-45° to rock core, light brown staining on fracture face, slightly weathered, not healed, medium hardness, no reaction to HCl, vertical thin bedding planes, spacing between fractures 0.6'-1.0'.		
	28							
DATE STARTED: 10/24/07					GWL: DEPTH: 5.02 DATE/TIME: 10/24/07, 12:00		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/24/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75 Truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: Russel Whitaker			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-339

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340479.984 E 2406149.449 SURFACE EL: 710.66	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-4	100% (96%)	5.0		Shale- Dark gray (N3), very little to slightly fractured, not healed, fresh, fracture spacing of 1.0'-1.5', medium to hard, fractures at 30°-45° to rock core, no reaction to HCl.		
	32							

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-339

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340479.984 E 2406149.449 SURFACE EL: 710.66	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-7	100% (100%)	5.0		Shale- Dark gray (N3), medium hard, no fractures, vertical bedding plane, thinly laminated, no reaction to HCl.		
	46							
	48							
	50							

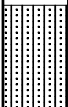
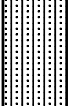


BORING NO. B-339
SHEET 5 OF 5



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-340

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340298.177 E 2406433.929 SURFACE EL: 702.37	USCS SYMBOL	REMARKS
						DESCRIPTION		
700.0	0							
	2							
		S-1	6-7 8 (15)	1.0'		Silty Sand (sm), 70% sand, 30% Silt, fine, rounded sand, low plasticity silt, medium dry strength, slow dilatancy, medium toughness, light brown (5Y 5/6), moist, no reaction to HCL, medium dense.	sm	
	4							
	6							
	8	S-2	12-13 11 (24)	1.1'				
	10							
	690.9							
	12	S-3	9-55 (55)	0.5'		Clayey Gravel (gc), 60% gravel, 20% clay, 10% silt, 10% sand, fine to coarse, angular shale gravel, fine to coarse, subangular, flat, medium gray (N5) sand, medium plasticity fines, medium dry strength, rapid dilatancy, medium toughness, moderate	gc	
	689.9							
	14	R-1	88% (0%)	2.2		yellowish brown (10YR 5/4), moist, no reaction to HCL, very dense. Shale - Dark gray (N3), highly fractured, fractures dipping 45° to rock core, light brown (5YR 6/4) weathering in fracture, highly fractured, medium hardness, fracture spacing 0.2' to 0.3'		
DATE STARTED: 10/25/2007					GWL: DEPTH: 5.05 DATE/TIME: 10/25/07 at 16:00		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/30/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ core		RIG: CME 75 truck	
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-340

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340298.177 E 2406433.929 SURFACE EL: 702.37	USCS SYMBOL	REMARKS
						DESCRIPTION		
	16	R-2	80% (32%)	4.0		Shale - Dark gray (N3), highly fractured, fractures dipping 45° to rock core, slightly weathered with light brown (5YR 6/4) staining on fracture face, highly fractured, medium hardness, fracture spacing 0.3' to 0.4'.		
	18							
	20							
	22							
	24	R-3	100% (38%)	5.0		Shale - Dark gray (N3), highly fractured, fractures dipping 45° to rock core, slightly weathered, highly fractured, medium hardness, fracture spacing 0.2' to 0.3'.		
	26							
	28							
		R-4	100% (48%)	5.0		Shale - Dark gray (N3), highly fractured, slightly weathered, medium hardness, fracture spacing 0.3' to 0.4'.		
DATE STARTED: 10/25/2007						GWL: DEPTH: 5.05 DATE/TIME: 10/25/07 at 16:00		NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 10/30/2007						GWL: DEPTH: N/A DATE/TIME: N/A		
FIELD GEOLOGIST: PFW						DRILLING METHOD: SPT/Tricone/NQ core		
CHECKED BY: EVZ								
APPROVED BY: RJB						DRILLER: Craig VanVactor HELPER: L. Shipman		RIG: CME 75 truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-340

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340298.177 E 2406433.929 SURFACE EL: 702.37	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-5	40% (16%)	2.0		Shale - Dark gray (N3), slightly to highly fractured, slightly weathered, medium hardness, fracture spacing 0.3' to 0.4'. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-340

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340298.177 E 2406433.929 SURFACE EL: 702.37	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-8	100% (52%)	5.0		Shale - Dark gray (N3), highly fractured, fracture spacing 0.2' to 0.3', medium hardness, slightly weathered with light brown (5YR 6/4) staining on fracture face, thinly bedded, fracture dipping 45° to rock core. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-340


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340298.177 E 2406433.929 SURFACE EL: 702.37	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-11	92% (92%)	4.6		Shale - Dark gray (N3), highly to moderately fractured, fractures 45° and 90° to rock core, slightly weathered, no healing, medium hardness, no reaction to HCl.		
	62							
	64							
	66							
	68	R-12	94% (46%)	4.7		Shale - Dark gray (N3), slightly fractured, moderately hard, no reaction to HCl. Fracture at 70.0' to 70.2' - weathered, unhealed Fracture at 74.0' - fresh, moist, unhealed		
	70							
	72	R-13	88% (84%)	4.4				
DATE STARTED: 10/25/2007					GWL: DEPTH: 5.05 DATE/TIME: 10/25/07 at 16:00		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/30/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ core			
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman		RIG: CME 75 truck	
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-340

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 340298.177 E 2406433.929 SURFACE EL: 702.37	USCS SYMBOL	REMARKS
						DESCRIPTION		
622.4	74	R-14	100% (100%)	5.0		Shale - Dark gray (N3), very slightly fractured, moderately hard, no HCl reaction, unhealed, fresh.		
	80					BOTTOM OF BORING 80'		
	82							
	84							
	86							
DATE STARTED: 10/25/2007					GWL: DEPTH: 5.05 DATE/TIME: 10/25/07 at 16:00		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 10/30/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: PFW					DRILLING METHOD: SPT/Tricone/NQ core		RIG: CME 75 truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-341

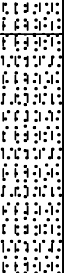
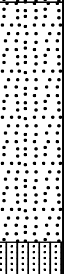
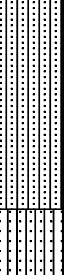



ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339825.649 E 2406458.827 SURFACE EL: 680.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
675.7 <								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-341

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339825.649 E 2406458.827 SURFACE EL: 680.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
665.7	16	S-7	8-7 12 (19)	0.9'		15.0'	sp-sm	
						Poorly Graded Sand with Silt (sp-sm), 90% sand, 10% silt, fine to medium grained, hard sand, nonplastic silt, dusky brown (5YR 2/2), wet, no HCL reaction, medium dense.		
663.2	18	S-8	6-8 11 (19)	1.0'		17.5'	sp	
						Poorly Graded Sand (sp), 95% sand, 5% silt, fine to medium grained sand, hard sand, nonplastic silt, dusky brown (5YR 2/2), wet, no HCL reaction, medium dense.		
660.7	20	S-9	5-7 7 (14)	0.3'		20.0'	sm	
						Silty Sand (sm), 60% sand, 40% silt, fine grained sand, nonplastic silt, low dry strength, slow dilatancy, low toughness, moderate yellowish brown (10YR 5/4), wet, no reaction to HCL, medium dense.		
658.2	22	S-10	6-11 16 (27)	1.5'		22.5'	ml	
						Sandy Silt (ml), 65% silt, 30% sand, 5% gravel, fine grained sand, fine to coarse grained, angular gravel, low plasticity silt, medium dry strength, slow dilatancy, medium toughness, moderate yellowish brown (10YR 5/4), wet, no HCL reaction, medium dense.		
655.7	26	S-11	12-11 13 (24)	0.7'		25.0'	sw	
						Poorly Sorted Sand with Gravel (sw), 75% sand, 20% gravel, 5% silt, fine to coarse grained, subrounded to subangular, hard sand, fine, angular gravel, nonplastic silt, dark reddish brown (10R 3/4), wet, no HCL reaction, medium dense.		
653.2	28	S-12	9-14 11 (25)	0.7'		27.5'	sw-sm	
DATE STARTED: 11/01/2007					GWL: DEPTH: 5.7 DATE/TIME: 11/03/07 0945		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/03/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tri-cone/Casing advancer			
CHECKED BY: EVZ					4" temporary steel casing			
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin		RIG: CME 75	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-341




ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339825.649 E 2406458.827 SURFACE EL: 680.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
648.2	30	S-13	20-14 17 (31)	0.6'			gw	
	32					32.5'		
645.7	34	S-14	16-28 24 (52)	0.2'		Well Graded Gravel (gw), 70% cobbles, 30% gravel, very hard, medium bluish gray (5B 5/1), unweathered cobbles, coarse grained, angular to subangular, hard gravel, dark reddish brown (10R 3/4), wet, no reaction to HCL, very dense.	gw	
	36					35.0'		
641.7	38	S-15	7-16 10 (26)	0.5'		Well Graded Gravel (gw), 100% cobbles, very hard, very light gray (N8), fresh quartz-rich sandstone cobbles, soft, dark gray (N3), fresh shale fragments, wet, no reaction to HCL, medium dense to dense.	gw	
	40					No recovery		
	42	S-16	17-24 25 (49)	0		39.0'		
		R-1	22% (0%)	1.0		Cobbles- 100% cobbles, sandstone, pale reddish brown (10R 5/4), very hard, quartz rich, no reaction to HCL, sandstone grayish orange pink (5YR 7/2), very hard, quartz rich.		
DATE STARTED: 11/01/2007					GWL: DEPTH: 5.7 DATE/TIME: 11/03/07 0945		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/03/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tri-cone/Casing advancer		RIG: CME 75	
CHECKED BY: EVZ					4" temporary steel casing			
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-341

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339825.649 E 2406458.827 SURFACE EL: 680.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
632.2	44	R-2	36% (0%)	1.8				
	46							
	48							
	48.5'	R-3	100% (42%)	5.0				
	50							
	52							
	54	R-4	92% (78%)	4.6				
	56							
	58							
	DATE STARTED: 11/01/2007					GWL: DEPTH: 5.7 DATE/TIME: 11/03/07 0945		
DATE COMPLETED: 11/03/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tri-cone/Casing advancer			
CHECKED BY: EVZ					4" temporary steel casing			
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin		RIG: CME 75	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-341

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339825.649 E 2406458.827 SURFACE EL: 680.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-341

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339825.649 E 2406458.827 SURFACE EL: 680.71	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-8	94% (86%)	4.7		Shale- Dark gray (N3), soft, moderately to very slightly fractured, fractures closely spaced, completely healed with calcite (reaction to HCl), thinly bedded, no reaction to HCl. <		

BORING NO. B-341
SHEET 7 OF 7



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-342

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339721.501 E 2406467.455 SURFACE EL: 678.15	USCS SYMBOL	REMARKS
						DESCRIPTION		
675.2	0	S-1	3-4 6 (10)	1.5'		Silt with Sand (ml), 50% silt, 30% clay, 20% fine sand, medium plasticity fines, low dry strength, no dilatancy, low toughness, moderate yellowish brown (10YR 5/4), dry, no reaction to HCL, medium stiff to hard.	ml	
	2	S-2	4-14 19 (33)	1.5'			sm	
	4	S-3	11-13 12 (25)	1.1'		Silty Sand (sm), 70% sand, 20% silt, 10% gravel, fine to medium sand, medium to coarse hard gravel, nonplastic silt, moderate yellowish brown (10YR 5/4), wet, no reaction to HCL, medium dense.	sm	
	6	S-4	7-10 11 (21)	1.0'			sm	
	8	S-5	7-9 11 (20)	1.1'		Poorly Graded Sand (sp), 90% sand, 10% silt, fine to medium grained sand, nonplastic silt, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense.	sp	
	10	S-6	8-10 10 (20)	1.0'		Poorly Graded Sand with Silt (sp-sm), 80% sand, 10% silt, 10% cobbles, fine to medium grained, angular to subangular sand, hard, dark gray (N3) cobbles, nonplastic silt, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, medium dense.	sp-sm	
	12	S-7	8-12 11 (23)	1.0'			sp-sm	
	14	S-8	7-15 32 (47)	1.0'		Poorly Graded Sand (sp), 90% sand, 5% gravel, 5% silt, fine to coarse grained, angular to subangular, very hard sand, medium to coarse grained, angular, hard gravel, angular hard gravel, nonplastic silt, dusky yellowish brown (10YR 2/2), wet, no reaction to HCL, dense.	sp	
	16	S-9	19-22 19 (41)	0.9'		Well Graded Gravel (gw), 60% gravel, 30% sand, 10% silt, medium to coarse, angular to subangular, hard gravel, fine to medium grained, angular to subangular sand, nonplastic silt, dusky yellowish brown (10YR 2/2), wet, no reaction to HCL, dense.	gw	
	18	S-10	6-15 23 (38)	0.7'		Well Graded Sand (sw), 60% sand, 40% gravel, fine to medium grained angular to subangular sand, medium to coarse grained angular to subangular, hard gravel, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, dense to very dense.	sw	
DATE STARTED: 10/31/2007					GWL: DEPTH: 20.3 DATE/TIME: 11/01/07 1450		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/01/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tri-cone/NQ Rock Core		RIG: CME 75 truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-342

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339721.501 E 2406467.455 SURFACE EL: 678.15	USCS SYMBOL	REMARKS
						DESCRIPTION		
661.7	16	S-11	15-29 25 (54)	0		No Recovery 		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-342

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339721.501 E 2406467.455 SURFACE EL: 678.15	USCS SYMBOL	REMARKS	
						DESCRIPTION			
648.2	30	S-20	9 (23)	0.5'		30.0'	SW	Begin rock coring at 38.0'	
		S-21	4-9 15 (24)	1.4'		Well Graded Sand (sw), 100% sand, fine to coarse grained, subangular, very hard grains, very dusky red (10R 2/2), wet, no reaction to HCL, medium dense.			
645.2	32	S-22	11-11 10 (21)	0		No recovery	SW-SC		
		S-23	11-11 10 (21)	0.7'		Well Graded Sand with Clay and Gravel (sw-sc), 60% sand, 30% gravel, 5% silt, 5% clay, fine to coarse, subangular sand, fine to coarse, angular gravel, low plasticity fines, low dry strength, slow dilatancy, low toughness, brownish gray (5YR 4/1) to dark gray (N3), wet, no reaction to HCL, loose to medium dense.			
642.2	36	S-24	3-5 4 (9)	0.7'		33.0'	GP		
		S-25	5-10 18 (28)	0.6'		Poorly Graded Gravel with Cobbles (gp), 50% gravel, 40% cobbles, 10% sand, trace silt and clay, fine to coarse, subangular, hard gravel, dark gray (N3) to very light gray (N8), moderately to very hard, slightly fractured cobbles, fine grained, very dusky red (10R 2/2) sand, wet, no reaction to HCL, medium dense.			
640.7	38	S-26	50/6" (50+)	0.5		37.5'			
640.2						SHALE, dark gray (N3), soft, very intensely fractures, no weathering, no reaction to HCL			
						Shale- Dark gray (N3), moderately soft, no reaction to HCL, slightly fractured, fresh, unhealed, thinly bedded.			
	40	R-1	100% (100%)	2.5					
							Shale- Dark gray (N3), moderately soft, no reaction to HCL, slightly fractured, fresh, unhealed, thinly bedded, calcite vein at 41.2'.		
	42	R-2	84% (82%)	4.2					
DATE STARTED: 10/31/2007					GWL: DEPTH: 20.3 DATE/TIME: 11/01/07 1450		NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 11/01/2007					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tri-cone/NQ Rock Core				
CHECKED BY: EVZ									
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin		RIG: CME 75 truck		
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-342

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339721.501 E 2406467.455 SURFACE EL: 678.15	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-3	100% (96%)	5.0		Shale- Dark gray (N3), moderately soft, no reaction to HCl, unfractured, fresh, thinly bedded, calcite filled nodules throughout. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-342

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339721.501 E 2406467.455 SURFACE EL: 678.15	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	60	R-6	100% (100%)	5.0		Shale- Dark gray (N3), moderately soft, no reaction to HCl, unfractured, fresh, thinly bedded.			
	62								
	64								
	66								
	68	R-7	100% (100%)	5.0		Shale- Dark gray (N3), moderately soft, no reaction to HCl, very slightly fractured, thinly bedded, very closely spaced fractures, calcite filled nodules throughout, fossiliferous, 67.5' fracture completely healed in calcite.			
	70								
	72	R-8	100%	5.0		Shale- Dark gray (N3), moderately soft, no reaction to HCl, very slightly fractured, moderately bedded, calcite nodules throughout, fossiliferous, very closely spaced fracture, vertical fracture from 73.3' to 74.3' completely healed fracture.			
DATE STARTED: 10/31/2007					GWL: DEPTH: 20.3 DATE/TIME: 11/01/07 1450			NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/01/2007					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tri-cone/NQ Rock Core			RIG: CME 75 truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin				
APPROVED BY: RJB									
DRILLING CO.: Terracon									

BORING NO. B-342
SHEET 6 OF 7



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-342

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339721.501 E 2406467.455 SURFACE EL: 678.15	USCS SYMBOL	REMARKS	
						DESCRIPTION			
577.7	88	R-11	100% (100%)	5.0		Shale- Dark gray (N3), moderately hard, no reaction to HCl, slightly fractured, moderately bedded.			
	90								
	92								
	94	R-12	96% (96%)	4.8					
	96								
	98	R-13	100% (92%)	5.0					
	100								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17	USCS SYMBOL	REMARKS
						DESCRIPTION		
676.2 								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343



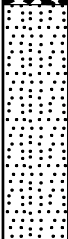

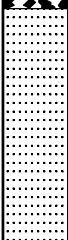

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17	USCS SYMBOL	REMARKS
						DESCRIPTION		
666.2	16	S-7	9-13 12 (25)	0.9		15.0' Silty Sand (sm), 70% sand, 30% silt, fine to medium grained, hard sand, low plasticity silt, low dry strength, slow dilatancy, medium toughness, moderate yellowish brown (10YR 5/4), wet, no reaction to HCl, medium dense.	sm	
	18	S-8	8-11 11 (22)	0.4				
661.2	20	S-9	6-9 16 (25)	1.3		20.0' Sandy Silt (ml), 60% silt, 40% sand, fine grained, rounded sand, medium plasticity silt, high dry strength, no dilatancy, medium toughness, dark yellowish orange (10YR 6/6), wet, no reaction to HCl, medium dense.	ml	
	22							
658.7	24	S-10	12-9 9 (18)	0.7		22.5' Well-Graded Sand with Silt and Gravel (sw-sm), 80% sand, 15% gravel, 5% silt, fine to coarse grained, subrounded to subangular sand, fine to coarse, angular, hard gravel, nonplastic silt, dusky brown (5YR 2/2), wet, no reaction to HCl, medium dense.	sw-sm	
	26	S-11	6-9 9 (18)	0.7				
	28	S-12	8-7 6 (13)	0.8				
DATE STARTED: 11/03/2007					GWL: DEPTH: N/A		DATE/TIME: N/A	
DATE COMPLETED: 11/04/2007					GWL: DEPTH: N/A		DATE/TIME: N/A	
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/ Tricone/ NQ Rock Core 4" temporary steel casing		NOTES: Bedrock Part of the Mahantango Formation	
CHECKED BY: EVZ					DRILLER: Craig VanVactor		HELPER: L. Shipman/ K.Goodin	
APPROVED BY: RJB							RIG: CME 75 truck	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17	USCS SYMBOL	REMARKS
						DESCRIPTION		
648.7	30	S-13	10-12 13 (25)	1.1			gw	
	32					32.5'		
646.2	34	S-14	10-33 16 (49)	0.7		Well Graded Gravel (gw), 60% gravel, 30% cobble, 10% sand, fine to coarse, angular to subangular, hard gravel, fine grained, very hard, medium gray (N5) sandstone cobble, fine grained sand, dark reddish brown (10R 3/4), wet, no reaction to HCl, dense.	sp	
	36					35.0'		
643.7	38	S-15	13-33 22 (55)	0.6		Poorly Graded Sand (sp), 90% sand, 10% gravel, trace silt, fine to coarse sand, coarse, hard, angular gravel, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCl, very dense.	gw	
	40					37.5'		
641.2	42	S-16	6-7 8 (15)	0.8		Well Graded Gravel (gw), 70% cobbles, 30% gravel, fine to coarse, angular to subangular, hard gravel, moderate yellowish brown (10YR 5/4), wet, no reaction to HCl, medium dense.	sw	
	44					40.0'		
638.7	46	S-17	13-13 9 (22)	0.9		Well-Graded Sand with Gravel (sw), 80% sand, 20% gravel, medium to coarse grained, rounded to subrounded sand, fine to coarse, angular to subangular, hard gravel, moderately yellowish brown (10YR 5/4), wet, no reaction to HCl, medium dense.	gw	
	48					42.5'		
		S-18	12-25 16 (41)	0.4		Well-Graded Gravel with Sand (gw), 50% gravel, 40% sand, 10% sandstone cobbles, fine to coarse, angular to sub angular, hard gravel, fine grained sand, very hard sandstone cobbles, dark yellowish brown (10YR 4/2), wet, no reaction to HCl, dense.		
DATE STARTED: 11/03/2007					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/04/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/ Tricone/ NQ Rock Core 4" temporary steel casing			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin		RIG: CME 75 truck	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17	USCS SYMBOL	REMARKS
						DESCRIPTION		
636.2	44	S-19	6-10 19 (29)	1.1		45.0'	sw	Rock at 48.0'
						Well-Graded Sand (sw), 95% sand, 5% gravel, fine to coarse grained, subrounded to subangular, hard sand, fine to coarse grained, subrounded to sub angular, hard gravel, very dusky red (10R 2/2), wet, no reaction to HCl, medium dense.		
634.7	46	S-20	18-50/5" (50+)	0.3		46.5'		
	SHALE, dark gray (N3), very soft, moderately bedded, unweathered, very intensely fractured, no reaction to HCL.							
633.7		R-1	84% (68%)	2.1		47.5'		
	57% medium light gray (N6) sandstone, very hard, thickly bedded, unfractured, highly weathered at edges, 43% dark gray (N3) shale, moderately soft, slightly fractured, fresh, thinly bedded, no reaction to HCl.							
631.2	50	R-2	100% (100%)	5.0		50.0'		
						Small Calcite Filled Nodule at 49.8'. Shale- Dark gray (N3), moderately soft, thinly bedded, no reaction to HCl, fresh, slightly fractured.		
	52	R-3	100% (100%)	5.0				
						Shale- Dark gray (N3), moderately soft, thinly bedded, fresh, unfractured, no reaction to HCl, many very thin calcite fractures completely healed throughout.		
	54							
	56							
	58							
DATE STARTED: 11/03/2007					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/04/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/ Tricone/ NQ Rock Core 4" temporary steel casing		RIG: CME 75 truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman/ K.Goodin			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17		USCS SYMBOL	REMARKS
						DESCRIPTION			
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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-7	100% (100%)	5.2		Shale- Dark gray (N3), moderately soft, moderately bedded, fresh, unfractured, no reaction to HCl.		
	76							
	78							
	80							
	82	R-8	98% (98%)	4.9				
	84							
		</						



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-343

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339772.487 E 2406401.475 SURFACE EL: 681.17	USCS SYMBOL	REMARKS
						DESCRIPTION		
581.2	88	R-10	100% (100%)	5.0		Shale- Dark gray (N3), moderately soft, moderately bedded, fresh, unfractured, no reaction to HCl. <		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344








ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS
						DESCRIPTION		
680.6	0	S-1	3-2 2 (4)	1.3	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344



ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS
						DESCRIPTION		
668.1	16	S-7	8-13 11 (24)	1.2		15.0'	sm	Begin rock coring at 28.0'
						Silty Sand with Gravel (sm), 50% sand, 30% gravel, 20% silt, fine sand, fine to medium grained gravel, subrounded to subangular sand, angular, hard gravel, nonplastic, moderate brown (5YR 3/4), wet, no reaction to HCL, medium dense.		
665.6	18	S-8	10-23 36 (59)	0.9		17.5'	gp	
						Poorly Graded Gravel with Sand (gp), 60% gravel, 20% sand, 20% cobbles, fine to coarse gravel, fine to medium sand, angular to subangular gravel, subrounded to subangular sand, subrounded to subangular cobbles, hard gravel, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, very dense.		
663.1	20	S-9	9-18 19 (37)	1.0		20.0'	gp	
						Poorly Graded Gravel with Sand (gp), 60% gravel, 30% cobbles, 10% sand with trace silt, fine to coarse gravel, medium grained sand, angular to subangular hard gravel, subrounded to subangular sand, dark yellowish brown (10YR 4/2), wet, no reaction to HCL, dense.		
660.6	22	S-10	19-34 50/6 (84)	0.9		22.5'	gp	
						Poorly Graded Gravel with Sand (gp), 50% gravel, 40% cobbles, 10% sand with trace silt, fine to coarse gravel, medium grained sand, angular to subangular hard gravel, very hard light gray (N7) sandstone cobbles, subrounded to subangular sand, dark reddish brown (10R 3/4), wet, no reaction to HCL, very dense.		
658.1	24	S-11	50/6 (50+)	0.5		25.0'	gm	
						Silty Gravel (gm), 60% gravel, 20% silt, 20% cobbles, fine to coarse, angular to subangular hard gravel, low plasticity silt, medium dry strength, slow dilatancy, medium toughness, moderate yellowish brown (10YR 5/4), wet, no reaction to HCL, very dense.		
656.6	26	S-12	32-40 31 (71)	1.3		26.5'	gp-gm	
						Poorly Graded Gravel with Silt (gp-gm), 90% gravel, 10% silt, fine to coarse, angular to subangular, soft to hard gravel, nonplastic silt, moderate yellowish brown (10YR 5/4), wet, no reaction to HCL, very dense.		
655.1	28	R-1	55% (0%)	1.1		28.0'		
						Cobbles- 90% cobbles, 10% fine to coarse grained gravel, angular, moderately soft, dusky brown (5R 2/2), no odor, wet, no reaction to HCL.		
DATE STARTED: 11/06/2007 DATE COMPLETED: 11/07/2007 FIELD GEOLOGIST: JTM CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rock Core		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: L. Shipman/ R. Whitaker		RIG: CME 75 truck	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS
						DESCRIPTION		
653.1	30	R-2	88% (80%)	4.4		30.0' Shale- Dark gray (N3), soft, intensely fractured, weathered, staining along fractures, thinly bedded, no reaction to HCl.		
651.9						31.2' Sandstone- Very hard, quartz rich, unfractured, staining at ends, moderately thick bedding, no HCL reaction, light bluish gray (5 B 7/1).		
	32							
	34							
647.3	36	R-3	50% (14%)	2.5		35.8' Cobbles- Angular to rounded, soft to very hard.		
	38							
	40					Cobbles- Soft to very hard, very intensely weathered, iron staining, rounded to angular.		
641.1	42				R-4	84% (14%)		
DATE STARTED: 11/06/2007					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/07/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rock Core		RIG: CME 75 truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman/ R. Whitaker			
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44							
						Shale- Dark gray (N3), soft, unweathered, slightly fractured, some fractures completely healed with calcite.		
	46							
		R-5	100% (98%)	5.0				
	48					48.9', fracture, clean, unhealed		
	50					Shale- Dark gray (N3), unfractured, soft, unweathered, moderately bedded.		
	52	R-6	100% (100%)	5.0		51.9', foliated calcite layers		
	54							
						Shale- Dark gray (N3), soft, unfractured, unweathered, moderately bedded, no reaction to HCl.		
	56							
	58	R-7	100% (100%)	5.0				
DATE STARTED: 11/06/2007					GWL: DEPTH: N/A DATE/TIME: N/A			NOTES: Bedrock Part of the Mahantango Formation
DATE COMPLETED: 11/07/2007					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rock Core			
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L. Shipman/ R. Whitaker			RIG: CME 75 truck
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-8	100% (100%)	5.0		Shale- Dark gray (N3), soft, unfractured, unweathered, moderately bedded, no reaction to HCl.		
	62							
	64							
	66	R-9	100% (100%)	5.0				
	68							
	70							
	72	R-10	100% (100%)	5.0				
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Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS	
						DESCRIPTION			
	74	R-11	100% (100%)	5.0		Shale- Dark gray (N3), soft, unfractured, unweathered, moderately bedded, no reaction to HCl.			
	76								
	78								
	80								
	82	R-12	100% (100%)	5.0					
	84								
					Shale- Dark gray (N3), moderately soft, unfractured, unweathered, moderately bedded, no reaction to HCl.				
	86								
		R-13	100% (100%)	5.0					
DATE STARTED: 11/06/2007					GWL: DEPTH: N/A DATE/TIME: N/A	NOTES: Bedrock Part of the Mahantango Formation			
DATE COMPLETED: 11/07/2007					GWL: DEPTH: N/A DATE/TIME: N/A				
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rock Core	RIG: CME 75 truck			
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L. Shipman/ R. Whitaker				
APPROVED BY: RJB									
DRILLING CO.: Terracon									



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-344


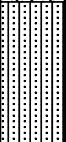
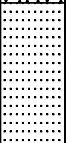
ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339761.983 E 2406301.534 SURFACE EL: 683.12	USCS SYMBOL	REMARKS	
						DESCRIPTION			
583.1	88	R-14	98% (98%)	4.9		Shale- Dark gray (N3), moderately hard, unfractured, unweathered, moderately bedded, no reaction to HCl, calcite filled nodules throughout, fossiliferous. 98.0', calcite and pyrite filled nodule			
	90								
	92								
	94								
	96								
	98								
	100								
	102								
	BOTTOM OF BORING 100'								
	DATE STARTED: 11/06/2007				GWL: DEPTH: N/A DATE/TIME: N/A				NOTES: Bedrock Part of the Mahantango Formation
	DATE COMPLETED: 11/07/2007				GWL: DEPTH: N/A DATE/TIME: N/A				
	FIELD GEOLOGIST: JTM				DRILLING METHOD: SPT/Tricone/NQ Rock Core				
	CHECKED BY: EVZ				DRILLER: Craig VanVactor HELPER: L. Shipman/ R. Whitaker				
	APPROVED BY: RJB								RIG: CME 75 truck
	DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-345

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
683.0	0	S-1	2-2 3 (5)	1.2		Organic Soil with Sand (ol), 40% clay, 40% silt, 20% sand, fine grained, subrounded to subangular, low plasticity, low dry strength, no dilatancy, low toughness, moderate brown (5YR 4/4) and medium dark gray (N4), organic odor, dry, no reaction to HCL, soft to hard.	ol	
	2	S-2	8-22 27 (49)	1.1				
680.5	6	S-3	2-2 3 (5)	1.1		Silty Sand (sm), 85% sand, 15% silt, fine to medium grained, subrounded to subangular, nonplastic, moderate yellowish brown (10YR 5/4), moist, no reaction to HCL, loose.	sm	
	8	S-4	1-2 3 (5)	1.1		Poorly Graded Sand with Silt (sp-sm), 90% sand, 10% silt, fine grained, subrounded to subangular, nonplastic, moderate yellowish brown (10YR 5/4), moist, no reaction to HCL, loose.	sp-sm	
678.0	10	S-5	4-6 6 (12)	1.2		Well Graded Sand (sw), 95% sand, 5% silt, fine to medium grained, rounded, soft sand, nonplastic, dark yellowish brown (10YR 4/2), dry, no reaction to HCL, medium dense.	sw	
	12	S-6	4-5 6 (11)	1.2		Well Graded Sand (sw), 100% sand, fine to medium grained, rounded, nonplastic, dark yellowish brown (10YR 4/2), dry, no reaction to HCL, medium dense.	sw	
675.5	14							
DATE STARTED: 11/05/07					GWL: DEPTH: N/A		DATE/TIME: N/A	
DATE COMPLETED: 11/06/07					GWL: DEPTH: N/A		DATE/TIME: N/A	
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock Part of the Mahantango Formation	
CHECKED BY: EVZ					DRILLER: Craig VanVactor		HELPER: L.Shipman/K.Goodin	
APPROVED BY: RJB							RIG: CME 75 Truck	
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891




LOG OF BORING NO. B-345

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
673.0	16	S-7	9-8 10 (18)	1.4		15.0'	sm	
						Silty Sand with Gravel (sm), 60% sand, 20% silt, 20% gravel, fine grained sand, fine grained gravel, subrounded to subangular sand, angular, hard gravel, low plasticity silt, medium dry strength, no dilatancy, low toughness, grayish brown (5YR 3/2), dry, no reaction to HCL, medium dense.		
670.5	18	S-8	8-12 14 (26)	1.3		17.5'	sm	
						Silty Sand with Gravel (sm), 50% sand, 30% silt, 20% gravel, fine grained sand, fine grained gravel, subrounded to subangular sand, angular, poorly sorted hard gravel, low plasticity silt, medium dry strength, no dilatancy, low toughness, moderate yellowish brown (10 YR 5/4), dry, no rection to HCL, medium dense.		
668.0	20	S-9	12-8 7 (15)	1.2		20'	gm	
						Silty Gravel with Sand (gm), 50% gravel, 30% sand, 20% silt, fine grained gravel, fine to coarse grained sand, angular, soft gravel, subrounded to subangular sand, nonplastic, dark yellowish brown (10 YR 4/2), wet, no reaction to HCL, medium dense.		
665.5	22	S-10	38-50/5" (50)	0.6		22.5'	gm	
						Silty Gravel with Sand (gm), 60% gravel, 25% sand, 15% silt, fine grained gravel, fine to coarse grained sand, angular, soft gravel, subrounded to subangular sand, nonplastic, dark yellowish brown (10 YR 4/2) to medium gray (N5), wet, no reaction to HCL, very dense.		
663.4	24	S-11	16-30 50/1" (80)	0.7		24.6'		
						Shale- Dark gray (N3), soft, very intensely to intensely fractured, clean, weathered, thinly bedded, no reaction to HCl. Shale- Dark gray (N3), soft, very intensely fractured to intensely fractured, clean, no reaction to HCl, moderately bedded, staining present on fractures.		
	26	R-1	100% (0%)	0.4				
	28	R-2	100% (6%)	5.0				
DATE STARTED: 11/05/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/06/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: EVZ					DRILLER: Craig VanVactor HELPER: L.Shipman/K.Goodin			
APPROVED BY: RJB								
DRILLING CO.: Terracon								

Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-345

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
	30	R-3	94% (24%)	4.7		Shale- Dark gray (N3), soft, very intensely fractured to intensely fractured, fractures clean, unweathered, shale unweathered, no reaction to HCl, moderately bedded.		
	32							
	34							
	36	R-4	86% (32%)	4.3		Shale- Dark gray (N3) soft, very intensely fractured to intensely fractured, fractured stain, fracture at 38.8' very thin with silty sand healing, no reaction to HCl, moderately bedded.		
	38							
	40							
	42	R-5	100% (66%)	5.0		Shale- Dark gray (N3) soft, intensely fractured, clean, no reaction to HCl, moderately bedded, exhibits staining, heavy weathering large vertical fracture from 41.6'-42.9', has horizontal fractures from 44.5'-44.8' containing quartz crystals and pyrite.		
DATE STARTED: 11/05/07 DATE COMPLETED: 11/06/07 FIELD GEOLOGIST: JTM CHECKED BY: EVZ APPROVED BY: RJB					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore		NOTES: Bedrock Part of the Mahantango Formation	
DRILLING CO.: Terracon					DRILLER: Craig VanVactor HELPER: L.Shipman/K.Goodin		RIG: CME 75 Truck	



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-345

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
	44	R-6	100% (82%)	5.0		Shale- Dark gray (N3), soft, intensely to moderately fractured, moderately bedded, no reaction to HCl, fractures very thin, unhealed, some calcite healed fractures throughout. 		



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-345

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
	60	R-9	100% (100%)	5.0		Shale- Dark gray (N3), soft, very slightly fractured, moderately bedded, no reaction to HCl, foliated calcite layer at 62.45', fracture at 63.1', unhealed, very thin.		
	62							
	64							
	66	R-10	100% (100%)	5.0		Shale- Dark gray (N3), moderately soft, very slightly fractured, moderately bedded, clean no healing, no reaction to HCl.		
	68							
	70							
	72	R-11	100% (100%)	5.0		Shale- Dark gray (N3), moderately hard, unfractured, moderately bedded, no reaction to HCl.		
DATE STARTED: 11/05/07					GWL: DEPTH: N/A DATE/TIME: N/A GWL: DEPTH: N/A DATE/TIME: N/A DRILLING METHOD: SPT/Tricone/NQ Rockcore	NOTES: Bedrock Part of the Mahantango Formation		
DATE COMPLETED: 11/06/07								
FIELD GEOLOGIST: JTM						DRILLER: Craig VanVactor HELPER: L.Shipman/K.Goodin	RIG: CME 75 Truck	
CHECKED BY: EVZ								
APPROVED BY: RJB								
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-345

ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
	74	R-12	100% (100%)	5.0		Shale- Dark gray (N3), moderately hard, unfractured, moderately bedded, no reaction to HCl.		
	76							
	78							
	80							
	82	R-13	100% (100%)	5.0				
	84							
DATE STARTED: 11/05/07					GWL: DEPTH: N/A DATE/TIME: N/A		NOTES: Bedrock Part of the Mahantango Formation	
DATE COMPLETED: 11/06/07					GWL: DEPTH: N/A DATE/TIME: N/A			
FIELD GEOLOGIST: JTM					DRILLING METHOD: SPT/Tricone/NQ Rockcore		RIG: CME 75 Truck	
CHECKED BY: EVZ								
APPROVED BY: RJB					DRILLER: Craig VanVactor HELPER: L.Shipman/K.Goodin			
DRILLING CO.: Terracon								



Bell Bend NPP

PROJECT NO. 07-3891

LOG OF BORING NO. B-345


ELEVATION (FEET MSL)	DEPTH (FEET)	SAMPLE NO. OR RUN NO.	BLOW/6" & (N) OR % REC. & (RQD)	RECOVERY (ft.)	PROFILE	COORDINATES N 339746.442 E 2406203.704 SURFACE EL: 688.02	USCS SYMBOL	REMARKS
						DESCRIPTION		
588.0	88	R-15	100% (100%)	5.0		Shale- Dark gray (N3), moderately hard, unfractured, moderately bedded, few calcite filled nodules throughout, fossiliferous, no reaction to HCl. <		


KEY TO SYMBOLS


Symbol Description


Symbol Description


Strata symbols


 Description not given for:
"DY"


 Well graded sand


 Description not given for:
"DB3"


 Description not given for:
"D=Y3"


 Description not given for:
"D3"


 Description not given for:
"83ZS"


 Description not given for:
"83S"


 Well graded gravel


 Description not given for:
"8ZS"


 Description not given for:
"8YB"


 Shale


 Siltstone


 Description not given for:
"OS"


 Description not given for:
"CZS"


 Description not given for:
"GS"


 Description not given for:
"83B"


 Poorly graded sand
with silt


 Silty sand

 Description not given for:
"83OS"

 Poorly graded gravel
with clay

 Poorly graded clayey
silty sand

 Description not given for:
":ZOY3"

 Description not given for:
"8S"


Notes:


1. Exploratory borings were drilled on 11/05/07 using a 4-inch diameter continuous flight power auger.
2. No free water was encountered at the time of drilling or when re-checked the following day.
3. Boring locations were taped from existing features and elevations extrapolated from the final design schematic plan.
4. These logs are subject to the limitations, conclusions, and recommendations in this report.
5. Results of tests conducted on samples recovered are reported on the logs.


KEY TO SYMBOLS


Symbol Description


Strata symbols


 Description not given for:
"D8"


 Description not given for:
"DRY3"


 Description not given for:
"83Y"


 Description not given for:
"O8S"


 Description not given for:
"ZO8S"


 Description not given for:
"ZD83"

 Description not given for:
"ZS"


 Poorly graded gravel
with silt


 Description not given for:
"D=8"


 Description not given for:
"DZ3"


 Description not given for:
"OY3"


 Silty sand and gravel

 Description not given for:
"DB"


 Well graded gravel
and sand


 Description not given for:
":Y3"


 Description not given for:
"DY3"


 Description not given for:
"OB"

Symbol Description

 Description not given for:
":Z8B"


 Clayey gravel

 Well graded gravel
with clay


 Description not given for:
":=Y3"

 Clayey sand


 Cobbles


 Silty gravel


 Silty clayey gravel

 Description not given for:
"ZS3"


 Poorly graded sand


 Poorly graded silty
fine sand


 Well graded gravel
with silt


 Description not given for:
"GB"

 Silt

 Description not given for:
"DO="

 Description not given for:
"O3"


 Description not given for:
"GBS"


 Description not given for:
"DO3"


KEY TO SYMBOLS


Symbol Description


Strata symbols


 Description not given for:
"D8Z"


 Well graded sand
with silt


 Description not given for:
"ZY38S"


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"DOY3"


 Description not given for:
"D=Z8"


 Description not given for:
"83YSB"


 Description not given for:
"83SB"


 Description not given for:
"B8"


 Description not given for:
"D=R"


 Description not given for:
"00"


 High plasticity
clay


 Description not given for:
"83BSZ"

 Description not given for:
"OZS"


 Poorly graded sand
with clay


 Description not given for:
"CS"


 Description not given for:
"83SY"


 Description not given for:
">Z"


Symbol Description


 Description not given for:
"83YB"


 Description not given for:
":Z03"


 Poorly graded gravel


 Sandstone


 Description not given for:
"OSY3"


 Description not given for:
"DBY3"


 Description not given for:
"0BY3"


 Description not given for:
"GD3"


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"D=3"


 Description not given for:
"ZY3"


 Description not given for:
">I"


 Description not given for:
"G8"


 Description not given for:
"DY3Z"

 Description not given for:
"OZ3"

 Description not given for:
"O="

 Description not given for:
"83:"

 Description not given for:
"DR3"

 Description not given for:
"B3"

KEY TO SYMBOLS

Symbol Description

Strata symbols



Description not given for:
"N>"



Description not given for:
"4S"