DRILL HOLE LOG

BORING NO. 08-AF4-B1

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:304,504 E:558,636
DRILLING METHOD: CME-75 / N.W. CASING TO 82'
DRILLER: M. WAYMENT
DEPTH TO WATER - INITIAL: ▽ 4.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 9/4/08
DATE COMPLETED: 9/8/08
GROUND ELEVATION: 4561.7'
LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
4560				0.5	5,12,9,(49)	GM	brown, slightly moist, med. dense									
								SILTY GRAVEL W/SAND possible cobbles								
4555	5			16	5,2,0,(5)	GM (A-1-b)	brown to gray, slightly moist, very loose			5.6		NP	41	39	20	
								SILTY CLAY (driller's observation) very soft								
4550	10			14	2,2,2,(7) 0.15	GC-GM CL-ML (A-4(3))	brown, wet	SILTY CLAYEY GRAVEL W/SAND								
							gray-brown, moist, soft			19.6	24	5	0	8	92	
								SILTY CLAY organics								
4545	15			15	Pushed	CL-ML ML	gray-brown, moist / brown, wet									
				18	3,3,4,(11)	ML (A-4(0))	brown, wet, med. dense	SANDY SILT		26.6		NP	0	31	69	17% -0.005 mm
4540	20			17	0,1,2,(5) 0.55	CL (A-6(12))	brown, moist, stiff	LEAN CLAY silty sand lenses & layers to 2" thick		30.7	34	13	0	8	92	48% -0.005 mm
4535	25			10	4,18,17,(50)	GP-GM	gray, wet, dense									
								GRAVEL W/SILT & SAND possible cobbles								
4530	30			10	4,9,20,(39)	GP-GM (A-1-a)	gray, wet, med. dense			7.2		NP	65	26	9	
4525	35			14	39,25,17,(53)	SM	brown, wet, very dense	SILTY SAND W/GRAVEL								
								CLAY (driller's observation)								
								GRAVELS (driller's observation)								
4520	40			18	3,4,5,(11) 0.51	CL	gray-brown, moist, stiff									
4515	45			16	Pushed 0.96	CL (A-7-6(23))	gray-brown, moist, stiff	LEAN CLAY few silt lenses, angled bedding in 50' sample	94.3	21.8	42	21	0	1	99	CT UC UU

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE: 2,3,2,(6) — Blow Count per 6"; $(N_1)_{60}$ Value; 0.45 — Torvane (tsf)

UNDISTURBED SAMPLE: PUSHED; 0.45 — Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-AF4-B1

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:304,504 E:558,636

DRILLING METHOD: CME-75 / N.W. CASING TO 82'

DRILLER: M. WAYMENT

DEPTH TO WATER - INITIAL: ▽ 4.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 9/4/08

DATE COMPLETED: 9/8/08

GROUND ELEVATION: 4561.7'

LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
4510			■	18	1,5,5,(11) *0.75*	CL (*A-6(19)*)	gray-brown, very moist, stiff			40.3	39	18	0	3	97	
4505	55		⊠	17	Pushed *0.81*	CL (*A-7-6(26)*)	gray-brown, moist, stiff	LEAN CLAY few silt lenses, angled bedding in 50' sample	93.3	31.8	46	23	0	0	100	CT UC UU
4500	60		■	18	5,4,6,(10) *0.70*	CL	mottled lt. & dk. gray, moist, stiff	LEAN CLAY sand lenses at ~75° angle								
4495	65		⊠ / ■	6 / 18	Pushed / 12,16,21,(36)	SM / SM (*A-2-4(0)*)	dk. gray, wet / dk. gray, wet, dense			17.6		NP	0	84	16	
4490	70		■	10	19,24,30,(51)	SM	dk. gray, wet, dense	SILTY SAND few thin clay layers (driller's observation)								
4485	75		■	14	8,4,15,(17) *0.25*	SM / CL (*A-7-6(13)*)	dk. gray, wet / mottled brown & dk. gray, moist, soft	LEAN CLAY		27.5	41	21	0	30	70	
4480	80		■	18	9,13,31,(39) *0.82*	SM	dk. gray, wet, dense	SILTY SAND possible thin clay layers (driller's observation)								
4475	85		■	16	6,16,21,(32) *0.66*	SM / ML (*A-4(0)*)	dk. gray, wet / gray, wet, dense	SANDY SILT		17.7	21	2	0	21	79	
4470	90		■	15	38,46,39,(72)	SM (*A-1-b*)	gray & brown, wet, dense			9.1		NP	40	43	17	
4465	95		■	6	35,50/5"	SM	gray & brown, wet, very dense	SILTY SAND W/GRAVEL possible cobbles, drilled like granular to 101'								

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE ■ 2,3,2,(6) ← Blow Count per 6"; $(N_1)_{60}$ Value
0.45 ← Torvane (tsf)

UNDISTURBED SAMPLE ⊠ PUSHED
0.45 ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-AF4-B1

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:304,504 E:558,636

DRILLING METHOD: CME-75 / N.W. CASING TO 82'

DRILLER: M. WAYMENT

DEPTH TO WATER - INITIAL: ▽ 4.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 9/4/08

DATE COMPLETED: 9/8/08

GROUND ELEVATION: 4561.7'

LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
4460															
	105														
4455															
	110														
4450															
	115														
4445															
	120														
4440															
	125														
4435															
	130														
4430															
	135														
4425															
	140														
4420															
	145														
4415															

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE — 2,3,2,(6) ← Blow Count per 6"; ← $(N_1)_{60}$ Value; 0.45 ← Torvane (tsf)

UNDISTURBED SAMPLE — PUSHED; 0.45 ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-AF4-B2

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:304,795 E:558,595

DRILLING METHOD: 08-CME 55 / N.W. CASING TO 65'

DRILLER: D. SAMPSON

DEPTH TO WATER - INITIAL: ▽ 6.1' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 12/11/08

DATE COMPLETED: 12/15/08

GROUND ELEVATION: 4565.9'

LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
4565			■	12	32,21,41,(99+)	SC	dk. gray-brown, dry, very dense	CLAYEY SAND W/GRAVEL gravel is slag								
4560 ▽	5		■	9	4,4,10,(32)	GP-GM (A-1-a)	brown, moist, med. dense	GRAVEL W/SILT & SAND		8.3		NP	61	28	11	
			■	2	3,2,1,(6)	GP-GM	brown, wet, very loose									
4555	10		■	15	3,3,1,(8) 0.20	GP-GM CL (A-4(4))	brown, wet / brown, moist, soft	SANDY LEAN CLAY		29.1	31	10	0	38	62	25% -0.005 mm
			☒	18	Pushed 0.32	ML (A-4(2))	brown, moist	SILT W/SAND		25.3	26	4	0	26	74	CT
							brown, moist, firm		94.5	27.1	37	18	0	19	81	UC
4550	15		■	11	1,2,2,(7) 0.30	CL (A-6(14)) CL	brown, moist, firm	LEAN CLAY W/SAND								
			■	18	1,1,2,(5)	ML (A-4(0))	brown, wet, loose	SANDY SILT		28.4		NP	0	46	54	14% -0.005 mm
4545	20		■	16	2,2,3,(8) 0.15	CL	lt. brown, moist, soft	LEAN CLAY sand lenses & layers to 1" thick								
			■	17	2,3,3,(9) 0.35	CL	lt. brown, moist, firm									
4540	25		■	12	1,4,5,(13)	SM (A-4(0))	brown, wet, med. dense	SILTY SAND W/GRAVEL		19.1		NP	21	37	42	14% -0.005 mm
4535	30		■	10	10,10,14,(32)	GP-GM	gray-brown, wet, med. dense	GRAVEL W/SILT & SAND possible cobbles								
4530	35		■	12	20,17,25,(53)	GP-GM (A-1-a)	gray-brown, wet, dense			7.1		NP	62	30	8	
4525	40		☒	18	Pushed 0.49	CL (A-6(12))	lt. brown, moist, firm		99.8	16.0	35	12	3	4	93	CT UU
4520	45		■	18	3,4,5,(10) 0.40	CL	gray-brown, moist, firm	LEAN CLAY silt lenses								

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE ■ 2,3,2,(6) — Blow Count per 6"; $(N_1)_{60}$ Value; 0.45 — Torvane (tsf)

UNDISTURBED SAMPLE ☒ PUSHED 0.45 — Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-AF4-B2

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:304,795 E:558,595
DRILLING METHOD: 08-CME 55 / N.W. CASING TO 65'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 6.1' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 12/11/08
DATE COMPLETED: 12/15/08
GROUND ELEVATION: 4565.9'
LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
4515				18	Pushed 0.42	CL (A-7-6(20))	gray, moist, firm		86.9	36.5	41	18	0	0	100	UU
								LEAN CLAY silt lenses & layers to 0.5" thick								
4510	55			18	3,3,5,(8) 0.75	CL	brown & gray, moist, stiff									
4505	60			17	Pushed 0.63	CL (A-7-6(22))	gray, moist, stiff		80.5	39.6	45	22	0	9	91	CT UC
								LEAN CLAY sand layers to 6" thick								
4500	65			4	Pushed	CL	gray, moist									
				16	11,12,19,(30)	ML (A-4(0))	dk. gray, wet, med. dense	SANDY SILT		18.8		NP	1	48	51	
4495	70			16	13,16,17,(31)	ML (A-4(0))	dk. gray, wet, dense			22.6	22	3	0	20	80	
								SILT W/SAND plastic, few sand lenses								
4490	75			16	7,10,16,(24) 0.35	ML	dk. gray, wet, med. dense									
								SILTY SAND								
4485	80			18	7,11,26,(32) 0.52	SM	dk. gray, wet									
						CL (A-4(5))	dk. gray, moist, stiff	LEAN CLAY		21.1	27	7	0	7	93	
						SM	dk. gray, wet, dense									
4480	85			16	24,37,37,(63)	SM (A-1-b)	dk. gray, wet, very dense	SILTY SAND		14.8		NP	11	72	17	
								SILTY CLAY W/SAND								
4475	90			17	20,23,40,(52)	CL-ML (A-4(1))	gray-brown, moist, very stiff			21.8	25	4	0	29	71	
						GM	brown, wet	SILTY GRAVEL W/SAND								
								SILTY SAND silt lenses & layers								
4470	95			16	15,20,21,(33)	SM	brown, wet, dense									
								SILTY GRAVEL W/SAND possible cobbles								

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE — 2,3,2,(6) — Blow Count per 6"; $(N_1)_{60}$ Value; 0.45 — Torvane (tsf)

UNDISTURBED SAMPLE — PUSHED 0.45 — Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 08-AF4-B2

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:304,795 E:558,595

DRILLING METHOD: 08-CME 55 / N.W. CASING TO 65'

DRILLER: D. SAMPSON

DEPTH TO WATER - INITIAL: ▽ 6.1' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 12/11/08

DATE COMPLETED: 12/15/08

GROUND ELEVATION: 4565.9'

LOGGED BY: M. HANSEN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
4465				11	53,58/6",(REF)	GM	gray-brown, wet, v. dense								
4460	105														
4455	110														
4450	115														
4445	120														
4440	125														
4435	130														
4430	135														
4425	140														
4420	145														

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE — 2,3,2,(6) ← Blow Count per 6"; ← $(N_1)_{60}$ Value; 0.45 ← Torvane (tsf)

UNDISTURBED SAMPLE — PUSHED; 0.45 ← Torvane (tsf)

OTHER TESTS
UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 09-AF4-B3

SHEET 1 OF 1

PROJECT: I-15 UTAH COUNTY CORRIDOR - AF4, I-15 OVER AM. FORK 100 EAST

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:304,568 E:558,583

DRILLING METHOD: 96-CME-55 / N.W. CASING TO 30'

DRILLER: E. RICHARDSON

DEPTH TO WATER - INITIAL: ▽ 7.5' **AFTER 24 HOURS:** ▼ 5.0'

PROJECT NUMBER: 200801.200

DATE STARTED: 3/9/09

DATE COMPLETED: 3/9/09

GROUND ELEVATION: 4562.8'

LOGGED BY: C. SANBORN, J. BOONE

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Rec. (in)	See Legend	USCS (AASHTO)	Material Description		Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
				14	4,6,34,(84)	ML	dk. brown, slightly moist	SANDY SILT W/GRAVEL								
						SP-SM	gray, slightly moist, dense	SAND W/SILT & GRAVEL (SLAG)								
4560				2	8,2,1,(7)	SP-SM	gray, slightly moist									
						CL	dk. brown, moist	LEAN CLAY								
					0.46	CL	dk. brown, moist, firm									
	5			10	1,1,1,(4)	SM (A-4(0))	dk. brown, wet, very loose	SILTY SAND		30.7		NP	1	54	44	
4555				1	4,8,9,(38)	GP-GM	brown, wet, med. dense	GRAVEL W/SILT & SAND								
				8	1,0,1,(2)	SM (A-4(0))	dk. brown, wet, very loose	SILTY SAND W/GRAVEL		24.0	23	3	24	38	38	10% -0.005 mm
	10			12	3,1,1,(4) 0.57	CL	brown, moist, stiff	LEAN CLAY sand lenses								
4550				22	0/24",(0) 0.51	CL (A-6(9))	brown, moist, firm to stiff	LEAN CLAY W/SAND		28.7	31	15	0	26	74	33% -0.005 mm
	15			1	1,1,2,(5)	ML	brown, wet, loose	SANDY SILT								
						GM	brown, wet	SILTY GRAVEL W/SAND								
				16	0.59 1,1,2,(5)	CL,ML ML	brown, moist, stiff / brown, wet, loose	LAYERS OF LEAN CLAY & SILT W/SAND		24.8		NP	4	19	77	14% -0.005 mm
4545				18	1,2,2,(7) 0.48	(A-4(0)) CL (A-6(7))	brown, moist, firm to stiff	SILT W/SAND / LEAN CLAY W/SAND silt layers to 2" thick		28.6	30	12	0	27	73	20% -0.005 mm
	20			18	1,3,3,(10) 0.42	CL	brown, moist, firm to stiff									
4540				16	0.54 3,4,8,(18)	ML (A-4(0)) SM	brown, wet, stiff / brown, wet, med. dense	SANDY SILT plastic / SILTY SAND		25.1	25	3	0	31	69	22% -0.005 mm
	25			12	7,14,13,(40)	GM	dk. brown, wet, med. dense	SILTY GRAVEL W/SAND								
					9,4,3,(10) 0.57	GM CL	dk. brown, wet / dk. brown, moist, stiff	SANDY LEAN CLAY								
4535				8	7,10,19,(40)	SP-SM	brown, wet, dense	SAND W/SILT & GRAVEL								
	30			9	10,19,11,(40)	GM	brown, wet, med. dense	SILTY GRAVEL W/SAND possible cobbles								
4530																
	35															
4525																
	40															
4520																
	45															
4515																

DH_LOGV1 08-AF4.GPJ US EVAL.GDT 5/22/09

RB&G ENGINEERING, INC.

LEGEND:

DISTURBED SAMPLE: 2,3,2,(6) — Blow Count per 6"; $(N_1)_{60}$ Value; 0.45 — Torvane (tsf)

UNDISTURBED SAMPLE: PUSHED; 0.45 — Torvane (tsf)

OTHER TESTS

UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
HYD = Hydrometer
SS = Soluble Salt
DC = Dispersive Clay