DRILL HOLE LOG

BORING NO. 08-P1-B1

PROJECT: I-15 UTAH CO. CORRIDOR - P1, I-15 OVER UPRR IN PROVO
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:261,590 E:586,188
DRILLING METHOD: 08-CME-55 / N.W. CASING TO 60'
DRILLER: D. SAMPSON
DEPTH TO WATER - INITIAL: ▽ 2.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 9/26/08
DATE COMPLETED: 9/30/08
GROUND ELEVATION: 4543.8'
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
				18	3,4,3,(15)	CL-ML	dk. brown to gray, very moist, firm	SILTY CLAY W/SAND organics								
4540	5			18	4,6,8,(32)	SM (A-2-4(0))	lt. brown, wet, dense	SILTY SAND		25.1		NP	3	65	32	DS
4535				18	6,8,7,(34)	SM	lt. brown, wet, dense									
	10			18	8,4,4,(18)	ML (A-4(0))	lt. brown to gray, wet, med. dense	SANDY SILT		23.1		NP	14	34	52	13% -0.005 mm
4530				18	1,1,1,(4) 0.15	ML ML (A-4(6))	gray, wet; gray, wet, soft	SILT W/SAND plastic		33.8	31	7	0	16	84	
	15			12	1,2,3,(10)	ML (A-4(0))	dk. gray, wet, loose	SILT W/SAND		32.8		NP	6	27	67	12% -0.005 mm
4525				18	1,2,2,(7) 0.30	ML (A-4(7))	dk. gray, wet, firm	SILT plastic, clay lenses		39.3	32	7	1	8	91	18% -0.005 mm
	20			18	0/18",(0) 0.12	CL (A-7-6(26))	gray, moist, soft	LEAN CLAY organic odor		42.2	47	24	0	3	97	
4520	25			15	0.20 Pushed	CL (A-6(13))	gray, moist, soft	LEAN CLAY many silt lenses	98.2	27.7	33	14	0	6	94	CT
				18	1,2,4,(9) 0.26	SM CL SM	gray, wet; gray, moist, firm; gray, wet, med. dense	SILTY SAND; LEAN CLAY; SILTY SAND								
4515	30			15	0.35 Pushed	CL (A-6(20))	gray, moist, firm	LEAN CLAY	88.8	31.6	40	20	0	6	94	CT
				18	1,2,2,(6) 0.30	SM SM CL	gray, wet; gray, wet; gray, moist, firm	SILTY SAND								
4510	35			18	Pushed 0.51	CL (A-6(12))	gray, moist, stiff	LEAN CLAY silt lenses	90.7	32.9	34	11	0	2	98	CT UC
4505	40			18	0.36 0,3,3,(8)	CL (A-7-6(25)) ML	gray, moist, firm; gray, wet	SANDY SILT		35.9	47	25	0	8	92	
4500	45			18	9,23,29,(62)	SM (A-2-4(0))	gray, wet, very dense	SILTY SAND		23.6		NP	0	68	32	
4495																

DH_LOGV1 08-P1.GPJ US EVAL.GDT 5/28/09

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-P1-B1

PROJECT: I-15 UTAH CO. CORRIDOR - P1, I-15 OVER UPRR IN PROVO

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:261,590 E:586,188

DRILLING METHOD: 08-CME-55 / N.W. CASING TO 60'

DRILLER: D. SAMPSON

DEPTH TO WATER - INITIAL: ▽ 2.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 9/26/08

DATE COMPLETED: 9/30/08

GROUND ELEVATION: 4543.8'

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
				18	12,26,31,(64)	SM	gray, wet, very dense								
4490							SILTY SAND								
	55			18	9,23,26,(53)	SM	gray, wet, very dense								
4485															
	60			17	12,23,27,(52)	SM (A-2-4(0))	gray, wet, very dense		21.4		NP	0	72	28	
4480															
	65			16	10,23,25,(48)	SM	gray, wet, dense								
4475							SILTY SAND occasional silty clay layer to 3" thick								
	70			16	18,31,20,(49)	SM (A-2-4(0))	gray, wet, dense		21.0		NP	0	85	15	
4470															
	75														
4465															
	80			16	21,18,19,(33)	SM	gray, wet, dense								
4460															
	85														
4455															
	90														
4450															
	95														
4445															

DH_LOGV1 08-P1.GPJ US EVAL.GDT 5/28/09

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-P1-B2

PROJECT: I-15 UTAH CO. CORRIDOR - P1, I-15 OVER UPRR IN PROVO
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:261,620 E:586,378
DRILLING METHOD: CME-75 / N.W. CASING TO 40'
DRILLER: M. WAYMENT
DEPTH TO WATER - INITIAL: ▽ 33.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 9/2/08
DATE COMPLETED: 9/3/08
GROUND ELEVATION: 4579.8'
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
			■	13	3,4,8,(28)	SM	dk. brown, slightly moist — SILTY SAND								
						GM	brown, slightly moist, med. dense — SILTY GRAVEL W/SAND possible cobbles (fill)								
4575	5		■	11	6,14,18,(74)	GM (A-1-b)	brown, moist		7.9		NP	46	35	19	
						SM	brown, moist, very dense								
4570	10		■	11	10,21,21,(75)	SM	brown, moist, very dense — SILTY SAND gravel layers, possible cobbles (fill)								
4565	15		■	12	5,13,15,(41)	SM (A-4(0))	brown, moist, dense		11.2		NP	3	60	37	
4560	20		■	3	18,55/5",(REF)	GM	brown, moist, very dense — SILTY GRAVEL W/SAND possible cobbles (fill)								
4555	25		■	12	13,24,26,(57)	SM (A-2-4(0))	brown, moist, very dense — SILTY SAND W/GRAVEL possible cobbles (fill)		9.8		NP	21	57	22	
4550	30		■	10	15,23,32,(58)	SM	brown, very moist, very dense								
							SILTY SAND								
4545	35		■	9	6,6,4,(10) 0.30	SM	brown, wet, med. dense								
						ML (A-4(5))	gray-brown, moist, firm — SANDY SILT plastic		19.0	37	10	1	38	61	
4540	40		☒	9	Pushed	SM	brown, wet								
							SILTY SAND few clay lenses								
4535	45		■	16	8,7,8,(14)	SM (A-2-4(0))	brown to gray, wet, med. dense		21.9		NP	6	51	43	14% -0.005 mm
							SILTY CLAY								

DH_LOGV1 08-P1.GPJ US EVAL.GDT 5/28/09

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-P1-B2

PROJECT: I-15 UTAH CO. CORRIDOR - P1, I-15 OVER UPRR IN PROVO
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:261,620 E:586,378
DRILLING METHOD: CME-75 / N.W. CASING TO 40'
DRILLER: M. WAYMENT
DEPTH TO WATER - INITIAL: ▽ 33.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200
DATE STARTED: 9/2/08
DATE COMPLETED: 9/3/08
GROUND ELEVATION: 4579.8'
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
			■	18	*0.36* 2,1,3,(4)	CL-ML ML	~~dk. gray, moist, firm~~ dk. gray, wet, very loose									
4525	55		⊠	17	Pushed	ML (*A-4(0)*)	dk. gray, wet	SILT silty clay layers to 2" thick, sand lenses & layers to 1" thick	87.5	31.6		NP	0	6	94	UU CU
4520	60		⊠	13	Pushed *0.42*	CL (*A-7-6(26)*)	dk. gray, moist, firm	LEAN CLAY slight organic odor	87.7	33.1	47	23	0	2	98	CT UC
4515	65		■	11	15,16,11,(23)	SM	gray-brown, wet, med. dense	SILTY SAND silt lenses & layers to 2" thick								
4510	70		⊠	17	Pushed *0.40*	CL (*A-6(9)*)	gray, moist, firm	LEAN CLAY sand lenses	100.4	25.4	31	12	0	14	86	UU
4505	75		■	14	*0.20* 14,23,26,(39)	CL SM	gray, moist, soft; gray, wet, dense									
4500	80		⊠	13	Pushed	SM (*A-2-4(0)*)	gray, wet	SILTY SAND clay lenses		19.6		NP	0	79	21	
4495	85		■	15	24,24,24,(37)	SM ML	gray, wet, dense; gray, wet, dense	SANDY SILT								
4490	90		■	16	30,37,37,(55)	SM (*A-2-4(0)*)	gray, wet, very dense			19.6		NP	0	71	29	
4485	95		■	16	30,25,41,(48)	SM	gray, wet, dense	SILTY SAND clay & silt layers to 0.25" thick								

DH_LOGV1 08-P1.GPJ US EVAL.GDT 5/28/09

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-P1-B2

PROJECT: I-15 UTAH CO. CORRIDOR - P1, I-15 OVER UPRR IN PROVO

CLIENT: UTAH DEPARTMENT OF TRANSPORTATION

LOCATION: N:261,620 E:586,378

DRILLING METHOD: CME-75 / N.W. CASING TO 40'

DRILLER: M. WAYMENT

DEPTH TO WATER - INITIAL: ▽ 33.0' **AFTER 24 HOURS:** ▼ N.M.

PROJECT NUMBER: 200801.200

DATE STARTED: 9/2/08

DATE COMPLETED: 9/3/08

GROUND ELEVATION: 4579.8'

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
			■	16	31,36,49,(61)	SM (A-2-4(0))	gray, wet, very dense		18.9		NP	0	69	31	
							SILTY SAND clay & silt layers to 0.25" thick								
4475	105		■	17	29,30,17,(33) 0.84	SM CL (A-6(16))	gray, wet, dense								
							gray-brown, moist, stiff LEAN CLAY sand lenses		31.1	35	18	0	8	92	
							SILTY SAND								
4470	110		■	13	30,28,18,(32) 0.51	SM CL	gray, wet, dense								
							gray-brown, moist, stiff LEAN CLAY sand lenses								
							SILTY CLAYEY SAND								
4465	115		■	15	35,30,22,(36) 0.75	SC-SM (A-4(0)) CL-ML	gray, very moist, dense		24.1	23	6	0	53	47	
							gray, moist, stiff SANDY SILTY CLAY								
4460	120														
4455	125														
4450	130														
4445	135														
4440	140														
4435	145														

DH_LOGV1 08-P1.GPJ US EVAL.GDT 5/28/09

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
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CU = Consolidated, Undrained
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SS = Soluble Salt
DC = Dispersive Clay

DRILL HOLE LOG

BORING NO. 09-P1-B3

SHEET 1 OF 1

PROJECT: I-15 UTAH CO. CORRIDOR - P1, I-15 OVER UPRR IN PROVO
CLIENT: UTAH DEPARTMENT OF TRANSPORTATION
LOCATION: N:261,931 E:585,366
DRILLING METHOD: 96-CME-55 / N.W. CASING TO 35'
DRILLER: T. KERN
DEPTH TO WATER - INITIAL: ▽ 8.0' **AFTER 24 HOURS:** ▼ 6.3'

PROJECT NUMBER: 200801.200
DATE STARTED: 4/16/09
DATE COMPLETED: 4/16/09
GROUND ELEVATION: 4544.7'
LOGGED BY: J. PRICE, 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
							4" ASPHALT									
4540	5			16	2,2,2,(9) *0.30*	CL	gray-brown, moist, firm	LEAN CLAY silt and/or sand lenses throughout								
4535	10			18	4,3,4,(14) *0.10*	ML (*A-4(0)*)	gray-brown, wet, soft	SILT W/SAND plastic		31.0	27	2	0	29	71	13% -0.005 mm
				18	2,3,4,(13) *0.30*	CL (*A-4(8)*)	brown, moist, firm	LEAN CLAY silt lenses		28.1	31	10	2	11	87	28% -0.005 mm
4530	15			16	3,4,5,(16) *0.50*	ML (*A-4(0)*)	brown, wet, med. dense	SANDY SILT		32.8		NP	0	31	69	11% -0.005 mm
				15	1,1,2,(5) *0.35*	ML (*A-4(8)*)	brown, very moist brown, very moist, firm to stiff	SILT plastic		32.7	31	8	0	3	97	20% -0.005 mm
				18	0/18",(0) *0.20*	CL (*A-6(19)*)	gray, wet, soft			44.2	40	17	0	1	99	
4525	20			11	0,2,5,(11) *0.05*	CL (*A-7-6(22)*)	gray, very moist, very soft	LEAN CLAY silt lenses		42.6	42	21	0	2	98	
4520	25			18	9,11,12,(33)	SP-SM	gray, wet, dense	SAND W/SILT								
				12	2,3,5,(11) *0.31*	CL (*A-4(6)*)	gray, very moist, firm	LEAN CLAY		31.0	28	8	0	9	91	22% -0.005 mm
4515	30			10	5,6,10,(21) *0.40*	ML (*A-4(1)*)	gray, very moist, firm	SILT W/SAND plastic		25.7	24	3	0	24	76	14% -0.005 mm
				18	*0.33* 2,2,5,(9) *0.35*	CL (*A-6(14)*)	gray, moist, firm			31.8	35	14	0	3	97	38% -0.005 mm
4510	35			18	3,2,5,(9) *0.40*	CL (*A-4(7)*)	gray, moist, firm	LEAN CLAY sand and/or silt lenses & layers to 2" thick		27.8	28	8	0	7	93	28% -0.005 mm
				18	3,3,5,(10) *0.57*	CL (*A-4(8)*)	gray, moist, stiff			26.3	30	10	0	13	87	15% -0.005 mm
4505	40															
4500	45															
4495																

DH_LOGV1 08-P1.GPJ US EVAL.GDT 5/28/09

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
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