Appendix C

Borehole Logs

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612280 **IWP Location ID:** 16 **Date:** 9/28/2010

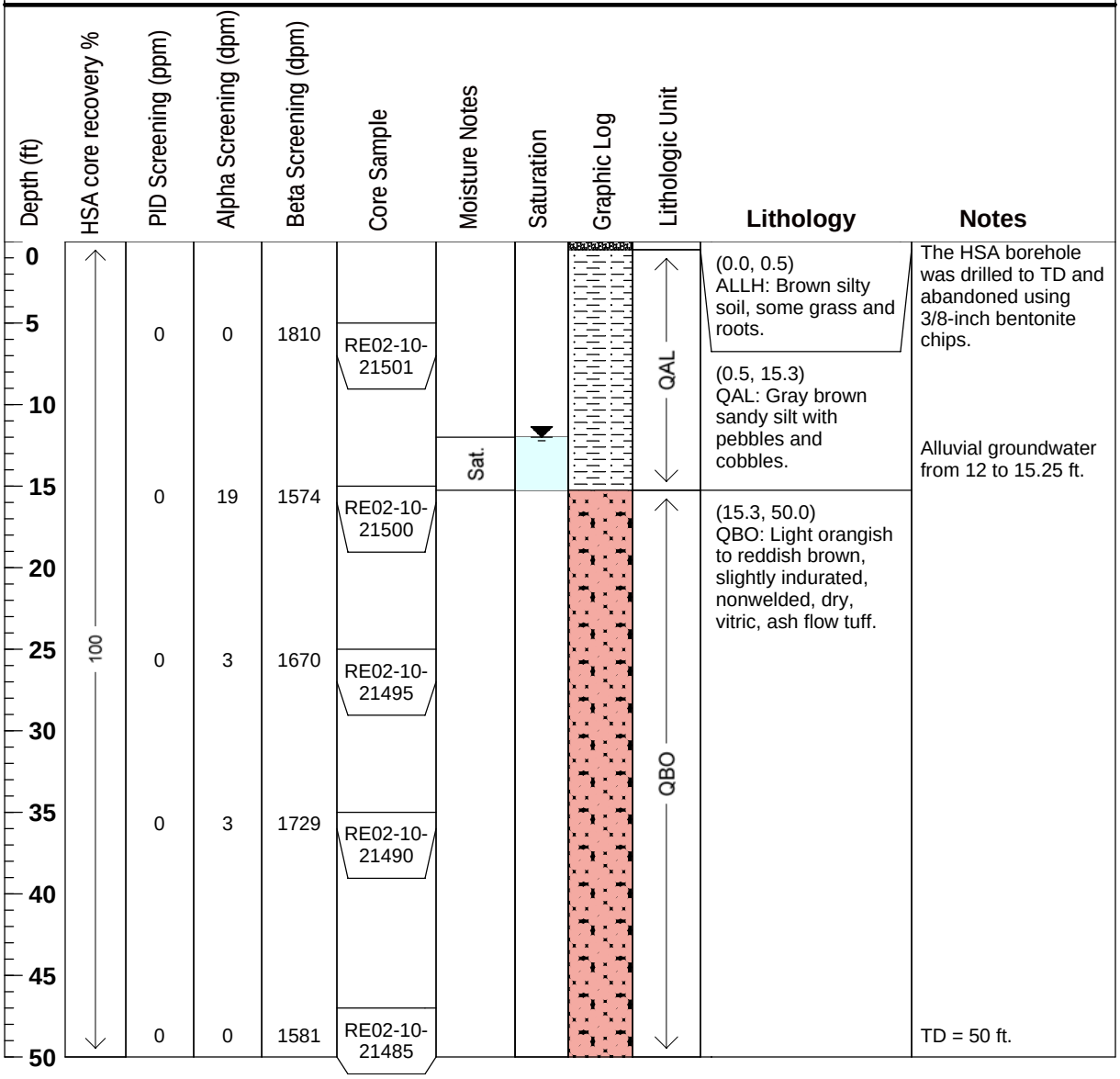
TA- 02 **SWMU/AOC:** 02-004(b-e), 02-011(d) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 12

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 15.25

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612292 **IWP Location ID:** 20 **Date:** 9/21/10 -9/24/10

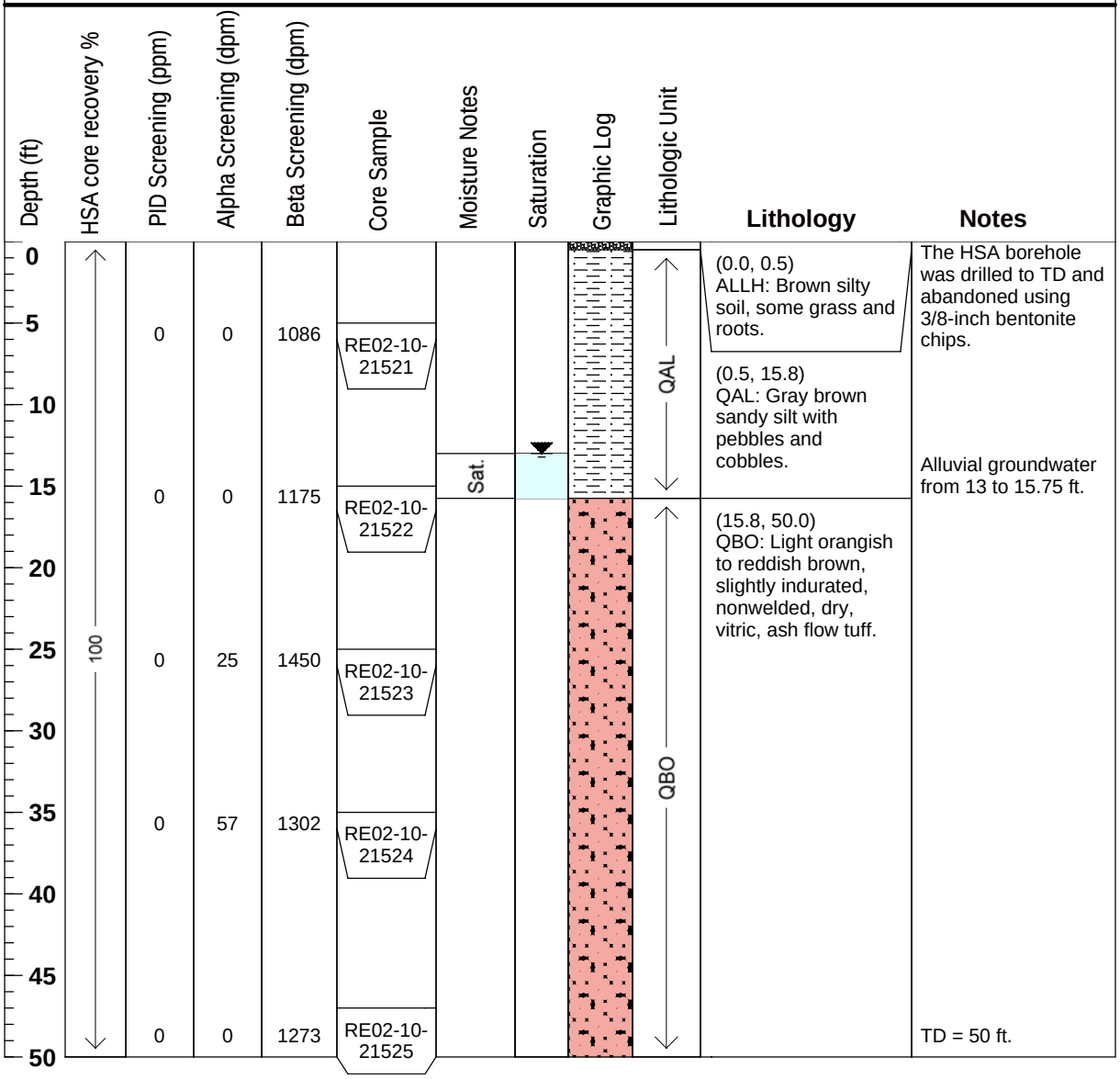
TA- 2 **SWMU/AOC:** 02-006(e), 02-011(a)(vii,viii) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 13

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 15.75

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612293 **IWP Location ID:** 17 **Date:** 9/29/10 - 10/05/10

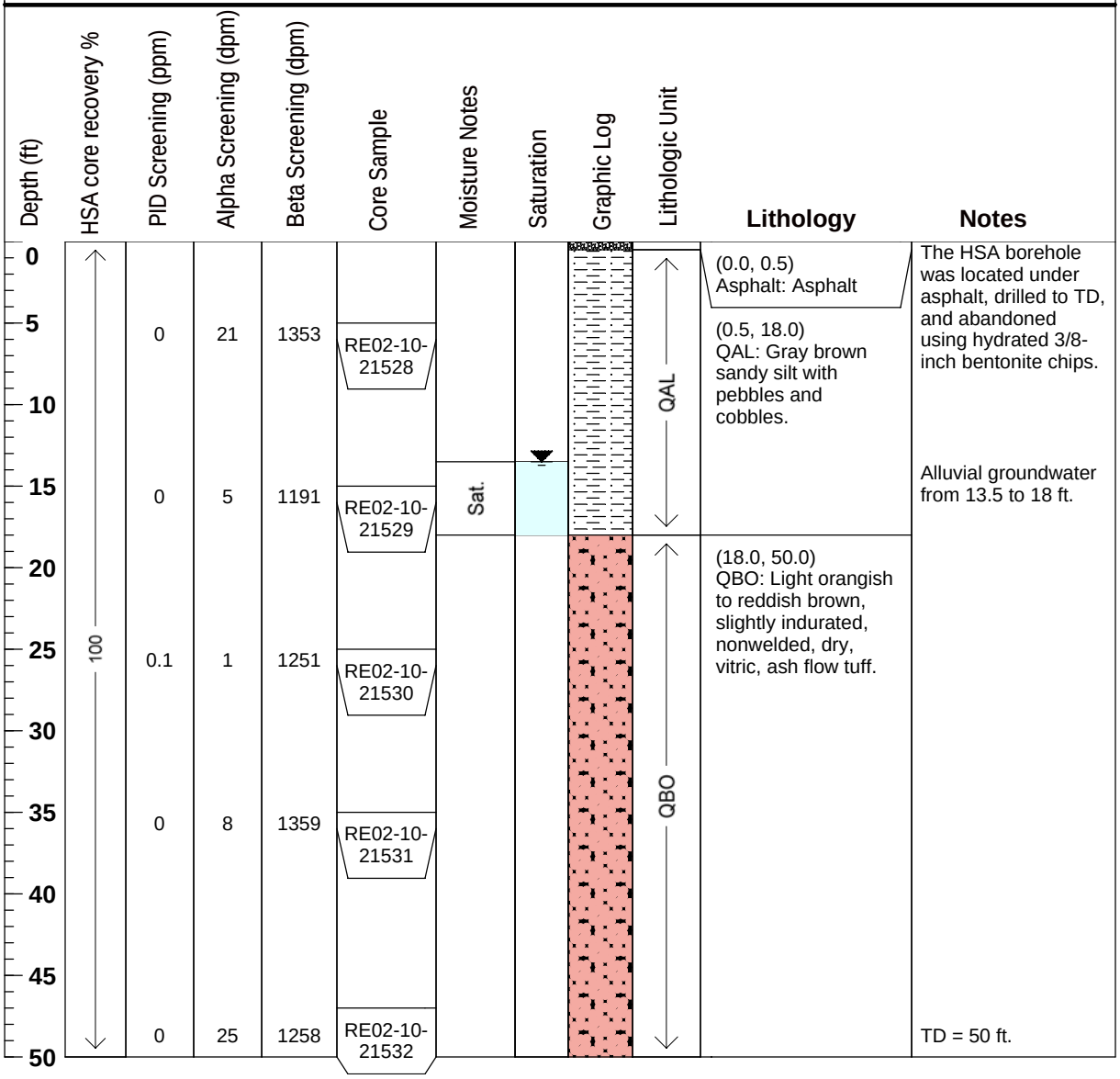
TA- 2 **SWMU/AOC:** 02-004(g) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 13.5

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 18

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612325 **IWP Location ID:** 25 **Date:** 8/17/10 - 8/19/10

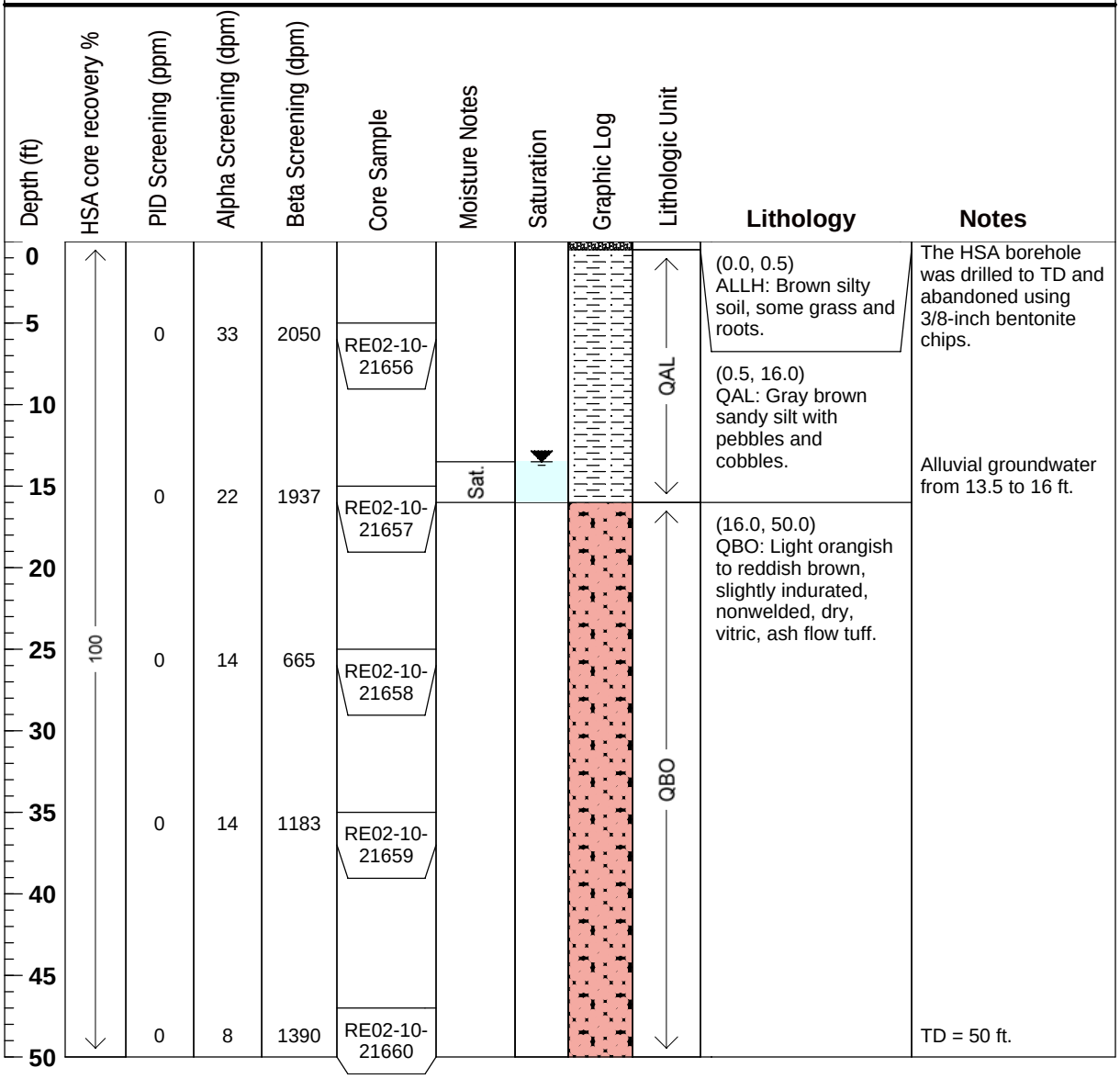
TA- 2 **SWMU/AOC:** 02-004(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 13.5

LATA Sampler: Jon Marin **Depth to soil/tuff interface (ft):** 16

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612326 **IWP Location ID:** 26 **Date:** 9/9/10 - 9/10/10

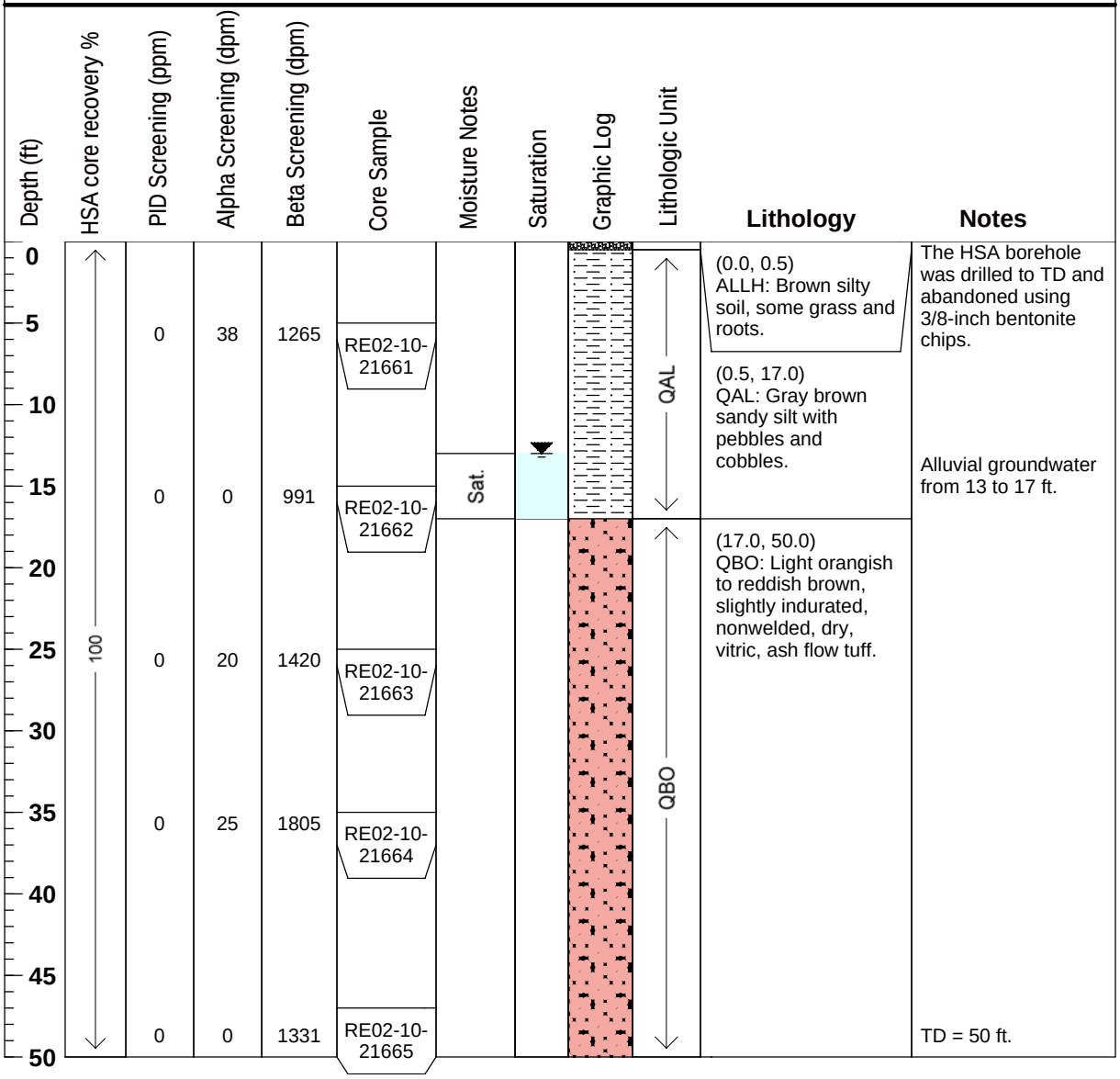
TA- 2 **SWMU/AOC:** 02-004(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 13

LATA Sampler: Jon Marin **Depth to soil/tuff interface (ft):** 17

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612327 **IWP Location ID:** 24 **Date:** 9/10/10 - 9/13/10

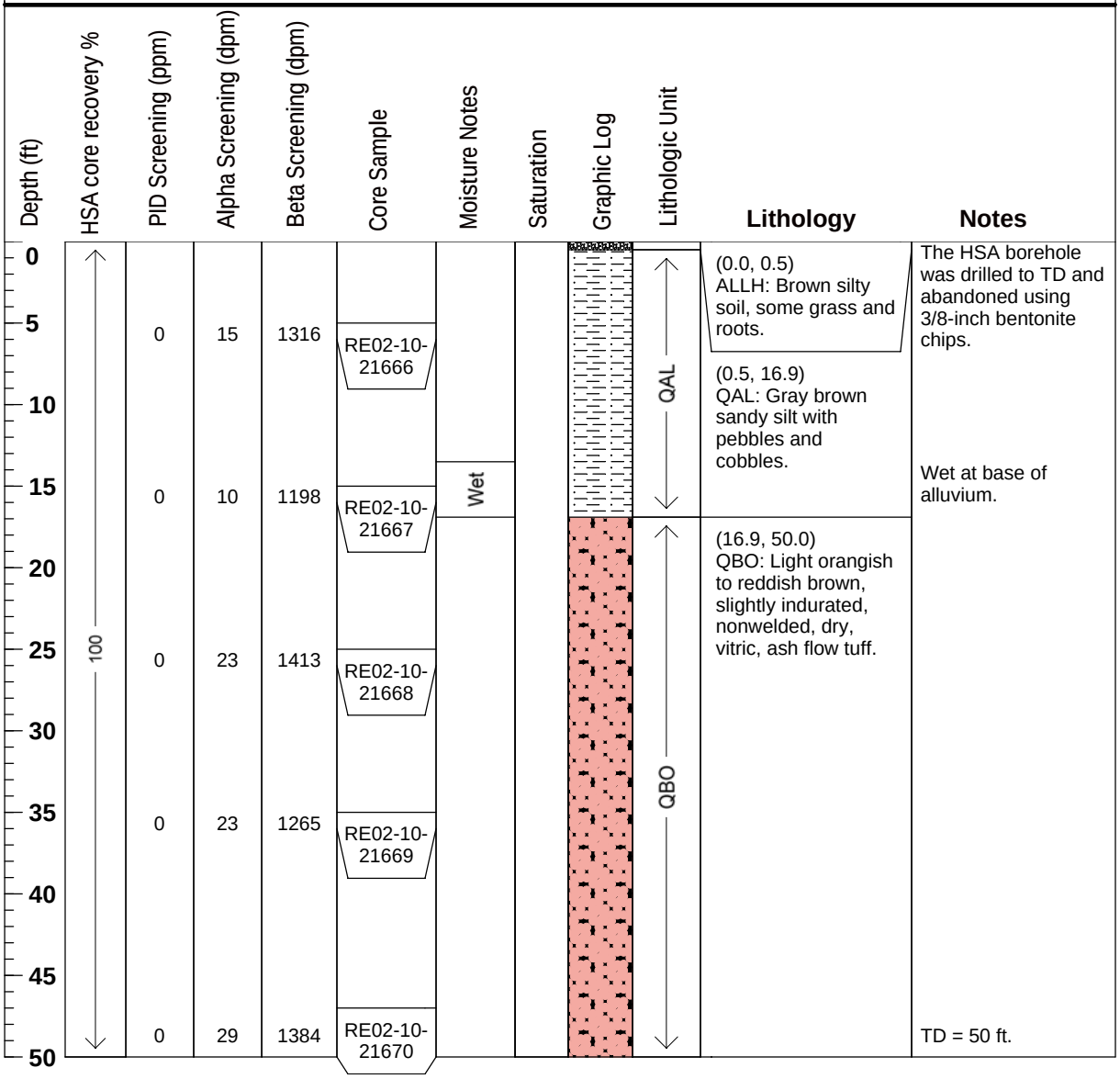
TA- 2 **SWMU/AOC:** 02-004(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** none

LATA Sampler: Jon Marin **Depth to soil/tuff interface (ft):** 16.9

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612328 **IWP Location ID:** 23 **Date:** 9/15/10 - 9/16/10

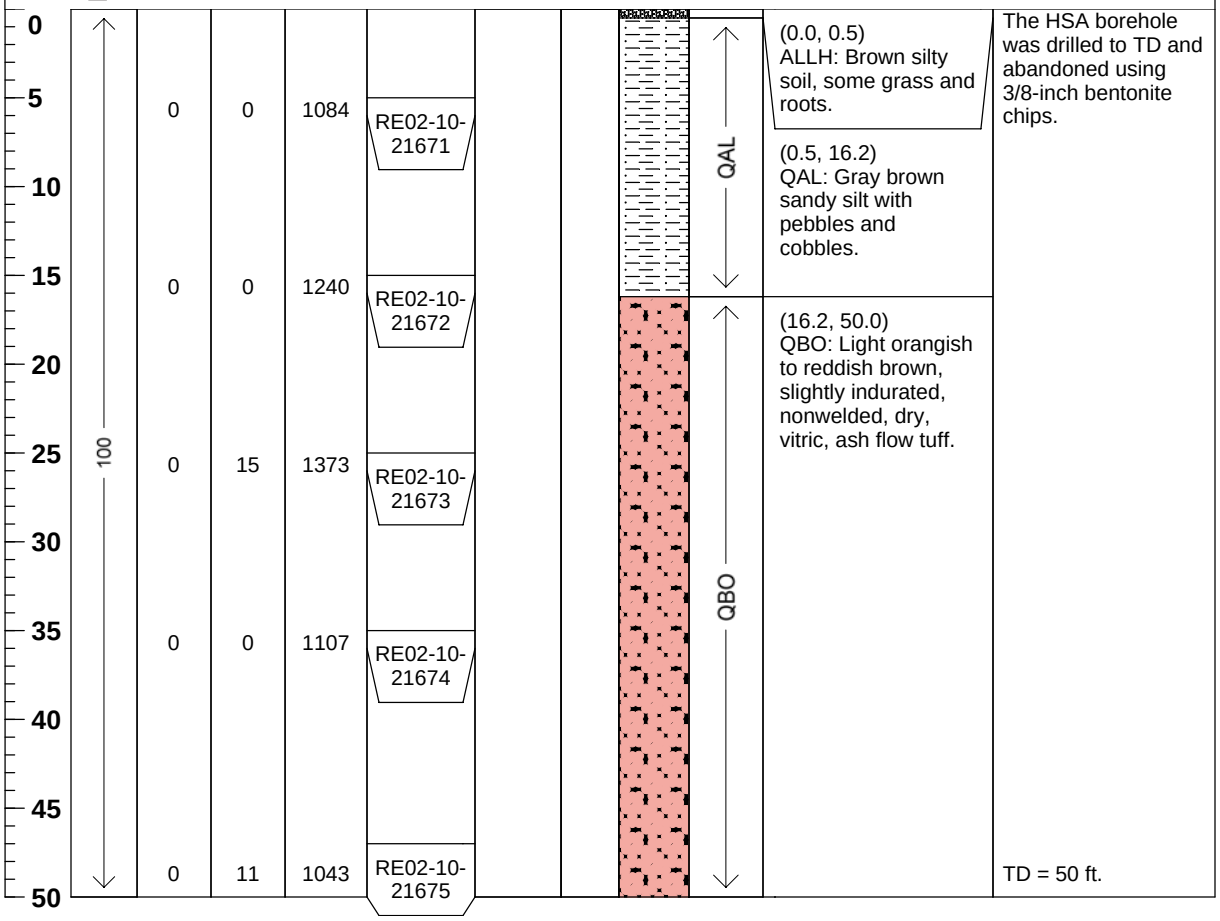
TA- 2 **SWMU/AOC:** 02-004(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Jon Marin **Depth to soil/tuff interface (ft):** 16.2

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612345 **IWP Location ID:** 22 **Date:** 8/18/10 - 8/19/10

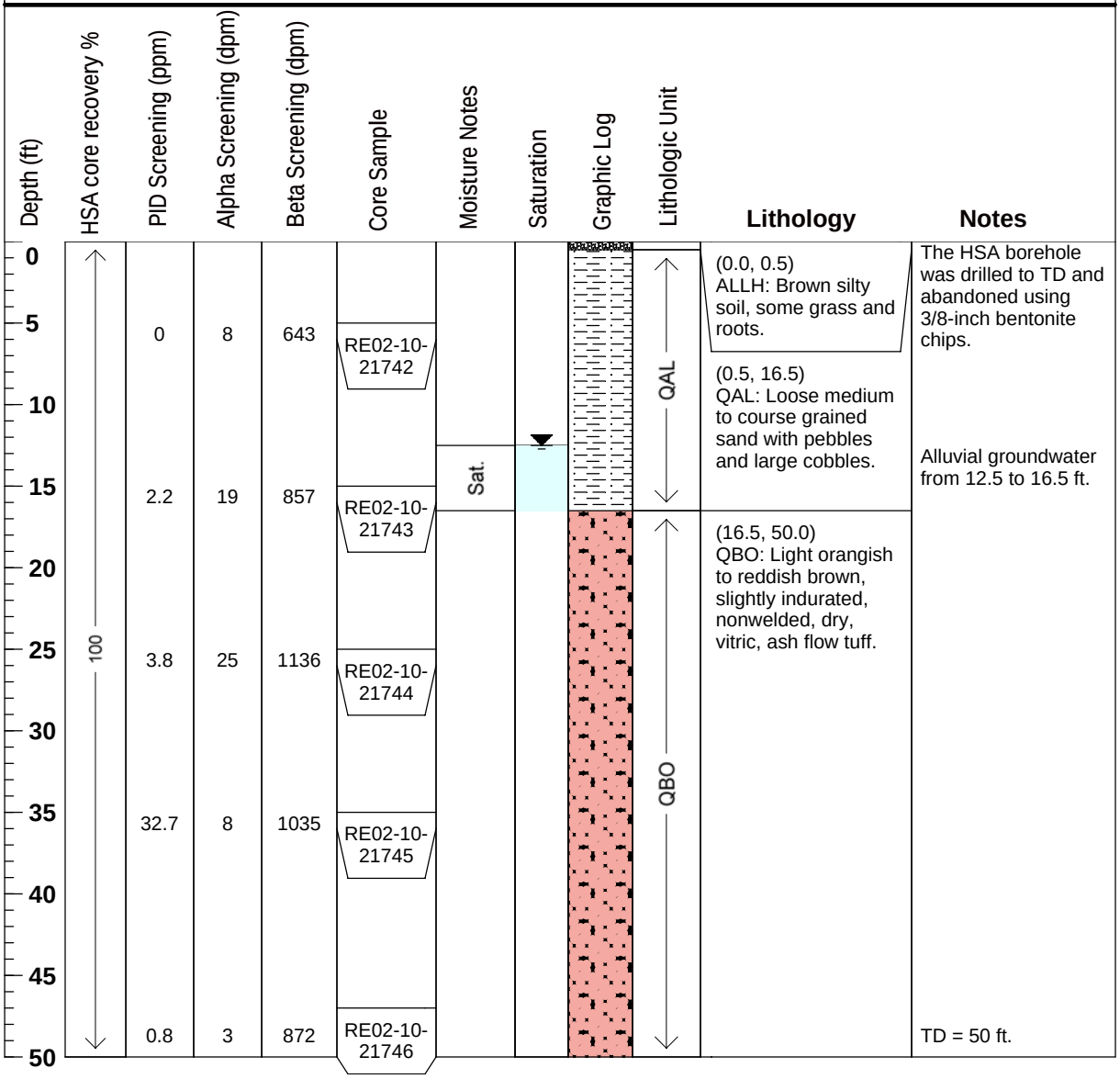
TA- 2 **SWMU/AOC:** 02-006(c), 02-011(a)(ix) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 12.5

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 16.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612346 **IWP Location ID:** 19 **Date:** 9/16/10 - 9/20/10

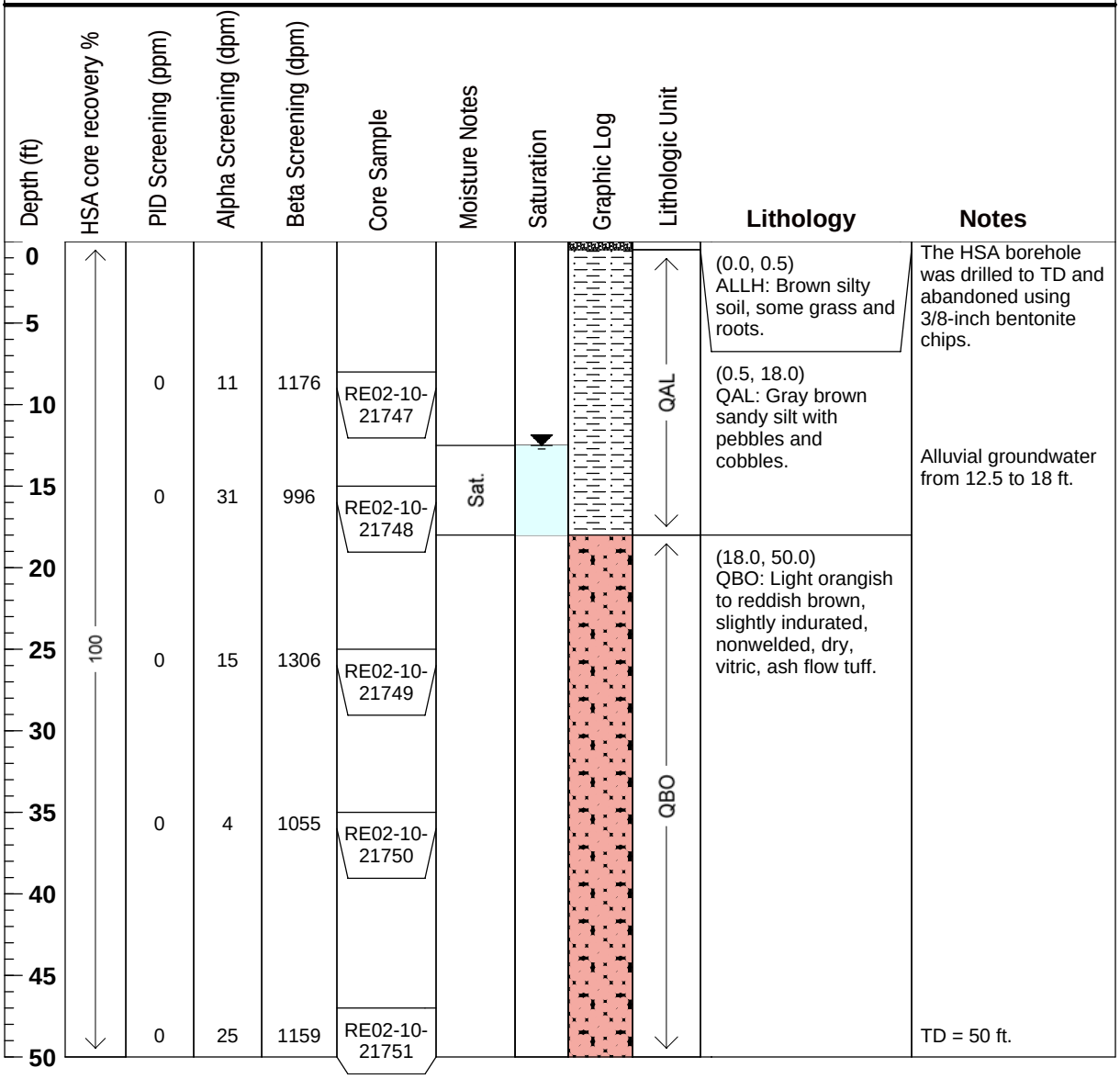
TA- 2 **SWMU/AOC:** 02-004(a,f), 02-011(a)(iv) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 12.5

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 18

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612347 **IWP Location ID:** 15 **Date:** 9/21/10 - 9/22/10

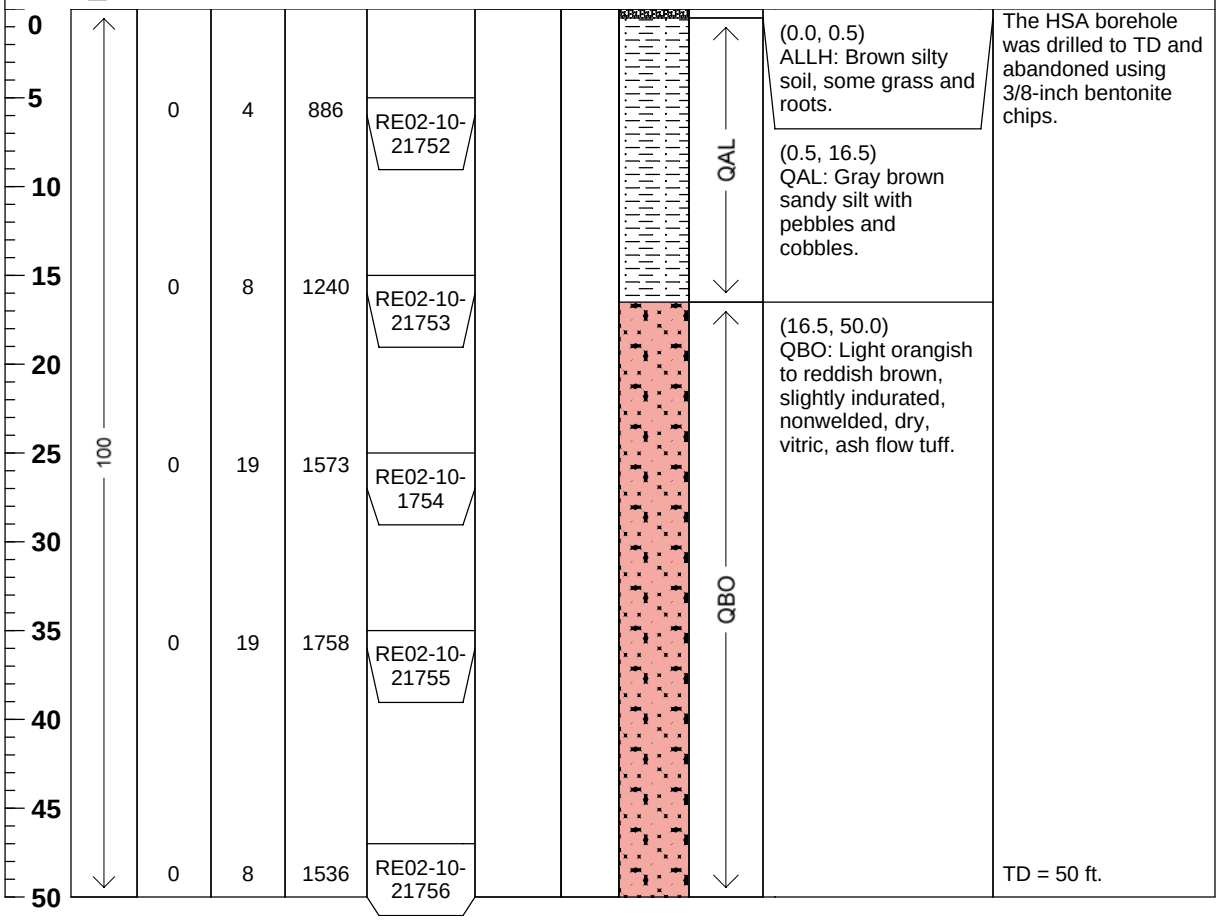
TA- 2 **SWMU/AOC:** 02-004(f), 02-011(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 16.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612348 **IWP Location ID:** 27 **Date:** 8/17/2010

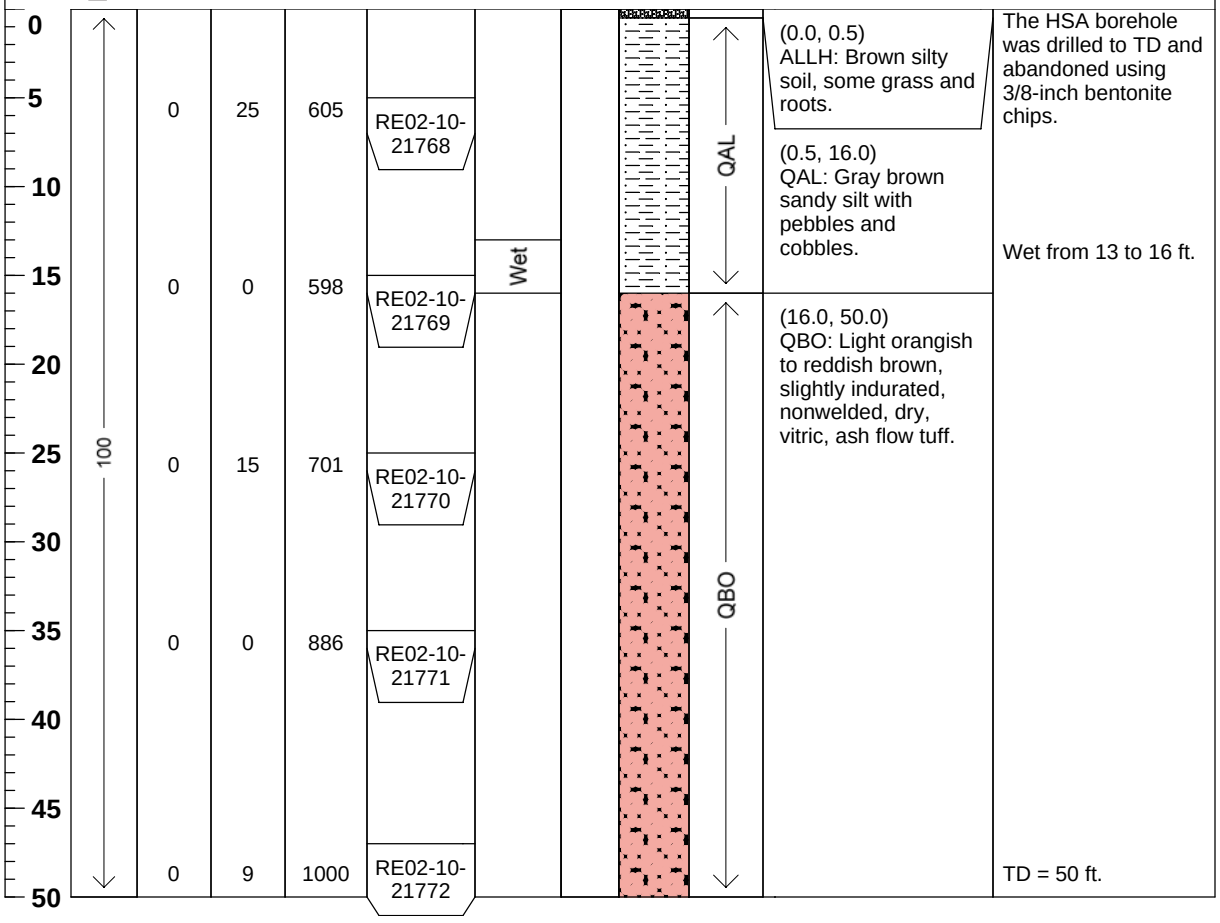
TA- 2 **SWMU/AOC:** 02-009(d), 02-003(a), 02-011(a)(x) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 16

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612374 **IWP Location ID:** 21 **Date:** 9/27/2010

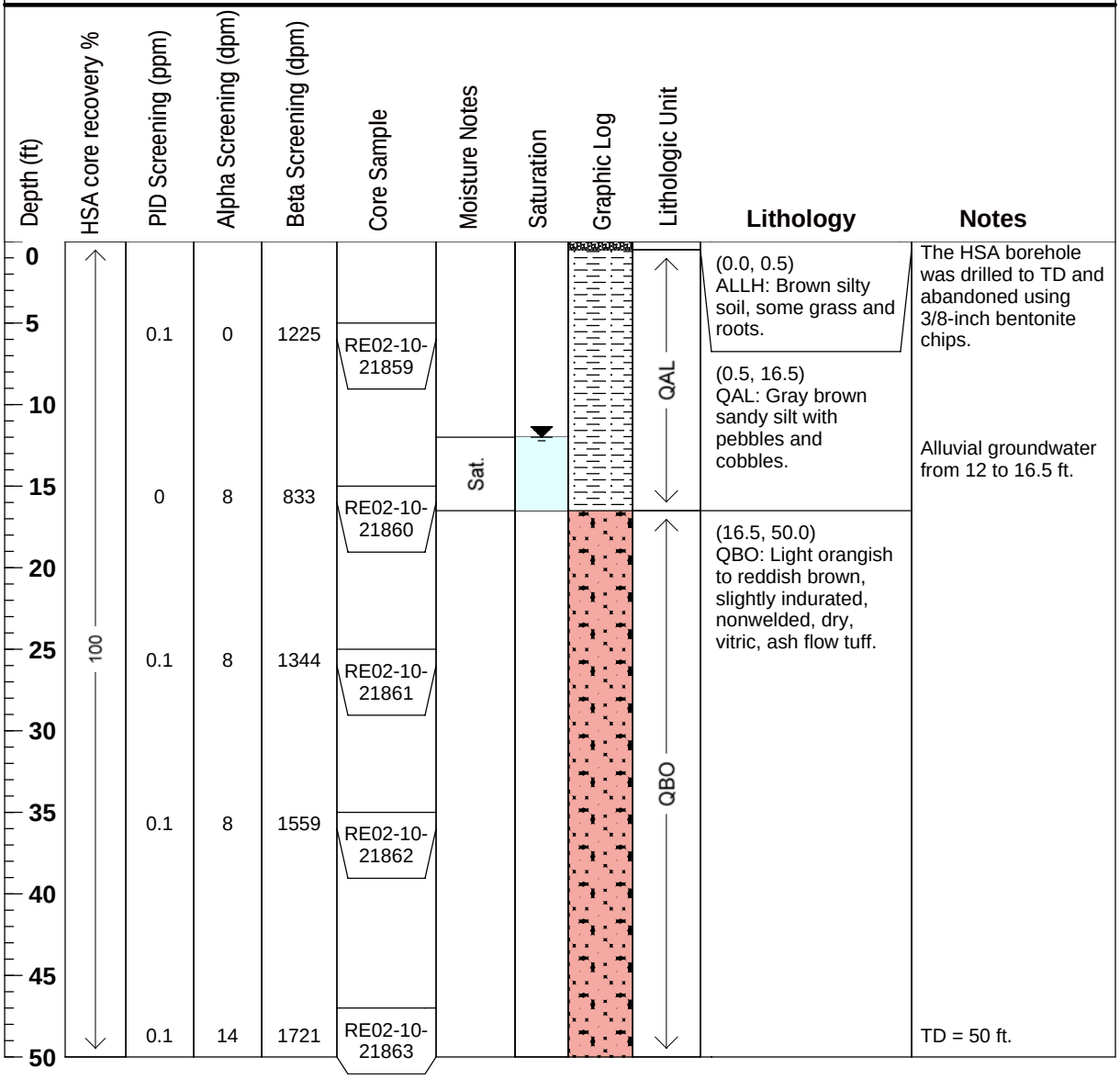
TA- 2 **SWMU/AOC:** 02-006(b), 02-012 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 12

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 16.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612388 **IWP Location ID:** 30 **Date:** 9/3/10 - 9/7/10

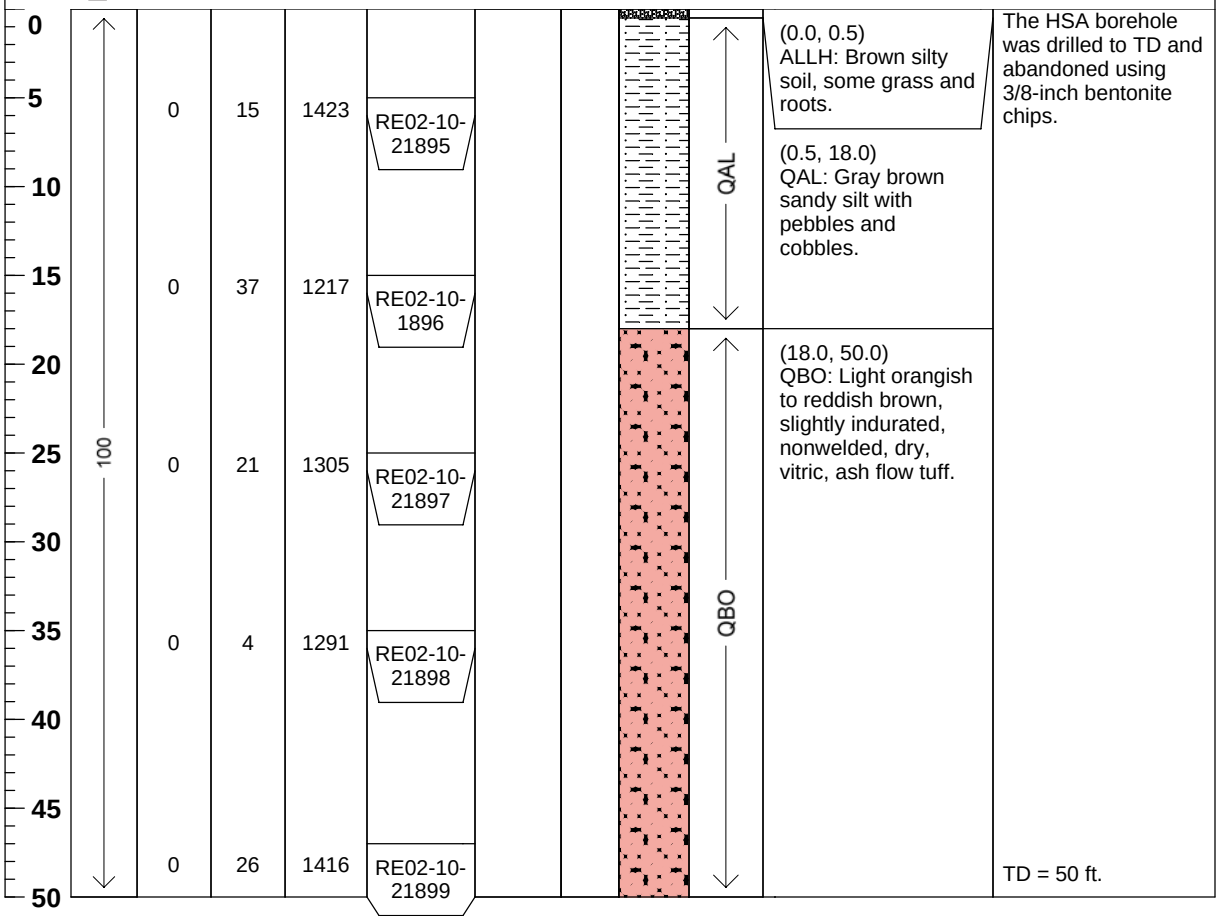
TA- 2 **SWMU/AOC:** 02-009(b) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Jon Marin **Depth to soil/tuff interface (ft):** 18

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612389 **IWP Location ID:** 31 **Date:** 10/6/2010 - 10/13/10

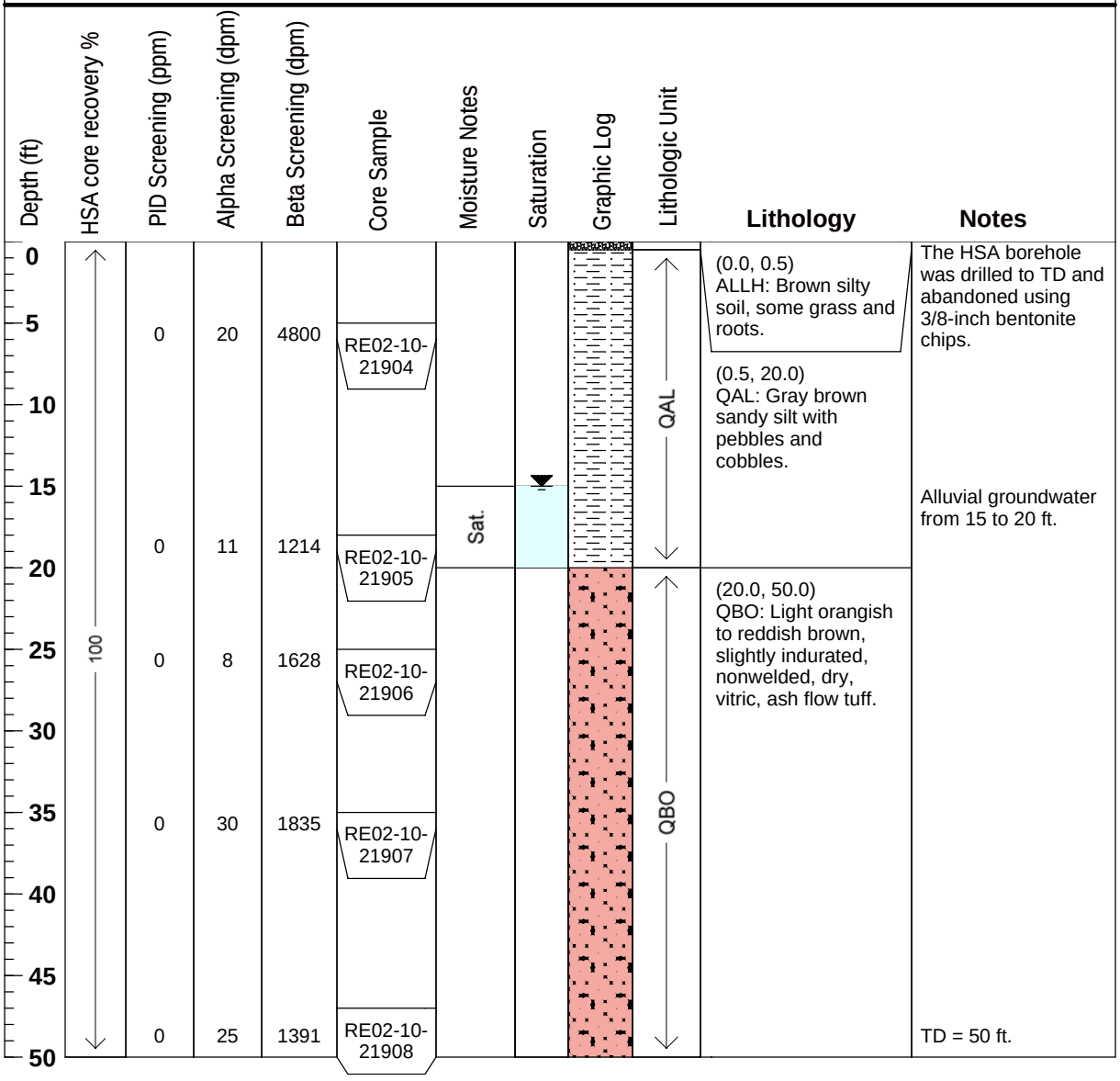
TA- 2 **SWMU/AOC:** 02-003(a,e), 02-011(b) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 15

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 20

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612390 **IWP Location ID:** 32 **Date:** 9/8/2010

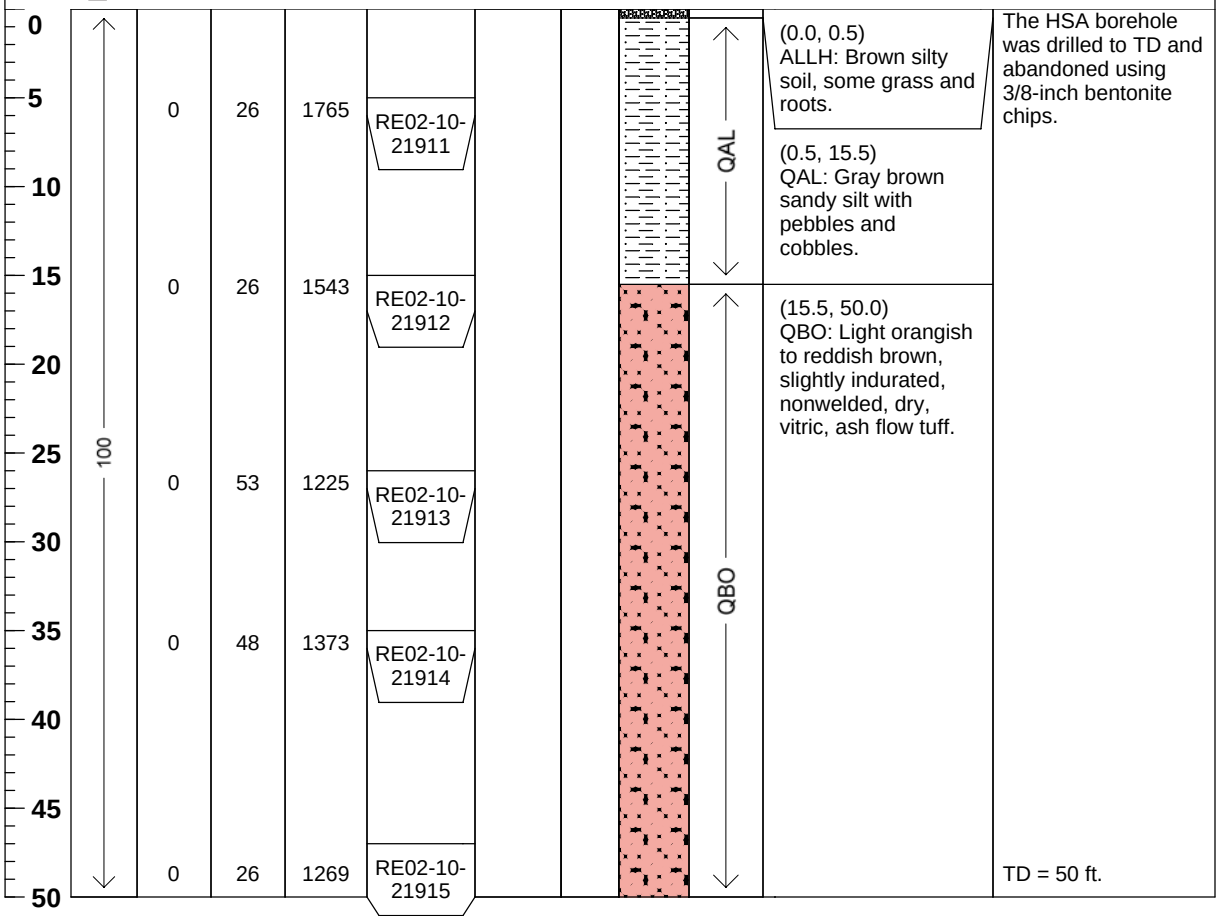
TA- 2 **SWMU/AOC:** 02-003(b),02-008(c)(i),02-011(b),02-007 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 15.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612391 **IWP Location ID:** 33 **Date:** 9/7/2010

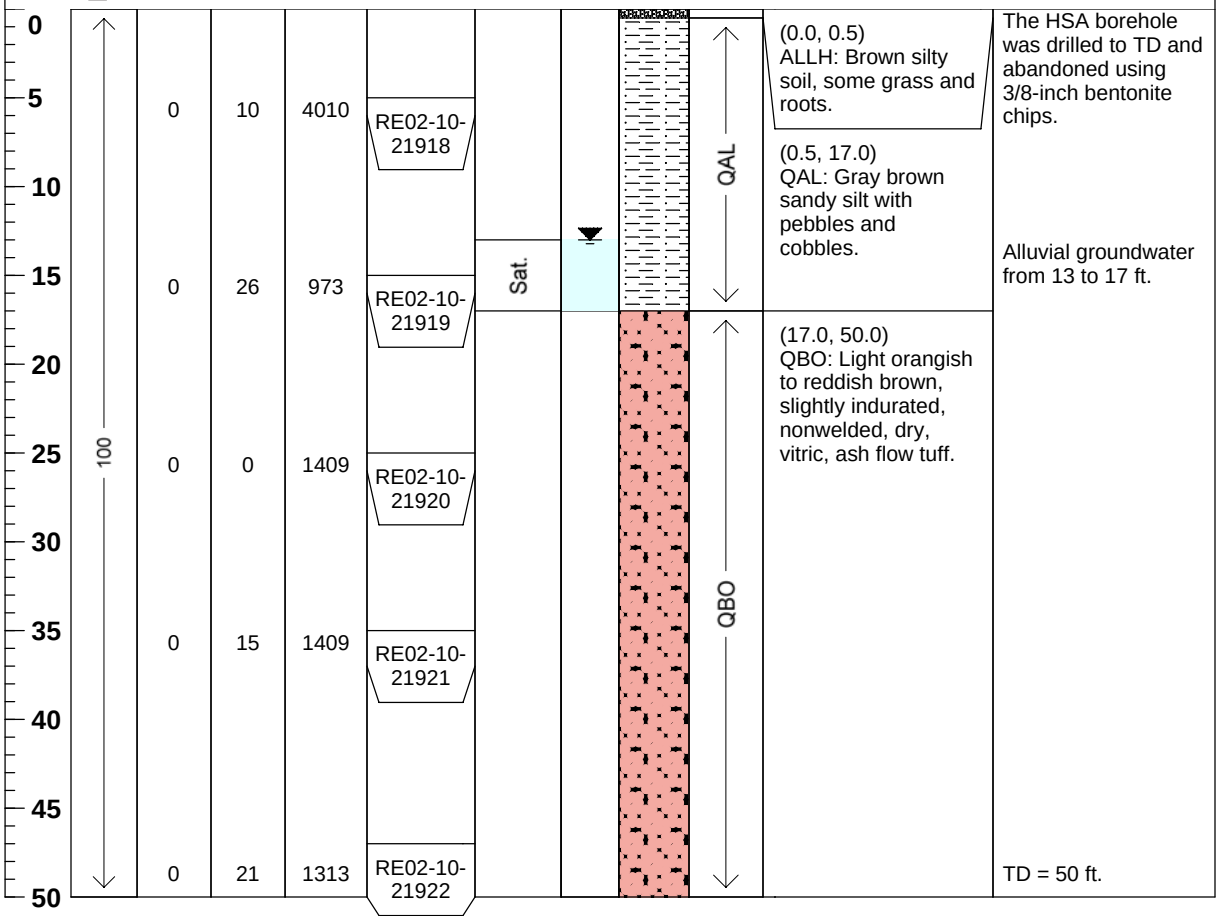
TA- 2 **SWMU/AOC:** 02-009(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 13

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 17

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612392 **IWP Location ID:** 34 **Date:** 9/9/10 - 9/10/10

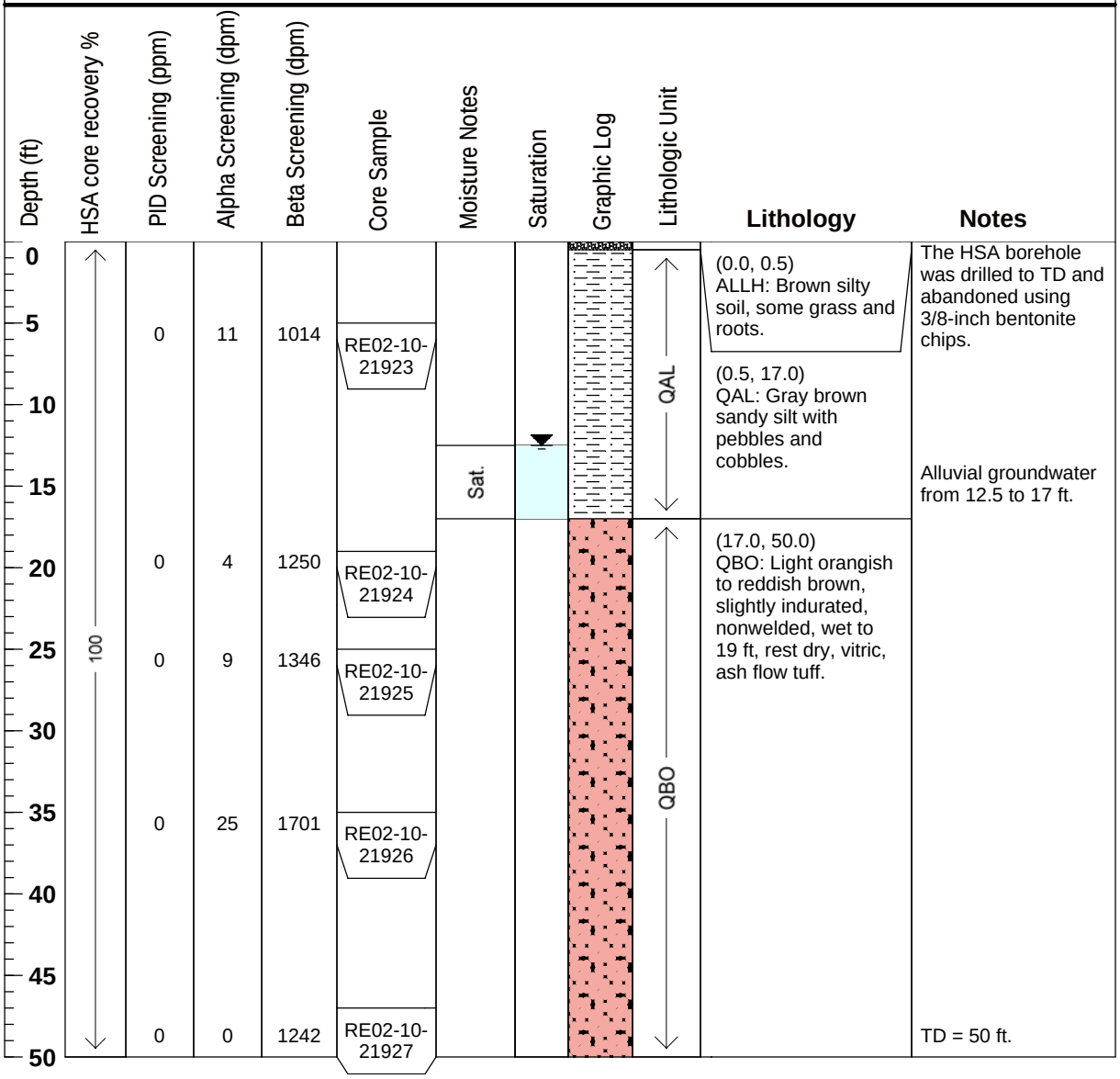
TA- 2 **SWMU/AOC:** 02-009(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 12.5

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 17

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612393 **IWP Location ID:** 35 **Date:** 9/13/10 - 9/14/10

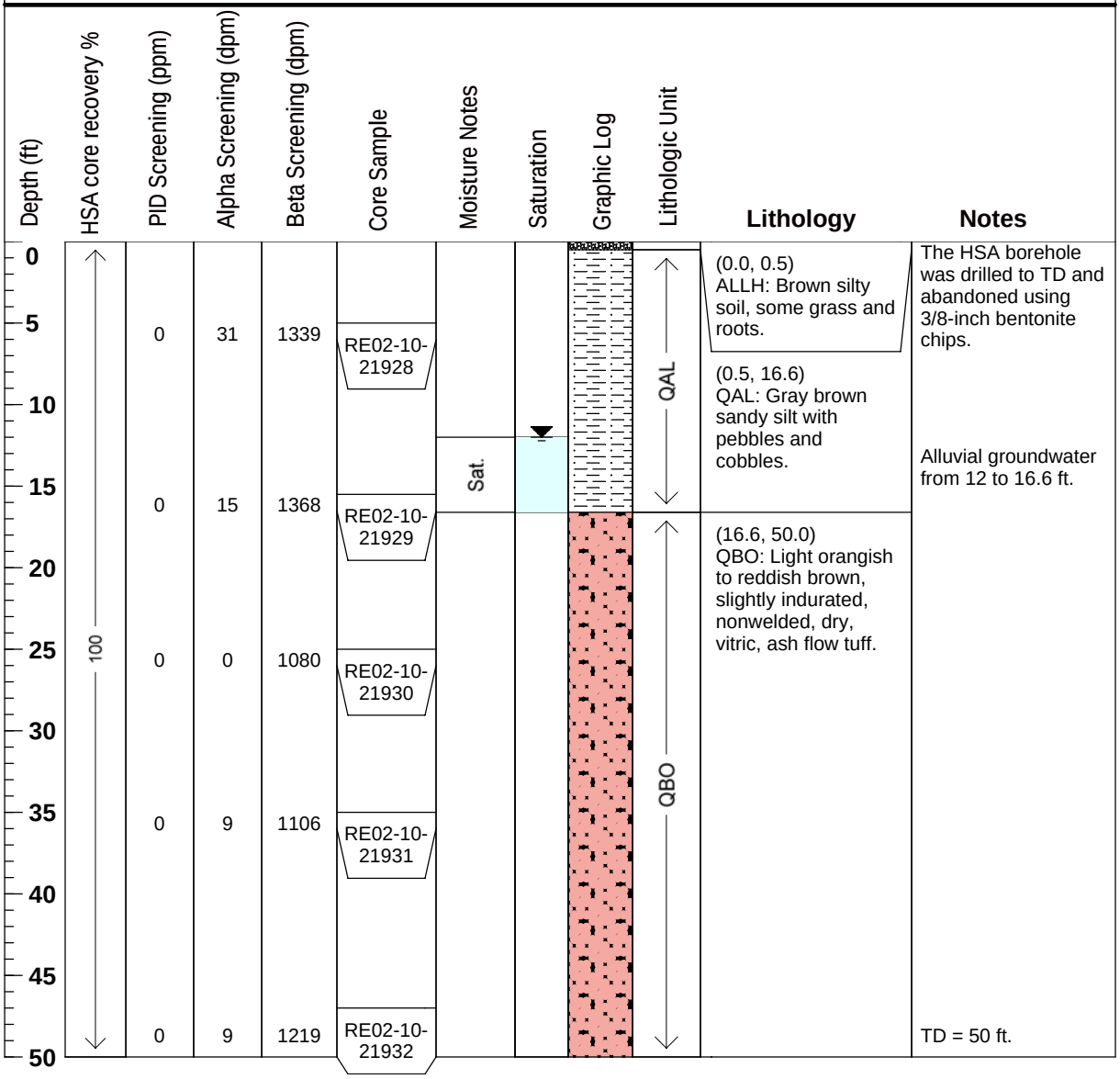
TA- 2 **SWMU/AOC:** 02-009(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 12

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 16.6

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612403 **IWP Location ID:** 50 **Date:** 9/27/2010

TA- 2 **SWMU/AOC:** 02 core area **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 6.5

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** NA

Sampling equipment: HSA core barrel **Total Depth (ft):** 10

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	16	2240	RE02-10-21964				QAL	(0.0, 0.5) ALLH: Brown silty soil, some grass and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	0	1239	RE02-10-21965	Sat.				(0.5, 10.0) QAL: Gray brown sandy silt with pebbles and cobbles.	
10		0	0	877	RE-02-10-21966						TD = 10 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612404 **IWP Location ID:** 49 **Date:** 9/27/2010

TA- 2 **SWMU/AOC:** 02 core area **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** NA

Sampling equipment: HSA core barrel **Total Depth (ft):** 10

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	37	2370	RE02-10-21967				QAL	(0.0, 0.5) ALLH: Brown silty soil, some grass and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	3	1025	RE02-10-21968						
10		0	8	988	RE02-10-21969					(0.5, 10.0) QAL: Gray brown sandy silt with pebbles and cobbles.	TD = 10 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612415 **IWP Location ID:** 68 **Date:** 10/6/2010

TA- 2 **SWMU/AOC:** 02 core area **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Riley Evans **Depth to soil/tuff interface (ft):** NA

Sampling equipment: HSA core barrel **Total Depth (ft):** 10

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	68	1337	RE02-10-22001				QAL	(0.0, 0.5) ALLH: Brown silty soil, some grass and roots.	The 0 to 0.5 ft and 4 to 5 ft samples were collected using a hand auger.
5		0	13	1590	RE02-10-22000						
10		0.1	46	1179	RE02-10-22002					(0.5, 10.0) QAL: Gray brown sandy silt with pebbles and cobbles.	TD = 10 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612416 **IWP Location ID:** 69 **Date:** 10/6/2010

TA- 2 **SWMU/AOC:** 02 core area **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** NA

Sampling equipment: HSA core barrel **Total Depth (ft):** 10

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0.1	67	1492	RE02-10-22003				QAL	(0.0, 0.5) ALLH: Brown silty soil, some grass and roots.	The 0 to 0.5 ft and 4 to 5 ft samples were collected using a hand auger.
5		0	55	1213	RE02-10-22004					(0.5, 10.0) QAL: Gray brown sandy silt with pebbles and cobbles.	
10		0.1	20	1468	RE02-10-22005						TD = 10 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612420 **IWP Location ID:** 36 **Date:** 9/14/10 - 9/15/10

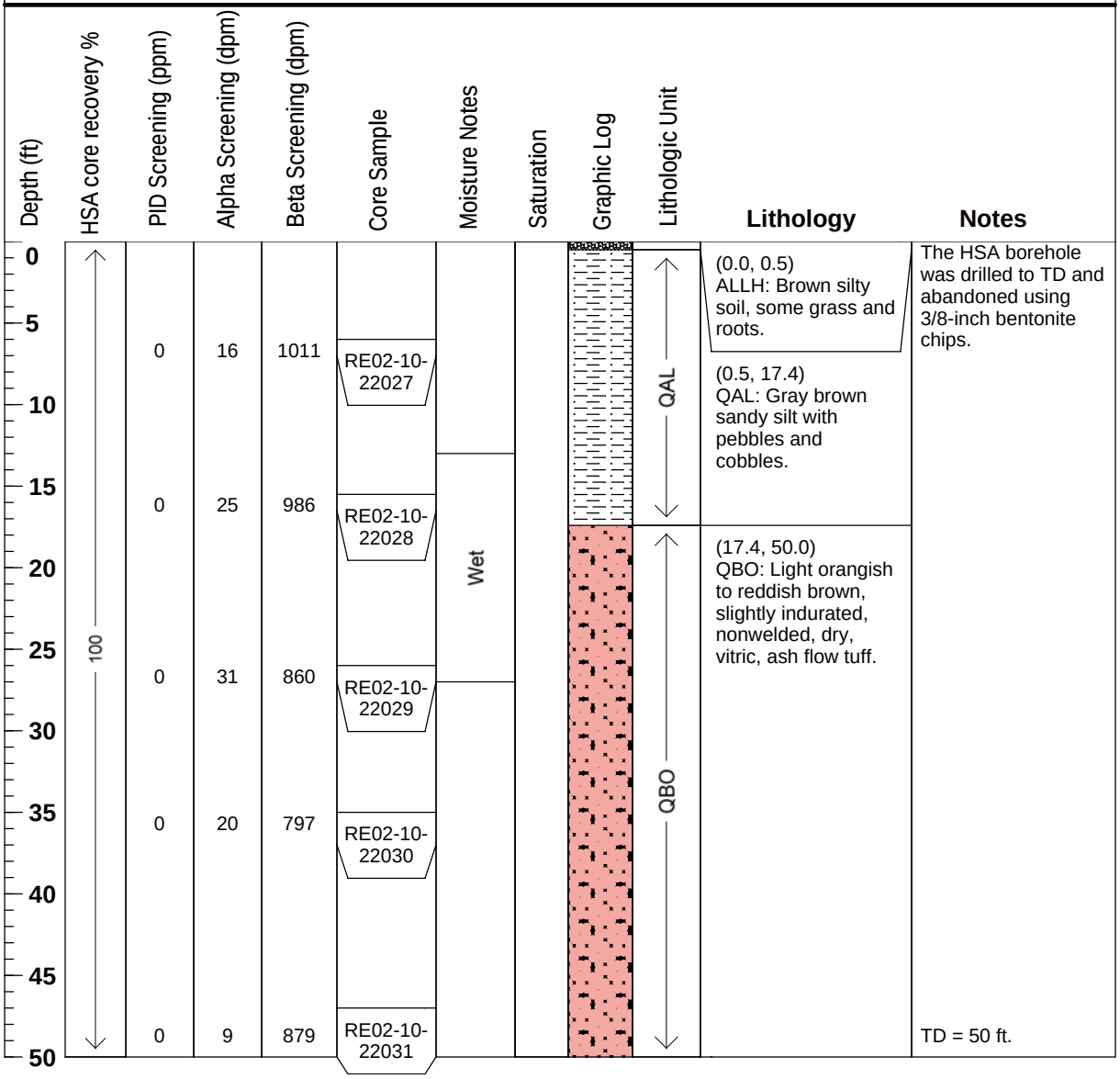
TA- 2 **SWMU/AOC:** 02-003(c), 02-009(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 17.4

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612421 **IWP Location ID:** 37 **Date:** 9/16/10 - 9/20/10

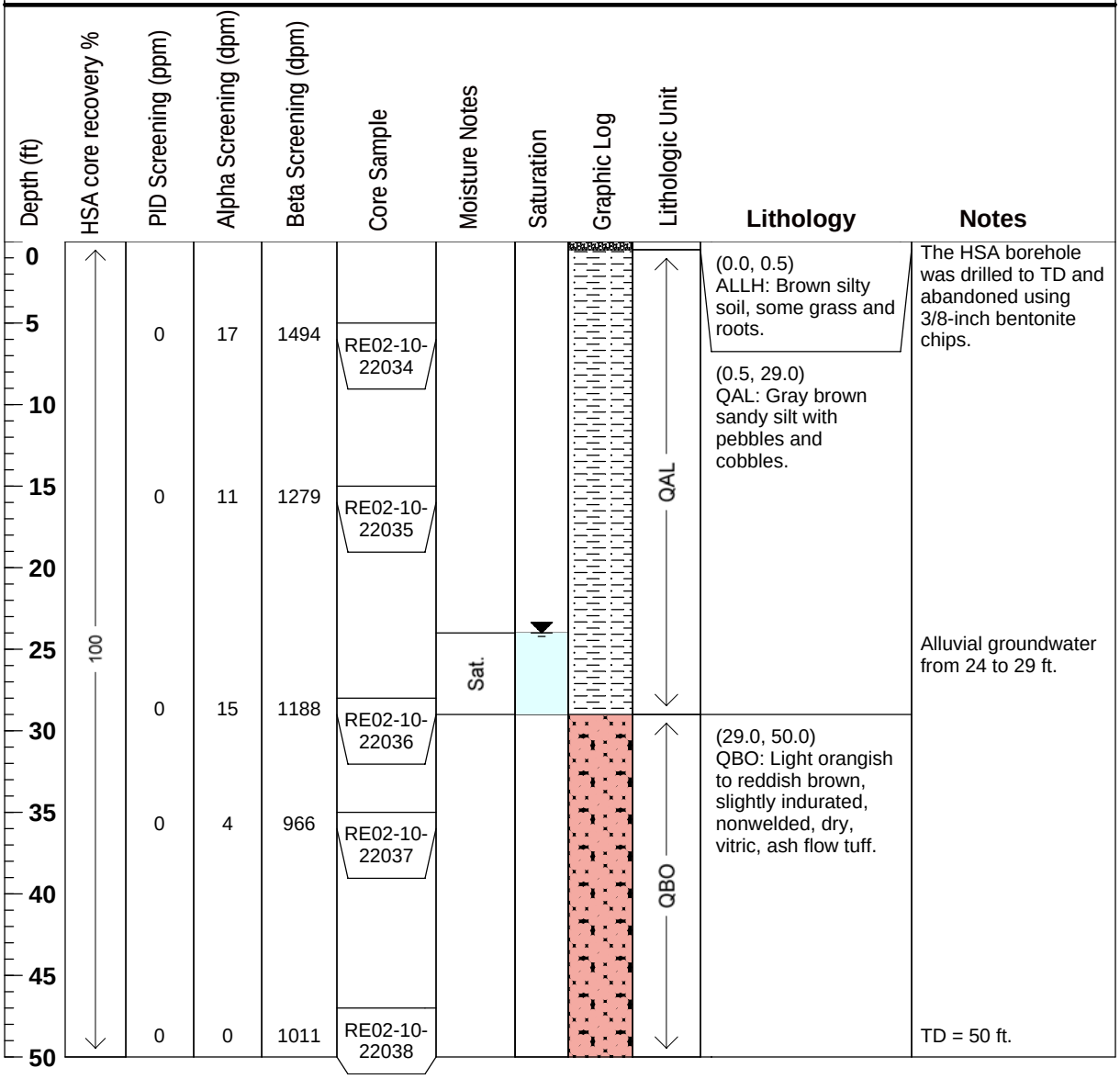
TA- 2 **SWMU/AOC:** 02-009(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** 24

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 29

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612422 **IWP Location ID:** 38 **Date:** 9/23/2010

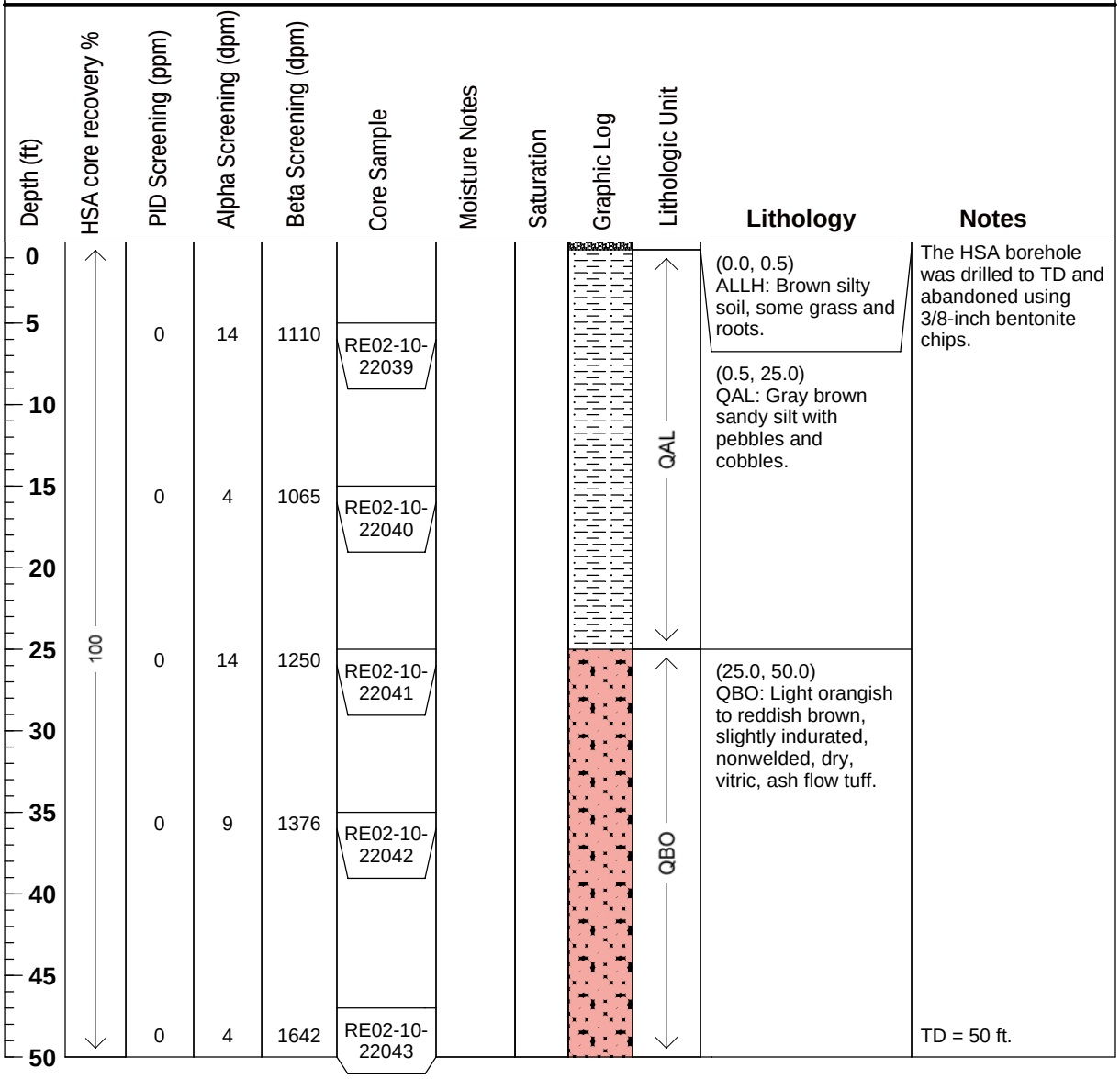
TA- 2 **SWMU/AOC:** 02-009(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 25

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612463 **IWP Location ID:** 28 **Date:** 8/12/10 - 8/16/10

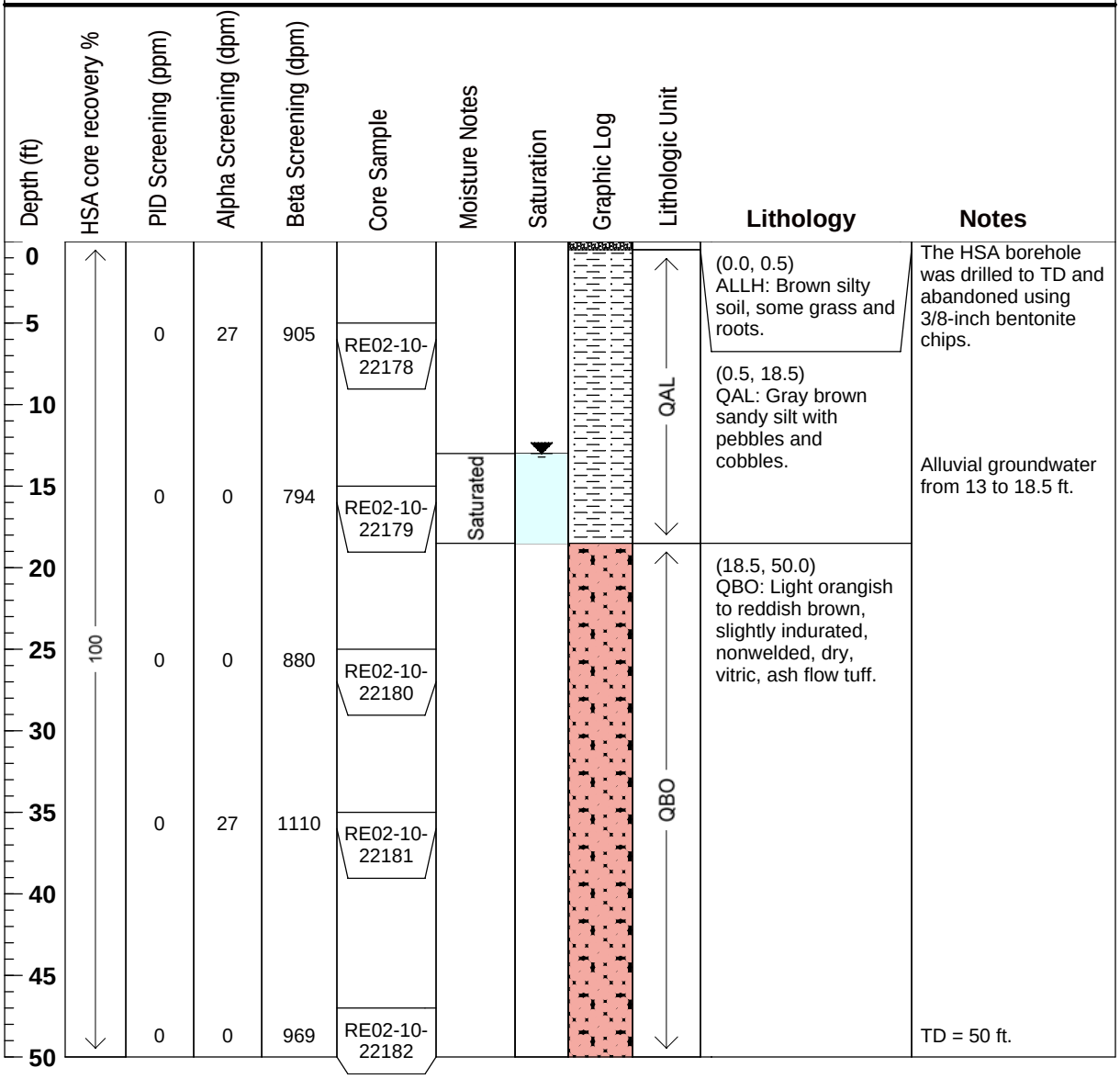
TA- 2 **SWMU/AOC:** 02-010, 02-006(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 13

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 18.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612640 **IWP Location ID:** 6 **Date:** 11/1/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	12	1255	RE02-10-23289				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles, cobbles, and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	12	1255	RE02-10-23290					(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	12	1255	RE02-10-23291						
20											
25		0	12	1255	RE02-10-23292						
30											
35		0	12	1255	RE02-10-23293						
40											
45											
50		0	12	1255	RE02-10-23294						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612641 **IWP Location ID:** 7 **Date:** 11/1/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	12	1255	RE02-10-23295				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles, cobbles, and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	22	2080	RE02-10-23296					(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	22	2080	RE02-10-23297						
20											
25		0	22	2080	RE02-10-23298						
30											
35		0	22	2080	RE02-10-23299						
40											
45											
50		0	22	2080	RE02-10-23300						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612642 **IWP Location ID:** 9 **Date:** 11/2/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	22	2080	RE02-10-23301				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles, cobbles, and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	22	2080	RE02-10-23302					(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	22	2080	RE02-10-23303						
20											
25		0	22	2080	RE02-10-23304						
30											
35		0	22	2080	RE02-10-23305						
40											
45											
50		0	22	2080	RE02-10-23306						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612643 **IWP Location ID:** 10 **Date:** 11/3/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	0	198	RE02-10-23307				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles and cobbles.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	0	198	RE02-10-23308					(0.5, 50.0) QBT3: Light orangish to reddish brown, slightly indurated, nonwelded, dry, vitric, ash flow tuff.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	0	198	RE02-10-23309						
20											
25		0	0	198	RE02-10-23310						
30											
35		0	0	198	RE02-10-23311						
40											
45											
50		0	0	198	RE02-10-23312						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612644 **IWP Location ID:** 3 **Date:** 11/3/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	0	198	RE02-10-23313				QBT3	(0.0, 1.0) ALLH: Gray brown sandy silt with pebbles and cobbles.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	0	198	RE02-10-23314					(1.0, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	0	198	RE02-10-23315						
20											
25		0	0	198	RE02-10-23316						
30											
35		0	0	198	RE02-10-23317						
40											
45											
50		0	0	198	RE02-10-23318						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612645 **IWP Location ID:** 11 **Date:** 11/4/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	2	631	RE02-10-23319				QBT3	(0.0, 1.0) ALLH: Gray brown sandy silt with pebbles and cobbles.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	2	631	RE02-10-23320						The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10										(1.0, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
15		0	2	631	RE02-10-23321						
20											
25		0	2	631	RE02-10-23322						
30											
35		0	2	631	RE02-10-23323						
40											
45											
50		0	2	631	RE02-10-23324						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612646 **IWP Location ID:** 4 **Date:** 11/5/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.6

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	20	294	RE02-10-23325				QBT3	(0.0, 0.6) ALLH: Gray brown sandy silt with pebbles, cobbles, and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	20	294	RE02-10-23326						The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10										(0.6, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
15		0	20	294	RE02-10-23327						
20											
25		0	20	294	RE02-10-23328						
30											
35		0	20	294	RE02-10-23329						
40											
45											
50		0	20	294	RE02-10-23330						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612647 **IWP Location ID:** 12 **Date:** 11/5/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 2.2

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	20	294	RE02-10-23331					(0.0, 2.2) ALLH: Gray brown sandy silt with pebbles and cobbles.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	20	294	RE02-10-23332						The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10										(2.2, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
15		0	20	294	RE02-10-23333						
20											
25		0	20	294	RE02-10-23334				QBT3		
30											
35		0	20	294	RE02-10-23335						
40											
45											
50		0	20	294	RE02-10-23336						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612648 **IWP Location ID:** 13 **Date:** 11/8/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	1	430	RE02-10-23337				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles and cobbles.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	1	430	RE02-10-23338						The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10										(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
15		0	1	430	RE02-10-23339						
20											
25		0	1	430	RE02-10-23340						
30											
35		0	1	430	RE02-10-3341						
40											
45											
50		0	1	430	RE02-10-23342						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612649 **IWP Location ID:** 8 **Date:** 11/9/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	26	367	RE02-10-23343				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles, cobbles, and roots.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	26	367	RE02-10-23344						The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10										(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
15		0	26	367	RE02-10-23345						
20											
25		0	26	367	RE02-10-23346						
30											
35		0	26	367	RE02-10-23347						
40											
45											
50		0	26	367	RE02-10-23348						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612650 **IWP Location ID:** 5 **Date:** 11/10/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	39	1583	RE02-10-23349				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles and cobbles.	The 0 to 0.5 ft sample was collected using a hand auger.
5		0	39	1583	RE02-10-23350					(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	39	1583	RE02-10-23351						
20											
25		0	39	1583	RE02-10-23352						
30											
35		0	39	1583	RE02-10-23353						
40											
45											
50		0	39	1583	RE02-10-23354						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612651 **IWP Location ID:** 1 **Date:** 11/09/2010

TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	26	367	RE02-10-23370				QBT3	(0.0, 0.5) ALLH: Gray brown sandy silt with pebbles and cobbles.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
5										(0.5, 50.0) QBT3: Light gray, non-indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
10											
15		0	26	367	RE02-10-23371						
20											
25		0	26	367	RE02-10-23372						
30											
35		0	26	367	RE02-10-23373						
40											
45											
50		0	26	367	RE02-10-23374						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612652 **IWP Location ID:** 2 **Date:** 11/4/2010

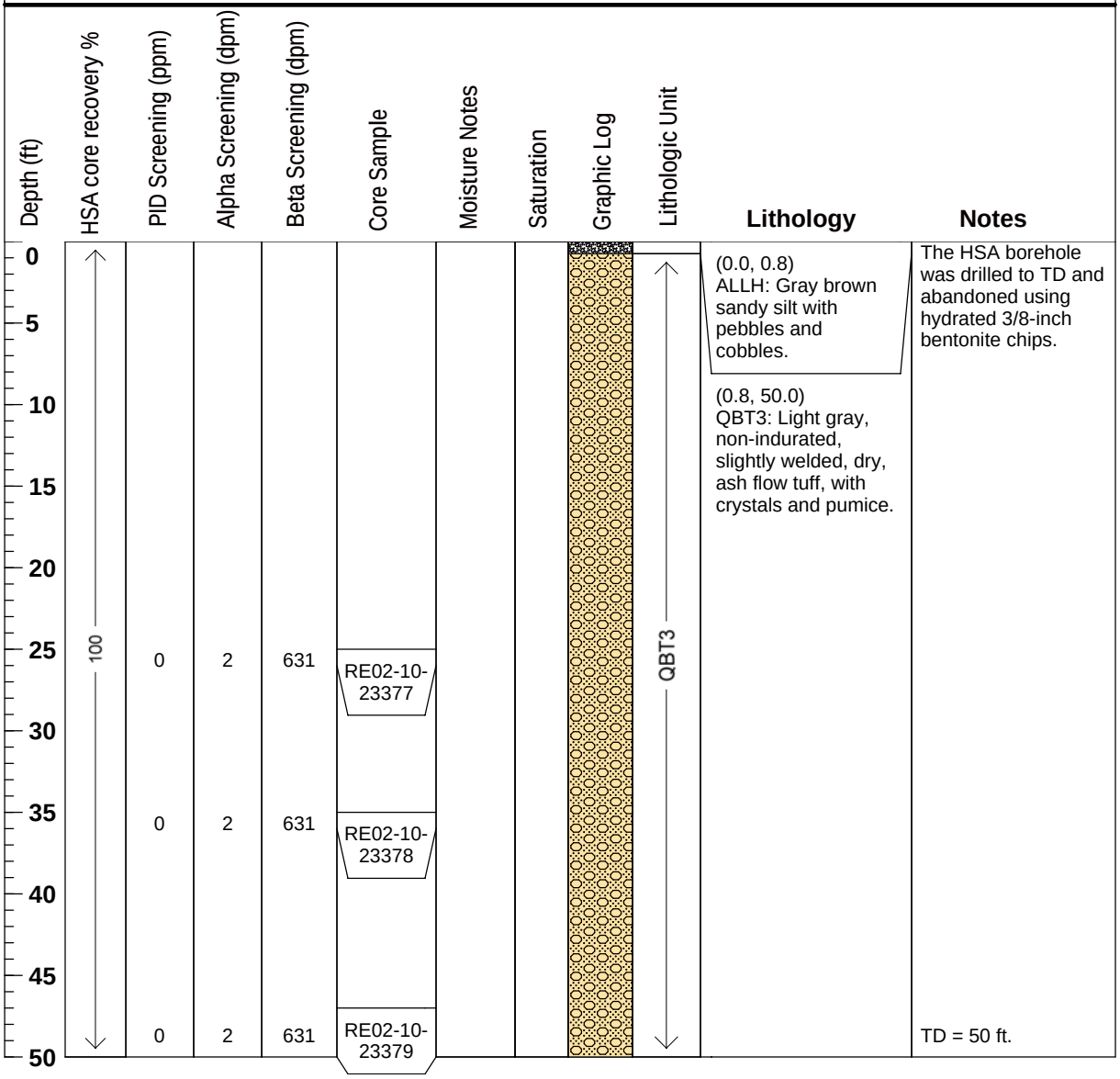
TA- 61 **SWMU/AOC:** 02-006(a) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 0.75

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 02-612982 **IWP Location ID:** 71 **Date:** 9/29/10 - 9/30/10

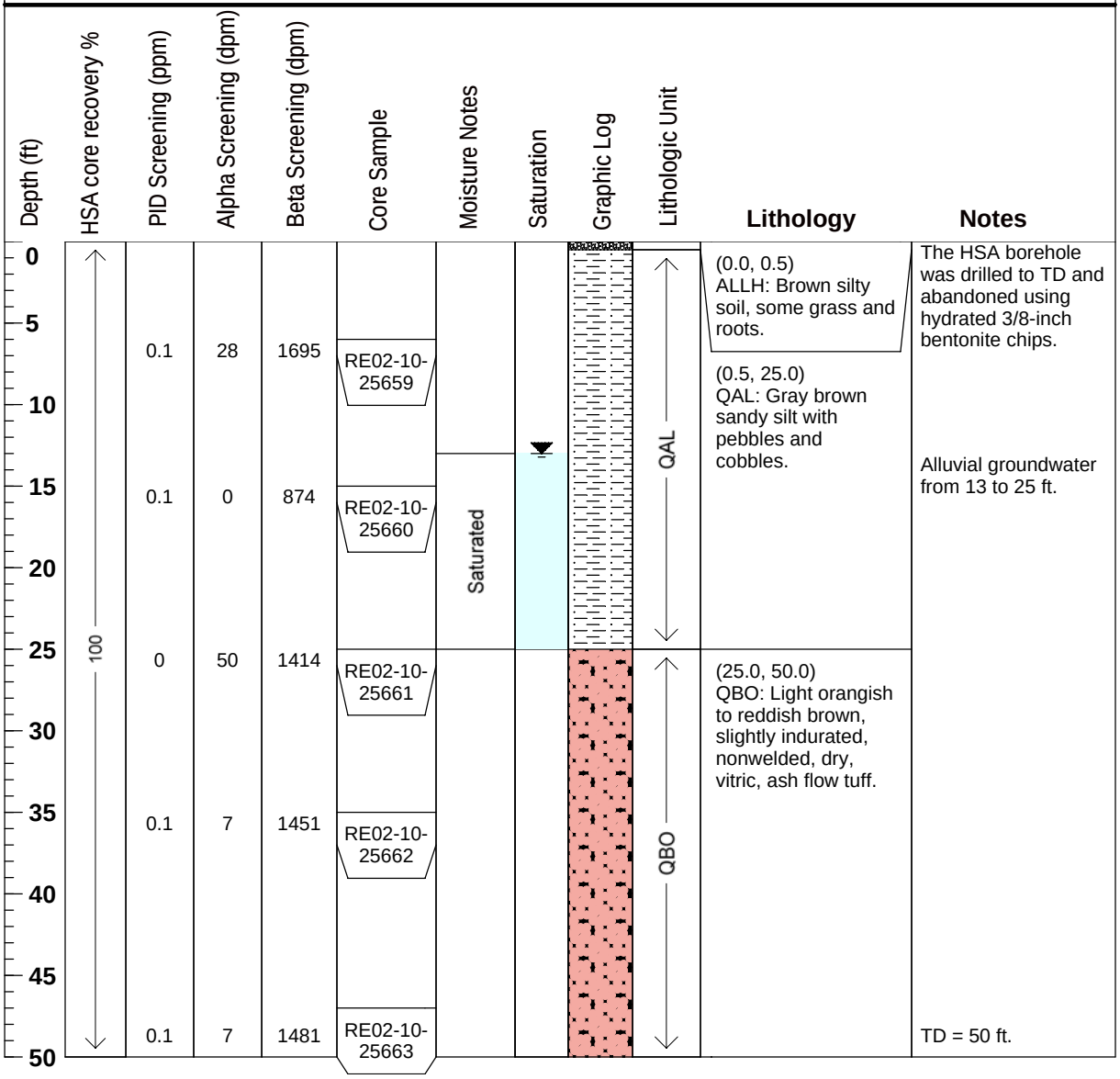
TA- 2 **SWMU/AOC:** 02-011(a)(x), 02-008(c)(ii) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 **Depth to saturation (ft):** 13

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 25

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-612983 **IWP Location ID:** 29 **Date:** 10/6/10 - 10/14/10

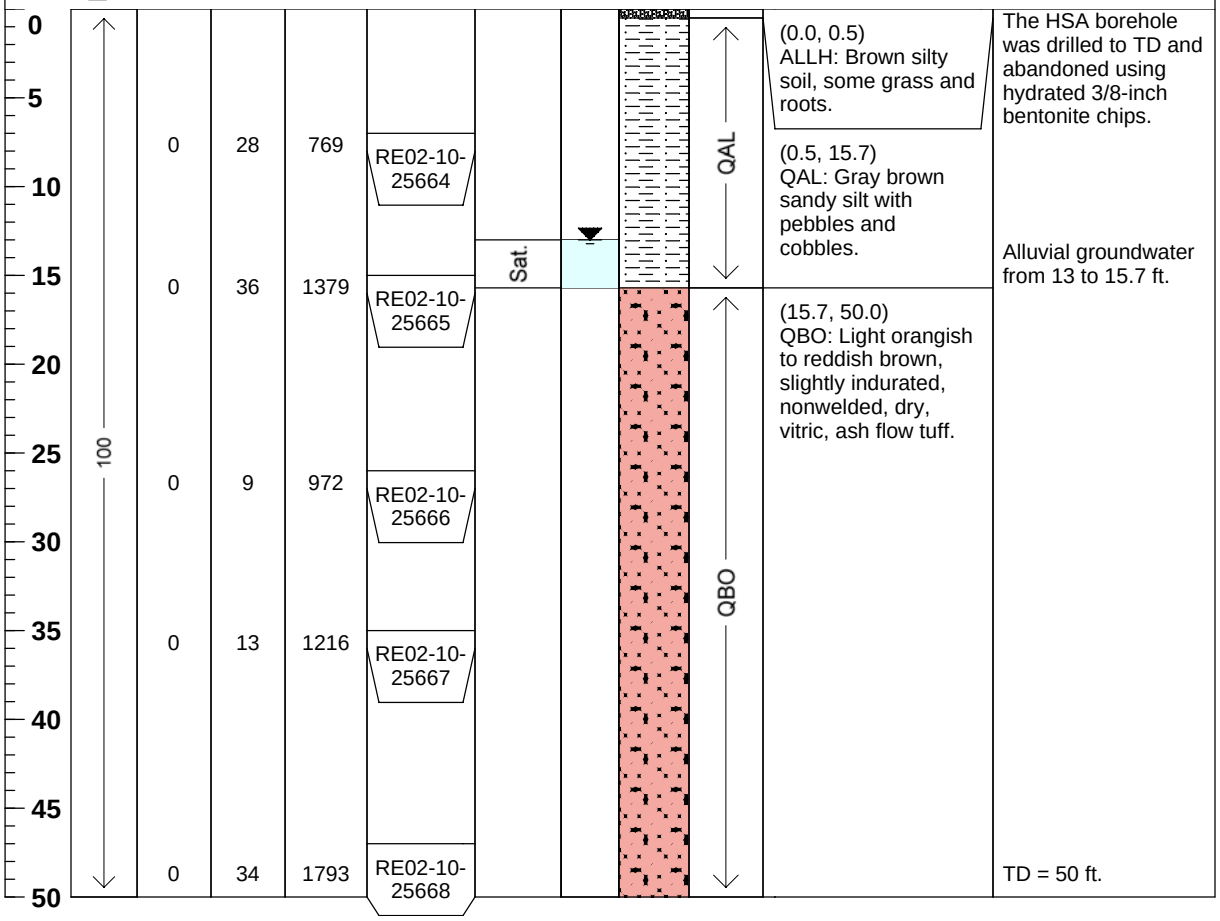
TA- 2 **SWMU/AOC:** 02-011(a)(x), 02-008(c)(ii) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: Failing F-10 and CME 750 **Depth to saturation (ft):** 13

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 15.7

Sampling equipment: HSA core barrel **Total Depth (ft):** 50



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 02-613571 **IWP Location ID:** 18 **Date:** 10/28/2010

TA- 2 **SWMU/AOC:** 02-011(a)(i-iii,v) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Craig Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 15

Sampling equipment: HSA core barrel **Total Depth (ft):** 50

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	28	1485	RE02-11-1525				QAL	(0.0, 0.5) ALLH: Brown silty soil, some grass and roots. (0.5, 15.0) QAL: Gray brown sandy silt with pebbles and cobbles.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
15		0	0	1618	RE02-11-1526				QBO	(15.0, 50.0) QBO: Light orangish to reddish brown, slightly indurated, nonwelded, dry, vitric, ash flow tuff.	
25		0	12	1492	RE02-11-1527						
35		0	1	1300	RE02-11-1528						
50		0	0	1655	RE02-11-1529						TD = 50 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612318 **IWP Location ID:** 1 **Date:** 7/28/2010

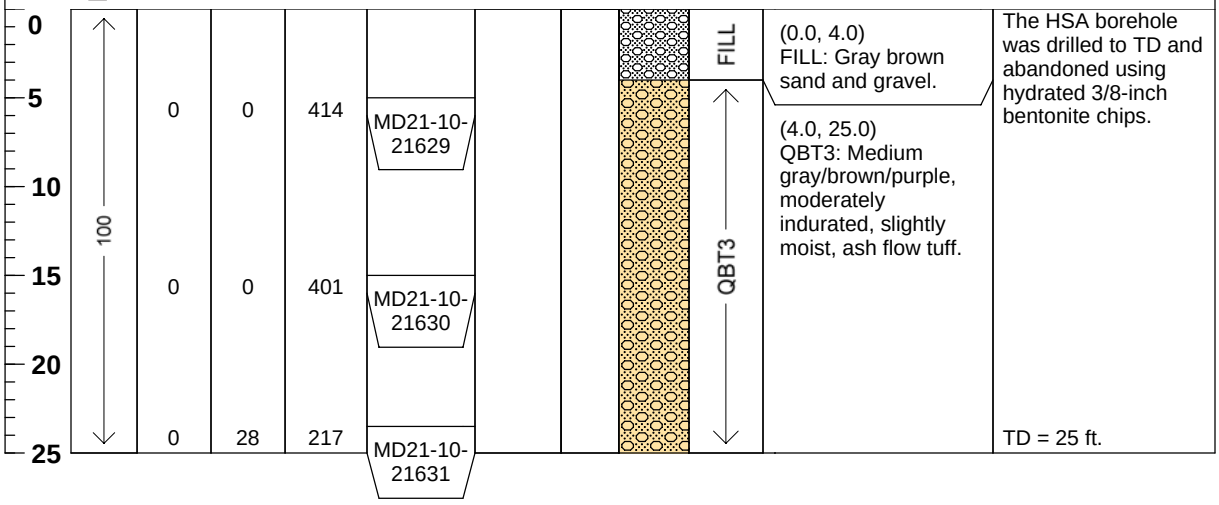
TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 21-612319 **IWP Location ID:** 2 **Date:** 7/27/2010

TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4

Sampling equipment: HSA core barrel **Total Depth (ft):** 25

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	13	257	MD21-10-21632				FILL	(0.0, 0.5) Asphalt (0.5, 4.0) FILL: Gray brown sand and gravel.	The HSA borehole was located under asphalt, drilled to TD, and abandoned using hydrated 3/8-inch bentonite chips and asphalt patch.
5											
10									QBT3	(4.0, 25.0) QBT3: Medium gray/brown/purple, moderately indurated, slightly moist, ash flow tuff.	
15		0	28	488	MD21-10-21633						
20											
25		0	18	457	MD21-10-21634						TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612320 **IWP Location ID:** 3 **Date:** 7/26/2010

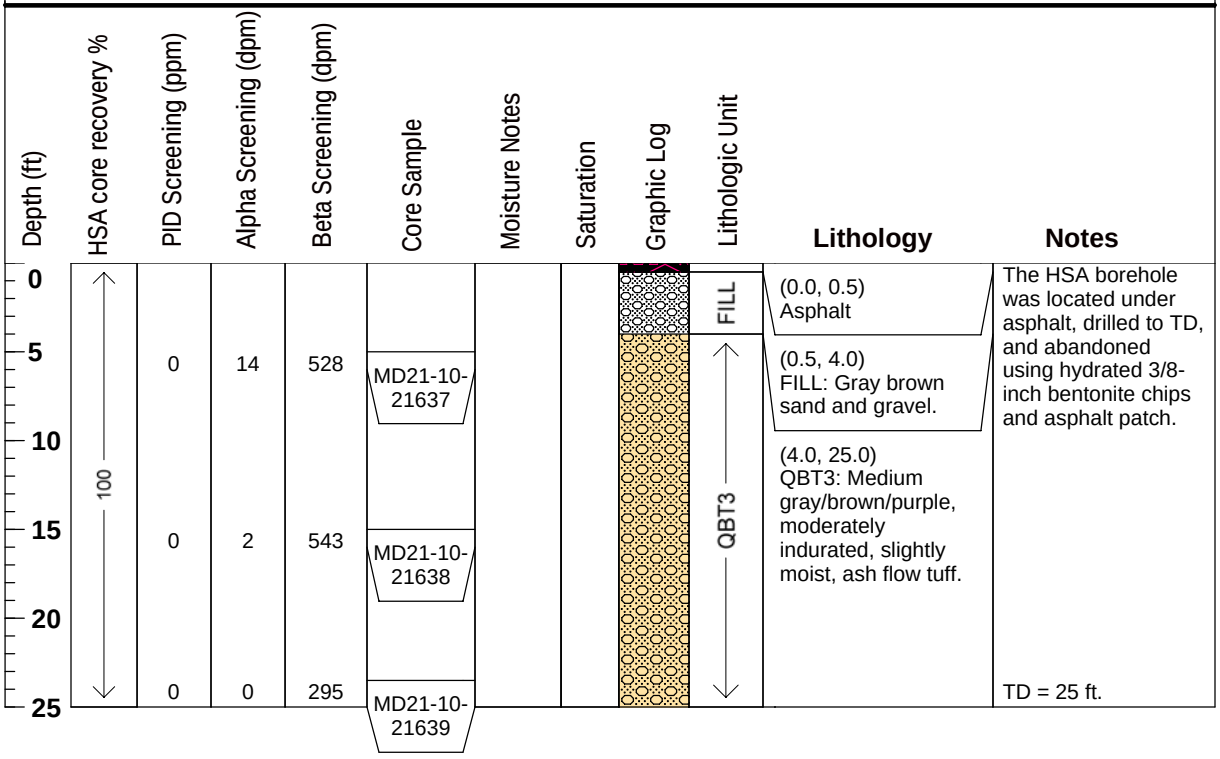
TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612321 **IWP Location ID:** 4 **Date:** 7/27/2010

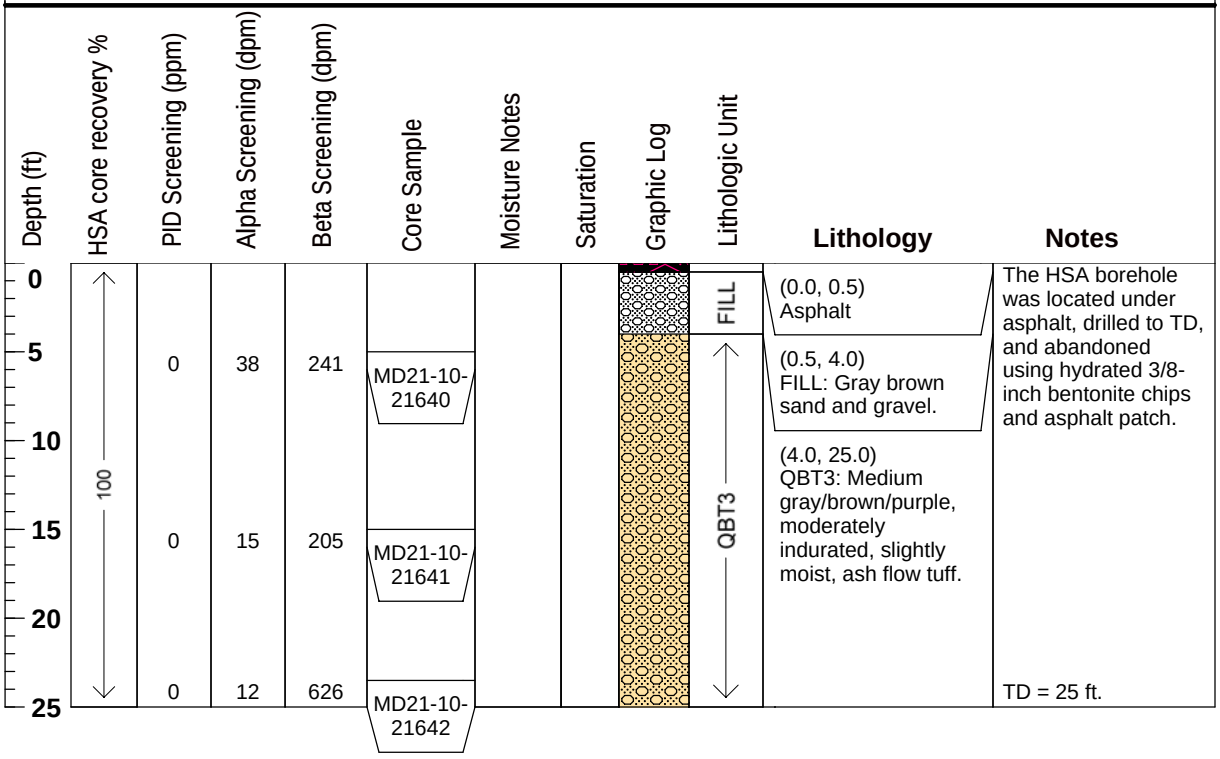
TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

Los Alamos Technical Associates, Inc.
Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 21-612322 **IWP Location ID:** 5 **Date:** 7/27/2010

TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4

Sampling equipment: HSA core barrel **Total Depth (ft):** 25

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	18	702	MD21-10-21643				FILL	(0.0, 0.5) Asphalt (0.5, 4.0) FILL: Gray brown sand and gravel.	The HSA borehole was located under asphalt, drilled to TD, and abandoned using hydrated 3/8-inch bentonite chips and asphalt patch.
5											
10									QBT3	(4.0, 25.0) QBT3: Medium gray/brown/purple, moderately indurated, slightly moist, ash flow tuff.	
15		0	45	629	MD21-10-21644						
20											
25		0	15	475	MD21-10-21645						TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612323 **IWP Location ID:** 6 **Date:** 7/26/2010

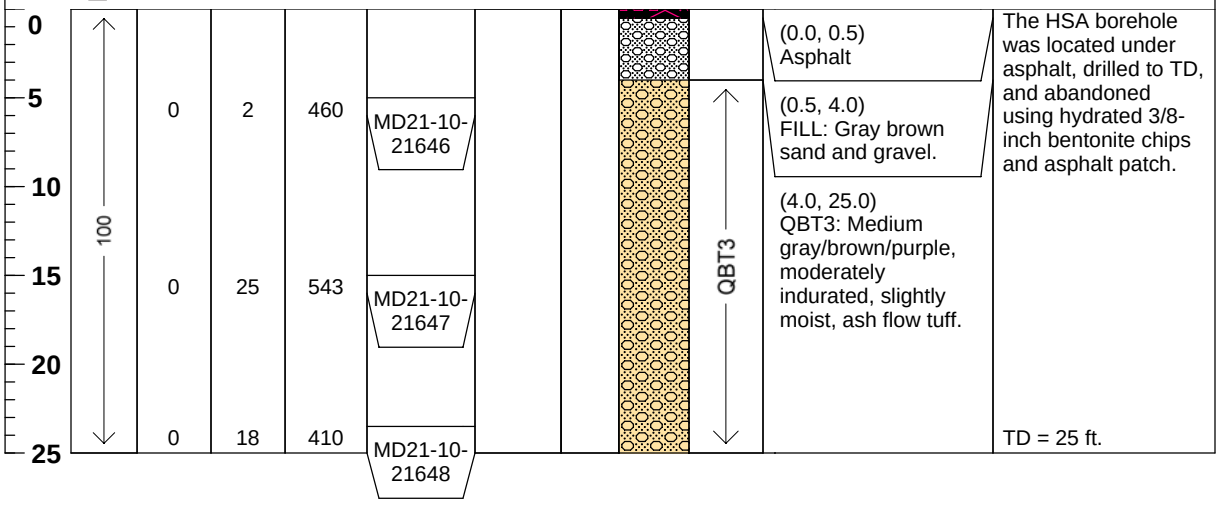
TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612324 **IWP Location ID:** 7 **Date:** 7/28/2010

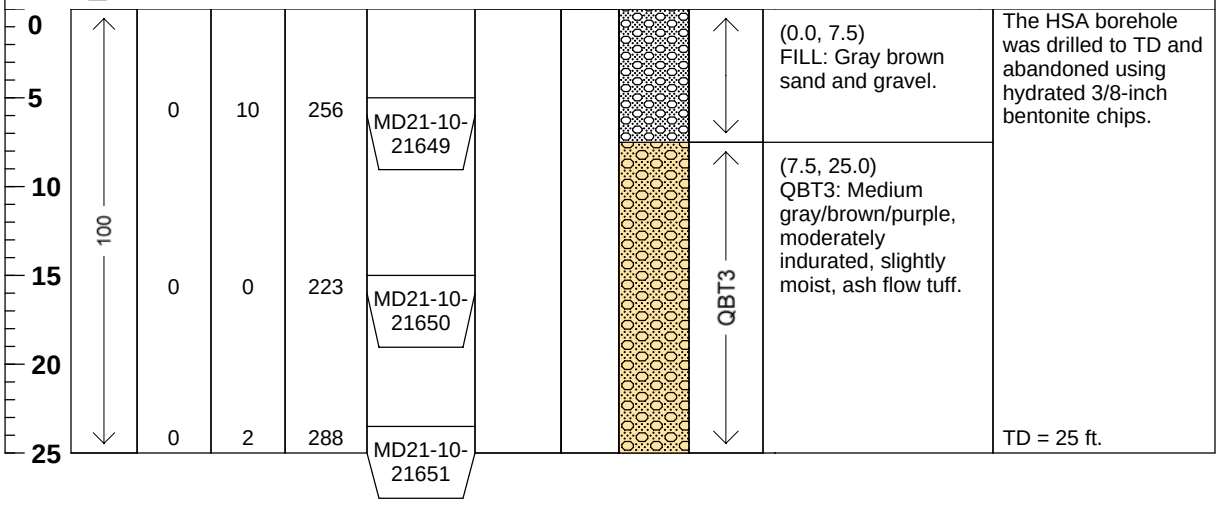
TA- 21 **SWMU/AOC:** 21-006(e)-99 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 7.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



Lithology	Notes
(0.0, 7.5) FILL: Gray brown sand and gravel.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
(7.5, 25.0) QBT3: Medium gray/brown/purple, moderately indurated, slightly moist, ash flow tuff.	TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612329 **IWP Location ID:** 1 **Date:** 10/19/2010

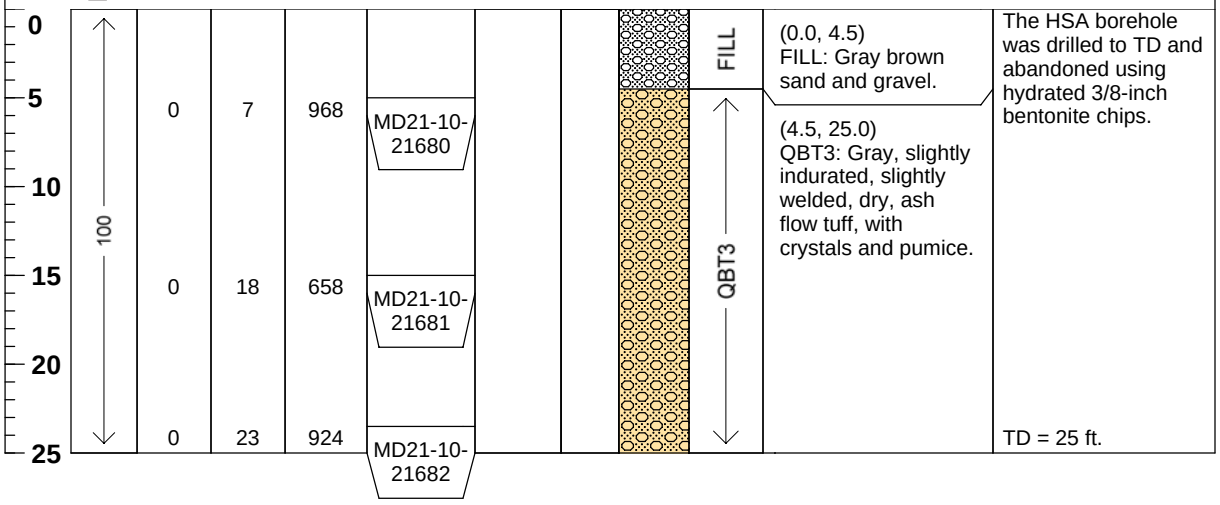
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 21-612330 **IWP Location ID:** 4 **Date:** 10/18/2010

TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	13	820	MD21-10-21685				FILL	(0.0, 4.5) FILL: Gray brown sand and gravel.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
5									QBT3	(4.5, 25.0) QBT3: Gray, slightly indurated, slightly welded, dry, ash flow tuff, with crystals and pumice.	
10											
15		0	18	1138	MD21-10-21686						
20											
25		0	13	1101	MD21-10-21687						TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612331 **IWP Location ID:** 14 **Date:** 10/19/2010

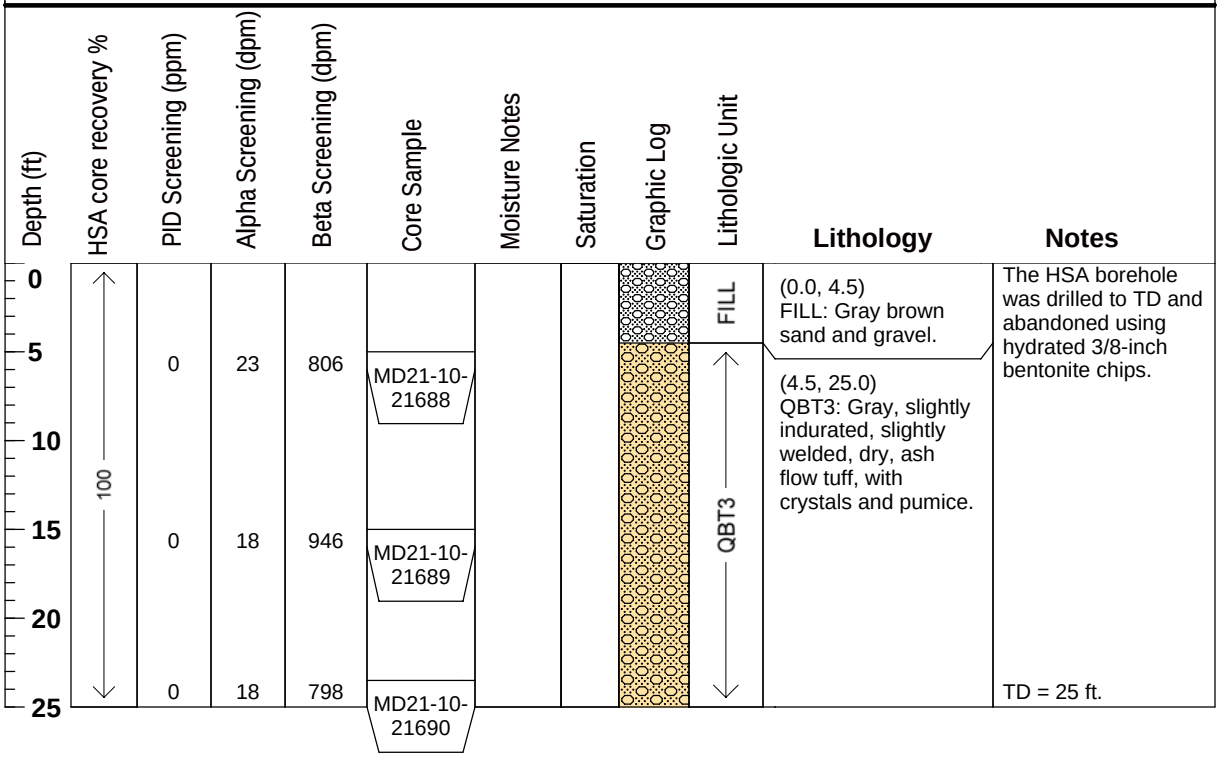
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612332 **IWP Location ID:** 6 **Date:** 10/20/2010

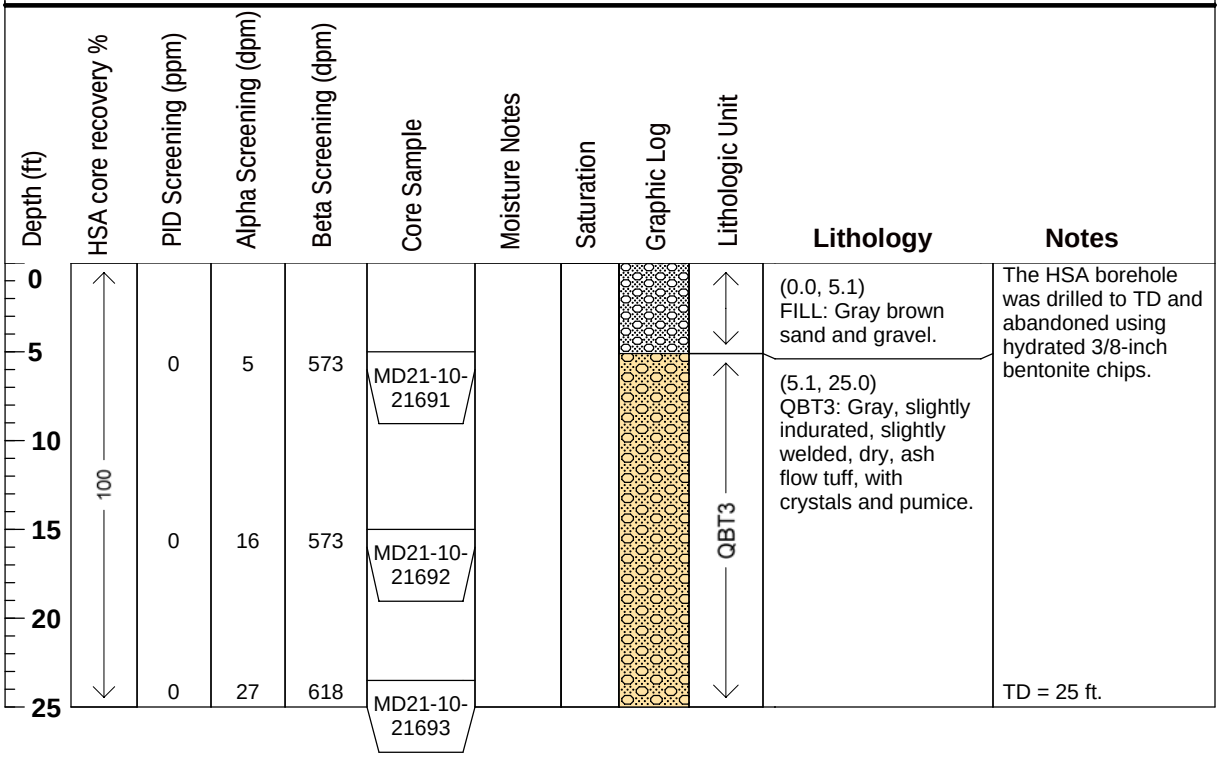
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 5.1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612333 **IWP Location ID:** 10 **Date:** 10/20/2010

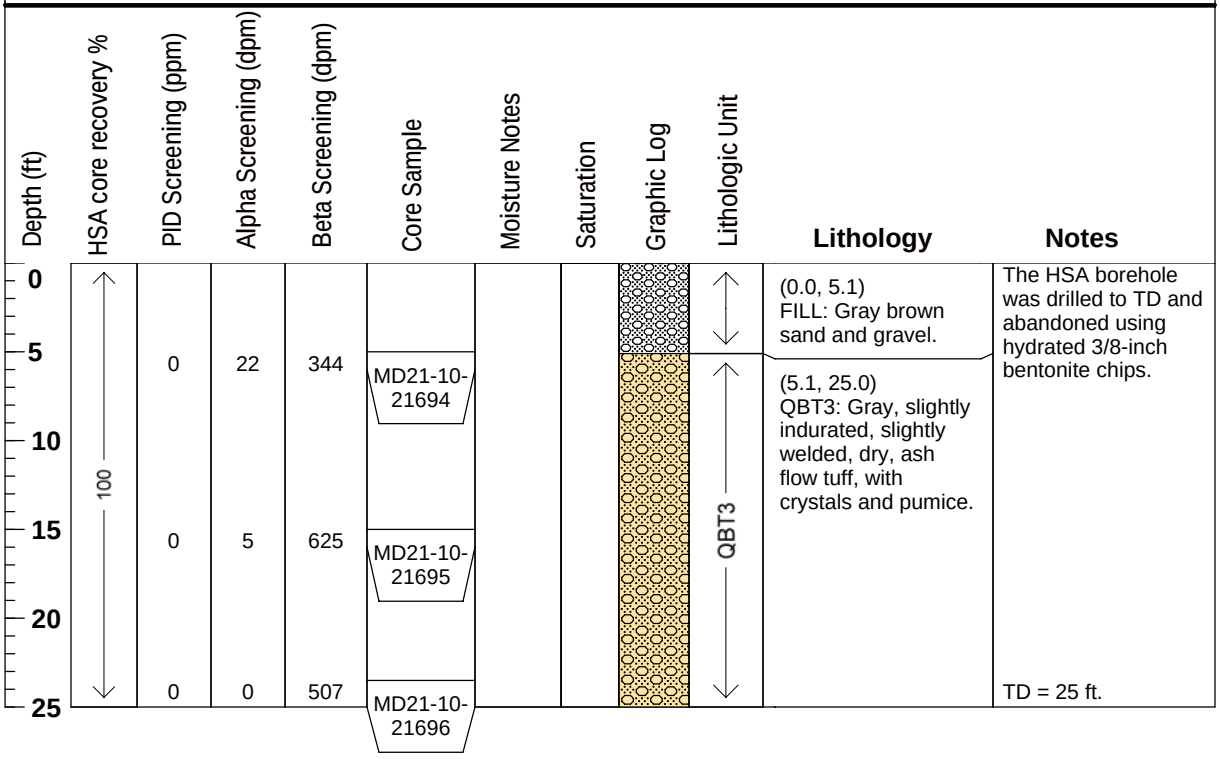
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 5.1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 21-612334 **IWP Location ID:** 7 **Date:** 10/20/2010

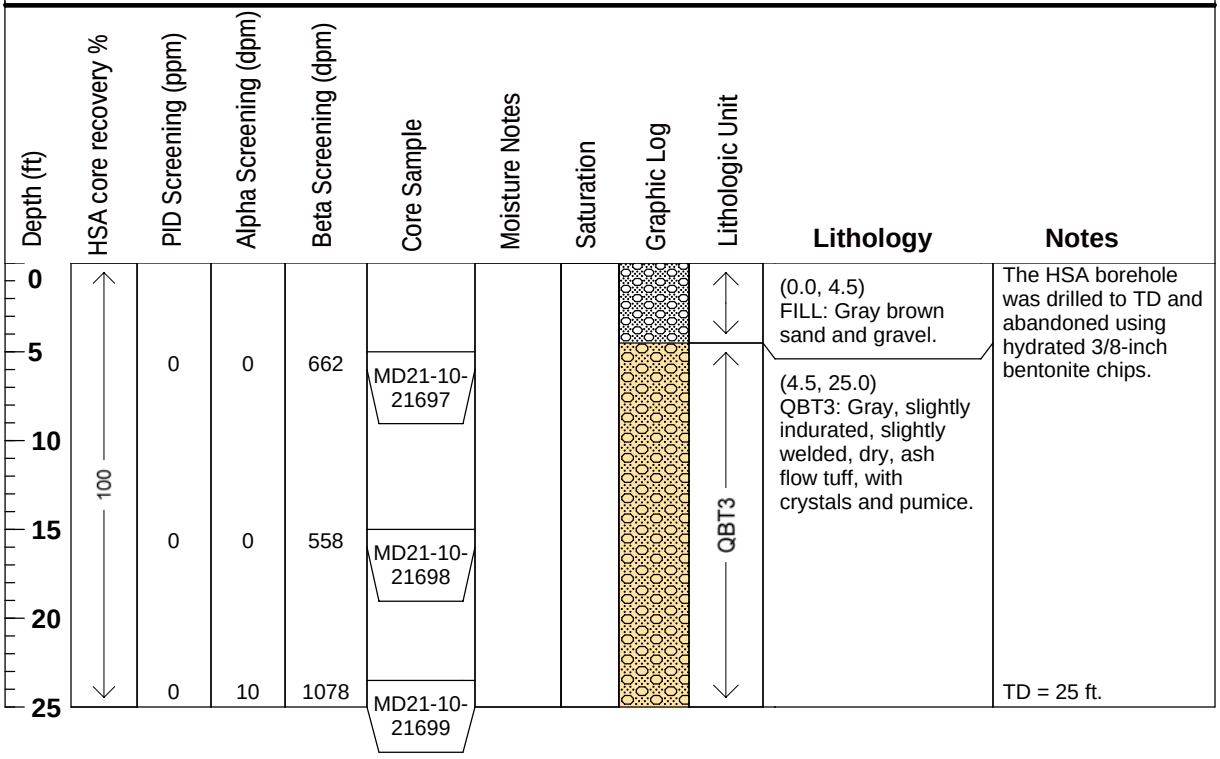
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612335 **IWP Location ID:** 9 **Date:** 10/21/2010

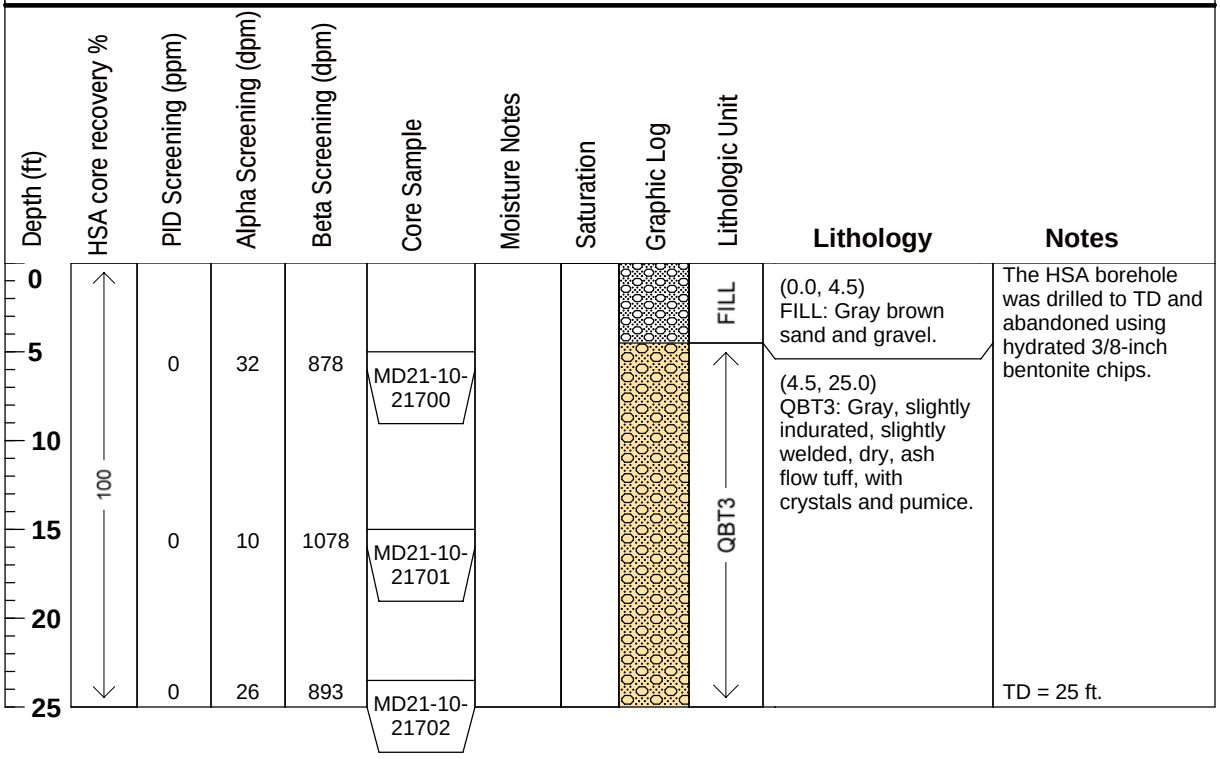
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612336 **IWP Location ID:** 2 **Date:** 10/22/2010

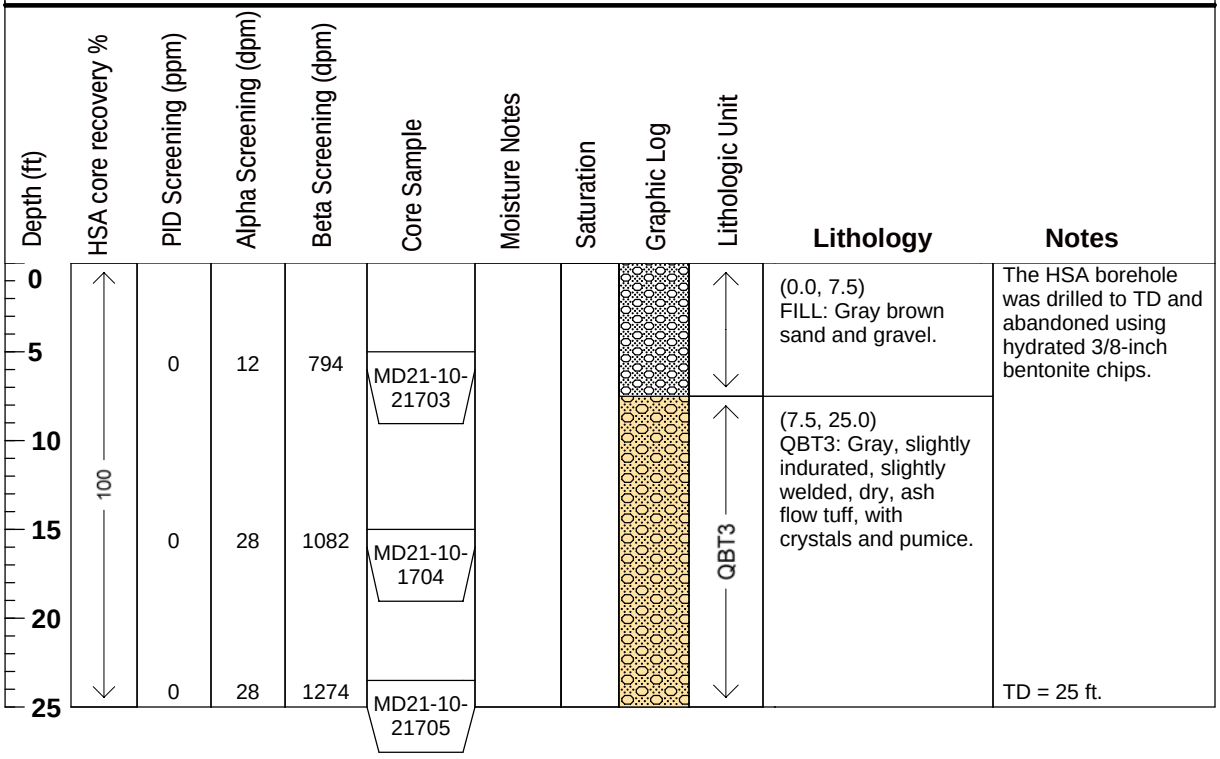
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 7.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612337 **IWP Location ID:** 5 **Date:** 10/25/2010

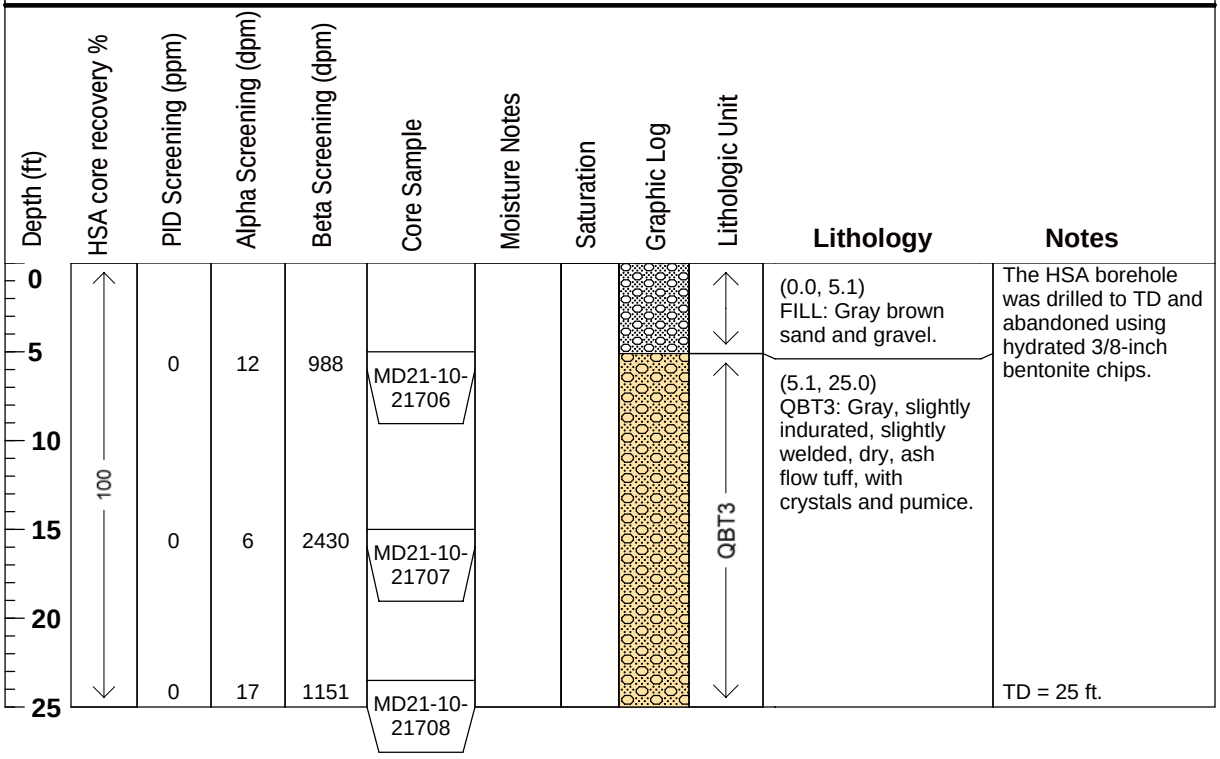
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 5.1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612338 **IWP Location ID:** 11 **Date:** 10/25/2010

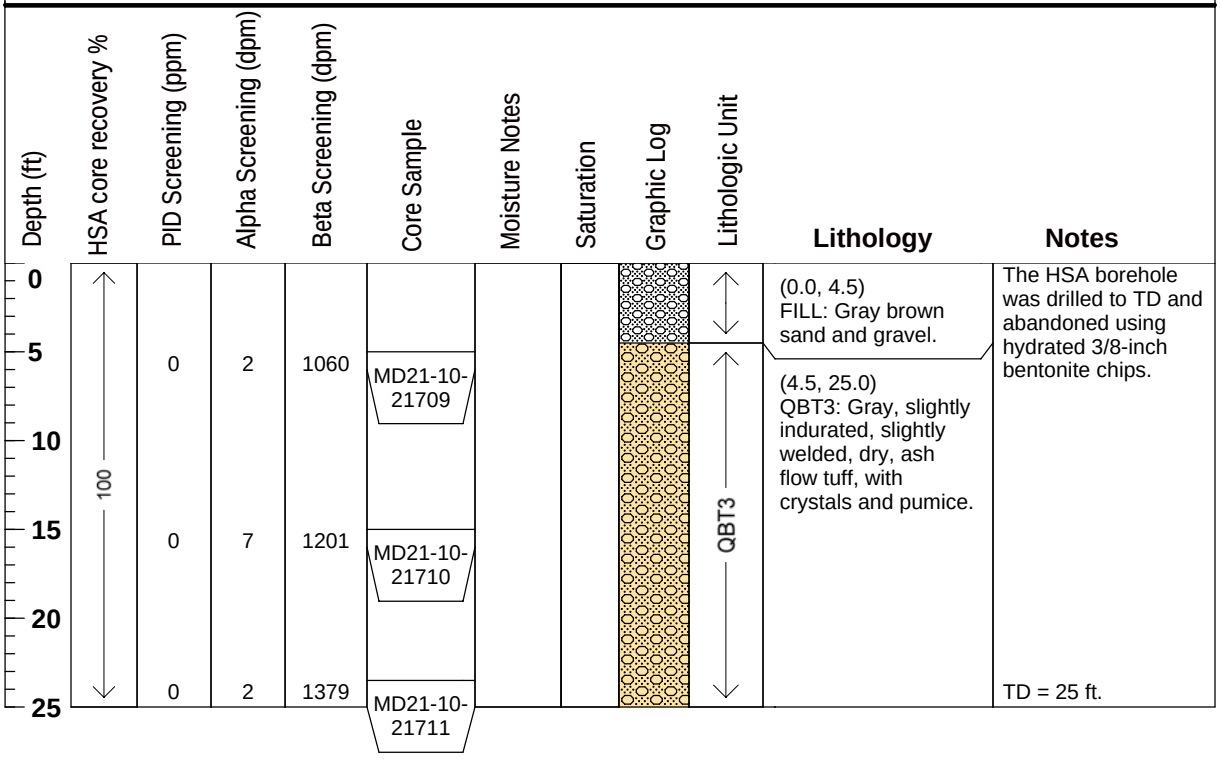
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612339 **IWP Location ID:** 8 **Date:** 10/26/2010

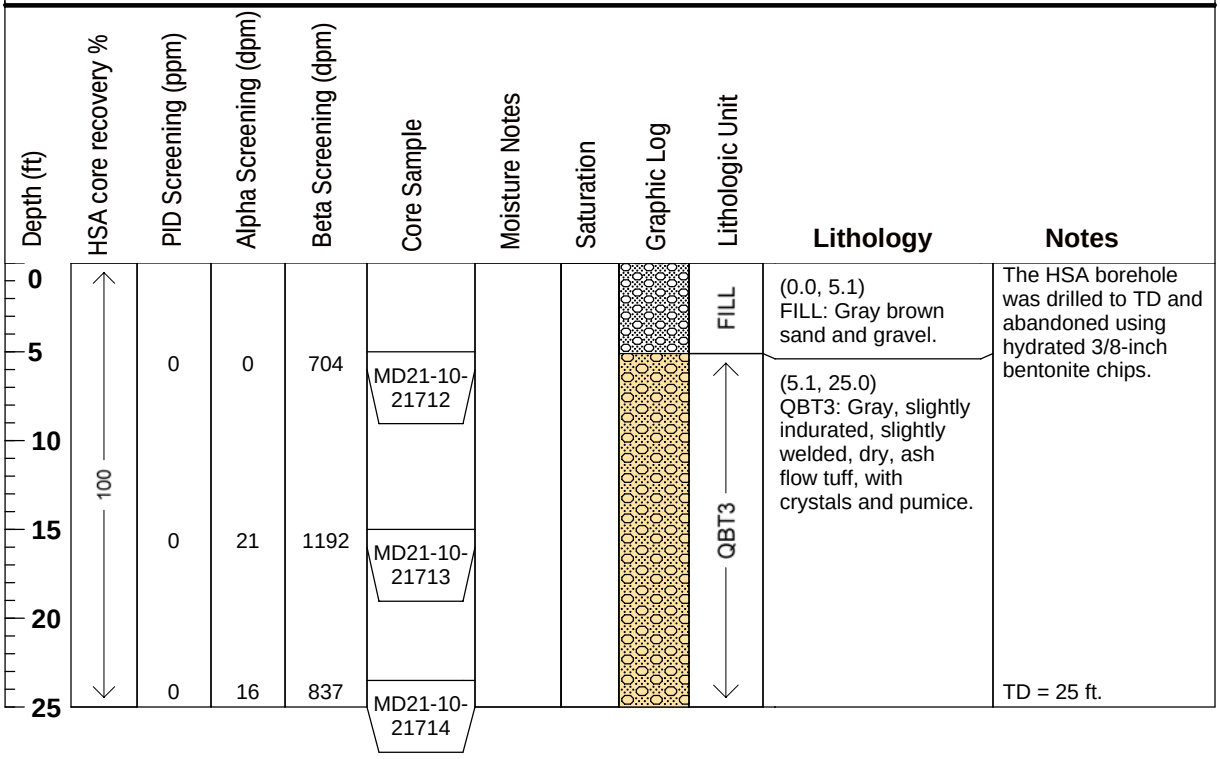
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 5.1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612340 **IWP Location ID:** 13 **Date:** 10/19/2010

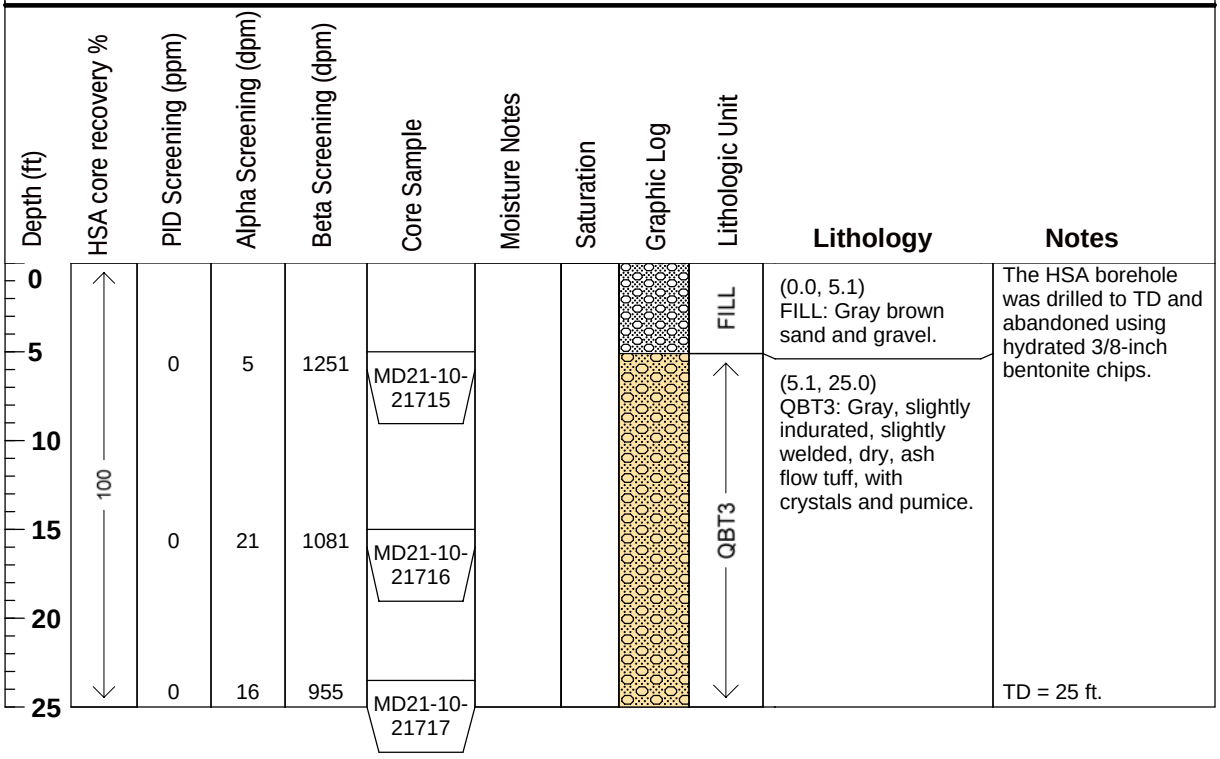
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 5.1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612341 **IWP Location ID:** 12 **Date:** 10/26/2010

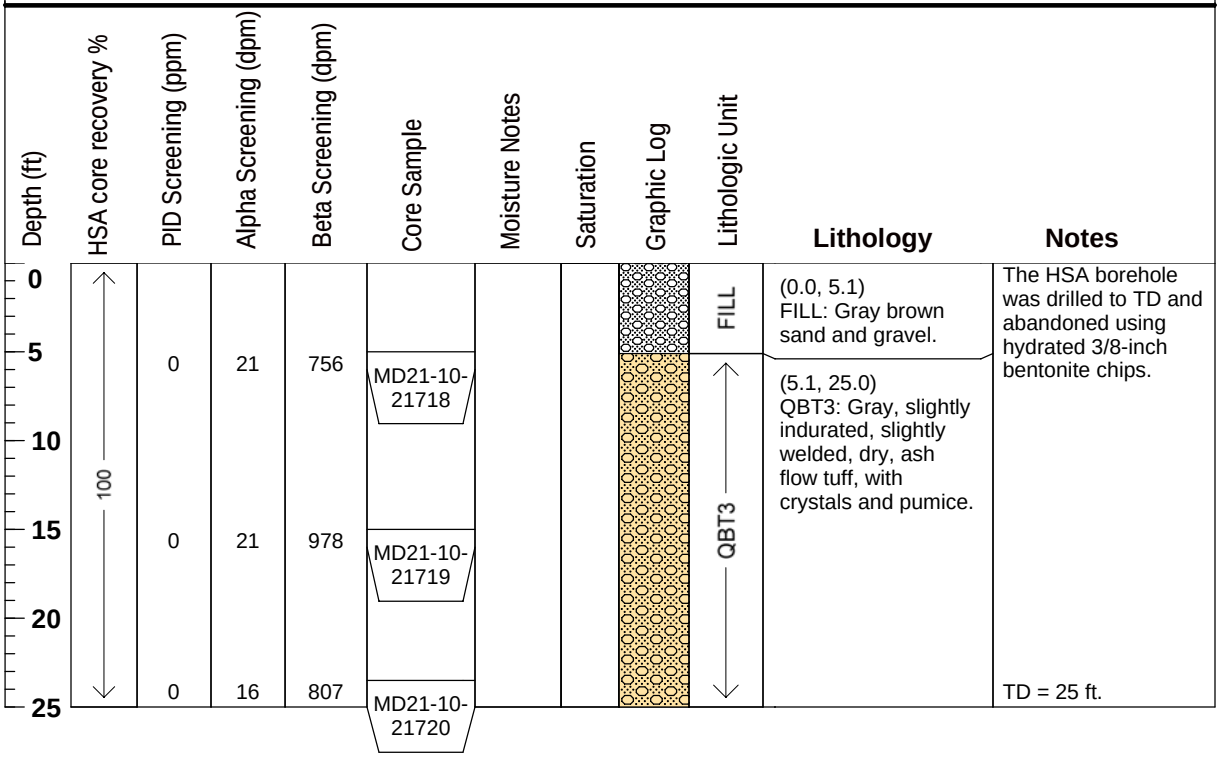
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 5.1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 21-612342 **IWP Location ID:** 3 **Date:** 10/27/2010

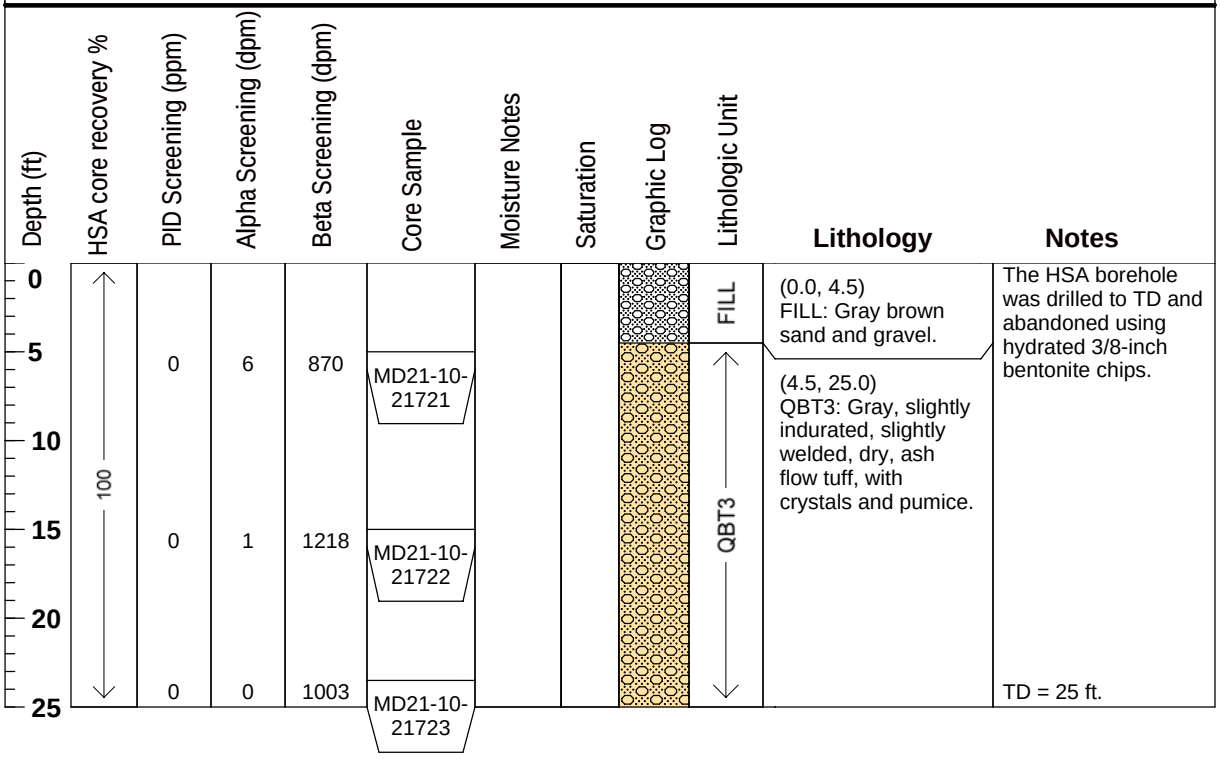
TA- 21 **SWMU/AOC:** 21-028(c) **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 4.5

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 26-612295 **IWP Location ID:** 6 **Date:** 7/22/2010

TA- 26 **SWMU/AOC:** 26-001 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 10

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	11	1127	RE26-10-21538				QBT3	(0.0, 1.0) ALLH: Gray brown silty soil, with pebbles, some grass and roots.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
5		0	11	1127	RE26-10-21539						
10		0	11	1127	RE26-10-21540					(1.0, 10.0) QBT3: Light gray, slightly indurated, slightly welded, dry, ash flow tuff, with pumice.	TD = 10 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 26-612303 **IWP Location ID:** 1 **Date:** 7/20/2010

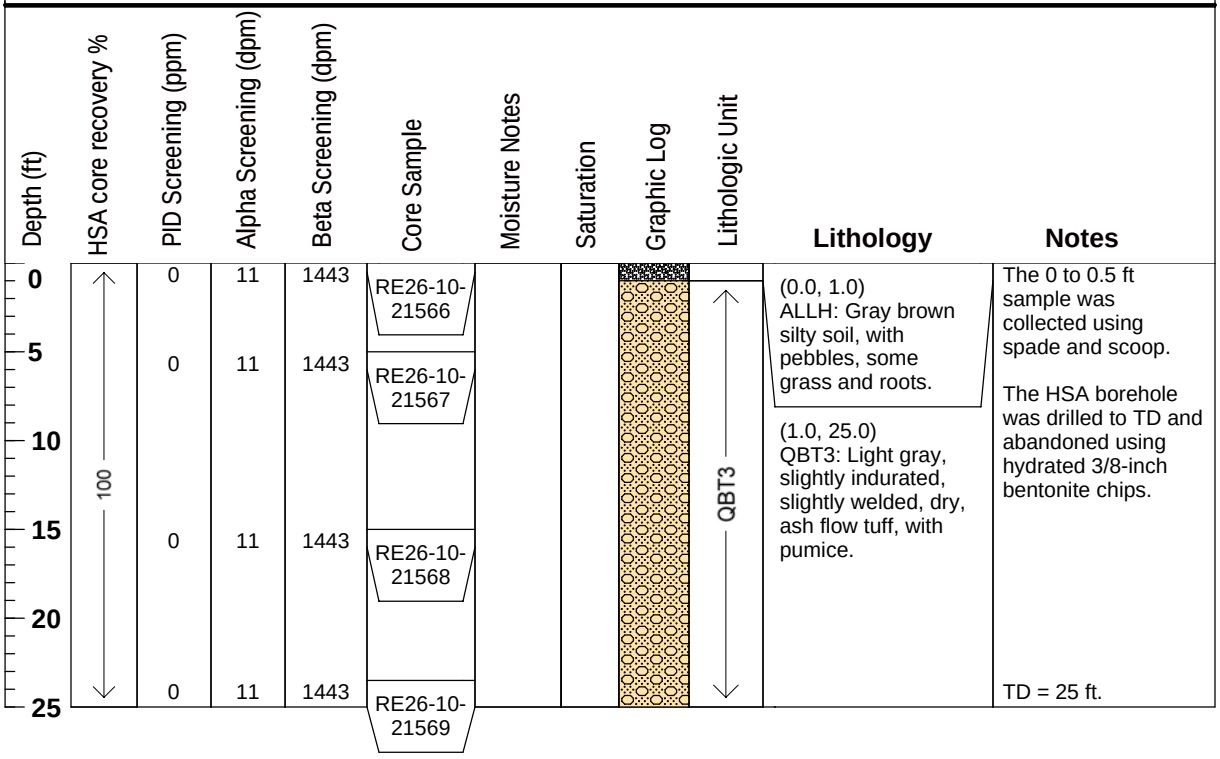
TA- 26 **SWMU/AOC:** 26-001 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Ali Furmall **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25



ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 26-612304 **IWP Location ID:** 2 **Date:** 7/20/2010

TA- 26 **SWMU/AOC:** 26-001 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	11	1443	RE26-10-21570				QBT3	(0.0, 1.0) ALLH: Gray brown silty soil, with pebbles, some grass and roots.	The 0 to 0.5 ft sample was collected using spade and scoop.
5		0	11	1443	RE26-10-21571					(1.0, 25.0) QBT3: Light gray, slightly indurated, slightly welded, dry, ash flow tuff, with pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	11	1443	RE26-10-21572						
20											
25		0	11	1443	RE26-10-21573						TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP

Borehole Location ID: 26-612305 **IWP Location ID:** 3 **Date:** 7/20/2010

TA- 26 **SWMU/AOC:** 26-001 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	11	1443	RE26-10-21574				QBT3	(0.0, 1.0) ALLH: Gray brown silty soil, with pebbles, some grass and roots.	The 0 to 0.5 ft sample was collected using spade and scoop.
5		0	13	1677	RE26-10-21575					(1.0, 25.0) QBT3: Light gray, slightly indurated, slightly welded, dry, ash flow tuff, with pumice.	The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10											
15		0	13	1677	RE26-10-21576						
20											
25		0	13	1677	RE26-10-21577						TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.

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Borehole Log

Project: Middle LA Canyon Aggregate Area Phase II IWP **Page 1 of 1**

Borehole Location ID: 26-612306 **IWP Location ID:** 4 **Date:** 7/21/2010

TA- 26 **SWMU/AOC:** 26-001 **Attitude:** Vertical

Drilling Company: Stewart Bros. Drilling Co. **Drill Operator:** Stanley Johnson

Drilling equipment: CME 750 **Depth to saturation (ft):** none

LATA Sampler: Larry Lopez **Depth to soil/tuff interface (ft):** 1

Sampling equipment: HSA core barrel **Total Depth (ft):** 25

Depth (ft)	HSA core recovery %	PID Screening (ppm)	Alpha Screening (dpm)	Beta Screening (dpm)	Core Sample	Moisture Notes	Saturation	Graphic Log	Lithologic Unit	Lithology	Notes
0	100	0	13	1677	RE26-10-21578				QBT3	(0.0, 1.0) ALLH: Gray brown silty soil, with pebbles, some grass and roots.	The 0 to 0.5 ft sample was collected using spade and scoop.
5		0	13	1677	RE26-10-21579						The HSA borehole was drilled to TD and abandoned using hydrated 3/8-inch bentonite chips.
10										(1.0, 25.0) QBT3: Light gray, slightly indurated, slightly welded, dry, ash flow tuff, with pumice.	
15		0	13	1677	RE26-10-21580						
20											
25			13	1677	RE26-10-21581						TD = 25 ft.

ALLH = Soil, all horizons, CME = Central Mine Equipment, dpm = disintegrations per minute, HSA = hollow stem auger, NA = not applicable or not encountered, PID = photo-ionization detector, ppm = parts per million, QAL = Quaternary Alluvium, QBO = Quaternary Bandelier Tuff Otowi Member, QBT = Quaternary Bandelier Tuff Tshirege Member, QBT1v = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 1 devitrified, QBT3 = Quaternary Bandelier Tuff Tshirege Member Cooling Unit 3, Sat. = saturated, TA = Technical Area, TD = Total Depth.