APPENDIX B

FIELD FORMS, NOTES, AND DOCUMENTS

APPENDIX B-1

PHASE IA PART 1 INITIAL TEST PLOT SCREENING FIELD FORMS AND NOTES

N

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 401 - 2

Completed By: Watson Matechman

Date: 8-16-17, 8-17-17

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/17	✓ 10:51
A2		✓ 10:55
A3		✓ 11:01
A4		✓ 11:06
A5		✓ 11:09
A6	8/16	✓ 11:03
A7		✓ 13:03
A8		✓ 14:00
A9		✓ 15:04
A10		✓ 16:08
B1	8/17	1116
B2	8/17	11:19
B3	8/17	1124
B4	8/17	1128
B5	8/17	1134
B6	8/16	✓ 11:12
B7		✓ 13:11
B8		✓ 14:03
B9		✓ 15:07
B10		✓ 16:12
C1	8/17	✓ 11:45
C2	8/17	✓ 11:48
C3	8/17	✓ 11:52
C4	8/17	✓ 11:57
C5	8/17	✓ 1200
C6	8/16	✓ 11:15
C7		✓ 13:15
C8		✓ 14:06
C9		✓ 15:11
C10		✓ 16:17
D1	8/17	1204
D2	8/17	✓ 12:09
D3	8/17	✓ 12:12
D4	8/17	✓ 12:15

Sample	Photo ID	Collected?
D5	8/17	✓ 12:18
D6	8/16	✓ 11:22
D7		✓ 13:19
D8		✓ 14:13
D9		✓ 15:34
D10		✓ 16:21
E1	8/17	✓ 12:19
E2	8/17	✓ 1256
E3	8/17	✓ 13:00
E4	8/17	✓ 1303
E5	8/17	✓ 307
E6	8/16	✓ 11:36
E7		✓ 13:22
E8		✓ 14:15
E9		✓ 15:38
E10		✓ 16:25
F1	8/17	✓ 13:14
F2		✓ 13:17
F3		✓ 13:19
F4		✓ 13:22
F5		✓ 13:25
F6	8/16	✓ 11:39
F7		✓ 13:27
F8		✓ 14:20
F9		✓ 15:42
F10		✓ 16:29
G1	8/17	✓ 13:33
G2	8/17	✓ 13:37
G3	8/17	✓ 13:42
G4	8/17	1346
G5	8/17	1349
G6	8/16	✓ 11:43
G7		✓ 13:31
G8		✓ 14:44

Sample	Photo ID	Collected?
G9	8/16	✓ 15:46
G10		✓ 16:32
H1	8/17	✓ 14:12
H2	8/17	1415
H3	8/17	1418
H4	8/17	✓ 14:21
H5	8/17	1424
H6	8/16	✓ 11:46
H7		✓ 13:35
H8		✓ 14:49
H9		✓ 15:52
H10		✓ 16:36
I1	8/17	✓ 14:32
I2	8/17	✓ 14:35
I3	8/17	1438
I4	8/17	✓ 14:40
I5	8/17	✓ 14:43
I6	8/16	✓ 11:52
I7		✓ 13:40
I8		✓ 14:55
I9		✓ 15:55
I10		✓ 16:39
J1	8/17	✓ 14:52
J2	8/17	✓ 14:54
J3	8/17	1456
J4	8/17 dup	✓ 1459
J5	8/17	1502
J6	8/16	✓ 11:56
J7		✓ 13:53
J8		✓ 14:59
J9		✓ 16:03
J10		✓ 16:42

*To be completed by Field Leads before leaving Test Plot.

*Circle the check mark to indicate a DUP was collected from the test plot.

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 1 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sunny Sampling Equipment Soil Probe, pH Meter

Time: 1103 Station No.: DU -40/TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - A06 - 081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree debris, 1-2" fluff

Photograph numbers: Refer to Photo Log /

Comments: pH = 5.22

ML 1103

Time: 1112 Station No.: DU -40/TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - B06 - 081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree debris, 1-2" fluff

Photograph numbers: Refer to Photo Log /

Comments: pH = 4.80

ML 1112

Time: 1115 Station No.: DU -40/TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - C06 - 081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, Pine needles, 1-2" fluff

Photograph numbers: Refer to Photo Log /

Comments: pH = 5.35

~~ML~~ ML ~~1112~~ 1115

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 2 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1130 Station No.: DU -401TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-D06-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, Pine needles, 1-2" fluff

Photograph numbers: Refer to Photo Log 2

Comments: pH = 5.32

ML 1130

Time: 1136 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-E06-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, no fluff

Photograph numbers: Refer to Photo Log 2

Comments: pH = 4.20

ML 1136

Time: 1139 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-F06-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~401-2-F06-081617~~

Vegetation: Grass, no fluff

Photograph numbers: Refer to Photo Log 2

Comments: pH = 4.30

ML 1139

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 3 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1143 Station No.: DU -401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-G06-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: Grass, 1/2" fluff
Photograph numbers: Refer to Photo Log 3

Comments: pH = 4.97
ML

Time: 1146 Station No.: DU -401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-H06-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: stump, tree debris, 1-2" duff
Photograph numbers: Refer to Photo Log 3

Comments: pH = 4.16
ML

Time: 1152 Station No.: DU -401 TP - 2 Elevation: N/A
Latitude: ______ I-06 Longitude: ______ Accuracy: ______

Sample ID: 401-2-~~G06~~-081617 RKA Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: Grass, tree debris, ~~a~~ 1/2" fluff
Photograph numbers: Refer to Photo Log 3

Comments: pH = ~~4.28~~ 4.34
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A　Project No.: B0095010.0005　Page: 4 of 17

Date: 08/16/2017　Sampling Crew: Alex Baird and Joseph Latham

Weather: ______　Sampling Equipment: Soil Probe, pH Meter

Time: 1156　Station No.: DU-401 TP-2　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 401-2-~~F06~~ J-06 -081617 RKA　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: Grass, no duff

Photograph numbers: Refer to Photo Log 3

Comments: pH = 5.10

MC

Time: 1303　Station No.: DU-401 TP-2　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 401-2-A07-081617　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: Grass, wood debris, 1" fluff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.53　3.00 °C

Time: 1311　Station No.: DU-401 TP-2　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 401-2-B07-081617　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree debris, stumps, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.39　34.3 °C

MC

DUP

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 5 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1315 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-~~D07~~ C07-08/6/17 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree limbs, no fluff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.50

ML

Time: 1319 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-D07-08/6/17 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Debris (tree needles), 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.18 32.5 °C

ML

Time: 1322 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-E07-08/6/17 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.03 32.0 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 6 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1327 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-~~E01~~ E07-08/6/17 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Wood debris, Grass, 1/2" Duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.90 34.5°C

ML

Time: 1331 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-G07-08/6/17 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.24 30.3 °C

ML

Time: 1335 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-H07-08/6/17 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.61 31.9 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 7 of 17

Date: 08/14/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1340 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-I07-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Tree stumps, grass, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.84 30.1 °C

ML

Time: 1352 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-J07-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tree debris, 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 29.3 °C

ML

Time: 1400 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-A08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, no duff, tree pile 2 ft East

Photograph numbers: Refer to Photo Log

Comments: pH = 5.20 33.4 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 8 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1403 Station No.: DU -401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-B08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, tree limbs, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.49 36.8 °C

ML

Time: 1406 Station No.: DU -401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-C08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.53 36.8 °C

ML

Time: 1413 Station No.: DU -401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-D08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: grass,

Vegetation: ~~tree debris~~ tree debris, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.35 38.7 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 9 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1415 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - E08 - 081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.96 37.9 °C

ML

Time: 1420 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - F08 - 081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: Grass, wood debris, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.80 30.5 °C

ML

Time: 1444 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - G08 - 081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.17 31.3 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 10 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1449 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-H08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.02 32.3 °C

MC

Time: 1455 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-I08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: wood debris, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.62 28.0 °C

MC

Time: 1459 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-J08-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, wood debris, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~4.68~~ 4.60 27.8 °C

MC

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 11 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1504 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-A09-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.29 32.7 °C

ML

Time: 1507 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-B09-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.13 31.7 °C

ML

Time: 1511 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-C09-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~401~~

Vegetation: Grass, tree debris, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.51 32.2 °C

ML

Dup

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 12 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1534 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-D09-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: grass, tree debris, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.19 31.3 °C
ML

Time: 1538 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-E09-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: Grass, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.13 31.2 °C
ML

Time: 1542 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-F09-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tree debris, grass, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.31 33.2 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 13 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1546 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-G09-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, no duff, wood debris
Photograph numbers: Refer to Photo Log

Comments: pH = 4.56 33.9 °C
ML

Time: 1552 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-H09-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, wood debris, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.53 32.9 °C
ML

Time: 1555 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-I09-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~8~~ 4.02 32.9 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 14 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1603 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401 - 2 - J09 - 081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.30 34.0
ML

Time: 1608 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401 - 2 - A10 - 081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: trees, needles, grass, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.10 32.9 °C
ML

Time: 1612 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401 - 2 - B10 - 081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: trees, pine needles, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.13 34.0 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 15 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1617 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-C10-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, needles, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 25.9 °C

ML

Time: 1621 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-D10-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, pine needles, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.19 26.0 °C

ML

Time: 1625 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-E10-081617 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.13 27.4 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 16 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1629 Station No.: DU-401TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401-2-F10-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: tree stump, pine needles, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.30 33.1 °C
ML

Time: 1632 Station No.: DU-401TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: ______ Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: 401-2-G10-081617
Vegetation: tall grass, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.11 33.5 °C
ML

Time: 1636 Station No.: DU-401TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401-2-H10-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: tall grass, no duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.87 27.9 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 17 of 17

Date: 08/16/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1639 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-~~E~~10-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: grass, pine needles, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.40 33.6°C
ML

Time: 1642 Station No.: DU - 401 TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-2-J10-081617 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~401-2-J10-081617~~
Vegetation: tall grass, pine needles, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.77 34.1°C
ML

Time: ______ Station No.: DU - TP - Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: ______ Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation:
Photograph numbers: Refer to Photo Log

Comments: pH =

N

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 401 - 2

Completed By: Watson Motetman
Date: 8-16-17, 8-17-17

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/17	✓ 10:51
A2	↓	✓ 10:55
A3	↓	✓ 11:01
A4	↓	✓ 11:06
A5	↓	✓ 11:09
A6	8/16	✓ 11:03
A7	↓	✓ 13:03
A8	↓	✓ 14:00
A9	↓	✓ 15:04
A10	↓	✓ 16:08
B1	8/17	1116
B2	8/17	11:19
B3	8/17	1124
B4	8/17	1128
B5	8/17	1134
B6	8/16	✓ 11:12
B7	↓	✓ 13:11
B8	↓	✓ 14:03
B9	↓	✓ 15:07
B10	↓	✓ 16:12
C1	8/17	✓ 11:45
C2	8/17	✓ 11:48
C3	8/17	✓ 11:52
C4	8/17	✓ 11:57
C5	8/17	✓ 1200
C6	8/16	✓ 11:15
C7	↓	✓ 13:15
C8	↓	✓ 14:06
C9	↓	✓ 15:11
C10	↓	✓ 16:17
D1	8/17	1204
D2	8/17	✓ 12:09
D3	8/17	✓ 12:12
D4	8/17	✓ 12:15

Sample	Photo ID	Collected?
D5	8/17	✓ 12:18
D6	8/16	✓ 11:22
D7	↓	✓ 13:19
D8	↓	✓ 14:13
D9	↓	✓ 15:34
D10	↓	✓ 16:21
E1	8/17	✓ 12:19
E2	8/17	✓ 1256
E3	8/17	✓ 13:00
E4	8/17	✓ 1303
E5	8/17	✓ 1307
E6	8/16	✓ 11:36
E7	↓	✓ 13:22
E8	↓	✓ 14:15
E9	↓	✓ 15:38
E10	↓	✓ 16:25
F1	8/17	✓ 13:14
F2	↓	✓ 13:17
F3	↓	✓ 13:19
F4	↓	✓ 13:22
F5	↓	✓ 13:25
F6	8/16	✓ 11:39
F7	↓	✓ 13:27
F8	↓	✓ 14:20
F9	↓	✓ 15:42
F10	↓	✓ 16:29
G1	8/17	✓ 13:33
G2	8/17	✓ 13:37
G3	8/17	✓ 13:42
G4	8/17	1346
G5	8/17	1349
G6	8/16	✓ 11:43
G7	↓	✓ 13:31
G8	↓	✓ 14:44

Sample	Photo ID	Collected?
G9	8/16	✓ 15:46
G10	↓	✓ 16:32
H1	8/17	✓ 14:12
H2	8/17	1415
H3	8/17	1418
H4	8/17	✓ 14:21
H5	8/17	1424
H6	8/16	✓ 11:46
H7	↓	✓ 13:35
H8	↓	✓ 14:49
H9	↓	✓ 15:52
H10	↓	✓ 16:36
I1	8/17	✓ 14:32
I2	8/17	✓ 14:35
I3	8/17	1438
I4	8/17	✓ 14:40
I5	8/17	✓ 14:43
I6	8/16	✓ 11:52
I7	↓	✓ 13:40
I8	↓	✓ 14:55
I9	↓	✓ 15:55
I10	↓	✓ 16:39
J1	8/17	✓ 14:52
J2	8/17	✓ 14:54
J3	8/17	1456
J4	8/17 DUP	✓ 1459
J5	8/17	1502
J6	8/16	✓ 11:56
J7	↓	✓ 13:53
J8	↓	✓ 14:59
J9	↓	✓ 16:03
J10	↓	✓ 16:42

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

~~E5~~
~~652~~
~~14~~

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 1 of 17

Date: 08/7/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sunny Sampling Equipment Soil Probe, pH Meter

Time: 1051 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-A01-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, 1" duff, trees

Photograph numbers: Refer to Photo Log

Comments: pH = 4.88 22.7 °C

AIL

Time: 1055 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-A02-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, 1/2" duff, trees

Photograph numbers: Refer to Photo Log

Comments: pH = 4.72 21.1 °C

ML

Time: 1101 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-A03-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, pine needles, 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.42 21.2 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 2 of 17

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1106 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-A04-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, pine needles, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 22.4°C

ML

Time: 1109 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-A05-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tree stump, pine needles, trees

Photograph numbers: Refer to Photo Log

Comments: pH = 4.06 22.9°C

ML

Time: 1116 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-B01-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: trees, pine needles, moss, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.02 22.0°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 3 of 16

Date: 08/17/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment: Soil Probe, pH Meter

Time: 1119   Station No.: DU-401 TP-2   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 401-2-B02-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume: ~~401-2-B02-081717~~

Vegetation: pine needles, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 21.7 °C

ML

Time: 1124   Station No.: DU-401 TP-2   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: ~~401-B~~ 401-2-B03-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: trees, pine needles, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.19 22.3 °C

ML

Time: 1128   Station No.: DU-401 TP-2   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 401-2-B04-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.26 22.8 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 4 of 14

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1131 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-~~B04~~ B05-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tree, pine needles, tree limbs, 3" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.34 22.7°C
ML

Time: 11:45 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-C01-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~4.4~~ 5.01 24.8°C
ML

Time: 1148 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-C02-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, tree limbs, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.06 23.8°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 5 of 10

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment: Soil Probe, pH Meter

Time: 1152 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~401-C03~~ 401-2-C03-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 22.8 °C

ML

Time: 1157 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-C04-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.19 24.6 °C

ML

Time: 1200 Station No.: DU-401 TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-C05-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.79 26.0

ML

SOIL COLLECTION FIELD FORM

17

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 6 of ~~6~~

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1204 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-001-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.10 24.1 °C
ML

Time: ~~10~~ 1204 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-002-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.80 24.9 °C
ML

Time: 1212 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-003-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: trees, pine needles, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.71 24.7 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 7 of ~~10~~ 17

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1213 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-D04-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.34 24.2°C

ML

Time: 1218 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-D05-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~ft~~

Vegetation: pine needles, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.40 25.5°C

ML

Time: 1249 Station No.: DU-401TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-E01-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~pine needles~~

Vegetation: pine needles, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.19 31.0°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 8 of 14

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1256 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-E02-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.77 28.7°C
ML

Time: 1300 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-E03-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.67 27.3°C
ML

Time: 1303 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-E04-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.46 27.8°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 9 of 17

Date: 08/17/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ________   Sampling Equipment: Soil Probe, pH Meter

Time: 1307   Station No.: DU-401 TP-2   Elevation: N/A

Latitude: ________   Longitude: ________   Accuracy: ________

Sample ID: 401-2-E05-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.50 28.2 °C

ML

Dup

Time: 1314   Station No.: DU-401 TP-2   Elevation: N/A

Latitude: ________   Longitude: ________   Accuracy: ________

Sample ID: 401-2-F01-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.62 28.5 °C

ML

Time: 1317   Station No.: DU-401 TP-2   Elevation: N/A

Latitude: ________   Longitude: ________   Accuracy: ________

Sample ID: 401-2-F02-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.80 26.4 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 10 of 17

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1319 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-F03-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needle, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.83 29.3 °C
ML

Time: 1322 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-F04-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.66 27.2 °C
ML

Time: 1325 Station No.: DU-401 TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-F05-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: grass, pine needles, trees, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.70 26.5 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 11 of 17

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1333 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-G01-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 29.4°C
ML

Time: 1337 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: 401-2-G02-081717
Vegetation: pine needles, grass, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.27 30.8°C
ML

OWO

Time: 1342 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-G03-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: grass, pine needles, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~4.27~~ ~~30.96~~ 4.08 29.8°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 12 of 19

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1346 Station No.: DU -401 TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-G04-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.04 30.1 °C

ML

Time: 1349 Station No.: DU -401 TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-G05-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: grass, pine needles, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 30.2 °C

ML

Time: 1412 Station No.: DU -401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-2-H01-081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.40 28.6 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 13 of 147

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1415 Station No.: DU -401 TP 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-H02-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.03 30.0 °C

Time: 1418 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-H03-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 28.6 °C
ML

Time: 1421 Station No.: DU -401 TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-2-H04-081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: grass, pine needles, trees
Photograph numbers: Refer to Photo Log

Comments: pH = 4.18 26.4 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 14 of 19

Date: 08/17/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1424   Station No.: DU-401TP-2   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 401-2-H05-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: grass, pine needles, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.27 31.4°C

ML

Time: 1432   Station No.: DU-401TP-2   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 401-2-I01-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.26 28.0°C

ML

Time: 1435   Station No.: DU-401TP-2   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 401-2-I02-081717   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.25 30.3°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 15 of 19

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1438 Station No.: DU -401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - I03 - 081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.02 30.1 °C

ML

Time: 1440 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - I04 - 081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.03 30.2 °C

Time: 1443 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 2 - ~~I5~~ I05 - 081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: grass, pine needles, trees, ~~1/2~~ 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.32 29.8 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 16 of 17

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1452 Station No.: DU -401 TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 2 - J01 - 081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: grass, pine needles, trees, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.16 31.8°C
ML

Time: 1454 Station No.: DU -401 TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 2 - J02 - 081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, grass, tree limbs, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.01 27.1 °C
ML

Time: ~~15~~ 1456 Station No.: DU -401 TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: ~~401~~ 401 - 2 - J03 - 081717 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.07 27.4°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 17 of 17

Date: 08/17/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment Soil Probe, pH Meter

Time: 1459 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 401 - 2 - J04 - 081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Dup

Soil Volume:

Vegetation: pine needles, grass, tree limbs, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.00 32.2 °C

MC

Time: 1502 Station No.: DU - 401 TP - 2 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 401 - 2 - J05 - 081717 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 32.3 °C

MC

Time: ____ Station No.: DU - TP - Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: ____ Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: pH =

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 401-1

Completed By: Watson / Matsutani
Date: 8-18-17

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/18	✓ 09:27
A2		✓ 09:30
A3		✓ 09:32
A4		✓ 09:34
A5		✓ 09:36
A6		✓ 09:40
A7		✓ 09:42
A8		✓ 09:44
A9		✓ 09:47
A10		✓ 09:49
B1	8/18	09:53
B2		09:55
B3		09:57
B4		10:00
B5		10:02
B6		10:04
B7		10:08
B8		10:10
B9		10:12
B10		10:15
C1	8/18	10:33
C2		10:35
C3		10:38
C4		10:40
C5		10:42
C6		10:45
C7		10:48
C8		10:51
C9		✓ 10:54
C10		10:57
D1	8/18	11:11
D2		11:15
D3		11:17
D4		11:19

Sample	Photo ID	Collected?
D5	8/18	11:22
D6		11:24
D7		11:27
D8		11:30
D9		11:33
D10		11:36
E1	8/18	11:54
E2		✓ 11:57
E3		12:00
E4		12:03
E5		12:06
E6		12:08
E7		12:10
E8		12:13
E9		12:16
E10		12:19
F1	8/18	13:06
F2		13:08
F3		13:11
F4		13:14
F5		13:17
F6		13:20
F7		13:23
F8		13:46
F9		13:49
F10		13:52
G1	8/18	14:09
G2		14:12
G3		14:15
G4		14:18
G5		14:22
G6		14:25
G7		14:21
G8		14:32

Sample	Photo ID	Collected?
G9	8/18	✓ 14:37
G10		14:40
H1	8/18	14:58
H2		15:02
H3		15:06
H4		15:09
H5		15:13
H6		15:16
H7		15:19
H8		15:22
H9		15:25
H10		15:28
I1	8/18	15:46
I2		15:48
I3		15:50
I4		15:52
I5		✓ 15:54
I6		15:56
I7		15:59
I8		16:01
I9		16:03
I10		1607
J1	8/18	1629
J2		1632
J3		1635
J4		1638
J5		1641
J6		1643
J7		1646
J8		1649
J9		1651
J10		1654

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 1 of 34

Date: 08/18/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: Sunny   Sampling Equipment: Soil Probe, pH Meter

Time: 0929   Station No.: DU-401 TP-1   Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 401-1-A01-081817   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: tree, pine needles, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.96   17.0°C
ML

Time: 0930   Station No.: DU-401 TP-1   Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 401-1-A02-081817   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.76   17.6°C
ML

Time: 0932   Station No.: DU-401 TP-1   Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 401-1-A03-081817   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.27   18.0°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 2 of 34

Date: 08/ 18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 0934 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 1 - A04 - 081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.05 18.1 °C

ML

Time: 0936 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 1 - A05 - 081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.75 18.5 °C

ML

DUP

Time: 0940 Station No.: DU 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401 - 1 - A06 - 081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~401 - 1 - A06 - 081817~~

Vegetation: pine needles, tree limbs, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.82 17.8 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 3 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: ~~0946~~ 0942 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-A07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.64 18.1 °C

ML

Time: ~~0953~~ 0944 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-~~A8~~ A08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.29 18.1 °C

ML

Time: 0947 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-A09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.14 18.6°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 4 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: ~~0944~~ 0949 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-A10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.23 19.0°C

ML

Time: ~~0944~~ 0953 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-B01-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 18.0°C

ML

Time: ~~0947~~ 0955 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-B02-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.08 18.0°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 5 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 0957 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401 - 1 - B03 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.01 18.2°C
ML

Time: ~~0~~ 1000 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401 - 1 - B04 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: pine needles, tree, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.04 18.4°C
ML

Time: 1002 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 401 - 1 - B05 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______
Vegetation: pine needles, small trees, tree limbs, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.00 18.9°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 6 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1004 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 1 - B06 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.02 18.0 °C
ML

Time: 1008 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 1 - B07 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.00 19.2 °C
ML

Time: 1010 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 1 - B08 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 19.5 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 7 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment: Soil Probe, pH Meter

Time: 1012 Station No.: DU-401 TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 401-1-B09-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.07 19.1°C
MC

Time: 1015 Station No.: DU-401 TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 401-1-B10-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.16 19.1°C
MC

Time: 1033 Station No.: DU-401 TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 401-1-C01-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.08 19.1°C
MC

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 8 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment: Soil Probe, pH Meter

Time: 1035 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 401-1-C02-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

4.10 20.1°C
Comments: pH = ~~4.08~~ ~~19.1°C~~
ML

Time: 1038 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 401-1-C03-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.15 20.0°C
ML

Time: 1040 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 401-1-C04-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 19.5°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 9 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1042 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-C05-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.20 20.2°C

ML

Time: 1045 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-C06-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ~~401-1-C06-081817~~

Vegetation: moss, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.10 19.6°C

ML

Time: 1048 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-C07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.06 19.7°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 10 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sunny Sampling Equipment Soil Probe, pH Meter

Time: ~~1057~~ 1051 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-C08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, tree debris, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.15 21.3°C

ML

Time: 1054 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-C09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

DUP

Soil Volume: ~~401-1-C09-081817~~

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.11 21.9°C

ML

Time: 1057 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-C10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, tree limbs, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.07 20.5°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 11 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1111 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-D01-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, moss, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.06 22.7°C
ML

Time: 1115 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-D02-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 22.7°C
ML

Time: 1117 Station No.: DU -401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-D03-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, grass, small trees, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 22.9°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 12 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1119 Station No.: DU-401TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D04-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.15 21.2°C

ML

Time: 1122 Station No.: DU-401TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D05-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.14 23.4°C

ML

Time: 1124 Station No.: DU-401TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D06-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.00 23.5°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 13 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1127 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 23.3°C

ML

Time: 1130 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.14 23.6°C

ML

Time: 1133 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tree, pine needles, small trees, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 23.5°C

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 14 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1136 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-D10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, ~~&~~ trees, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 24.7°C

ML

Time: 1154 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-~~E10~~ E01-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: 4oz

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.18 25.0°C

ML

Time: 1157 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E02-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Dup

Soil Volume:

Vegetation: pine needles, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.02 24.9°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 15 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1200 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E03-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.08 22.4°C

ML

Time: 1203 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E04-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: grass, pine needles, small trees, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.10 24.6°C

ML

Time: 1206 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E05-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~4.1 __°C~~ 4.09 25.1 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 16 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1208 Station No.: DU 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E06-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 24.5 °C

MC

Time: 1210 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.03 24.7 °C

MC

Time: 1213 Station No.: DU - 401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-E08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: grass, pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.18 25.1 °C

MC

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 17 of 34

Date: 08/18/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment: Soil Probe, pH Meter

Time: 1216   Station No.: DU-401 TP-1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 401-1-E09-081817   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, grass, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.10 24.3 °C

ML

Time: 1219   Station No.: DU-401 TP-1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: ____   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume: 401-1-E10-081817

Vegetation: pine needles, small trees, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.14 26.0 °C

ML

Time: 1306   Station No.: DU-401 TP-1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 401-1-F01-081817   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 ~~28.7 °C~~ 25.8 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 18 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1308 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-F02-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: moss,

Vegetation: pine needles, grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 30.0°C

ML

Time: 1311 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-F03-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, pine needles, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.22 28.1°C

ML

Time: 1314 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-F04-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 28.9°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 19 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1317 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 1 - F05 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.04 28.9 °C
ML

Time: 1320 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 1 - F06 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, tree limbs, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.11 28.9 °C
ML

Time: 1323 Station No.: DU - 401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401 - 1 - F07 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.21 29.3 °C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 20 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1346 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-F08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.21 27.5

ML

Time: 1349 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-F09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.16 31.4 °C

ML

Time: 1352 Station No.: DU 401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-F10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.20 30.5 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 21 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1409 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-G01-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.17 25.7°C
ML

Time: 1412 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-G02-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 26.5°C
ML

Time: 1415 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-G03-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.15 25.9°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 2 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ________ Sampling Equipment Soil Probe, pH Meter

Time: 1418 Station No.: DU -401 TP - 1 Elevation: N/A
Latitude: ________ Longitude: ________ Accuracy: ________
Sample ID: 401 - 1 - G04 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.17 26.9°C
ML

Time: 1422 Station No.: DU -401 TP - 1 Elevation: N/A
Latitude: ________ Longitude: ________ Accuracy: ________
Sample ID: 401 - 1 - G05 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.15 26.5°C
ML

Time: 1425 Station No.: DU -401 TP - 1 Elevation: N/A
Latitude: ________ Longitude: ________ Accuracy: ________
Sample ID: 401 - 1 - G06 - 081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.19 21.9°C
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 23 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1429 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-G07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 26.4 °C

AUL

Time: 1432 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-G08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tree, pine needles, small trees, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.02 26.6 °C

AUL

Time: ~~1433~~ 1437 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-G09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.02 27.1 °C.

AUL

DWP

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 24 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1440 Station No.: DU-40, TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-G10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.06 22.2°C

ML

Time: 1458 Station No.: DU-40, TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H01-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.25 24.5°C

ML

Time: 1502 Station No.: DU-40, TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H02-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.21 27.2°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 25 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1506 Station No.: DU-401 TP 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H03-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, moss, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 27.0 °C

ML

Time: 1509 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H04-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.26 27.6 °C

ML

Time: 1513 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H05-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.21 28.6 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 26 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1516 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H06-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.24 27.0°C

ML

Time: 1519 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.08

ML

Time: 1522 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-H08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.33 26.4°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 27 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1525 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-H09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.10 28.8°C

AL

Time: 1528 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-H10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.74 27.3°C

AL

Time: 1540 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-I01-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.13 27.0°C

AL

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 28 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1548 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-I02-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.31 27.9°C

ML

Time: 1550 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-I03-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.00 30.5°C

ML

Time: 1552 Station No.: DU -401 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-I04 081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.09 28.9°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 29 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Dup

Time: 1554 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-I05-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree limbs, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.29 30.5
ML

Time: 1556 Station No.: DU -401 TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-I06-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree debris, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.03 27.9 °C
ML

Time: 1559 Station No.: DU -401 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-I07-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, grass, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.25 30.9 °C

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 30 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1601 Station No.: DU-401TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-I08-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, stump, tree debris
Photograph numbers: Refer to Photo Log

Comments: pH = 4.01 28.4°c
ML

Time: 1603 Station No.: DU-401TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-I09-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, trees, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.38 31.0°c
ML

Time: 1607 Station No.: DU-401TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 401-1-I10-081817 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, grass, pine needles, tree limbs, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.06 30.1°c
ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 31 of 34(

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1629 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-J01-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.19 30.7°C

ML

Time: 1632 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-J02-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.24 30.0°C

ML

Time: 1635 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-J03-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.12 26.4°C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 32 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1638 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-J04-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.22 28.2°C

MC

Time: 1641 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-J05-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree debris, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.29 30.1°C

Time: 1643 Station No.: DU -401 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-J06-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.16 28.2°C

MC

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 33 of 34

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1646 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-J07-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, pine needles, brush, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.24 30.1 °C

ML

Time: 1649 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-J08-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, pine needles, tree limbs, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.27 32.3 °C

ML

Time: 1651 Station No.: DU-401 TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 401-1-J09-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.23 ~~31.2 °C~~ 31.2 °C

ML

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 34 of 39

Date: 08/18/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1654 Station No.: DU - 401 TP 7 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 401-1-J10-081817 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, grass, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.17 25.8°C

ML

Time: Station No.: DU - TP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: pH =

Time: Station No.: DU - TP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: pH =

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 258-2

Completed By: Watson Metsutan

Date: 8-19-17

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/19	11:45
A2		11:47
A3		11:49
A4		11:51
A5		11:55
A6		11:57
A7		11:59
A8		12:02
A9		12:03
A10		12:05
B1	8/19	12:08
B2		12:10
B3		12:12
B4		12:13
B5		12:15
B6		12:17
B7		12:18
B8		12:20
B9		12:21
B10		12:23
C1	8/19	13:05
C2		1307
C3		1309
C4		13:11
C5		13:13
C6		✓ 13:15
C7		13:17
C8		13:18
C9		13:19
C10		13:21
D1	8/19	✓ 13:24
D2		13:26
D3		1329
D4		1330

Sample	Photo ID	Collected?
D5	8/19	1333
D6		1337
D7		1338
D8		1340
D9		1342
D10		1345
E1	8/19	1408
E2		1409
E3		1411
E4		1413
E5		1414
E6		1416
E7		1417
E8		1419
E9		1420
E10		1422
F1	8/19	1424
F2		1426
F3		1427
F4		1429
F5		1431
F6		1433
F7		1435
F8		1437
F9		1438
F10		✓ 1441
G1	8/19	1505
G2		1506
G3		1508
G4		1510
G5		1512
G6		1513
G7		1516
G8		1517

Sample	Photo ID	Collected?
G9	8/19	1519
G10		1521
H1	8/19	✓ 1524
H2		1526
H3		1528
H4		1530
H5		1530
H6		1534
H7		1535
H8		1536
H9		1538
H10		1540
I1	8/19	1557
I2		1558
I3		1600
I4		1602
I5		1604
I6		1605
I7		1607
I8		1608
I9		1610
I10		1612
J1	8/19	1618
J2		1620
J3		1621
J4		1623
J5		✓ 1625
J6		1627
J7		1629
J8		1630
J9		1632
J10		1633

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 1 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sunny Sampling Equipment Soil Probe, pH Meter

Time: 1145 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-A01-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.44 23.5°C

SM

Time: 1147 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-A02-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: bushes, pine needles, tall grass, tree, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.24 20.6°C

SM

Time: 1149 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-A03-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.28 21.0°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 2 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1151 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-A04-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, tall grass, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.77~~ 5.51 21.4°C
SM

Time: ~~1157~~ 1156 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-A05-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.15 21.5°C
SM

Time: 1157 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-A06-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, tall grass, bushes, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.62 21.7°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 3 of 34

Date: 08/ 19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1200 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - A07 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.56 20.8°C

SM

Time: 1202 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - A08 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, small tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.56 22.3°C

SM

Time: 1203 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - A09 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.52 21.5°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 4 of 34

Date: 08/19/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1205   Station No.: DU-258TP-2   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-A10-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.58 21.4°C

SM

Time: 1208   Station No.: DU-258TP-2   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-B01-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.28 22.2°C

SM

Time: 1210   Station No.: DU-258TP-2   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-B02-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, tall grass, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.45 21.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 5 of 34

Date: 08/19/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment: Soil Probe, pH Meter

Time: 1212   Station No.: DU-258TP-2   Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-B03-081917   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, small tree, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.49 21.9°C
SM

Time: 1213   Station No.: DU-258TP-2   Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-B04-081917   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.18 21.9°C
SM

Time: 1215   Station No.: DU-258TP-2   Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-B05-081917   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, tall grass, bushes, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.46 20.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 6 of 37

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1217 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-B06-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, bushes, small tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.46 22.9°C

SM

Time: 1218 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-B07-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, small tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.38 24.1°C

SM

Time: 1220 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-B08-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss tall grass, pine needles, small tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.45 23.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 7 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1221 Station No.: DU - 258TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258 - 2 - B09 - 081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, small tree, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.41 23.1°C
SM

Time: 1223 Station No.: DU - 258TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258 - 2 - B10 - 081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.44 22.7°C
SM

Time: ~~12~~ 1305 Station No.: DU - 258TP - 2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258 - 2 - C01 - 081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.31 25.5°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 8 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1307 Station No.: DU - 258TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258 - 2 - C02 - 081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, stump, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.18 22.8°C
SM

Time: 1309 Station No.: DU - 258TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258 - 2 - C03 - 081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.19 27.2°C
SM

Time: 1311 Station No.: DU - 258TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258 - 2 - C04 - 081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, trees, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.24 22.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 9 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1313 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 258-2-C05-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, bushes, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.29, 23.3°C
SM

Time: 1315 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 258-2-C06-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, small trees, bushes, tree, 1" duff
Photograph numbers: Refer to Photo Log

DUP

Comments: pH = 5.25 23.2°C
SM

Time: 1317 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 258-2-C07-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.19 25.9°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 10 of 34

Date: 08/ 19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1318 Station No.: DU - 258TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - C08 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~p~~ 5.15 27.3 °C

SM

Time: 1319 Station No.: DU - 258TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - C09 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.35 24.8 °C

SM

Time: 1321 Station No.: DU - 258TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - C10 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, bushes, tree, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.53 22.3 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 11 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1324 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-D01-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, ~~tr~~ tree debris, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.37 25.1°C

SM

Dup

Time: 1326 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-D02-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: bushes, tall grass, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.35 23.7°C

SM

Time: 1329 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-D03-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, small tree, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.46 22.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 12 of 34

Date: 08/ 19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1330 Station No.: DU -258TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - D04 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.35 24.3°C

SM

Time: 1333 Station No.: DU -258TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - D05 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, bushes, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.45 20.0°C

SM

Time: 1337 Station No.: DU -258TP -2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - D06 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.26 27.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 13 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1338 Station No.: DU-258TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-2-D07-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.20 28.3°C
SM

Time: 1340 Station No.: DU-258TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-2-D08-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, small trees, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.24 24.4°C
SM

Time: 1342 Station No.: DU 258TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-~~0~~ 2 - D09-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree debris, bushes, small trees, tree, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.33 25.3°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 19 of 34

Date: 08/14/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1345 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-D10-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.30 24.0°C
SM

Time: 1408 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-E01-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, tree limbs, bushes, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 27.5°C
SM

Time: 1409 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-E02-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.10 31.0°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 15 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1411 Station No.: DU-258TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-2-E03-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.05 27.3°C
SM

Time: 1413 Station No.: DU-258TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-2-E04-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, bushes, trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.19 25.0°C
SM

Time: 1414 Station No.: DU-258TP-2 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-2-E05-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.14 26.4°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 16 of 34

Date: 08/ 19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1416 Station No.: DU-25BTP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 25B-2-E06-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, small tree, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.16 31.2°C

SM

Time: 1417 Station No.: DU-25BTP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 25B-2-E07-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.00 27.1°C

SM

Time: 1419 Station No.: DU-25BTP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 25B-2-E08-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~4.98~~ 5.15 28.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 17 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1420 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 258-2-E09-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree limbs, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.00 233.9 °C
SM

Time: 1422 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 258-2-E10-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, bushes, 3" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.26 24.8 °C
SM

Time: 1424 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: 258-2-F01-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 27.1 °C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 18 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1426 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 2 - F02 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.09 31.6°C

SM

Time: 1427 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 2 - F03 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, tree, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.02 27.8°C

SM

Time: 1429 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 2 - F04 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.01 26.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 19 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1431 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-F05-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.04 26.0°C

SM

Time: 1433 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-F06-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 26.0°C

SM

Time: 1435 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-F07-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.24 32.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 20 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1437 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - F08 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.10 32.0°C

SM

Time: 1438 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - F09 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, tree, 2" duff, empty beer can.

Photograph numbers: Refer to Photo Log

Comments: pH = 5.06 26.0°C

SM

Time: 1441 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 2 - F10 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree limbs, small trees, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.96 28.0°C

SM

Dup

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 21 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1505 Station No.: DU -258TP -2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-2-G01-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.96 32.0°C

SM

RKA Time: ~~1306~~ 1506 Station No.: DU -258TP -2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-2-G02-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.04 36.4°C

SM

Time: 1508 Station No.: DU -258TP -2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-2-G03-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, tree limbs, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.10 27.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 22 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1510 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-604-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, small tree, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.89 27.1°C

SM

Time: 1512 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-605-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.02 28.0°C

SM

Time: 1513 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-606-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: moss,

Vegetation: tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.97 26.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 33 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1516 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-607-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, moss, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.92 28.9°C
SM

Time: 1517 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-608-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, small trees, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.02 31.0°C
SM

Time: 1519 Station No.: DU-258TP-2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-609-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, small trees, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.17 30.0°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 27 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1521 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-G10-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.03 31.9°C

SM

Time: 1524 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-H61-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, tree limbs, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.94 37.0°C

SM

DUP

Time: 1526 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-H62-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, tree limbs, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.91 ~~28.~~ 28.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 25 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1528 Station No.: DU -258TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-H03-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.03 30.6°C
SM

Time: 1530 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-H04-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: 2
Vegetation: tall grass, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.91 34.6°C
SM

Time: 1532 Station No.: DU -258TP -2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-H05-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, moss, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.95 32.0°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 26 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1534 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 2 - H06 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.05 32.0°C

SM

Time: 1535 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 2 - H07 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: ~~moss,~~ tall grass, moss, tree, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.03 31.1°C

SM

Time: 1536 Station No.: DU - 258TP - 2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 2 - H08 - 081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.98 34.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 27 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1538 Station No.: DU-258TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-2-H09-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.09 31.4°C

SM

Time: 1540 Station No.: DU-258TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-2-H10-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.86 33.5°C

SM

Time: 1557 Station No.: DU-258TP-2 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-2-I01-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tree debris, moss, tall grass, small tree, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.81 24.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 23 of 34

Date: 08/19/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment: Soil Probe, pH Meter

Time: 1558   Station No.: DU-258TP-2   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-2-I02-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.87 29.6 °C

SM

Time: 1600   Station No.: DU-258TP-2   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-2-I03-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, dead trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.92 28.0 °C

SM

Time: 1602   Station No.: DU-258TP-2   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-2-I04-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.85 31.2 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 29 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1604 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-I05-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.95 33.5°C

SM

Time: 1605 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-I06-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.84 30.9°C

SM

Time: 1607 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-I07-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.91 31.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 30 of 34

Date: 08/19/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1608   Station No.: DU-258TP-2   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-I08-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.03 32.5°C

SM

Time: 1610   Station No.: DU-258TP-2   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-I09-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.02 34.1°C

SM

Time: 1612   Station No.: DU-258TP-2   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-I10-081917   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.05 36.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 31 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1618 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J01-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.81 29.8°C

SM

Time: 1620 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J02-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, tree limbs, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.73 30.4°C

SM

Time: 1621 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J03-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, small trees, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.80 27.5°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 32 of 34

Date: 08/ 19 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1623 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J04-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.73 32.1 °C

SM

Time: 1625 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J05-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Dup

Soil Volume:

Vegetation: tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.57 31.9 °C

SM

Time: 1627 Station No.: DU-258TP-2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J06-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.81 31.9 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 33 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment: Soil Probe, pH Meter

Time: 1629 Station No.: DU - ~~258~~TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-J07-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume:
Vegetation: moss, tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 4.90 31.5°
SM

Time: 1630 Station No.: DU - ~~258~~TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-J08-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume:
Vegetation: tall grass, no duff
Photograph numbers: Refer to Photo Log
Comments: pH = 4.87 33.1°C
SM

Time: 1632 Station No.: DU - ~~258~~TP - 2 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-2-J09-081917 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume:
Vegetation: tall grass, no duff
Photograph numbers: Refer to Photo Log
Comments: pH = 4.53 33.6°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 34 of 34

Date: 08/19/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1633 Station No.: DU - ~~258~~ TP - 2 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-2-J10-081917 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, mod duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.54 32.7°C

SM

Time: Station No.: DU - TP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: pH =

Time: Station No.: DU - TP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: pH =

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 258-1

Completed By: Watson Metsctnem

Date: 8-21-17

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/21	1120
A2		1122
A3		1124
A4		1126
A5		1127
A6		1128
A7		1129
A8		1131
A9		1133
A10		1135
B1	8/21	1140
B2		1143
B3		1145
B4		1146
B5		1148
B6		1151
B7		1153
B8		1156
B9		1158
B10		1200
C1	8/21	1227
C2		1230
C3		1232
C4		1234
C5		1236
C6		1238
C7		1239
C8		1241
C9		1243
C10		1244
D1	8/21	1248
D2		1250
D3		1252
D4		1254

Sample	Photo ID	Collected?
D5	8/21	1256
D6		1258
D7		1300
D8		1302
D9		1304
D10		1306
E1	8/21	1320
E2		1342
E3		1343
E4		1345
E5		1346
E6		1349
E7		1352
E8		1355
E9		1357
E10		1359
F1	8/21	1340
F2		1324
F3		1326
F4		1328
F5		1330
F6		1406
F7		1409
F8		1411
F9		1412
F10		1413
G1	8/21	1503
G2		1505
G3		1506
G4		1508
G5		1510
G6		1512
G7		1514
G8		1516

Sample	Photo ID	Collected?
G9	8/21	1518
G10		1520
H1	8/21	1529
H2		1531
H3		1533
H4		1535
H5		1536
H6		1538
H7		1540
H8		1542
H9		1544
H10		1546
I1	8/21	1604
I2		1605
I3		1607
I4		1609
I5		1610
I6		1612
I7		1614
I8		1616
I9		1618
I10		1620
J1	8/21	1627
J2		1629
J3		1631
J4		1633
J5		1634
J6		1636
J7		1638
J8		1640
J9		1642
J10		1644

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 258-3

Completed By: Watson M.
Date: 8/21, 8/22

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/21	1658
A2		1701
A3		1703
A4		1705
A5		1706
A6		1708
A7		1710
A8		1712
A9		1714
A10		1715
B1	8/21	1720
B2		1721
B3		1723
B4		1724
B5		1726
B6		1727
B7		1728
B8		1730
B9		1731
B10		1733
C1	8/22	0856
C2		0858
C3		0900
C4		0901
C5		0903
C6		0906
C7		0908
C8		0910
C9		0912
C10		0913
D1	8/22	0922
D2		0924
D3		0926
D4		0928

Sample	Photo ID	Collected?
D5	8/22	0927
D6		0931
D7		0932
D8		0935
D9		0938
D10		0935
E1	8/22	0939
E2		0941
E3		0943
E4		0945
E5		0946
E6		0948
E7		0950
E8		0951
E9		0952
E10		0954
F1	8/22	1001
F2		1004
F3		1006
F4		1008
F5		1009
F6		1011
F7		1013
F8		1017
F9		1018
F10		1022
G1	8/22	1022
G2		1024
G3		1027
G4		1029
G5		1031
G6		1033
G7		1035
G8		1036

Sample	Photo ID	Collected?
G9	8/22	1039
G10		1041
H1	8/22	1044
H2		1047
H3		1049
H4		1051
H5		1052
H6		1054
H7		1056
H8		1058
H9		1100
H10		1101
I1	8/22	1120
I2		1122
I3		1124
I4		1126
I5		1128
I6		1129
I7		1131
I8		1133
I9		1135
I10		1137
J1	8/22	1141
J2		1144
J3		1146
J4		1149
J5		1150
J6		1153
J7		1156
J8		1158
J9		1200
J10		1202

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 1 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1120 Station No.: DU -258TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: ~~258-1-0821~~ 258-1-A01-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, moss, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.81 22.1°C
SM

Time: 1122 Station No.: DU -258TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-~~B01~~ A02-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, overhead branches, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.60 20.6°C
SM

Time: 1124 Station No.: DU -258TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A03-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree stumps, tree, 3" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.05 19.7°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 2 of 46

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1126 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A04-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, trees, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.11 20.1°C
SAY

Time: 1127 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A05-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree stumps, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 3.98 20.8°C
SAY

Time: 1128 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A06-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, small trees, tree, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.00 20.3°C
SAY

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 3 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1129 Station No.: DU-25BTP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A07-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, small tree, tree,
Photograph numbers: Refer to Photo Log

Comments: pH = 4.96 19.9°C
SM

Time: 1131 Station No.: DU-25BTP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A08-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.63 20.0°C
SM

Time: 1133 Station No.: DU-25BTP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-A09-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles moss, bushes, tree limbs, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.36 21.3°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 4 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1135 Station No.: DU - ~~258~~TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258 - 1 - A10 - 082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, tree limbs, trees, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 22.5°C
SM

Time: 1140 Station No.: DU - ~~258~~TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258 - 1 - B01 - 082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, small trees, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.39 23.2°C
SM

Time: 1143 Station No.: DU - ~~258~~TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258 - 1 - B02 - 082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, overhead branches, small tree, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.29 21.6°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 5 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1145 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-B03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, overhead branches, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.82 21.2°C

SM

Time: 1146 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-B04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, overhead branches, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.72 21.8°C

SM

Time: 1148 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-B05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.13 21.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 6 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1151 Station No.: DU -258TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-B06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.94 21.7 °C

SM

Time: 1153 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-B07-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.43 21.9 °C

SM

Time: 1156 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-B08-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: —

Vegetation: pine needles, bushes, tree, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.28 21.9 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 7 of 40

Date: 08/21/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment: Soil Probe, pH Meter

Time: 1158   Station No.: DU-258TP 1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-1-B09-082117   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, bushes, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.60 22.2°C

SM

Time: 1200   Station No.: DU-258TP-1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-1-B10-082117   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, trees, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.02 24.9°C

SM

Time: 1227   Station No.: DU-258TP-1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-1-C01-082117   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: grass, moss, pine needles, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.62 23.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 8 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1230 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-C02-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, trees, bushes, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.16~~ 4.69 21.7°C

SM

Dup

Time: 1232 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-C03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.80 22.9°C

SM

Time: 1234 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-C04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, ~~fe~~ bushes, tree, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.96 24.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 9 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1236 Station No.: DU - ~~258~~ TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-C05-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.90 24.4°C
SM

Time: 1238 Station No.: DU - 258 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-C06-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tree debris, small trees, bushes, tree, 3" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.05 23.3°C
SM

Time: 1239 Station No.: DU - 258 TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-C07-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.53 23.2°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 10 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1241 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-C08-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume:
Vegetation: tall grass, pine needles, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.97 24.1°C
SM

Time: 1243 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-C09-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume: ~~258-1-C09-0821~~
Vegetation: moss, tall grass, pine needles, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.86 25.0°C
SM

Time: 1244 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-C10-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume:
Vegetation: moss, pine needles, tree limbs, tree debris, small trees, 1" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 6.25 24.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 11 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1248 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-D01-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.89 22.9°C
SM

Time: 1250 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-D02-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, bushes, small trees, 1/2 - 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.84 22.0°C
SM

Time: 1252 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-D03-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, grass, bushes, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.55 21.2°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 12 of 40

Date: 08/21/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment Soil Probe, pH Meter

Time: 1254   Station No.: DU - 258TP - 1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-1-D04-082117   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, bushes, overhead branches, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.08 22.8°C

SM

Time: 1256   Station No.: DU - 258TP - 1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-1-D05-082117   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

DUP

Soil Volume:

Vegetation: pine needles, moss, stumps, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.28 23.9°C

SM

Time: 1258   Station No.: DU - 258TP - 1   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-1-D06-082117   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.58 24.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 13 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1300 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 1 - D07 - 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.26 23.7°C

SM

Time: 1302 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 1 - D08 - 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.40~~ 5.72 24.2°C

SM

Time: 1304 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 1 - D09 - 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.43 23.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 14 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1306 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-D10-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, moss, bushes, trees, small trees, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.81 24.5°C
SM

Time: 1320 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-E01-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, moss, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.00~~ 4.88 22.9°C
SM

Time: 1324 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-F02-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, moss, pine needles, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.86 24.4°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 15 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1326 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, tree, small trees, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.05 24.2°C

SM

Time: 1328 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.46 25.1°C

SM

Time: 1330 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.46 26.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 16 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1340 Station No.: DU -258 TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-1-E01-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.29 24.3°C

SM

Time: 1342 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-1-E02-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, bushes, small trees, 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.20 25.5°C

SM

Time: 1343 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-1-E03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.33 24.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 17 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1345 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

~~5~~ 4.71 26.7°C

Comments: pH = ~~5.~~ ~~25.7°C~~

SM

Time: 1346 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, bushes, grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.66~~ 5.01 26.1°C

SM

Time: 1349 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, small trees, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.99 23.5°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 18 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1352 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E07-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.26 23.9°C

SM

Time: 1355 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E08-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, bushes, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.08 24.7°C

SM

Time: 1357 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E09-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, small trees, empty beer can in grid, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.58 24.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 19 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: ~~1353~~ 1359 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-E10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tree limbs, small trees, tree, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.51 26.2°C

SM

Prep

Time: 1406 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, 3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.45 22.2°C

SM

Time: 1409 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F07-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, small trees, ~~1" duff~~ 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.86 23.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 20 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1411 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F08-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.20 26.0°C

SM

Time: 1412 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F09-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.41 27.8°C

SM

Time: 1413 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-F10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.10 28.5°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 21 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment: Soil Probe, pH Meter

Time: 1503 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-G01-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, small trees, bushes, tree, 4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.08 23.3 °C

SM

Time: 1505 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-G02-~~0817~~ 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, small tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.48 24.0 °C

SM

Time: 1506 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-G03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.48 25.1 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 22 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1508 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-G04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.81 24.7°C

SM

Time: 1510 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-G05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.73 23.3°C

SM

Time: 1512 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-G06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.14 22.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 23 of 70

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1514 Station No.: DU-258 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-607-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, pine needles, tree debris, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.52 25.2°C

SM

Time: 1516 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-608-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.17 25.4°C

SM

Time: 1518 Station No.: DU-258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-609-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, moss, small trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.20 23.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 24 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1520 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~258+~~ 258-1-G10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss tall grass, pine needles, tree limbs, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.97 25.7

SM

Time: 1529 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~258-0~~ 258-1-H01-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, small trees, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.03 26.5°C

SM

Time: 1531 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-H02-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, small trees, tall grass, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.62 25.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 25 of 70

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1533 Station No.: DU - 258TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-H63-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, bushes, 1/2" duff.

Photograph numbers: Refer to Photo Log

Comments: pH = 5.92 26.2°C
SM

Time: 1535 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-H64-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.04 25.7°C
SM

Time: 1536 Station No.: DU - 258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~258+~~ 258-1-H65-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.64 ~~35.7°C~~ 25.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 26 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1538 Station No.: DU - 258TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-H06-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, tall grass, pine needles, bushes, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.92 26.4°C
SM

Time: 1540 Station No.: DU - 258TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-H07-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, tall grass, bushes, pine needles, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.81 27.9°C
SM

Time: 1542 Station No.: DU - 258TP - 1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-H08-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, bushes, grass, ~~tre~~ small trees, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.10 25.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 27 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1544 Station No.: DU -258TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-H09-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: grass, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.28 27.3°C

SM

Time: 1546 Station No.: DU -258TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-H10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.03 27.0°C

SM

Time: 1604 Station No.: DU -258TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-I01-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.12 29.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 20 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1605 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-I02-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: moss, pine needles, tall grass, bushes, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.30 28.3 °C
SM

Time: 1607 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-I03-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, moss, tall grass, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.62 25.6 °C
SM

Time: 1609 Station No.: DU-258TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-I04-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, moss, small trees, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.53 23.9 °C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 29 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1610 Station No.: DU-25BTP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 25B-1-I05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, small tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.13 27.8°C

SM

Time: 1612 Station No.: DU-25BTP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 25B-1-I06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.16 27.6°C

SM

Time: 1614 Station No.: DU-25BTP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 25B-1-I07-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

DUP

Soil Volume:

Vegetation: moss, tall grass, bushes, pine needles, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.31 25.0°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 30 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1616 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-I08-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.97 28.9°C

SM

Time: 1618 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-I09-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, small trees, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.98 29.5°C

SM

Time: 1620 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-I10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, moss, tall grass, tree limbs, tree, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.34 27.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 31 of 96

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1627 Station No.: DU-258TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-1-J01-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

DUP

Soil Volume:

Vegetation: moss, tall grass, pine needles, small trees, bushes, 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.66 25.2°C

SM

Time: 1629 Station No.: DU-258TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-1-J02-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, bushes, small tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.11 27.6°C

SM

Time: 1631 Station No.: DU-258TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-1-J03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, small tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.95 30.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 32 of 46

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1633 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-J04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, pine needles, bushes, small tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.17 25.4°C

SM

Time: 1634 Station No.: DU -258TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-1-J05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.28 27.8°C

SM

RKA Time: ~~1436~~ Station No.: DU -258TP - 1 Elevation: N/A

Latitude: 1636 Longitude: Accuracy:

Sample ID: 258-1-J06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.78 25.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A　Project No.: B0095010.0005　Page: 33 of 40

Date: 08/21/2017　Sampling Crew: Alex Baird and Joseph Latham

Weather: ______　Sampling Equipment: Soil Probe, pH Meter

Time: 1638　Station No.: DU-258TP-1　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 258-1-J07-082117　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, small tree,

Photograph numbers: Refer to Photo Log

Comments: pH = 5.70 28.9°C

SM

Time: 1640　Station No.: DU-258TP-1　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 258-1-J08-082117　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.86 29.3°C

SM

Time: 1642　Station No.: DU-258TP-1　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 258-1-J09-082117　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.97 28.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 34 of 70

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1644 Station No.: DU -258TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-1-J10-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, moss, tall grass, trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 4.74 29.8°C
SM

Time: 1658 Station No.: DU -258TP -3 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-3-A01-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.72 32.7°C
SM

Time: 1701 Station No.: DU -258TP -3 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 258-3-A02-082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, no duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.61 32.7°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 35 of 40

Date: 08/21 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: ~~1704~~ 1703 Station No.: DU -258TP -3 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258 - 3 - A03 - 082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, moss, bushes, no duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.74 32.6°C
SM

Time: 1705 Station No.: DU -258TP -3 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258 - 3 - A04 - 082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, no duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 34.5°C
SM

Time: 1706 Station No.: DU -258TP - 3 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258 - 3 - A05 - 082117 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, moss, bushes, no duff
Photograph numbers: Refer to Photo Log

5.88 34.8°C
Comments: pH = ~~5.93~~ ~~34.5°C~~
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 36 of 40

Date: 08/21 /2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1708 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 3 - A06 - 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.30 33.5 °C

SM

Time: 1710 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 3 - A07 - 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.80 31.1 °C

SM

Time: 1712 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 3 - A08 - 082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.04 ~~33.9~~ 33.9 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 37 of 70

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: ~~1712~~ 1714 Station No.: DU - ~~258~~TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-A09-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.77 33.8°C

SM

Time: 1715 Station No.: DU -258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-A10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.34 34.5°C

SM

Time: 1720 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B01-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.31 31.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 38 of 70

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1721 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B02-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

6.17

Comments: pH = ~~6.30~~ 31.7°C

SM

Time: 1723 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B03-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~6.00~~ 5.83 33.2°C

SM

Time: 1724 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B04-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.86 33.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 39 of 46

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1726 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B05-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.23 33.1°C

SM

Time: 1727 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B06-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.87 34.6°C

SM

Time: 1728 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-B07-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, tree debris, no duff.

Photograph numbers: Refer to Photo Log

Comments: pH = 6.00 33.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 40 of 40

Date: 08/21/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1730 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-B08-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: 5.92 35.6 °C

pH = ~~5.71 35.3°6~~

SM

Time: 1731 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-B09-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.86 35.1 °C

SM

Time: 1733 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-B10-082117 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

DUP

Soil Volume:

Vegetation: tall grass, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~6.00~~ ~~5.86~~ 5.76 35.4 °C

SM

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 258-3

Completed By: Watson M.
Date: 8/21, 8/22

Test Plot Sample Checklist:

Sample	Photo ID	Collected?
A1	8/21	1658
A2		1701
A3		1703
A4		1705
A5		1706
A6		1708
A7		1710
A8		1712
A9		1714
A10		1715
B1	8/21	1720
B2		1721
B3		1723
B4		1724
B5		1726
B6		1727
B7		1728
B8		1730
B9		1731
B10		1733
C1	8/22	0856
C2		0858
C3		0900
C4		0901
C5		0903
C6		0906
C7		0908
C8		0910
C9		0912
C10		0913
D1	8/22	0922
D2		0924
D3		0926
D4		0928

Sample	Photo ID	Collected?
D5	8/22	0927
D6		0931
D7		0932
D8		0935
D9		0938
D10		0935
E1	8/22	0939
E2		0941
E3		0943
E4		0945
E5		0946
E6		0948
E7		0950
E8		0951
E9		0952
E10		0954
F1	8/22	1001
F2		1004
F3		1006
F4		1008
F5		1009
F6		1011
F7		1013
F8		1017
F9		1018
F10		1022
G1	8/22	1022
G2		1024
G3		1027
G4		1029
G5		1031
G6		1033
G7		1035
G8		1036

Sample	Photo ID	Collected?
G9	8/22	1039
G10		1041
H1	8/22	1044
H2		1047
H3		1049
H4		1051
H5		1052
H6		1054
H7		1056
H8		1058
H9		1100
H10		1101
I1	8/22	1120
I2		1122
I3		1124
I4		1126
I5		1128
I6		1129
I7		1131
I8		1133
I9		1135
I10		1137
J1	8/22	1141
J2		1144
J3		1146
J4		1149
J5		1150
J6		1153
J7		1156
J8		1158
J9		1200
J10		1202

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Test Plot Sample and Photo Checklist

DU and Test Plot: 441-1

Completed By: Watson M.
Date: 8/22/17

Test Plot Sample Checklist:

Sample	Photo ID	Collected?	Sample	Photo ID	Collected?	Sample	Photo ID	Collected
A1	8/22	1515	D5	8/22	1652	G9	8/22	1818
A2		1518	D6		1654	G10		1819
A3		1520	D7		1656	H1	8/22	1829
A4		1523	D8		1659	H2		1831
A5		1526	D9		1700	H3		1832
A6		1529	D10		1701	H4		1834
A7		1532	E1	8/22	1705	H5		1836
A8		1537	E2		1706	H6		1837
A9		1541	E3		1708	H7		1838
A10		1543	E4		1710	H8		1839
B1	8/22	1546	E5		1712	H9		1840
B2		1548	E6		1714	H10		1840
B3		1551	E7		1721	I1	8/22	18[illegible]
B4		1553	E8		1718	I2		1845
B5		1556	E9		1723	I3		1846
B6		1558	E10		1726	I4		1847
B7		1600	F1	8/22	1731	I5		1847
B8		1602	F2		1733	I6		1848
B9		1604	F3		1735	I7		1850
B10		1606	F4		1737	I8		1853
C1	8/22	1627	F5		1739	I9		1855
C2		1628	F6		1742	I10		1856
C3		1629	F7		1744	J1	8/22	1859
C4		1632	F8		1746	J2		1900
C5		1633	F9		1748	J3		1900
C6		1634	F10		1750	J4		1903
C7		1636	G1	8/22	1800	J5		1904
C8		1639	G2		1802	J6		1905
C9		1640	G3		1804	J7		1906
C10		1642	G4		1807	J8		1907
D1	8/22	1645	G5		1810	J9		1908
D2		1646	G6		1811	J10		1910
D3		1649	G7		1813			
D4		1650	G8		1815			

*To be completed by Field Leads before leaving Test Plot.
*Circle the check mark to indicate a DUP was collected from the test plot.

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A　Project No.: B0095010.0005　Page: 1 of 60

Date: 08/22/2017　Sampling Crew: Alex Baird and Joseph Latham

Weather: ______　Sampling Equipment: Soil Probe, pH Meter

Time: 0856　Station No.: DU - ~~25~~ 3TP - 3　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 258-3-C01-082217　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.06 ~~@~~ 18.7°C

SM

Time: 0858　Station No.: DU - 258TP - 3　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 258-3-C02-082217　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.33 18.6°C

SM

Time: 0900　Station No.: DU - 258TP - 3　Elevation: N/A

Latitude: ______　Longitude: ______　Accuracy: ______

Sample ID: 258-3-C03-082217　Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010　No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.88 18.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 2 of 60

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment Soil Probe, pH Meter

Time: 0901   Station No.: DU - 258 TP 3   Elevation: N/A
Latitude: ____   Longitude: ____   Accuracy: ____
Sample ID: 258 - 3 - C04 - 082217   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1
Soil Volume:
Vegetation: tall grass, moss, no duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.42 19.7°C
SM

Time: 0903   Station No.: DU - 258TP - 3   Elevation: N/A
Latitude: ____   Longitude: ____   Accuracy: ____
Sample ID: 258 - 3 - C05 - 082217   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1
Soil Volume:
Vegetation: tall grass, moss, no duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.56 20.2°C
SM

Time: 0906   Station No.: DU - 258TP - 3   Elevation: N/A
Latitude: ____   Longitude: ____   Accuracy: ____
Sample ID: 258 - 3 - C06 - 082217   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1
Soil Volume:
Vegetation: tall grass, no duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.46 20.6°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 3 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 0908 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-C07-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.46 20.2°C

SM

Time: 0910 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-C08-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.16 20.8°C

SM

Time: 0912 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-C09-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.43 20.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 4 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 0913 Station No.: DU-258TP-3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258-3-U0-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010

Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.33 19.7°C

SM

Time: 0922 Station No.: DU-258TP-3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258-3-D01-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010

Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.49 20.2°C

SM

Time: 0924 Station No.: DU-258TP-3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258-3-D02-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010

Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.51 19.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 5 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 0926 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-D03-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, moss, tree limbs, ~~[illegible]~~ no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.71 ~~28.7~~ 20.1°C

SM

Time: 0927 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-D05-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, moss no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 20.1°C

SM

Time: 0928 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-D04-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.75 ~~Z~~ 19.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 6 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 0931 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-D06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.09 21.0°C

SM

Time: 0932 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-D07-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.22 20.6°C

SM

Time: 0935 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-D08-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.21 21.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 7 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

DUP

Time: 0938 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 3 - DD9 - 082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.90 21.6°C

SM

Time: 0935 Station No.: DU - ~~258~~TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 3 - D10 - 082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~5~~ 5.04 21.4°C

SM

Time: 0939 Station No.: DU - 258TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - E01 - 082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.10 20.9°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 8 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment: Soil Probe, pH Meter

Time: 0941 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-E02-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, ~~[illegible]~~ 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 20.6°C

SM

Time: 0943 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-E03-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.35 20.9°C

SM

Time: 0945 Station No.: DU-258TP-3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-E04-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.02 20.9°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 9 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 0946 Station No.: DU -258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-E05-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.22 20.8°C

SM

Time: 0948 Station No.: DU -258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-E06-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.78 20.7°C

SM

Time: 0950 Station No.: DU -258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-E07-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.73 21.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 10 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 0951 Station No.: DU-258 TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-E08-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.66 21.7°C

SM

Time: 0952 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-E09-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.58 21.5°C

SM

Time: 0954 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-E10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.27 21.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 11 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Dup

Time: 1001 Station No.: DU -258TP -3 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-3-F01-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: moss, tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 6.16 20.2°c
SM

Time: 1004 Station No.: DU -258TP -3 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-3-F02-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: moss, tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 6.29 21.7°c
SM

Time: 1006 Station No.: DU -258TP -3 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 258-3-F03-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: moss, tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 6.54 21.8°c
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 12 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1008 Station No.: DU -258 TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-F04-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.18 21.7°C

SM

Time: 1009 Station No.: DU -258 TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-F05-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.60 22.2°C

SM

Time: 1011 Station No.: DU -258 TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-F06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.04 21.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 13 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1013 Station No.: DU - 258 TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 3 - F07 - 082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.44 22.5 °C

SM

Time: 1017 Station No.: DU - 258 TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 3 - F08 - 082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.06 22.4 °C

SM

Time: 1018 Station No.: DU - 258 TP - 3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258 - 3 - F09 - 082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 24.6 °C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 14 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment: Soil Probe, pH Meter

Time: 1022 Station No.: DU-258TP-3

Latitude: ____ Longitude: ____ Elevation: N/A Accuracy: ____

Sample ID: 258-3-F10-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.74 23.8°C

SM

Time: 1022 Station No.: DU-258TP-3

Latitude: ____ Longitude: ____ Elevation: N/A Accuracy: ____

Sample ID: 258-3-G01-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.26 20.8°C

SM

Time: 1024 Station No.: DU-258TP-3

Latitude: ____ Longitude: ____ Elevation: N/A Accuracy: ____

Sample ID: 258-3-G02-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.40 21.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 15 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1027 Station No.: DU -258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 3 - 603 - 082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.22 22.1°C

SM

Time: 1029 Station No.: DU -258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 3 - 604 - 082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.28 21.3°C

SM

Time: 1031 Station No.: DU -258TP - 3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258 - 3 - 605 - 082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.37 22.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 16 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1033 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-606-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.80 23.2°C

SM

Time: 1035 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-607-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, tree, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.29 23.8°C

SM

Time: 1036 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-608-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.76 23.0°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 17 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1039 Station No.: DU - ~~258~~TP - 3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258 - 3 - G09 - 082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, tree stump and debris, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~[illegible]~~ 5.30 22.7°C

SM

Time: 1041 Station No.: DU - ~~258~~TP - 3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258 - 3 - G10 - 082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 23.4°C

SM

Time: 1044 Station No.: DU - ~~258~~TP - 3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258 - 3 - H01 - 082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, pine needles, tall grass, bushes, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.31 20.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 18 of 66

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____   Sampling Equipment: Soil Probe, pH Meter

Time: 1047   Station No.: DU-258TP-3   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-3-H02-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume: ____

Vegetation: tree debris, tall grass, bushes, pine needles, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.16 21.4°C

SM

Time: 1049   Station No.: DU-258TP-3   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-3-H03-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume: ____

Vegetation: tree debris, bushes, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.70 22.5°C

SM

Time: 1051   Station No.: DU-258TP-3   Elevation: N/A

Latitude: ____   Longitude: ____   Accuracy: ____

Sample ID: 258-3-H04-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume: ____

Vegetation: tree debris, bushes, tall grass, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.17 21.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 19 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1052 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-H05-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.14 21.6°C

SM

Time: 1054 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-H06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.01 22.1°C

SM

Time: 1056 Station No.: DU -258TP -3 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 258-3-H07-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Dup

Vegetation: moss, tall grass, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.04 24.2°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 20 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment Soil Probe, pH Meter

Time: 1058 Station No.: DU - 258 TP - 3 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 258-3-H08-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.47 25.2°C

SM

Time: 1100 Station No.: DU - 258 TP - 3 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 258-3-H09-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.41 24.9°C

SM

Time: 1101 Station No.: DU - 258 TP - 3 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 258-3-H10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.66 24.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 21 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1120 Station No.: DU - ~~258~~ TP - 3

Latitude: Longitude: Elevation: N/A

Accuracy:

Sample ID: 258-3-I01-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 23.3°C

SM

Time: 1122 Station No.: DU - ~~258~~ TP - 3

Latitude: Longitude: Elevation: N/A

Accuracy:

Sample ID: 258-3-I02-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.65 21.6°C

SM

Time: 1129 Station No.: DU - ~~258~~ TP - 3

Latitude: Longitude: Elevation: N/A

Accuracy:

Sample ID: 258-3-I03-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tree debris, pine needles, bushes, tall grass, 1-2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.92 21.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 22 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1126 Station No.: DU - ~~25~~ TP - 3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258-3-I04-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume: ______

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.38 22.0°C

SM

Time: 1128 Station No.: DU - ~~25~~ TP - 3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258-3-I05-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, bushes, no duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.58 23.1°C

SM

Time: 1129 Station No.: DU - ~~25~~ TP - 3

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 258-3-I06-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume: ______

Vegetation: moss, pine needles, tall grass, bushes, trees, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.14 22.0°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 23 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1131 Station No.: DU -258TP -3
Latitude: Longitude: Elevation: N/A
Accuracy:
Sample ID: 258-3-I07-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: tree debris, pine needles, tall grass, moss, shot-up paint can ft from sample area, 1" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 4.61 20.8°C
SM

Time: 1133 Station No.: DU -258TP -3
Latitude: Longitude: Elevation: N/A
Accuracy:
Sample ID: 258-3-I08-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: moss, tall grass, pine needles, bushes, tree debris, 1/2" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.55 22.1°C
SM

Time: 1135 Station No.: DU -258TP -3
Latitude: Longitude: Elevation: N/A
Accuracy:
Sample ID: 258-3-I09-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: moss, leaves + pine needles, tall grass, bushes, 1" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.93 22.3°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 24 of 60

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1137   Station No.: DU-258TP-3   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 258-3-I10-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: Leaves & pine needles, tall grass, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.97 22.8°C
SM

Time: 1141   Station No.: DU-258TP-3   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 258-3-J01-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, pine needles, bushes, small trees, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.99 23.3°C
SM

Time: 1144   Station No.: DU-258TP-3   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 258-3-J02-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, small trees, tree, 2-3" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.66 22.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 25 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1146 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-J03-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, pine needles, bushes, small trees, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.19 25.4°c

SM

Time: 1149 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-J04-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

DUP

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.10 24.8°c

SM

Time: 1150 Station No.: DU-258TP-3 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 258-3-J05-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.14 25.6°c

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 26 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1153 Station No.: DU - ~~258~~TP - 3

Latitude: Longitude: Elevation: N/A

Accuracy:

Sample ID: 258-3-J06-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.82 26.2°C

SM

Time: 1156 Station No.: DU - ~~258~~TP - 3

Latitude: Longitude: Elevation: N/A

Accuracy:

Sample ID: 258-3-J07-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: pine needles, grass, bushes, tree, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.65 25.6°C

SM

Time: 1158 Station No.: DU - ~~258~~TP - 3

Latitude: Longitude: Elevation: N/A

Accuracy:

Sample ID: 258-3-J08-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, grass, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.11 25.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 27 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment Soil Probe, pH Meter

Time: 1200 Station No.: DU ~~25~~8TP - 3 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: 258-3-J09-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: leaves + pine needles, moss, bushes, 1" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.93 23.8°C
SM

Time: 1202 Station No.: DU ~~25~~8TP - 3 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: 258-3-~~0~~J10-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: ~~leaves and~~ moss, pine needles, tall grass, bushes, tree, 1/2" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 6.15 23.3°C
SM

Time: 1515 Station No.: DU 441/TP - 1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: 441-1-A01-082217
Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches
No. sample containers: 1
Soil Volume:
Vegetation: moss, tall grass, bushes, ~~rocky~~, rocks, ~~1" duff~~ No duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.95 36.9°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 28 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1518 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-A02-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, small trees, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.67 32.6°C

1 ft ~~Southeast~~ South due to rocks, SM

Time: 1520 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-A03-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, leaves, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.71 31.1°C

West edge of Flag, SM

Time: 1523 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-A04-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, leaves, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.76 31.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 29 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1526 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-A05-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: pine needles, leaves, bushes, small trees, tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.68 30.7°C

SM

Time: 1529 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-A06-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: leaves, pine needles, bushes, moss, tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.76 32.6°C

SM

Time: 1532 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-A07-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 32.5°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 30 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

DUP

Time: 1537 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44/-1-A08-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: leaves, pine needles, bushes, 2" duff

Vegetation: ~~moss, tall grass, bushes, 1/4" duff~~

Photograph numbers: Refer to Photo Log

Comments: pH = ~~[illegible]~~ 5.63 ~~[illegible]~~ 28.8°C

SM

Time: 1541 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44/-1-A09-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: tall grass, moss, bushes, 1/4" duff

Vegetation: ~~Leaves, pine needles, bushes, 2" duff~~

Photograph numbers: Refer to Photo Log

Comments: pH = ~~[illegible]~~ 5.68 ~~[illegible]~~ 32.5°C

SM

Time: 1543 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44/-1-A10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: leaves, pine needles, tall grass, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.60 30.6°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 31 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1546 Station No.: DU 44/ TP -1

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 441-1-~~B~~ B01-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, rocks, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.98 34.0°C

South side of flag, SM

Time: 1548 Station No.: DU -44/TP -1

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 441-1-B02-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.95 35.6°C

SM

Time: 1551 Station No.: DU -44/TP -1

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 441-1-B03-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: pine needles, leaves, bushes, tall grass, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.12 32.7°C

SM, East of flag

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 32 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1553 Station No.: DU 441 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-B04-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.31 31.7°C
SM

Time: 1556 Station No.: DU -441 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-B05-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.18 34.4°C
SM

Time: 1558 Station No.: DU -441 TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-B06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.83 34.1°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 33 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1602 Station No.: DU - 44/TP - 1

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 441-1-B07-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: moss, ~~pine needles~~, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.27

SM

Time: 1604 Station No.: DU - 44/TP - 1

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 441-1-B08-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.92 33.2°C

SM

Time: 1606 Station No.: DU - 44/TP - 1

Latitude: ______ Longitude: ______ Elevation: N/A Accuracy: ______

Sample ID: 441-1-B09-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.88 33.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 34 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment Soil Probe, pH Meter

Time: 1606 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 44/-1-B10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.96 34.9°C

SAL

Time: 1627 Station No.: DU -44/ TP - 1 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 44/-1-C01-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, leaves, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.38 32.0°C

SAL

Time: 1628 Station No.: DU 44/TP - 1 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 44/-1-C02-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: bushes, pine needles, tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.39 32.4°C

SAL

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 35 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1629 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44-1-C03-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: pine needles, ~~[illegible]~~ bushes, small trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.75 33.5°C

SM

Time: 1632 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44-1-C04-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, bushes, small trees, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.85~~ 5.90 33.0°C

SM

Time: 1633 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44-1-C05-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.43 34.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 36 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1634 Station No.: DU - 41/TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-106-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.77 33.2°C

SM

Time: 1636 Station No.: DU - 41/TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-107-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: bushes, pine needles, tall grass, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.18 32.3°C

SM

Time: 1639 Station No.: DU - 41/TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-108-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, leaves, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH =

1 ft East due to rocks, SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 37 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1640 Station No.: DU-441/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-L09-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.05 33.3°C

SM

Time: 1642 Station No.: DU-441/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-~~L09~~ C10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, bushes, rocks, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.48 31.8°C

East side of flag, SM

Time: 1645 Station No.: DU-441/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-D01-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: moss, tall grass, bushes, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.25 32.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 38 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1646 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 44/-1-D02-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume: ______
Vegetation: moss, tall grass, pine needles, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.99 31.7°C
SM

Time: 1649 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 44/-1-D03-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume: ______
Vegetation: tall grass, pine needles, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.86 33.0°C
SM

Time: 1650 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 44/-1-D04-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1
Soil Volume: ______
Vegetation: moss, tall grass, small tree, 1/4" duff
Photograph numbers: Refer to Photo Log
Comments: pH = 5.96 31.7°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 39 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1652 Station No.: DU-441/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-D05-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.00 30.8°C
SM

Time: 1654 Station No.: DU-441/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-D06-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.06 32.7°C
SM

Time: 1656 Station No.: DU 441/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-D07-082217

Sample analysis: Total Lead and Arsenic by USEPA 6010 Depth: 3 inches

No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.91 32.9°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 40 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1659 Station No.: DU-441TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 441-1-D08-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, pine needles, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.03 31.5°C
SM

Time: 1700 Station No.: DU-441TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 441-1-D09-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: pine needles,
Vegetation: tall grass, bushes, trees, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.62 31.8°C
SM

Time: 1701 Station No.: DU-441TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 441-1-D10-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Dup

Soil Volume:
Vegetation: tree, pine needles, bushes, tall grass, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.41 32.0°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 41 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1705 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-E01-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.97 31.8°C
SM

Time: 1706 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-E02-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.10 31.7°C
SM

Time: 1708 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-E03-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, ~~tree limbs~~ tree, tree limbs, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.11 33.2°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 42 of 66

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1710   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 441-1-E04-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.59 33.0°C

SM

Time: 1712   Station No.: DU 44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 441-1-E05-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.72 32.5°C

SM

Time: 1714   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 441-1-E06-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, rocks, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.93 32.7°C

1 ft NW, SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 43 of 66

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1720   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-E07-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.35 31.8°C

SM

Time: 1718   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-E08-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.80 30.7°C

SM

Time: 1723   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-E09-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, rocks, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.29 33.2

1 ft north, SM

creek bed?

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 44 of 60

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1726   Station No.: DU - 44/TP - 1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-B10-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.24 31.5°C

SM

Time: 1731   Station No.: DU - 44/TP - 1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-F01-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.21 32.3°C

SM

Time: 1733   Station No.: DU - 44/TP - 1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-F02-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.72 31.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 45 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1735 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-F03-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, tree, bushes, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.34 31.4°C
SM

Time: 1737 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-~~F~~ F04-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.92 30.6°C
SM

Time: 1739 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-F05-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: bushes, tall grass, pine needles, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.85~~ ~~32.0°C~~ 5.86 22.1°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 46 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1742 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44/-1-F06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.57 30.9°C

SM

Time: 1744 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44/-1-F07-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.97 32.9°C

SM

Time: 1746 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 44/-1-F08-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: bushes, tall grass, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.29 31.9°C

SM

DWP

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 47 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1748 Station No.: DU -44/TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 44/-1-F09-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, tall grass, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.18 30.5°C
SM

Time: 1750 Station No.: DU -44/TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 44/-1-F10-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, bushes, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.84 32.3°C
SM

Time: 1800 Station No.: DU -44/TP -1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 44/-1-G01-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, tall grass, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.17 30.5°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 48 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment: Soil Probe, pH Meter

Time: 1802 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 44/-1-G02-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, bushes, tall grass, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.85 31.6°C
SM

Time: 1804 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 44/-1-G03-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, bushes, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~6.05~~ 6.11 31.7°C
SM

Time: 1807 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: ______ Longitude: ______ Accuracy: ______
Sample ID: 44/-1-G04-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, small trees, 1" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.66 28.8°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 49 of 66

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1810 Station No.: DU-441 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-G05-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: bushes, pine needles, tall grass, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.65 29.2°C

SM

Time: 1811 Station No.: DU-441 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-G06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.36 30.5°C

SM

Time: 1813 Station No.: DU-441 TP-1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-G07-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.01 30.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 50 of 60

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1815   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-G08-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.49 30.0°C

SM

Time: 1818   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-G~~08~~09-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.53 28.0°C

SM

Time: 1819   Station No.: DU-44/TP-1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-G10-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.16 28.5°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 51 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1829 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-H01-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, tall grass, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.01 30.3°C

SM

Time: 1831 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-H02-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: leaves + pine needles, bushes, tall grass, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.75 28.7°C

west side of flag, SM

Time: 1832 Station No.: DU-44/TP-1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-H03-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: leaves + pine needles, tall grass, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.64, 26.9°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 52 of 60

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1834   Station No.: DU -44/TP -1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-H04-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1" duff, ~~[illegible]~~

Photograph numbers: Refer to Photo Log

Comments: pH = 6.45 27.5°C

SM

Time: 1836   Station No.: DU -44/TP -1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-H05-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.57 28.0°C

SM

Time: 1837   Station No.: DU -44/TP -1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 44/-1-H06-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.37 27.3°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 53 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1838 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-H07-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, pine needles, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.74 25.2°C
SM

Time: 1839 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-1-H08-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.52 28.5°C
SM

Time: 1840 Station No.: DU-44/TP-1 Elevation: N/A
Latitude: Longitude: Accuracy:
Sample ID: 441-~~H09~~-1-H09-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~5.76~~ 5.67 28.2°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 54 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1840 Station No.: DU -441 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-H10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, moss, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.79 26.6°C

SM

Time: 1843 Station No.: DU -441 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-I01-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: pine needles, bushes, trees, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.14 27.9°C

SM

Time: 1845 Station No.: DU -441 TP -1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 441-1-I02-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.34 26.4°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 55 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: Sampling Equipment Soil Probe, pH Meter

Time: 1846 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 44/-1-IO3-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, pine needles, bushes, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.35 26.2°C

SM

Time: 1847 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 44/-1-IO4-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Dup

Soil Volume:

Vegetation: pine needles, tall grass, bushes, 1/2" duff burned stump 2 ft north

Photograph numbers: Refer to Photo Log

Comments: pH = 6.17 28.0°C

SM

Time: 1847 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: 44/-1-IO5-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.71 27.8°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 56 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment Soil Probe, pH Meter

Time: 1848 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 441-1-I06-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 4.96 23.2°C

SM

Time: 1850 Station No.: DU -44/TP -1 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 441-1-I07-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, moss, bushes, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.40 26.8°C

SM

Time: 1853 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: 441-1-I08-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.45 26.7°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 57 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ______ Sampling Equipment Soil Probe, pH Meter

Time: 1855 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-I09-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: pine needles, bushes, tall grass, 2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.47 26.2°C

SM

Time: 1856 Station No.: DU - 44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-I10-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: tall grass, bushes, pine needles, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.34 26.7°C

SM

Time: 1859 Station No.: DU -44/TP - 1 Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: 441-1-J01-082217 Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume: ______

Vegetation: pine needles, tree debris, tall grass, burned and fallen tree 3 ft from sample, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.32 25.1°C

SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 58 of 60

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ____________   Sampling Equipment: Soil Probe, pH Meter

---

Time: 1900   Station No.: DU -44/TP -1   Elevation: N/A
Latitude: ____________   Longitude: ____________   Accuracy: ____________

Sample ID: 44/-1-J02-082217   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: tall grass, tree debris, pine needles, bushes, fallen tree 1.5 ft from sample, 1" duff
Photograph numbers: Refer to Photo Log

Comments: 5.37 27.9°C
pH = ~~[illegible]~~ ~~[illegible]~~
SM

Time: 1900   Station No.: DU -44/TP -1   Elevation: N/A
Latitude: ____________   Longitude: ____________   Accuracy: ____________

Sample ID: 44/-1-J03-082217   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, bushes, fallen tree 3 ft from sample, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.47 27.6°C
SM

Time: 1903   Station No.: DU -44/TP -1   Elevation: N/A
Latitude: ____________   Longitude: ____________   Accuracy: ____________

Sample ID: 44/-1-J04-082217   Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, fallen tree 4.5 ft from sample, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.10 26.2°C
SM

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A Project No.: B0095010.0005 Page: 59 of 60

Date: 08/22/2017 Sampling Crew: Alex Baird and Joseph Latham

Weather: ____ Sampling Equipment Soil Probe, pH Meter

Time: 1904 Station No.: DU -44/TP -1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: 441-1-J05-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, pine needles, bushes, moss, 1/4" duff
Photograph numbers: Refer to Photo Log

Comments: pH = ~~[illegible]~~ 6.68 25.0°C
SM

Time: 1905 Station No.: DU -44/TP -1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: 441-1-J06-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: tall grass, bushes, pine needles, 1/2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 6.14 25.3°C
SM

Time: 1906 Station No.: DU -44/TP -1 Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: 441-1-J07-082217 Depth: 3 inches
Sample analysis: Total Lead and Arsenic by USEPA 6010 No. sample containers: 1

Soil Volume:
Vegetation: pine needles, tall grass, bushes, moss, 2" duff
Photograph numbers: Refer to Photo Log

Comments: pH = 5.98 25.7°C
SM

DLB

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1A   Project No.: B0095010.0005   Page: 60 of 68

Date: 08/22/2017   Sampling Crew: Alex Baird and Joseph Latham

Weather: ______   Sampling Equipment: Soil Probe, pH Meter

Time: 1907   Station No.: DU - 44 TP - 1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 441-1-J08-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.50 26.8°C

SM

Time: 1908   Station No.: DU - 44 TP - 1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 441-1-J09-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: tall grass, bushes, pine needles, 1/4" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 5.99 25.2°C

SM

Time: 1960   Station No.: DU - 44 TP - 1   Elevation: N/A

Latitude: ______   Longitude: ______   Accuracy: ______

Sample ID: 441-1-J10-082217   Depth: 3 inches

Sample analysis: Total Lead and Arsenic by USEPA 6010   No. sample containers: 1

Soil Volume:

Vegetation: bushes, pine needles, tall grass, 1" duff

Photograph numbers: Refer to Photo Log

Comments: pH = 6.16 25.7°C

SM

	pH meter calibration			
8/15/17	pH 4 =	4.00	pH 7 =	7.00
8/16/17	pH 4	4.00	pH 7	7.00
8/17/17	pH 4	4.00	pH 7	7.00
8/18/17	pH 4	4.01	pH 7	7.00
8/19/17	pH 4	4.00	pH 7	7.00
8/21/17	pH 4	4.00	pH 7	7.00
8/22/17	pH 4	4.00	pH 7	7.00

TAI-UCR SEATEJ 08/16/17
Phase 1A
PN: B0090510.0005

0800 - Meet at station/shop. Prep field vehicles and mobilize to DU-401.

0915 - Setup equipment and pin sample locations on eastern half of 401-2 cleared by CCT.

1100 - Start sampling at A06.

1200 - Break for lunch.

1300 - Continue sampling.

1645 - Finish eastern half of 401-2 at J10. See field forms for sample times. Collect equipment and demobilize to station/shop.

1730 - Close up station/shop and demobilize to lodging in Canada.

STAFF: AB, JL, WM, RA (AUS)   DE (rack)
Aaron (CCT)
MR, HA (Ramboll)

Rite in the Rain

TAI - UCR SATES 08/17/19
Phase 1A
PN: B0085010.0085

0800 - Meet at Station and load vehicle

0840 - Head to 401-2.

0900 - H & S tailgate

0920 - Flag west half of 401-2

1020 - Finish flagging and take water break.

1030 - Begin sampling.

1221 - Finish ~~up~~ to ~~D05~~ D05. Break for lunch.

1505 - Mark out 401-1 and backfill 401-2.

1705 - Demobilize from 401. Back to shop.

1750 - Close shop. Arcadis off-site.

STAFF: AB, JL, LSM (AUS)
Aaron (CCT)
MR (Rambsoll)

TAI-UCR SATES 08/18/17
Phase 1A
PN? B0095010.0005

0800 - Arcadis, Ramboll, CET at shop. Load vehicles and head to 401-1.

0910 - Arrive at 401-1 and set up process station and begin sampling.

0927 - Sample A01.

1220 - Break for lunch and then continue sampling at 401-1-F01.

1655 - Finish sampling 401-1 and backfill sample locations. Confirm photos, sample field forms, and all data collected.

1730 - Demobilize from 401-1 back to station/shop.

1800 - Close shop. Arcadis off-site.

STAFF: AB, JL, EWM (Arcadis)
MR (Ramboll)
Aaron (CET)

Rite in the Rain

~~TAF~~ - UCR SATES 08/19/17
Phase 1A
PN: B0035610.0005

0750 - Arcadis and Rambol on-site. Load ~~Field~~ vehicles.

0830 - Arrive at # 258-2. Flag edges of ~~258 sub~~ 258-2, 258-3, and 258-1.

0935 - CCT done with survey conformed and flag samplocations in 258-2.

~~0~~1130 - Finish flagging and start sampling.

1230 - Break for lunch

1300 - Begin sampling.

1630 - Finish sampling 258-2. Acain demobilizing off-site. Arcadis processing samples.

1730 - Finish processing and load field vehicles. Demob to station shop.

1815 - Finish field equipment and sample recording at shop.

STAFF: A B, JL, WM (ARIS)
Acain (CCT)

Rite in the Rain

TAI-LLCR SATES
PHASE IA
PN: 53005010.0005

8/21/17

0800 - Meet at station/shop and load field vehicles. Prep coolers and mobilize to 258-1.

0900 - Arrive at DH-258. Confirm 258-1 and 258-3 cleared by CCT and begin flagging sample locations.

1115 - Finish flagging and start sampling 258-1.

1200 - Break for lunch and continue sampling 258-1.

1645 - Finish sampling 258-1. Begin backfilling sample locations. Begin partial sampling of 258-3.

1735 - Complete 258-3 sampling up to B10. Process samples and collect equipment.

1800 - Demobilize back to shop.

1915 - Finish at station/shop.

STAFF: AB, JL, WM (AWS)
0 (CCT)

TAI - UCR ~~SA~~ SITES 8/22/17
Phase IA
PN: B0035010-0005

0800 - Meet at station/shop. Load vehicles and mobilize to 258-3.

0845 - Arrive at 258-3 and ~~begin~~ begin sampling.

1205 - Complete sampling 258-3. Break for lunch and backfill sample locations. Pull flags after phone conversations with Rebecca Andresen (Arcadis)

1330 - Arrive at DU 441 and confirm CCT is finished with bio survey. Begin flagging ~~444~~ 441-1.

1500 - Begin sampling 441-1.

1910 - Finish sampling 441-1 and backfill sample locations. Demob back to station/shop.

2000 - Break for food and come back to station/shop to ~~fit~~ process samples and prep coolers.

2400 - Continue to prep coolers and clean shop to demobilize tomorrow.

STAFF: AB, JC, ~~ws~~ (AWS)
GS (CCT)

Rite in the Rain.

Table [#]
Sample Detail Summary
UCR-SATES Phase 1A

DRAFT

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
401-2-A06-081617	401	2	8/16/2017	11:03	5.22	
401-2-B06-081617	401	2	8/16/2017	11:12	4.80	
401-2-C06-081617	401	2	8/16/2017	11:15	5.35	
401-2-D06-081617	401	2	8/16/2017	11:30	5.32	
401-2-E06-081617	401	2	8/16/2017	11:36	4.20	
401-2-F06-081617	401	2	8/16/2017	11:39	4.30	
401-2-G06-081617	401	2	8/16/2017	11:43	4.97	
401-2-H06-081617	401	2	8/16/2017	11:46	4.16	
401-2-I06-081617	401	2	8/16/2017	11:52	4.34	
401-2-J06-081617	401	2	8/16/2017	11:56	5.10	
401-2-A07-081617	401	2	8/16/2017	13:03	6.53	
401-2-B07-081617	401	2	8/16/2017	13:11	6.39	Duplicate
401-2-C07-081617	401	2	8/16/2017	13:15	6.50	
401-2-D07-081617	401	2	8/16/2017	13:19	6.18	
401-2-E07-081617	401	2	8/16/2017	13:22	6.03	
401-2-F07-081617	401	2	8/16/2017	13:27	5.90	
401-2-G07-081617	401	2	8/16/2017	13:31	5.24	
401-2-H07-081617	401	2	8/16/2017	13:35	5.61	
401-2-I07-081617	401	2	8/16/2017	13:40	4.86	
401-2-J07-081617	401	2	8/16/2017	13:52	5.11	
401-2-A08-081617	401	2	8/16/2017	14:00	5.20	
401-2-B08-081617	401	2	8/16/2017	14:03	5.49	
401-2-C08-081617	401	2	8/16/2017	14:06	5.53	
401-2-D08-081617	401	2	8/16/2017	14:13	5.35	
401-2-E08-081617	401	2	8/16/2017	14:15	4.96	
401-2-F08-081617	401	2	8/16/2017	14:20	4.80	
401-2-G08-081617	401	2	8/16/2017	14:44	5.17	
401-2-H08-081617	401	2	8/16/2017	14:49	5.02	
401-2-I08-081617	401	2	8/16/2017	14:55	4.62	
401-2-J08-081617	401	2	8/16/2017	14:59	4.60	
401-2-A09-081617	401	2	8/16/2017	15:04	4.29	
401-2-B09-081617	401	2	8/16/2017	15:07	4.13	
401-2-C09-081617	401	2	8/16/2017	15:11	4.51	Duplicate
401-2-D09-081617	401	2	8/16/2017	15:34	4.19	
401-2-E09-081617	401	2	8/16/2017	15:38	4.13	
401-2-F09-081617	401	2	8/16/2017	15:42	4.31	
401-2-G09-081617	401	2	8/16/2017	15:46	4.56	
401-2-H09-081617	401	2	8/16/2017	15:52	4.53	
401-2-I09-081617	401	2	8/16/2017	15:55	4.02	
401-2-J09-081617	401	2	8/16/2017	16:03	4.30	
401-2-A10-081617	401	2	8/16/2017	16:08	4.10	
401-2-B10-081617	401	2	8/16/2017	16:12	4.13	
401-2-C10-081617	401	2	8/16/2017	16:17	4.03	
401-2-D10-081617	401	2	8/16/2017	16:21	4.19	
401-2-E10-081617	401	2	8/16/2017	16:25	4.13	
401-2-F10-081617	401	2	8/16/2017	16:29	4.30	
401-2-G10-081617	401	2	8/16/2017	16:32	4.11	
401-2-H10-081617	401	2	8/16/2017	16:36	4.87	
401-2-I10-081617	401	2	8/16/2017	16:39	4.40	
401-2-J10-081617	401	2	8/16/2017	16:42	4.77	
401-2-A01-081717	401	2	8/17/2017	10:51	4.88	
401-2-A02-081717	401	2	8/17/2017	10:55	4.72	
401-2-A03-081717	401	2	8/17/2017	11:01	4.42	
401-2-A04-081717	401	2	8/17/2017	11:06	4.12	
401-2-A05-081717	401	2	8/17/2017	11:09	4.06	
401-2-B01-081717	401	2	8/17/2017	11:16	4.02	
401-2-B02-081717	401	2	8/17/2017	11:19	4.09	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
401-2-B03-081717	401	2	8/17/2017	11:24	4.19	
401-2-B04-081717	401	2	8/17/2017	11:28	4.26	
401-2-B05-081717	401	2	8/17/2017	11:31	4.34	
401-2-C01-081717	401	2	8/17/2017	11:45	5.01	
401-2-C02-081717	401	2	8/17/2017	11:48	4.06	
401-2-C03-081717	401	2	8/17/2017	11:52	4.05	
401-2-C04-081717	401	2	8/17/2017	11:57	4.19	
401-2-C05-081717	401	2	8/17/2017	12:00	4.79	
401-2-D01-081717	401	2	8/17/2017	12:04	4.10	
401-2-D02-081717	401	2	8/17/2017	12:04	4.80	
401-2-D03-081717	401	2	8/17/2017	12:12	4.71	
401-2-D04-081717	401	2	8/17/2017	12:15	4.34	
401-2-D05-081717	401	2	8/17/2017	12:18	4.4	
401-2-E01-081717	401	2	8/17/2017	12:49	5.19	
401-2-E02-081717	401	2	8/17/2017	12:56	4.77	
401-2-E03-081717	401	2	8/17/2017	13:00	4.67	
401-2-E04-081717	401	2	8/17/2017	13:03	4.46	
401-2-E05-081717	401	2	8/17/2017	13:07	4.50	Duplicate
401-2-F01-081717	401	2	8/17/2017	13:14	4.62	
401-2-F02-081717	401	2	8/17/2017	13:17	4.80	
401-2-F03-081717	401	2	8/17/2017	13:19	4.83	
401-2-F04-081717	401	2	8/17/2017	13:22	4.66	
401-2-F05-081717	401	2	8/17/2017	13:25	4.70	
401-2-G01-081717	401	2	8/17/2017	13:33	4.05	
401-2-G02-081717	401	2	8/17/2017	13:37	4.27	Duplicate
401-2-G03-081717	401	2	8/17/2017	13:42	4.08	
401-2-G04-081717	401	2	8/17/2017	13:46	4.04	
401-2-G05-081717	401	2	8/17/2017	13:49	4.12	
401-2-H01-081717	401	2	8/17/2017	14:12	4.40	
401-2-H02-081717	401	2	8/17/2017	14:15	4.03	
401-2-H03-081717	401	2	8/17/2017	14:18	4.12	
401-2-H04-081717	401	2	8/17/2017	14:21	4.18	
401-2-H05-081717	401	2	8/17/2017	14:24	4.27	
401-2-I01-081717	401	2	8/17/2017	14:32	4.26	
401-2-I02-081717	401	2	8/17/2017	14:35	4.25	
401-2-I03-081717	401	2	8/17/2017	14:38	4.02	
401-2-I04-081717	401	2	8/17/2017	14:40	4.03	
401-2-I05-081717	401	2	8/17/2017	14:43	4.32	
401-2-J01-081717	401	2	8/17/2017	14:52	4.16	
401-2-J02-081717	401	2	8/17/2017	14:54	4.01	
401-2-J03-081717	401	2	8/17/2017	14:56	4.07	
401-2-J04-081717	401	2	8/17/2017	14:59	4.00	Duplicate
401-2-J05-081717	401	2	8/17/2017	15:02	4.05	
401-1-A01-081817	401	1	8/18/2017	9:29	4.96	
401-1-A02-081817	401	1	8/18/2017	9:30	5.76	
401-1-A03-081817	401	1	8/18/2017	9:32	5.27	
401-1-A04-081817	401	1	8/18/2017	9:34	5.05	
401-1-A05-081817	401	1	8/18/2017	9:36	4.75	
401-1-A06-081817	401	1	8/18/2017	9:40	4.82	Duplicate
401-1-A07-081817	401	1	8/18/2017	9:42	4.64	
401-1-A08-081817	401	1	8/18/2017	9:44	4.29	
401-1-A09-081817	401	1	8/18/2017	9:47	4.14	
401-1-A10-081817	401	1	8/18/2017	9:49	4.23	
401-1-B01-081817	401	1	8/18/2017	9:53	4.09	
401-1-B02-081817	401	1	8/18/2017	9:55	4.08	
401-1-B03-081817	401	1	8/18/2017	9:57	4.01	
401-1-B04-081817	401	1	8/18/2017	10:00	4.04	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
401-1-B05-081817	401	1	8/18/2017	10:02	4.00	
401-1-B06-081817	401	1	8/18/2017	10:04	4.02	
401-1-B07-081817	401	1	8/18/2017	10:08	4.00	
401-1-B08-081817	401	1	8/18/2017	10:10	4.05	
401-1-B09-081817	401	1	8/18/2017	10:12	4.07	
401-1-B10-081817	401	1	8/18/2017	10:15	4.16	
401-1-C01-081817	401	1	8/18/2017	10:33	4.08	
401-1-C02-081817	401	1	8/18/2017	10:35	4.10	
401-1-C03-081817	401	1	8/18/2017	10:38	4.15	
401-1-C04-081817	401	1	8/18/2017	10:40	4.09	
401-1-C05-081817	401	1	8/18/2017	10:42	4.20	
401-1-C06-081817	401	1	8/18/2017	10:45	4.10	
401-1-C07-081817	401	1	8/18/2017	10:48	4.06	
401-1-C08-081817	401	1	8/18/2017	10:51	4.15	
401-1-C09-081817	401	1	8/18/2017	10:54	4.11	Duplicate
401-1-C10-081817	401	1	8/18/2017	10:57	4.07	
401-1-D01-081817	401	1	8/18/2017	11:11	4.06	
401-1-D02-081817	401	1	8/18/2017	11:15	4.05	
401-1-D03-081817	401	1	8/18/2017	11:17	4.09	
401-1-D04-081817	401	1	8/18/2017	11:19	4.15	
401-1-D05-081817	401	1	8/18/2017	11:22	4.14	
401-1-D06-081817	401	1	8/18/2017	11:24	4.00	
401-1-D07-081817	401	1	8/18/2017	11:27	4.05	
401-1-D08-081817	401	1	8/18/2017	11:30	4.14	
401-1-D09-081817	401	1	8/18/2017	11:33	4.05	
401-1-D10-081817	401	1	8/18/2017	11:36	4.09	
401-1-E01-081817	401	1	8/18/2017	11:54	4.18	
401-1-E02-081817	401	1	8/18/2017	11:57	4.02	Duplicate
401-1-E03-081817	401	1	8/18/2017	12:00	4.08	
401-1-E04-081817	401	1	8/18/2017	12:03	4.1	
401-1-E05-081817	401	1	8/18/2017	12:06	4.09	
401-1-E06-081817	401	1	8/18/2017	12:08	4.05	
401-1-E07-081817	401	1	8/18/2017	12:10	4.03	
401-1-E08-081817	401	1	8/18/2017	12:13	4.15	
401-1-E09-081817	401	1	8/18/2017	12:16	4.10	
401-1-E10-081817	401	1	8/18/2017	12:19	4.14	
401-1-F01-081817	401	1	8/18/2017	13:06	4.05	
401-1-F02-081817	401	1	8/18/2017	13:08	4.05	
401-1-F03-081817	401	1	8/18/2017	13:11	4.22	
401-1-F04-081817	401	1	8/18/2017	13:14	4.09	
401-1-F05-081817	401	1	8/18/2017	13:17	4.04	
401-1-F06-081817	401	1	8/18/2017	13:20	4.11	
401-1-F07-081817	401	1	8/18/2017	13:23	4.21	
401-1-F08-081817	401	1	8/18/2017	13:46	4.21	
401-1-F09-081817	401	1	8/18/2017	13:49	4.16	
401-1-F10-081817	401	1	8/18/2017	13:52	4.20	
401-1-G01-081817	401	1	8/18/2017	14:09	4.17	
401-1-G02-081817	401	1	8/18/2017	14:12	4.12	
401-1-G03-081817	401	1	8/18/2017	14:15	4.15	
401-1-G04-081817	401	1	8/18/2017	14:18	4.17	
401-1-G05-081817	401	1	8/18/2017	14:22	4.15	
401-1-G06-081817	401	1	8/18/2017	14:25	4.19	
401-1-G07-081817	401	1	8/18/2017	14:29	4.12	
401-1-G08-081817	401	1	8/18/2017	14:32	4.02	
401-1-G09-081817	401	1	8/18/2017	14:37	4.02	Duplicate
401-1-G10-081817	401	1	8/18/2017	14:40	4.06	
401-1-H01-081817	401	1	8/18/2017	14:58	4.25	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
401-1-H02-081817	401	1	8/18/2017	15:02	4.21	
401-1-H03-081817	401	1	8/18/2017	15:06	4.12	
401-1-H04-081817	401	1	8/18/2017	15:09	4.26	
401-1-H05-081817	401	1	8/18/2017	15:13	4.21	
401-1-H06-081817	401	1	8/18/2017	15:16	4.24	
401-1-H07-081817	401	1	8/18/2017	15:19	4.08	
401-1-H08-081817	401	1	8/18/2017	15:22	4.33	
401-1-H09-081817	401	1	8/18/2017	15:25	4.10	
401-1-H10-081817	401	1	8/18/2017	15:28	4.24	
401-1-I01-081817	401	1	8/18/2017	15:46	4.13	
401-1-I02-081817	401	1	8/18/2017	15:48	4.31	
401-1-I03-081817	401	1	8/18/2017	15:50	4.00	
401-1-I04-081817	401	1	8/18/2017	15:52	4.09	
401-1-I05-081817	401	1	8/18/2017	15:54	4.29	Duplicate
401-1-I06-081817	401	1	8/18/2017	15:56	4.03	
401-1-I07-081817	401	1	8/18/2017	15:59	4.25	
401-1-I08-081817	401	1	8/18/2017	16:01	4.01	
401-1-I09-081817	401	1	8/18/2017	16:03	4.38	
401-1-I10-081817	401	1	8/18/2017	16:07	4.06	
401-1-J01-081817	401	1	8/18/2017	16:29	4.19	
401-1-J02-081817	401	1	8/18/2017	16:32	4.24	
401-1-J03-081817	401	1	8/18/2017	16:35	4.12	
401-1-J04-081817	401	1	8/18/2017	16:38	4.22	
401-1-J05-081817	401	1	8/18/2017	16:41	4.29	
401-1-J06-081817	401	1	8/18/2017	16:43	4.16	
401-1-J07-081817	401	1	8/18/2017	16:46	4.24	
401-1-J08-081817	401	1	8/18/2017	16:49	4.27	
401-1-J09-081817	401	1	8/18/2017	16:51	4.23	
401-1-J10-081817	401	1	8/18/2017	16:54	4.17	
258-2-A01-081917	258	2	8/19/2017	11:45	5.44	
258-2-A02-081917	258	2	8/19/2017	11:47	5.24	
258-2-A03-081917	258	2	8/19/2017	11:49	5.28	
258-2-A04-081917	258	2	8/19/2017	11:51	5.51	
258-2-A05-081917	258	2	8/19/2017	11:56	5.15	
258-2-A06-081917	258	2	8/19/2017	11:57	5.62	
258-2-A07-081917	258	2	8/19/2017	12:00	5.56	
258-2-A08-081917	258	2	8/19/2017	12:02	5.56	
258-2-A09-081917	258	2	8/19/2017	12:03	5.52	
258-2-A10-081917	258	2	8/19/2017	12:05	5.55	
258-2-B01-081917	258	2	8/19/2017	12:08	5.28	
258-2-B02-081917	258	2	8/19/2017	12:10	5.45	
258-2-B03-081917	258	2	8/19/2017	12:12	5.49	
258-2-B04-081917	258	2	8/19/2017	12:13	5.15	
258-2-B05-081917	258	2	8/19/2017	12:15	5.46	
258-2-B06-081917	258	2	8/19/2017	12:17	5.46	
258-2-B07-081917	258	2	8/19/2017	12:18	5.38	
258-2-B08-081917	258	2	8/19/2017	12:20	5.45	
258-2-B09-081917	258	2	8/19/2017	12:21	5.41	
258-2-B10-081917	258	2	8/19/2017	12:23	5.44	
258-2-C01-081917	258	2	8/19/2017	13:05	5.31	
258-2-C02-081917	258	2	8/19/2017	13:07	5.18	
258-2-C03-081917	258	2	8/19/2017	13:09	5.19	
258-2-C04-081917	258	2	8/19/2017	13:11	5.24	
258-2-C05-081917	258	2	8/19/2017	13:13	5.29	
258-2-C06-081917	258	2	8/19/2017	13:15	5.25	Duplicate
258-2-C07-081917	258	2	8/19/2017	13:17	5.19	
258-2-C08-081917	258	2	8/19/2017	13:18	5.15	

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Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
258-2-C09-081917	258	2	8/19/2017	13:19	5.35	
258-2-C10-081917	258	2	8/19/2017	13:21	5.53	
258-2-D01-081917	258	2	8/19/2017	13:24	5.37	Duplicate
258-2-D02-081917	258	2	8/19/2017	13:26	5.35	
258-2-D03-081917	258	2	8/19/2017	13:29	5.46	
258-2-D04-081917	258	2	8/19/2017	13:30	5.35	
258-2-D05-081917	258	2	8/19/2017	13:33	5.45	
258-2-D06-081917	258	2	8/19/2017	13:37	5.26	
258-2-D07-081917	258	2	8/19/2017	13:38	5.20	
258-2-D08-081917	258	2	8/19/2017	13:40	5.24	
258-2-D09-081917	258	2	8/19/2017	13:42	5.33	
258-2-D10-081917	258	2	8/19/2017	13:45	5.30	
258-2-E01-081917	258	2	8/19/2017	14:08	5.11	
258-2-E02-081917	258	2	8/19/2017	14:09	5.10	
258-2-E03-081917	258	2	8/19/2017	14:11	5.05	
258-2-E04-081917	258	2	8/19/2017	14:13	5.19	
258-2-E05-081917	258	2	8/19/2017	14:14	5.14	
258-2-E06-081917	258	2	8/19/2017	14:16	5.16	
258-2-E07-081917	258	2	8/19/2017	14:17	5.00	
258-2-E08-081917	258	2	8/19/2017	14:19	5.15	
258-2-E09-081917	258	2	8/19/2017	14:20	5.00	
258-2-E10-081917	258	2	8/19/2017	14:22	5.26	
258-2-F01-081917	258	2	8/19/2017	14:24	5.11	
258-2-F02-081917	258	2	8/19/2017	14:26	5.09	
258-2-F03-081917	258	2	8/19/2017	14:27	5.02	
258-2-F04-081917	258	2	8/19/2017	14:29	5.01	
258-2-F05-081917	258	2	8/19/2017	14:31	5.04	
258-2-F06-081917	258	2	8/19/2017	14:33	5.11	
258-2-F07-081917	258	2	8/19/2017	14:35	5.24	
258-2-F08-081917	258	2	8/19/2017	14:37	5.10	
258-2-F09-081917	258	2	8/19/2017	14:38	5.06	
258-2-F10-081917	258	2	8/19/2017	14:41	4.96	Duplicate
258-2-G01-081917	258	2	8/19/2017	15:05	4.96	
258-2-G02-081917	258	2	8/19/2017	15:06	5.04	
258-2-G03-081917	258	2	8/19/2017	15:08	5.10	
258-2-G04-081917	258	2	8/19/2017	15:10	4.89	
258-2-G05-081917	258	2	8/19/2017	15:12	5.02	
258-2-G06-081917	258	2	8/19/2017	15:13	4.97	
258-2-G07-081917	258	2	8/19/2017	15:16	4.92	
258-2-G08-081917	258	2	8/19/2017	15:17	5.02	
258-2-G09-081917	258	2	8/19/2017	15:19	5.17	
258-2-G10-081917	258	2	8/19/2017	15:21	5.03	
258-2-H01-081917	258	2	8/19/2017	15:24	4.94	Duplicate
258-2-H02-081917	258	2	8/19/2017	15:26	4.91	
258-2-H03-081917	258	2	8/19/2017	15:28	5.03	
258-2-H04-081917	258	2	8/19/2017	15:30	4.91	
258-2-H05-081917	258	2	8/19/2017	15:32	4.95	
258-2-H06-081917	258	2	8/19/2017	15:34	5.05	
258-2-H07-081917	258	2	8/19/2017	15:35	5.03	
258-2-H08-081917	258	2	8/19/2017	15:36	4.98	
258-2-H09-081917	258	2	8/19/2017	15:38	5.09	
258-2-H10-081917	258	2	8/19/2017	15:40	4.86	
258-2-I01-081917	258	2	8/19/2017	15:57	4.81	
258-2-I02-081917	258	2	8/19/2017	15:50	4.87	
258-2-I03-081917	258	2	8/19/2017	16:00	4.92	
258-2-I04-081917	258	2	8/19/2017	16:02	4.85	
258-2-I05-081917	258	2	8/19/2017	16:04	4.95	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
258-2-I06-081917	258	2	8/19/2017	16:05	4.84	
258-2-I07-081917	258	2	8/19/2017	16:07	4.91	
258-2-I08-081917	258	2	8/19/2017	16:08	5.03	
258-2-I09-081917	258	2	8/19/2017	16:10	5.02	
258-2-I10-081917	258	2	8/19/2017	16:12	5.05	
258-2-J01-081917	258	2	8/19/2017	16:18	4.81	
258-2-J02-081917	258	2	8/19/2017	16:20	4.73	
258-2-J03-081917	258	2	8/19/2017	16:21	4.80	
258-2-J04-081917	258	2	8/19/2017	16:23	4.73	
258-2-J05-081917	258	2	8/19/2017	16:25	4.57	Duplicate
258-2-J06-081917	258	2	8/19/2017	16:27	4.81	
258-2-J07-081917	258	2	8/19/2017	16:29	4.90	
258-2-J08-081917	258	2	8/19/2017	16:30	4.87	
258-2-J09-081917	258	2	8/19/2017	16:32	4.53	
258-2-J10-081917	258	2	8/19/2017	16:33	4.54	
258-1-A01-082117	258	1	8/21/2017	11:20	4.81	
258-1-A02-082117	258	1	8/21/2017	11:22	4.60	
258-1-A03-082117	258	1	8/21/2017	11:24	4.05	
258-1-A04-082117	258	1	8/21/2017	11:26	4.11	
258-1-A05-082117	258	1	8/21/2017	11:27	3.98	
258-1-A06-082117	258	1	8/21/2017	11:28	4.00	
258-1-A07-082117	258	1	8/21/2017	11:29	4.96	
258-1-A08-082117	258	1	8/21/2017	11:31	5.63	
258-1-A09-082117	258	1	8/21/2017	11:33	5.36	
258-1-A10-082117	258	1	8/21/2017	11:35	5.11	
258-1-B01-082117	258	1	8/21/2017	11:40	4.39	
258-1-B02-082117	258	1	8/21/2017	11:43	4.29	
258-1-B03-082117	258	1	8/21/2017	11:45	4.82	
258-1-B04-082117	258	1	8/21/2017	11:46	4.72	
258-1-B05-082117	258	1	8/21/2017	11:48	4.13	
258-1-B06-082117	258	1	8/21/2017	11:51	4.94	
258-1-B07-082117	258	1	8/21/2017	11:53	5.43	
258-1-B08-082117	258	1	8/21/2017	11:56	5.28	
258-1-B09-082117	258	1	8/21/2017	11:58	5.60	
258-1-B10-082117	258	1	8/21/2017	12:00	6.02	
258-1-C01-082117	258	1	8/21/2017	12:27	5.62	
258-1-C02-082117	258	1	8/21/2017	12:30	4.69	Duplicate
258-1-C03-082117	258	1	8/21/2017	12:32	4.80	
258-1-C04-082117	258	1	8/21/2017	12:34	4.96	
258-1-C05-082117	258	1	8/21/2017	12:36	4.90	
258-1-C06-082117	258	1	8/21/2017	12:38	5.05	
258-1-C07-082117	258	1	8/21/2017	12:39	5.53	
258-1-C08-082117	258	1	8/21/2017	12:41	5.97	
258-1-C09-082117	258	1	8/21/2017	12:43	5.86	
258-1-C10-082117	258	1	8/21/2017	12:44	6.25	
258-1-D01-082117	258	1	8/21/2017	12:48	5.89	
258-1-D02-082117	258	1	8/21/2017	12:50	5.84	
258-1-D03-082117	258	1	8/21/2017	12:52	5.55	
258-1-D04-082117	258	1	8/21/2017	12:54	5.08	
258-1-D05-082117	258	1	8/21/2017	12:56	4.28	Duplicate
258-1-D06-082117	258	1	8/21/2017	12:58	5.58	
258-1-D07-082117	258	1	8/21/2017	13:00	5.26	
258-1-D08-082117	258	1	8/21/2017	13:02	5.72	
258-1-D09-082117	258	1	8/21/2017	13:04	5.43	
258-1-D10-082117	258	1	8/21/2017	13:06	5.81	
258-1-E01-082117	258	1	8/21/2017	13:20	4.88	
258-1-F02-082117	258	1	8/21/2017	13:24	5.86	

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Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
258-1-F03-082117	258	1	8/21/2017	13:26	6.05	
258-1-F04-082117	258	1	8/21/2017	13:28	5.46	
258-1-F05-082117	258	1	8/21/2017	13:30	4.40	
258-1-F01-082117	258	1	8/21/2017	13:40	5.29	
258-1-E02-082117	258	1	8/21/2017	13:42	6.20	
258-1-E03-082117	258	1	8/21/2017	13:43	5.33	
258-1-E04-082117	258	1	8/21/2017	13:45	4.71	
258-1-E05-082117	258	1	8/21/2017	13:46	5.01	
258-1-E06-082117	258	1	8/21/2017	13:49	4.99	
258-1-E07-082117	258	1	8/21/2017	13:52	5.26	
258-1-E08-082117	258	1	8/21/2017	13:55	6.08	
258-1-E09-082117	258	1	8/21/2017	13:57	5.58	
258-1-E10-082117	258	1	8/21/2017	13:59	5.51	Duplicate
258-1-F06-082117	258	1	8/21/2017	14:06	4.45	
258-1-F07-082117	258	1	8/21/2017	14:09	5.86	
258-1-F08-082117	258	1	8/21/2017	14:11	5.2	
258-1-F09-082117	258	1	8/21/2017	14:12	6.41	
258-1-F10-082117	258	1	8/21/2017	14:13	6.10	
258-1-G01-082117	258	1	8/21/2017	15:03	4.08	
258-1-G02-082117	258	1	8/21/2017	15:05	5.48	
258-1-G03-082117	258	1	8/21/2017	15:06	5.48	
258-1-G04-082117	258	1	8/21/2017	15:08	4.81	
258-1-G05-082117	258	1	8/21/2017	15:10	4.73	
258-1-G06-082117	258	1	8/21/2017	15:12	4.14	
258-1-G07-082117	258	1	8/21/2017	15:14	4.52	
258-1-G08-082117	258	1	8/21/2017	15:16	5.17	
258-1-G09-082117	258	1	8/21/2017	15:18	5.20	
258-1-G10-082117	258	1	8/21/2017	15:20	5.97	
258-1-H01-082117	258	1	8/21/2017	15:29	6.03	
258-1-H02-082117	258	1	8/21/2017	15:31	5.62	
258-1-H03-082117	258	1	8/21/2017	15:33	5.92	
258-1-H04-082117	258	1	8/21/2017	15:35	6.04	
258-1-H05-082117	258	1	8/21/2017	15:36	5.64	
258-1-H06-082117	258	1	8/21/2017	15:38	5.92	
258-1-H07-082117	258	1	8/21/2017	15:40	5.81	
258-1-H08-082117	258	1	8/21/2017	15:42	6.10	
258-1-H09-082117	258	1	8/21/2017	15:44	5.28	
258-1-H10-082117	258	1	8/21/2017	15:46	5.03	
258-1-I01-082117	258	1	8/21/2017	16:04	6.12	
258-1-I02-082117	258	1	8/21/2017	16:05	6.30	
258-1-I03-082117	258	1	8/21/2017	16:07	5.62	
258-1-I04-082117	258	1	8/21/2017	16:09	5.53	
258-1-I05-082117	258	1	8/21/2017	16:10	6.13	
258-1-I06-082117	258	1	8/21/2017	16:12	6.16	
258-1-I07-082117	258	1	8/21/2017	16:14	6.31	Duplicate
258-1-I08-082117	258	1	8/21/2017	16:16	5.97	
258-1-I09-082117	258	1	8/21/2017	16:18	5.98	
258-1-I10-082117	258	1	8/21/2017	16:20	5.34	
258-1-J01-082117	258	1	8/21/2017	16:27	5.66	Duplicate
258-1-J02-082117	258	1	8/21/2017	16:29	6.11	
258-1-J03-082117	258	1	8/21/2017	16:31	5.95	
258-1-J04-082117	258	1	8/21/2017	16:33	6.17	
258-1-J05-082117	258	1	8/21/2017	16:34	6.28	
258-1-J06-082117	258	1	8/21/2017	16:36	5.78	
258-1-J07-082117	258	1	8/21/2017	16:38	5.70	
258-1-J08-082117	258	1	8/21/2017	16:40	5.86	
258-1-J09-082117	258	1	8/21/2017	16:42	4.97	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
258-1-J10-082117	258	1	8/21/2017	16:44	4.74	
258-3-A01-082117	258	3	8/21/2017	16:58	5.72	
258-3-A02-082117	258	3	8/21/2017	17:01	5.61	
258-3-A03-082117	258	3	8/21/2017	17:03	5.74	
258-3-A04-082117	258	3	8/21/2017	17:05	5.93	
258-3-A05-082117	258	3	8/21/2017	17:06	5.88	
258-3-A06-082117	258	3	8/21/2017	17:08	6.30	
258-3-A07-082117	258	3	8/21/2017	17:10	5.80	
258-3-A08-082117	258	3	8/21/2017	17:12	6.04	
258-3-A09-082117	258	3	8/21/2017	17:14	5.77	
258-3-A10-082117	258	3	8/21/2017	17:15	6.34	
258-3-B01-082117	258	3	8/21/2017	17:20	6.31	
258-3-B02-082117	258	3	8/21/2017	17:21	6.17	
258-3-B03-082117	258	3	8/21/2017	17:23	5.83	
258-3-B04-082117	258	3	8/21/2017	17:24	5.86	
258-3-B05-082117	258	3	8/21/2017	17:26	6.23	
258-3-B06-082117	258	3	8/21/2017	17:27	5.87	
258-3-B07-082117	258	3	8/21/2017	17:28	6.00	
258-3-B08-082117	258	3	8/21/2017	17:30	5.92	
258-3-B09-082117	258	3	8/21/2017	17:31	5.86	
258-3-B10-082117	258	3	8/21/2017	17:33	5.76	Duplicate
258-3-C01-082217	258	3	8/22/2017	8:56	6.06	
258-3-C02-082217	258	3	8/22/2017	8:58	5.33	
258-3-C03-082217	258	3	8/22/2017	9:00	4.88	
258-3-C04-082217	258	3	8/22/2017	9:01	5.42	
258-3-C05-082217	258	3	8/22/2017	9:03	5.56	
258-3-C06-082217	258	3	8/22/2017	9:06	5.66	
258-3-C07-082217	258	3	8/22/2017	9:08	5.46	
258-3-C08-082217	258	3	8/22/2017	9:10	6.16	
258-3-C09-082217	258	3	8/22/2017	9:12	6.63	
258-3-C10-082217	258	3	8/22/2017	9:13	6.33	
258-3-D01-082217	258	3	8/22/2017	9:22	6.69	
258-3-D02-082217	258	3	8/22/2017	9:24	6.51	
258-3-D03-082217	258	3	8/22/2017	9:26	5.71	
258-3-D05-082217	258	3	8/22/2017	9:27	5.93	
258-3-D04-082217	258	3	8/22/2017	9:28	5.75	
258-3-D06-082217	258	3	8/22/2017	9:31	6.09	
258-3-D07-082217	258	3	8/22/2017	9:32	6.22	
258-3-D08-082217	258	3	8/22/2017	9:35	6.21	
258-3-D09-082217	258	3	8/22/2017	9:38	5.90	Duplicate
258-3-D10-082217	258	3	8/22/2017	9:35	5.04	
258-3-E01-082217	258	3	8/22/2017	9:39	6.10	
258-3-E02-082217	258	3	8/22/2017	9:41	5.93	
258-3-E03-082217	258	3	8/22/2017	9:43	6.35	
258-3-E04-082217	258	3	8/22/2017	9:45	6.02	
258-3-E05-082217	258	3	8/22/2017	9:46	6.22	
258-3-E06-082217	258	3	8/22/2017	9:48	6.78	
258-3-E07-082217	258	3	8/22/2017	9:50	5.73	
258-3-E08-082217	258	3	8/22/2017	9:51	5.66	
258-3-E09-082217	258	3	8/22/2017	9:52	5.38	
258-3-E10-082217	258	3	8/22/2017	9:54	5.27	
258-3-F01-082217	258	3	8/22/2017	10:01	6.16	Duplicate
258-3-F02-082217	258	3	8/22/2017	10:04	6.29	
258-3-F03-082217	258	3	8/22/2017	10:06	6.54	
258-3-F04-082217	258	3	8/22/2017	10:08	6.18	
258-3-F05-082217	258	3	8/22/2017	10:09	6.60	
258-3-F06-082217	258	3	8/22/2017	10:11	6.04	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
258-3-F07-082217	258	3	8/22/2017	10:13	6.44	
258-3-F08-082217	258	3	8/22/2017	10:17	6.06	
258-3-F09-082217	258	3	8/22/2017	10:18	5.11	
258-3-F10-082217	258	3	8/22/2017	10:22	5.74	
258-3-G01-082217	258	3	8/22/2017	10:22	6.26	
258-3-G02-082217	258	3	8/22/2017	10:24	6.40	
258-3-G03-082217	258	3	8/22/2017	10:27	6.22	
258-3-G04-082217	258	3	8/22/2017	10:29	6.28	
258-3-G05-082217	258	3	8/22/2017	10:31	6.31	
258-3-G06-082217	258	3	8/22/2017	10:33	5.80	
258-3-G07-082217	258	3	8/22/2017	10:35	6.29	
258-3-G08-082217	258	3	8/22/2017	10:36	5.76	
258-3-G09-082217	258	3	8/22/2017	10:39	5.30	
258-3-G10-082217	258	3	8/22/2017	10:41	5.93	
258-3-H01-082217	258	3	8/22/2017	10:44	5.31	
258-3-H02-082217	258	3	8/22/2017	10:47	5.16	
258-3-H03-082217	258	3	8/22/2017	10:49	4.72	
258-3-H04-082217	258	3	8/22/2017	10:51	5.17	
258-3-H05-082217	258	3	8/22/2017	10:52	6.14	
258-3-H06-082217	258	3	8/22/2017	10:54	6.01	
258-3-H07-082217	258	3	8/22/2017	10:56	6.04	Duplicate
258-3-H08-082217	258	3	8/22/2017	10:58	5.97	
258-3-H09-082217	258	3	8/22/2017	11:00	5.41	
258-3-H10-082217	258	3	8/22/2017	11:01	5.66	
258-3-I01-082217	258	3	8/22/2017	11:20	5.93	
258-3-I02-082217	258	3	8/22/2017	11:22	5.65	
258-3-I03-082217	258	3	8/22/2017	11:24	4.92	
258-3-I04-082217	258	3	8/22/2017	11:26	6.38	
258-3-I05-082217	258	3	8/22/2017	11:28	6.58	
258-3-I06-082217	258	3	8/22/2017	11:29	6.14	
258-3-I07-082217	258	3	8/22/2017	11:31	4.61	
258-3-I08-082217	258	3	8/22/2017	11:33	5.55	
258-3-I09-082217	258	3	8/22/2017	11:35	5.93	
258-3-I10-082217	258	3	8/22/2017	11:37	5.97	
258-3-J01-082217	258	3	8/22/2017	11:41	5.99	
258-3-J02-082217	258	3	8/22/2017	11:44	5.66	
258-3-J03-082217	258	3	8/22/2017	11:46	6.19	
258-3-J04-082217	258	3	8/22/2017	11:49	6.10	Duplicate
258-3-J05-082217	258	3	8/22/2017	11:50	6.14	
258-3-J06-082217	258	3	8/22/2017	11:53	5.82	
258-3-J07-082217	258	3	8/22/2017	11:56	5.65	
258-3-J08-082217	258	3	8/22/2017	11:58	6.11	
258-3-J09-082217	258	3	8/22/2017	12:00	5.95	
258-3-J10-082217	258	3	8/22/2017	12:02	6.15	
441-1-A01-082217	441	1	8/22/2017	15:15	5.98	
441-1-A02-082217	441	1	8/22/2017	15:18	5.67	
441-1-A03-082217	441	1	8/22/2017	15:20	5.71	
441-1-A04-082217	441	1	8/22/2017	15:23	5.76	
441-1-A05-082217	441	1	8/22/2017	15:26	5.68	
441-1-A06-082217	441	1	8/22/2017	15:29	5.76	
441-1-A07-082217	441	1	8/22/2017	15:32	5.93	
441-1-A08-082217	441	1	8/22/2017	15:37	5.63	Duplicate
441-1-A09-082217	441	1	8/22/2017	15:41	5.68	
441-1-A10-082217	441	1	8/22/2017	15:43	5.60	
441-1-B01-082217	441	1	8/22/2017	15:46	5.98	
441-1-B02-082217	441	1	8/22/2017	15:48	5.95	
441-1-B03-082217	441	1	8/22/2017	15:51	6.12	

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
441-1-B04-082217	441	1	8/22/2017	15:53	6.31	
441-1-B05-082217	441	1	8/22/2017	15:56	5.18	
441-1-B06-082217	441	1	8/22/2017	15:58	5.83	
441-1-B07-082217	441	1	8/22/2017	16:02	6.27	
441-1-B08-082217	441	1	8/22/2017	16:04	5.92	
441-1-B09-082217	441	1	8/22/2017	16:06	5.88	
441-1-B10-082217	441	1	8/22/2017	16:06	5.96	
441-1-C01-082217	441	1	8/22/2017	16:27	5.35	
441-1-C02-082217	441	1	8/22/2017	16:28	6.39	
441-1-C03-082217	441	1	8/22/2017	16:29	5.75	
441-1-C04-082217	441	1	8/22/2017	16:32	5.90	
441-1-C05-082217	441	1	8/22/2017	16:33	5.43	
441-1-C06-082217	441	1	8/22/2017	16:34	5.77	
441-1-C07-082217	441	1	8/22/2017	16:36	6.18	
441-1-C08-082217	441	1	8/22/2017	16:39	--	
441-1-C09-082217	441	1	8/22/2017	16:40	6.05	
441-1-C10-082217	441	1	8/22/2017	16:42	5.48	
441-1-D01-082217	441	1	8/22/2017	16:45	6.25	
441-1-D02-082217	441	1	8/22/2017	16:46	5.99	
441-1-D03-082217	441	1	8/22/2017	16:49	5.86	
441-1-D04-082217	441	1	8/22/2017	16:50	5.96	
441-1-D05-082217	441	1	8/22/2017	16:52	6.00	
441-1-D06-082217	441	1	8/22/2017	16:54	6.06	
441-1-D07-082217	441	1	8/22/2017	16:56	5.91	
441-1-D08-082217	441	1	8/22/2017	16:59	6.03	
441-1-D09-082217	441	1	8/22/2017	17:00	5.62	
441-1-D10-082217	441	1	8/22/2017	17:01	5.41	Duplicate
441-1-E01-082217	441	1	8/22/2017	17:05	5.97	
441-1-E02-082217	441	1	8/22/2017	17:06	6.10	
441-1-E03-082217	441	1	8/22/2017	17:08	5.11	
441-1-E04-082217	441	1	8/22/2017	17:10	5.59	
441-1-E05-082217	441	1	8/22/2017	17:12	5.72	
441-1-E06-082217	441	1	8/22/2017	17:14	5.93	
441-1-E07-082217	441	1	8/22/2017	17:21	6.35	
441-1-E08-082217	441	1	8/22/2017	17:18	5.80	
441-1-E09-082217	441	1	8/22/2017	17:23	6.29	
441-1-E10-082217	441	1	8/22/2017	17:26	6.24	
441-1-F01-082217	441	1	8/22/2017	17:31	6.27	
441-1-F02-082217	441	1	8/22/2017	17:33	5.72	
441-1-F03-082217	441	1	8/22/2017	17:35	6.34	
441-1-F04-082217	441	1	8/22/2017	17:37	5.92	
441-1-F05-082217	441	1	8/22/2017	17:39	5.86	
441-1-F06-082217	441	1	8/22/2017	17:42	6.57	Duplicate
441-1-F07-082217	441	1	8/22/2017	17:44	5.97	
441-1-F08-082217	441	1	8/22/2017	17:46	6.29	
441-1-F09-082217	441	1	8/22/2017	17:48	6.18	
441-1-F10-082217	441	1	8/22/2017	17:50	5.84	
441-1-G01-082217	441	1	8/22/2017	18:00	6.17	
441-1-G02-082217	441	1	8/22/2017	18:02	5.85	
441-1-G03-082217	441	1	8/22/2017	18:04	6.11	
441-1-G04-082217	441	1	8/22/2017	18:07	6.66	
441-1-G05-082217	441	1	8/22/2017	18:10	6.65	
441-1-G06-082217	441	1	8/22/2017	18:11	6.36	
441-1-G07-082217	441	1	8/22/2017	18:13	6.01	
441-1-G08-082217	441	1	8/22/2017	18:15	6.49	
441-1-G09-082217	441	1	8/22/2017	18:18	6.53	
441-1-G10-082217	441	1	8/22/2017	18:19	6.16	

DRAFT

Sample ID	Decision Unit	Test Plot	Sample Date	Sample Time	pH Result	
441-1-H01-082217	441	1	8/22/2017	18:29	6.01	
441-1-H02-082217	441	1	8/22/2017	18:31	5.75	
441-1-H03-082217	441	1	8/22/2017	18:32	5.64	
441-1-H04-082217	441	1	8/22/2017	18:34	6.45	
441-1-H05-082217	441	1	8/22/2017	18:36	6.57	
441-1-H06-082217	441	1	8/22/2017	18:37	6.37	
441-1-H07-082217	441	1	8/22/2017	18:38	6.24	
441-1-H08-082217	441	1	8/22/2017	18:39	6.52	
441-1-H09-082217	441	1	8/22/2017	18:40	5.67	
441-1-H10-082217	441	1	8/22/2017	18:40	5.79	
441-1-I01-082217	441	1	8/22/2017	18:43	6.14	
441-1-I02-082217	441	1	8/22/2017	18:45	6.34	
441-1-I03-082217	441	1	8/22/2017	18:46	6.35	
441-1-I04-082217	441	1	8/22/2017	18:47	6.17	Duplicate
441-1-I05-082217	441	1	8/22/2017	18:47	5.71	
441-1-I06-082217	441	1	8/22/2017	18:48	4.96	
441-1-I07-082217	441	1	8/22/2017	18:50	6.40	
441-1-I08-082217	441	1	8/22/2017	18:53	6.45	
441-1-I09-082217	441	1	8/22/2017	18:55	6.47	
441-1-I10-082217	441	1	8/22/2017	18:56	6.34	
441-1-J01-082217	441	1	8/22/2017	18:59	6.32	
441-1-J02-082217	441	1	8/22/2017	19:00	5.37	
441-1-J03-082217	441	1	8/22/2017	19:00	6.47	
441-1-J04-082217	441	1	8/22/2017	19:03	6.10	
441-1-J05-082217	441	1	8/22/2017	19:04	6.68	
441-1-J06-082217	441	1	8/22/2017	19:05	6.14	
441-1-J07-082217	441	1	8/22/2017	19:06	5.98	Duplicate
441-1-J08-082217	441	1	8/22/2017	19:07	6.50	
441-1-J09-082217	441	1	8/22/2017	19:08	5.99	
441-1-J10-082217	441	1	8/22/2017	19:10	6.16	

Notes:

-- = Not available

Repeat sample ID

APPENDIX B-2

PHASE IA PART 2 TEST PLOT CHARACTERIZATION FIELD FORMS AND NOTES

MEMORANDUM

ENVIRONMENT & HEALTH

Job	**SATES Phase IA Part 2 Field Forms and Notes**
Client	**Teck American Incorporated**
Date	
To	**Dave Enos and Denise Mills**
From	**Amy Kephart and Julie Weicheld**
Copy to	**Kris McCaig, Teck American Incorporated; Cristy Kessel, Teck American Incorporated; Mike Arnold, Ramboll; Rosalind Schoof, Ramboll**

February 23, 2018

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1. SATES Phase IA Part 2 Field Forms and Notes

In general accordance with the *Final Work Plan for the Soil Amendment Technology Evaluation Study (SATES), Phase I: Test Plot Characterization and Initial Amendment Alternatives Evaluation* (Work Plan; Ramboll 2017), Arcadis, U.S., Inc. (Arcadis) conducted field sampling for both Phase IA Part 1: test plot screening and Phase IA Part 2: test plot baseline soil characterization. In Arcadis' field forms and notes, the Phase IA Part 2 sampling event is referred to as SATES Phase IB. According to the Work Plan, Phase IB, the Soil Amendment Alternative Selection, occurs following Phase IA and does not involve field events or sampling. The discrepancy in naming was documented in an email sent by Amy Kephart (Ramboll) to Rebecca Andresen (Arcadis) and Eric Epple (Arcadis) on February 22, 2018. All field forms and notes from the Phase IA Part 2 sampling event that list Phase IB should be interpreted as Phase IA Part 2.

2. References

Ramboll Environ U.S. Corporation (Ramboll). 2017. FINAL Work Plan for the Soil Amendment Technology Evaluation Study Phase I: Test Plot Characterization and Initial Amendment Alternatives Evaluation. Prepared for Teck American Incorporated. Seattle, WA.

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 2

Date: 10/03/2017 Sampling Crew: RB, ME, JL

Weather: Clear, Cool Sampling Equipment Soil Probe, ~~DPT Rig~~

Time: 1200 Station No.: DU 401 TP-01 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-100317-0-3 Depth: 0-3

Sample analysis: Refer to COC No. sample containers: 4

Soil Volume:

Vegetation: Duff = 1.5 in

Photograph numbers: Refer to Photo Log

Comments: Q = 560 g
NRML = 43 g

Time: 1152 Station No.: DU 401 TP-2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-100317-0-3 Depth:

Sample analysis: Refer to COC No. sample containers: 3

Soil Volume: Q = 631 g NRML - 145 g

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Duff = 1.5

Time: 1400 Station No.: DU 258 TP-3 SP C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0-3

Sample analysis: D-258-3C-100317-0-3 No. sample containers: 4

Soil Volume: Q = 815 g NRML - 138 g

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Duff - 0.5 - in

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 2

Date: 10/03/2017 Sampling Crew: RB, ME, JL

Weather: Clear & cool Sampling Equipment Soil Probe, ~~DPT Rig~~

Time: 1550 Station No.: DU 441 TP-1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-100317-0-3 Depth: 0-3

Sample analysis: Refer to COC No. sample containers:

Soil Volume: Q=565 g NRML= 93 g

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: duff = 1-in

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth:

Sample analysis: Refer to COC No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 2

Date: 10/04/2017 Sampling Crew: RB, JL, ME

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 940 Station No.: DU 401 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-100417-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: NA - Shelby w/jack hammer

Vegetation: 1/2" moss & pine needles

Photograph numbers: Refer to Photo Log

Comments: water holding capacity - OSU

Time: 950 Station No.: DU 401 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-100417-53 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation: 1/2" moss & pine needles

Photograph numbers: Refer to Photo Log

Comments: BD

Time: 1000 Station No.: DU 401 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 6"-9"

Sample analysis: D401-1C-100417-6-9 No. sample containers: 1

Soil Volume: Shelby jackhammer

Vegetation: 1/2" moss & pine needles

Photograph numbers: Refer to Photo Log

Comments: BD

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 2

Date: 10/04/2017 Sampling Crew: RB, JL, ME

Weather: cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1010 Station No.: DU 401 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-100417-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers:

Soil Volume: Shelby - jackhammer

Vegetation: 1/2" moss & pine needles

Photograph numbers: Refer to Photo Log

Comments: in-situ permeability

Time: 1040 Station No.: DU 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: macro core - jackhammer Depth: 12"-24"

Sample analysis: Refer to COC No. sample containers: 1

D-401-1C-100417-12-24

Soil Volume:

Vegetation: 1/2" moss & pine needles

Photograph numbers: Refer to Photo Log

Comments: ALS-hold

Recovery of 8"

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 5

Date: 10/04/2017 Sampling Crew: ME, RB, JL

Weather: Cool, Clear Sampling Equipment Soil Probe, DPT Rig

Time: 1100 Station No.: DU -401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1A-100417-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff removed
BD

Time: 1120 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1A-100417-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
Soil moisture

Time: 1130 Station No.: DU -401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: DU-401-1A-100417-0-6 No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
Permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 5

Date: 10/04/2017 Sampling Crew: ME, RB, JL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1135 Station No.: DU - 401 TP- 1 SP - ~~A~~ A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1~~A~~-100417-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
BD

Time: 1251 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-100417-0-3 Depth: 0-3

Sample analysis: Refer to COC BD No. sample containers: 1

Soil Volume: Shelby - hand push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: BD
1.5" duff

Time: 1235 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 12"-24"

Sample analysis: D-401-1A-100417-12-24 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 7" recovery
ALS HOLD MACROCORE
1" duff

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 3 of 5

Date: 10/04/2017 Sampling Crew: ME, RB, JL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1300 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-100417-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Soil moisture
15" duff

Time: 1310 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-100417-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby Jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: In-Situ Permeability
15" duff

Time: 1315 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC D-401-1B-100417-6-9 Depth: 6"-9"

Sample analysis: No. sample containers: 1

Soil Volume: Shelby Jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: In-Situ Bulk Density
15" duff

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 4 of 5

Date: 10/04/2017 Sampling Crew: ME, RB, JL

Weather: cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1324 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-100417-12-30 Depth: 12"-30"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macro-Core Jackhammer Acetate Liner

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 11" recovery
ALS Hold MACRO-CORE
1.5" duff

Time: 1356 Station No.: DU - 401 TP-1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-100417-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube - push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: BD, ~~B~~ 1" duff

Time: ~~[illegible]~~ 1400 Station No.: DU - 401 TP-1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-1D-100417-0-~~3~~ 6 No. sample containers: 1

Soil Volume: Shelby tube - jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
Soil moisture

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 5 of 5

Date: 10/04/2017 Sampling Crew: ME, RB, JL

Weather: cool, clear Sampling Equipment: Soil Probe, DPT Rig

Time: 1404 Station No.: DU -401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-100417-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
permeability

Time: 1416 Station No.: DU -401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-100417-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
BD

Time: 1430 Station No.: DU -401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 12"-30"

Sample analysis: D-401-1D-100417-12-30 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1" duff
ALS HOLD MACRO-CORE
7" recovery

SOIL COLLECTION FIELD FORM

Project Name: UGR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 7

Date: 10/05/2017 Sampling Crew: (ME), RB, JL

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 0940 Station No.: DU - ~~104~~ 401 TP-2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-~~404~~ 401-2A-100517-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: 2" duff removed

Photograph numbers: Refer to Photo Log

Comments: 2" duff

BD

Time: 0950 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2A-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube: jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

2" duff

Comments: permeability

Time: 1009 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-2A-100517-0-6 No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

2" duff

Comments: Soil Moisture - OSU

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 7

Date: 10/05/2017 Sampling Crew: (ME), JL, RB

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 1017 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2A-100517-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 2" duff
bulk density

Time: 1030 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2A-100517-12-30 Depth: 12"-30"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner)

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 2" duff
ALS archive
recovery = 6 inches

Time: 1050 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: D-401-2B-100517-0-3 No. sample containers: 1

Soil Volume: ~~Macro~~ Shelby tube - hand push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff/wood fragments
bulk density

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 3 of 7

Date: 10/05/2017 Sampling Crew: (ME), JL, RB

Weather: clear & cool Sampling Equipment: Soil Probe, DPT Rig

---

Time: 1100 Station No.: DU-401 TP-2 SP-B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff & wood chips
Permeability

Time: 1105 Station No.: DU-401 TP-2 SP-B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff & wood chips
Soil Moisture holding capacity OSU

Time: 1115 Station No.: DU-401 TP-2 SP-B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~Refer to COC~~ D-401-2B-100517-6-9 Depth: 6"-9"

Sample analysis: ~~D-401-100517-6-9~~ No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff & wood chips
bulk density

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 4 of 7

Date: 10/05/2017 Sampling Crew: (ME) JL, RB

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 1127 Station No.: DU -401 TP- 2 SP -B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-100517-12-~~30~~24 Depth: 12"-~~30~~"24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner)

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff & wood chips
ALS archive
recovery = 6" refusal @ 24"

Time: 1155 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-100517-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1205 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-2C-100517-0-6 No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 5 of 7

Date: 10/05/2017 Sampling Crew: (ME) RB, JL

Weather: clear & sunny Sampling Equipment Soil Probe, DPT Rig

---

Time: 1215 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-1005 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: ½" duff

Photograph numbers: Refer to Photo Log

Comments: soil moisture OSU

Time: 1225 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-100517-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube jackhammer

Vegetation: ½" duff

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1230 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 12"-30"

Sample analysis: D-401-2C-100517-12-30 No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate sleeve)

Vegetation: ½" duff

Photograph numbers: Refer to Photo Log

Comments: ALS Archive

recovery = 8 inches

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 6 of 7

Date: 10/05/2017 Sampling Crew:

Weather: clear & sunny Sampling Equipment Soil Probe, DPT Rig

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Time: 1240 Station No.: DU-401 TP-2 SP-D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-100517-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume:

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1300 Station No.: DU 401 TP-2 SP-D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume:

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: permeability

Time: 1305 Station No.: DU-401 TP-2 SP-D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-2D-100517-0-6 No. sample containers: 1

Soil Volume:

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: soil moisture holding capacity

OSU

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 7 of 7

Date: 10/05/2017 Sampling Crew: (ME) JL, RB

Weather: clear & sunny Sampling Equipment Soil Probe, DPT Rig

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Time: 1310 Station No.: DU -401 TP- 2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-100517-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1325 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-100517-12-30 Depth: 12" - 30"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: ALS archive
recovery = 9"

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 7

Date: 10/06/2017 Sampling Crew: ME, JL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 0930 Station No.: DU -441 TP-1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-100617-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff
Bulk density

Time: 0955 Station No.: DU -441 TP-1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff
rocky OSU

Time: 1005 Station No.: DU -441 TP-1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~NA~~ Refer to COC Depth: 0"-6"

Sample analysis: NA No. sample containers: 1

Soil Volume: D-441-1A-100617-0-6

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff took 2 trips
rocky Permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 7

Date: 10/6/2017 Sampling Crew: ME, SL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1020 Station No.: DU-441 TP-1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-100617-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff
very rocky BD

Time: 1030 Station No.: DU 441 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-100617-12-24" Depth: 12"-24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: ALS
9" recovery

Time: 1057 Station No.: DU-441 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: D-441-1C-100617-0-3 No. sample containers: 1

Soil Volume: shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: .5" duff
BD

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 3 of 7

Date: 10/06/2017 Sampling Crew: ME, JL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1105 Station No.: DU -441 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: .5" duff

OSU

Time: 1112 Station No.: DU 441 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Permeability

.5" duff

Time: 1117 Station No.: DU 441 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 6"-9"

Sample analysis: D-441-1C-100617-6-9 No. sample containers: 1

Soil Volume: Shelby tube, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: .5" duff

BD

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 4 of 7

Date: 10/6/2017 Sampling Crew: ME, JL

Weather: Warm, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1125 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-100617-12-24 Depth: 12"-24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: macro core

Vegetation:

Photograph numbers: Refer to Photo Log

.5" duff

Comments: 6.5" recovery

Time: 1142 Station No.: DU -441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-100617-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

1/4" duff

Comments: BD

Time: 1147 Station No.: DU -441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-441-1B-100617-0-6 No. sample containers: 1

Soil Volume: shelby tube, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

1/4" duff

Comments: OSU - soil moisture

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 5 of 7

Date: 10/6/2017 Sampling Crew: ~~B~~ ME, SL

Weather: warm, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1155 Station No.: DU -441 TP-1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
permeability

Time: 1208 Station No.: DU -441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-100617-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
BD

Time: ~~[illegible]~~ ME 1256 Station No.: DU -441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 12"-~~[illegible]~~ 30"

Sample analysis: D-441-1B-~~0~~00617-12-~~[illegible]~~ 30 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Macrocore
1/4" duff
6.5" recovery

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 6 of 7

Date: 10/6/2017 Sampling Crew: ME, JL, RB

Weather: Overcast, Cool Sampling Equipment: Soil Probe, DPT Rig

---

Time: 1307 Station No.: DU -441 TP-1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-100617-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
BD

Time: 1315 Station No.: DU -441 TP-1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: OSU
Soil Moisture
1/4" duff

Time: 1318 Station No.: DU -441 TP-1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: ~~D-441-1D-100617-0-6~~ ME No. sample containers: 1

D-441-1D-100617-0-6

Soil Volume: shelby, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 7 of 7

Date: 10/06/2017 Sampling Crew: ME, SL, RB

Weather: Overcast, cool Sampling Equipment Soil Probe, DPT Rig

---

Time: ~~1326~~ 1323 Station No.: DU - 44 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-100617-6-a Depth: 6" - 9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: BD
1/4" duff

Time: 1335 Station No.: DU - 44 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-100617-12-28 Depth: 12" - 28"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Macro-core 1/4" duff
refusal at 28" 7" recovery

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 7

Date: 10/07/2017 Sampling Crew: ME, RB, JL

Weather: cool & wet (rain ~~[illegible]~~) Sampling Equipment Soil Probe, DPT Rig

---

Time: 0905 Station No.: DU -258 TP-3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-100717-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1" duff

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 0915 Station No.: DU -258 TP-3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-100717-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1" duff

Photograph numbers: Refer to Photo Log

Comments: soil moisture holding capacity OSU

Time: 0920 Station No.: DU -258 TP-3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-100717-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube ~~- jackhammer~~ hand push

Vegetation: 1" duff

Photograph numbers: Refer to Photo Log

Comments: In situ permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 7

Date: 10/07/2017 Sampling Crew: ME, RB, JL

Weather: cool & light rain Sampling Equipment Soil Probe, DPT Rig

---

Time: 0925 Station No.: DU -258 TP- 3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-100717-6-9 Depth: 6"- 9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube ~~jackhammer~~ hand push

Vegetation: 1" duff

Photograph numbers: Refer to Photo Log

Comments: bulk density
soil was soft

Time: 0930 Station No.: DU -258 TP- 3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-100717-12-30 Depth: 12" - 30"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: macrocore - jackhammer

Vegetation: 1" duff

Photograph numbers: Refer to Photo Log

Comments: ALS archive
recovery: 15"

Time: 0937 Station No.: DU -258 TP- 3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"- 3"

Sample analysis: D-258-3C-100717-0-3 No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: ½" moss & grass

Photograph numbers: Refer to Photo Log

Comments: bulk density

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 3 of 7

Date: 10/07/2017 Sampling Crew: ME, RB, JL

Weather: cool / light rain Sampling Equipment Soil Probe, DPT Rig

---

Time: 0942 Station No.: DU -258 TP- 3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-100717-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" moss & grass

Photograph numbers: Refer to Photo Log

Comments: soil moisture OSU

Time: 0946 Station No.: DU -258 TP- 3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-100717-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" moss & grass

Photograph numbers: Refer to Photo Log

Comments: permeability

Time: 0952 Station No.: DU -258 TP- 3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 6"-9"

Sample analysis: D-258-3C-100717-6-9 No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" moss & grass

Photograph numbers: Refer to Photo Log

Comments: bulk density

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 4 of 7

Date: 10/07/2017 Sampling Crew: ME/RB/JL

Weather: cool & partly cloudy Sampling Equipment Soil Probe, DPT Rig

---

Time: 0955 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-100717-12-24 Depth: 12" - 24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer

Vegetation: ½" moss & grass

Photograph numbers: Refer to Photo Log

Comments: ALS - Archive

recovery = 10"

Time: 1000 Station No.: DU-258 TP-3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-100717-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: ½" moss & grass

Photograph numbers: Refer to Photo Log

~~½" moss & grass~~

Comments: bulk density

Time: 1005 Station No.: DU-258TP-3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-258-3A-100717-0-6 No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: ½" moss & grass

Photograph numbers: Refer to Photo Log

Comments: soil moisture

OSU

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 5 of 7

Date: 10/07/2017 Sampling Crew: ME / RB / JL

Weather: cool & partly cloudy Sampling Equipment Soil Probe, DPT Rig

---

Time: 1011 Station No.: DU -258 TP- 3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-100717-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" moss & grass

Photograph numbers: Refer to Photo Log

Comments: permeability

Time: 1015 Station No.: DU -258 TP- 3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-100717-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" moss & grass

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1017 Station No.: DU -258 TP- 3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 12"-24"

Sample analysis: D-258-3A-100717-12-24 No. sample containers: 1

Soil Volume: Macro core - jackhammer (acetate liner)

Vegetation: 1/2" moss & grass

Photograph numbers: Refer to Photo Log

Comments: ALS Archive
Recovery = 10"

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 6 of 7

Date: 10/07/2017 Sampling Crew: RB/ME/JL

Weather: cool & partly cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1020 Station No.: DU 258 TP-3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-100717-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: 1/4" grass

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1028 Station No.: DU -258 TP-3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-100717-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/4" grass

Photograph numbers: Refer to Photo Log

Comments: soil moisture OSU

Time: 1033 Station No.: DU -258 TP-3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-6

Sample analysis: D-258-3B-100717-0-6 No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/4" grass

Photograph numbers: Refer to Photo Log

Comments: permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 7 of 7

Date: 10/07/2017 Sampling Crew: ME, JL, RB

Weather: cool & partly cloudy Sampling Equipment Soil Probe, DPT Rig

---

Time: 1036 Station No.: DU - 258 TP- 3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-100717-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/4" grass

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1040 Station No.: DU - 258 TP- 3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-100717-12-24 Depth: 12"-24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner)

Vegetation: 1/4" grass

Photograph numbers: Refer to Photo Log

Comments: ALS archive
recovery = 85"

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 1

Date: 10/10/2017 Sampling Crew: ME, RB, JL

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

---

Time: 1058 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: — Longitude: — Accuracy: —

Sample ID: IC-401-1A-101017 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 2

Soil Volume: 10,457 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: Used 2" diameter sampler, grabbed 3 pushes at each increment & filled 2 sample buckets which will be shipped together and composited at the lab

---

Time: 1155 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: — Longitude: — Accuracy: —

Sample ID: IC-401-1B-101017 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 2

Soil Volume: 13,511 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: See last comments

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B   Project No.: B0095010.0005   Page: 1 of 2

Date: 10/11/2017   Sampling Crew: JL, RB

Weather: clear & sunny (overcast in pm)   Sampling Equipment: Soil Probe, DPT Rig

---

Time: 1023   Station No.: DU -401 TP- 1 SP - C   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-401-1C-101117   Depth: 0"-3"

Sample analysis: Refer to COC   No. sample containers: 2

Soil Volume: 11,403 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: see last comments (10-10-17)

Time: 1235   Station No.: DU -401 TP- 1 SP - C   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-401-1C-101117-D   Depth: 0"-3

Sample analysis: Refer to COC   No. sample containers: 2

Soil Volume: 12,555 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: see last comments (10-10-17)

Time: 1400   Station No.: DU -401 TP- 1 SP - D   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC   Depth: 0"-3"

Sample analysis: IC-401-1D-101117   No. sample containers: 1

Soil Volume: 5,453 g

Vegetation: Pine thicket

Photograph numbers: Refer to Photo Log

Comments: Ramboll reversed their decision and from now on we are taking 2 2-inch plugs

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 2

Date: 10/11/2017 Sampling Crew:

Weather: sunny & clear Sampling Equipment Soil Probe, DPT Rig

Time: 1538 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: IC-401-2B-101117 Depth: 0"-3"
Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 7,639 g
Vegetation: clear cut pine woods
Photograph numbers: Refer to Photo Log
Comments: IC location # 17 shifted 6" to the north to avoid tree
2 punches with 2-inch diameter sampler

Time: Station No.: DU - TP- SP - Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: Depth:
Sample analysis: Refer to COC No. sample containers:

Soil Volume:
Vegetation:
Photograph numbers: Refer to Photo Log
Comments:

Time: Station No.: DU - TP- SP - Elevation: N/A
Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:
Sample analysis: No. sample containers:

Soil Volume:
Vegetation:
Photograph numbers: Refer to Photo Log
Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 2

Date: 10/12/2017 Sampling Crew: JL/ME

Weather: cool & clear Sampling Equipment Soil Probe, DPT Rig

Time: 0920 Station No.: DU -401 TP- 2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC1-401-2A-101217 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 6,400g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil with 2-inch sampler

Time: 1015 Station No.: DU -401 TP-2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC2-401-2A-101217 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 6870g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil with 2-inch sampler
shifted 5 cm to the south

Time: 1055 Station No.: DU -401 TP-2 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: IC3-401-2A-101217 No. sample containers: 1

Soil Volume: 7,213g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil with 2-inch sampler
shifted 5 cm to the west

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 2

Date: 10/12/2017 Sampling Crew: JL/ME

Weather: cool & clear Sampling Equipment Soil Probe, DPT Rig

Time: 1250 Station No.: DU-401 TP-2 SP-C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-401-2C-101217 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 7683g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil (0"-3") with 2-inch sampler

Time: 1400 Station No.: DU-401 TP-2 SP-D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-401-2D-101217 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers:

Soil Volume: 7,205g

Vegetation: clear cut area - tree stumps & grass

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil with 2-inch sampler

Time: Station No.: DU- TP- SP- Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 34

Date: 10/13/2017 Sampling Crew: ME, MM, JL, RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1005 Station No.: DU - 401 TP-2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 50g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north sidewall of test pit

Time: 1006 Station No.: DU - 401 TP-2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 46g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north sidewall of test pit

Time: 1007 Station No.: DU - 401 TP-2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-401-2D-101317-4-6 No. sample containers: 1

Soil Volume: 50g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north sidewall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 34

Date: 10/13/2017 Sampling Crew: ME/JL/MM/RB

Weather: cool, cloudy Sampling Equipment: Soil Probe, DPT Rig

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Time: 1008 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 70 g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north sidewall of test pit

Time: 1009 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2D-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94 g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north sidewall of test pit

Time: 1010 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-401-2D-101317-10-12 No. sample containers: 1

Soil Volume: 103 g

Vegetation: clear cut

Photograph numbers: Refer to Photo Log

Comments: north sidewall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 3 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1011 Station No.: DU -401 TP-2 SP -B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-101317-02 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 45g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

north ~~Wall~~ wall of test pit

Comments:

Time: 1012 Station No.: DU -401 TP-2 SP -B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-101317-2-4 Depth: 2"-4

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 55g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

north wall of test pit

Comments:

Time: 1013 Station No.: DU -401 TP- 2 SP -B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-401-2B-101317-4-6 No. sample containers: 1

Soil Volume: 185g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

north wall of test pit

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 4 of 34

Date: 10/13/2017 Sampling Crew: MM/MC/JL/RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1014 Station No.: DU -401 TP- 2 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 177g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1015 Station No.: DU -401 TP- 2 SP B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2B-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 192g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1016 Station No.: DU -401 TP- 2 SP B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-401-2B-101317-10-12 No. sample containers: 1

Soil Volume: 201g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 5 of 34

Date: 10/13/2017 Sampling Crew: MM/ME / JL/RB

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1020 Station No.: DU -401 TP- 2 SP -A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2A-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 47g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1021 Station No.: DU -401 TP- 2 SP -A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2A-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 76g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1022 Station No.: DU -401 TP- 2 SP -A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-401-2A-101317-4-6 No. sample containers: 1

Soil Volume: 51g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B　Project No.: B0095010.0005　Page: 6 of 34

Date: 10/13/2017　Sampling Crew: MM/ME/JL/RB

Weather: cool & cloudy　Sampling Equipment Soil Probe, DPT Rig

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Time: 1023　Station No.: DU - 401 TP- 2 SP - A　Elevation: N/A

Latitude:　Longitude:　Accuracy:

Sample ID: D-401-2A-101317-6-8　Depth: 6"-8"

Sample analysis: Refer to COC　No. sample containers: 1

Soil Volume: 69g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1024　Station No.: DU - 401 TP- 2 SP - A　Elevation: N/A

Latitude:　Longitude:　Accuracy:

Sample ID: D-401-2A-101317-8-10　Depth: 8"-10"

Sample analysis: Refer to COC　No. sample containers: 1

Soil Volume: 72g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1025　Station No.: DU - 401 TP- 2 SP - A　Elevation: N/A

Latitude:　Longitude:　Accuracy:

Sample ID: Refer to COC　Depth: 10"-12

Sample analysis: D-401-2A-101317-10-12　No. sample containers: 1

Soil Volume: ~~10~~ 112g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 7 of 34

Date: 10/13/2017 Sampling Crew: MM/KE, RB, JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1028 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 100g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1029 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~79g~~ → 80g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a bag with duplicate sample, homogenized & re jarred before submittal to lab

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Time: 1030 Station No.: DU -401 TP- 2 SP C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6

Sample analysis: D-401-2C-101317-4-6 No. sample containers: 1

Soil Volume: 91g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 8 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool/cloudy Sampling Equipment: Soil Probe, DPT Rig

Time: 1031 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 89g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1032 Station No.: DU -401 TP- 2 SP C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 102g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1033 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-401-2C-101317-10-12 No. sample containers: 1

Soil Volume: 101g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 9 of 34

Date: 10/13 /2017 Sampling Crew: MM/ME/SL/RB

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: ~~1034~~ 1029 Station No.: DU -401 TP-2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~89g~~ 79g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
collected at same depth as 2"-4" sample
10-16-17: emptied into a bag with parent sample, homogenize and rejarred

---

Time: 1040 Station No.: DU -401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1A-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers:

Soil Volume: 32g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1041 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-401-1A-101317-2-4 No. sample containers: 1

Soil Volume: 112g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 10 of 34

Date: 10/13 /2017 Sampling Crew: MM / ME / BB / JL

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1042 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1A-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 123g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1043 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 127g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1044 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-401-1A-101317-8-10 No. sample containers: 1

Soil Volume: 159g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 11 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: cool & cloudy Sampling Equipment: Soil Probe, DPT Rig

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Time: 1045 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-~~1A~~-101317-10"-12" Depth: 10" - 12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 146 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1051 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-0-2 Depth: 0" - 2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 100g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1052 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 2" - 4"

Sample analysis: D-401-1B-101317-2-4 No. sample containers: 1

Soil Volume: ~~89g~~ 90g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-2017: Emptied into a bag with duplicate sample, homogenized & re jarred prior to lab submittal

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 12 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1053 Station No.: DU - 401 TP- 1 SP - 1B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 80g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1054 Station No.: DU - 401 TP- 1 SP - 1B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: northwall of test pit

Time: 1055 Station No.: DU - 401 TP- 1 SP - 1B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-401-1B-101317-8-10 No. sample containers: 1

Soil Volume: 91g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of ~~sample~~ test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 13 of 34

Date: 10/13/2017 Sampling Crew:

Weather: Sampling Equipment Soil Probe, DPT Rig

Time: 1056 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 88g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ~~1057~~ 1052 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~11g~~ 98g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-10-17: emptied jar into bag with parent sample, homogenized, & re-jarred prior to lab submittal

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Time: 1059 Station No.: DU -401 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-401-1C-101317-0-2 No. sample containers: 1

Soil Volume: 79g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 14 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: ~~105~~ 1100 Station No.: DU -401 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 107g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1101 Station No.: DU -401 TP- 1 SP -C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 152g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1102 Station No.: DU -401 TP- 1 SP -C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 6"-8"

Sample analysis: D-401-1C-101317-6-8 No. sample containers: 1

Soil Volume: 156g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 15 of 34

Date: 10/ /2017 Sampling Crew: ME/MM/RB/JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1103 Station No.: DU - 401 TP-1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 182 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1104 Station No.: DU - 401 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 195 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ~~1105~~ 1116 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-401-1D-101317-0-2 No. sample containers: 1

Soil Volume: 59 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 16 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1117 Station No.: DU -401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 72g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1118 Station No.: DU -401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 108g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1119 Station No.: DU -401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 6"-8"

Sample analysis: D-401-1D-101317-6-8 No. sample containers: 1

Soil Volume: 122g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 17 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1120 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-101317-D-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 123g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1121 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1D-101317-10-12 Depth: 10"-12

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 99g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1313 Station No.: DU - 258 TP- 3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-258-3C-101317-0-2 No. sample containers: 1

Soil Volume: 62g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 18 of 34

Date: 10/13/2017 Sampling Crew: ME/MM/

Weather: partly cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1314 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3 -101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~73g~~ 80g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a bag with duplicate sample, homogenized, and re-jarred prior to lab submittal

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Time: 1316 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3 -101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 79g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1317 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 6"-8"

Sample analysis: D-258-3 -101317-6-8 No. sample containers: 1

Soil Volume: 120g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 19 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: partly cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1318 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1319 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ~~1315~~ 1314 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: ~~0"-2"~~ 2"-4"

Sample analysis: D-258-3C-101317-2-4-D No. sample containers: 1

Soil Volume: ~~84g~~ 76g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a ~~jar~~ bag with parent sample, homogenized & re-jarred prior to lab submittal

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 20 of 34

Date: 10/13/2017 Sampling Crew: MM/KG/RB/JL

Weather: cool/mostly sunny Sampling Equipment Soil Probe, DPT Rig

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Time: 1320 Station No.: DU -258 TP- 3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

B RWB 10-16-17

Sample ID: D-258-3~~D~~-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 133g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1321 Station No.: DU -258TP-3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 121g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1322 Station No.: DU -258 TP- 3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-258-3B-101317-4-6 No. sample containers: 1

Soil Volume: 140g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 21 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1323 Station No.: DU-258TP-3 SP-B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 162g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1324 Station No.: DU-258TP-3 SP-B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 161g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1325 Station No.: DU-258 TP-3 SP-B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-253-3B-101317-10-12 No. sample containers: 1

Soil Volume: 159g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 22 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1328 Station No.: DU - 258 TP-3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 63 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1329 Station No.: DU - 258 TP-3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1330 Station No.: DU - 258 TP-3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-258-3D-101317-~~4~~4-6 No. sample containers: 1

Soil Volume: 83 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 23 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1331 Station No.: DU -258 TP- 3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north ~~face~~ face of test pit

Time: 1332 Station No.: DU -258 TP- 3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3D-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 83g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north edge of test pit

Time: 1333 Station No.: DU -258TP- 3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-258-3D-101317-10-12 No. sample containers: 1

Soil Volume: 110g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north edge of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B   Project No.: B0095010.0005   Page: 24 of 34

Date: 10/13/2017   Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny   Sampling Equipment: Soil Probe, DPT Rig

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Time: 1335   Station No.: DU - 258 TP- 3 SP - A   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-101317-0-2   Depth: 0"-2"

Sample analysis: Refer to COC   No. sample containers: 1

Soil Volume: 95 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1336   Station No.: DU - 258 TP- 3 SP - A   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-101317-2-4   Depth: 2"-4"

Sample analysis: Refer to COC   No. sample containers: 1

Soil Volume: 119 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1337   Station No.: DU - 258 TP- 3 SP - A   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC   Depth: 4"-6"

Sample analysis: D-258-3A-101317-4-6   No. sample containers: 1

Soil Volume: 125 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 25 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1338 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 133g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1339 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 128g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1340 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-258-3A-101317-10-12 No. sample containers: 1

Soil Volume: 156g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 26 of 34

Date: 10/~~14~~ 13/2017 Sampling Crew: ME/MM/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1435 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 86g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1436 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 109g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1437 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-441-1C-101317-4-6 No. sample containers: 1

Soil Volume: 86g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 27 of 34

Date: 10/13/2017 Sampling Crew: ME/MM/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1438 Station No.: DU - 441TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 110g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1439 Station No.: DU - 441TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 116g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1440 Station No.: DU - 441 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-441-1C-101317-10-12 No. sample containers: 1

Soil Volume: 140g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 28 of 34

Date: 10/13/2017 Sampling Crew: ME / MM / JL / RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1441 Station No.: DU - 441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 49g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1442 Station No.: DU - 441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~63g~~ ~~70g~~ 62g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a ~~jar~~ bag with duplicate sample, homogenized, & re-jarred prior to submittal to the lab

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Time: ~~1443~~ 1442 Station No.: DU - 441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~63g~~ 65 g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a bag with the parent sample, homogenized, & re-jarred prior to submittal to the lab

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 29 of 34

Date: 10/13/2017 Sampling Crew: ME/MM/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1444 Station No.: DU -441 TP-1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 76g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1445 Station No.: DU -441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 75g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1446 Station No.: DU -441 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-441-1B-101317-8-10 No. sample containers: 1

Soil Volume: 92g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 30 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny Sampling Equipment: Soil Probe, DPT Rig

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Time: 1447 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 91g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1450 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 74g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1451 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-441-1D-101317-2-4 No. sample containers: 1

Soil Volume: 94g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 31 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1452 Station No.: DU - 441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 85g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north face of test pit

Time: 1453 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-101317-6-8 Depth: 6" - 8"

Sample analysis: Refer to COC No. sample containers:

Soil Volume: 108g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1454 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 8" - 10"

Sample analysis: D-441-1D-101317-8-10 No. sample containers:

Soil Volume: 103g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 32 of 34

Date: 10/13/2017 Sampling Crew:

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1455 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 127g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of ~~soil~~ test pit

Time: 1458 Station No.: DU -441 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 47g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1459 Station No.: DU -441 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 36g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 33 of 34

Date: 10/13/2017 Sampling Crew: ME/MM/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1500 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 58g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1501 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 91g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1502 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-441-1A-101317-8-10 No. sample containers: 1

Soil Volume: 97g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 34 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1503 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1A-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 133g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth:

Sample analysis: Refer to COC No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 2

Date: 10/16/2017 Sampling Crew: ME/MM/KB

Weather: clear, sunny Sampling Equipment Soil Probe, DPT Rig

Time: 0915 Station No.: DU -441TP- 1 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-441-1A-101617 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 7,130g

Vegetation: low shrubs & small trees

Photograph numbers: Refer to Photo Log

Comments: ~~two~~ rocky soil
2 punches @ 30 locations with 2-inch diameter sampler

Time: 1015 Station No.: DU -441TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-441-1B-101617 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 7,531g

Vegetation: low shrubs & small trees

Photograph numbers: Refer to Photo Log

Comments: rocky soil
2 punches @ 30 locations with 2-inch diameter sampler

Time: 1125 Station No.: DU -441TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: IC-441-1C-101617 No. sample containers: 1

Soil Volume: 5,110g

Vegetation: low shrubs & small trees

Photograph numbers: Refer to Photo Log

Comments: rocky soil
2 punches @ 30 locations with 2-inch diameter sampler

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 2

Date: 10/16/2017 Sampling Crew: MM/ME/RB

Weather: sunny, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1250 Station No.: DU - 44 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: IC-441-1D-10167 Depth: 0'-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 5773 g

Vegetation: low shrubs & small trees

Photograph numbers: Refer to Photo Log

Comments: rocky soil
2 punches at 30 locations w/ 2-inch diameter sampler

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth:

Sample analysis: Refer to COC No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 1 of 2

Date: 10/17/2017 Sampling Crew:

Weather: sunny & cool Sampling Equipment Soil Probe, DPT Rig

Time: 0840 Station No.: DU - 258TP-3 SP - A Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3A-101717 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 9,577g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil - 0"-3" using 2-inch diameter sampler
nearly full bucket

Time: 0915 Station No.: DU -258 TP- 3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-101717 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 8,284g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil - 0"-3" using 2-inch diameter sampler

---

Time: 0950 Station No.: DU -258 TP- 3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: D-258-3C-101717 No. sample containers:

Soil Volume: 5,463g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil - 0"-3" using 2-inch diameter sampler

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 2 of 2

Date: 10/17/2017 Sampling Crew: MM/ME/JL

Weather: overcast Sampling Equipment Soil Probe, DPT Rig

Time: 1020 Station No.: DU - 258 TP- 3 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: ~~D~~ IC-258-3D-101717 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 7,074 g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil (0"-3") using 2-inch diameter samples

---

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Depth:

Sample analysis: Refer to COC No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	401-2 C03
Sub-Plot:	A
Completed By:	RB
Date:	

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 1009
In Situ Bulk Density (0-3")	10-5-17 0940
In Situ Bulk Density (6-9")	10-5-17 1017
In Situ Permeability (0-6")	10-5-17 0950

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1030

Soil horizon descriptions	

DU and Test Plot:	401-2 D06
Sub-Plot:	B
Completed By:	RB
Date:	

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 1105
In Situ Bulk Density (0-3")	10-5-17 1050
In Situ Bulk Density (6-9")	10-5-17 1115
In Situ Permeability (0-6")	10-5-17 1100

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1127

Soil horizon descriptions	

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	401-2 F04
Sub-Plot:	C
Completed By:	~~RKAF~~ JL
Date:	10/03/17

Punch Bar Samples: Duff= 1.5-in

Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1152
Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1152

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 ~~[illegible]~~ 1215
In Situ Bulk Density (0-3")	10-5-17 1155
In Situ Bulk Density (6-9")	10-5-17 1225
In Situ Permeability (0-6")	10-5-17 1205

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1230

Soil horizon descriptions	

DU and Test Plot:	401-2 J08
Sub-Plot:	D
Completed By:	RB
Date:	

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 1305
In Situ Bulk Density (0-3")	10-5-17 1240
In Situ Bulk Density (6-9")	10-5-17 1310
In Situ Permeability (0-6")	10-5-17 1300

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1325

Soil horizon descriptions	

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

SOIL COLLECTION FIELD FORM

Project Name: UGR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/05/2017 Sampling Crew: (ME), RB, JL

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 0940 Station No.: DU - ~~[illegible]~~ 401 TP- 2 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-~~[illegible]~~ 401 -2A-100517-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: 2" duff removed

Photograph numbers: Refer to Photo Log

Comments: 2" duff
BD

Time: 0950 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-2A-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube: jackhammer

Vegetation: ____

Photograph numbers: Refer to Photo Log

2" duff

Comments: permeability

Time: 1009 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-2A-100517-0-6 S No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: ____

Photograph numbers: Refer to Photo Log

2" duff

Comments: Soil Moisture - OSU

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/05/2017 Sampling Crew: (ME), JL, RB

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 1017 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2A-100517-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 2" duff
bulk density

Time: 1030 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2A-100517-12-30 Depth: 12"-30"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner)

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 2" duff
ALS archive
recovery = 6 inches

Time: 1050 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: D-401-2B-100517-0-3 No. sample containers: 1

Soil Volume: ~~Macro~~ Shelby tube - hand push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff / wood fragments
bulk density

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/05/2017 Sampling Crew: (ME), JL, RB

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 1100 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-401-2B-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

½" duff & wood chips

Comments: Permeability

Time: 1105 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-401-2B-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

½" duff & wood chips

Comments: Soil Moisture holding capacity OSU

Time: 1115 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: ~~Refer to COC~~ D-401-2B-100517-6-9 Depth: 6"-9"

Sample analysis: ~~D-401-100517-6-9~~ No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

½" duff & wood chips

Comments: bulk density

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/05/2017 Sampling Crew: (ME) JL, RB

Weather: clear & cool Sampling Equipment Soil Probe, DPT Rig

Time: 1127 Station No.: DU -401 TP- 2 SP - B Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2B-100517-12-~~??~~24 Depth: 12"-~~??~~24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner)

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff & wood chips
ALS archive
recovery = 6" refusal @ 24"

Time: 1155 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2C-100517-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - hand push

Vegetation: 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1205 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-2C-100517-0-6 No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: 1/2" duff

Photograph numbers: Refer to Photo Log

Comments: permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/05/2017 Sampling Crew: (ME) RB, JL

Weather: clear & sunny Sampling Equipment Soil Probe, DPT Rig

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Time: 1215 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-1005 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: ½" duff

Photograph numbers: Refer to Photo Log

Comments: soil moisture OSU

Time: 1225 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-100517-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube jackhammer

Vegetation: ½" duff

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1230 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 12"-30"

Sample analysis: D-401-2C-100517-12-30 No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate sleeve)

Vegetation: ½" duff

Photograph numbers: Refer to Photo Log

Comments: ALS Archive

recovery = 8 inches

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/05/2017 Sampling Crew: ___

Weather: clear & sunny Sampling Equipment Soil Probe, DPT Rig

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Time: 1240 Station No.: DU-401 TP-2 SP-D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2D-100517-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ___

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1300 Station No.: DU 401 TP-2 SP-D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2D-100517-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ___

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: permeability

Time: 1305 Station No.: DU-401 TP-2 SP-D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-401-2D-100517-0-6 No. sample containers: 1

Soil Volume: ___

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: soil moisture holding capacity

OSU

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/05/2017 Sampling Crew: (ME) JL, RB

Weather: clear & sunny Sampling Equipment Soil Probe, DPT Rig

---

Time: 1310 Station No.: DU -401 TP- 2 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2D-100517-6-9 Depth: 6" - 9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube - jackhammer

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: bulk density

Time: 1325 Station No.: DU -401 TP- 2 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2D-100517-12-30 Depth: 12" - 30"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore - jackhammer (acetate liner

Vegetation: ~1" wood chips

Photograph numbers: Refer to Photo Log

Comments: ALS archive
recovery = 9"

Time: ___ Station No.: DU - TP- SP - Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: ___

Sample analysis: ___ No. sample containers: ___

Soil Volume: ___

Vegetation: ___

Photograph numbers: Refer to Photo Log

Comments: ___

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/06/2017 Sampling Crew: ME, JL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 0930 Station No.: DU -441 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1A-100617-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff
Bulk density

Time: 0955 Station No.: DU -441 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1A-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff
rocky OSU

Time: 1015 Station No.: DU -441 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: ~~Da~~ No. sample containers: 1

Soil Volume: D-441-1A-100617-0-6

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/2" duff took 2 trips
rocky Permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/6/2017 Sampling Crew: ME, SL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1020 Station No.: DU 441 TP-1 SP - A Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1A-100617-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

1/2" duff

Comments: very rocky BD

Time: 1030 Station No.: DU 441 TP-1 SP - C Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1A-100617-12-24" Depth: 12"-24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

ALS, M

Comments: 9" recovery

Time: 1057 Station No.: DU-441 TP-1 SP - C Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: D-441-1C-100617-0-3 No. sample containers: 1

Soil Volume: Shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

.5" duff

Comments: BD

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/06/2017 Sampling Crew: ME, JL

Weather: Cool, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1105 Station No.: DU-441 TP-1 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-441-1C-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby - jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: .5" duff
OSU

Time: 1112 Station No.: DU-441 TP-1 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-441-1C-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Permeability
.5" duff

Time: 1117 Station No.: DU-441 TP-1 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 6"-9"

Sample analysis: D-441-1C-100617-6-9 No. sample containers: 1

Soil Volume: Shelby tube, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: .5" duff
BD

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/6/2017 Sampling Crew: ME, JL

Weather: Warm, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1125 Station No.: DU-441 TP-1 SP-C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1C-100617-12-24 Depth: 12"-24"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: macro core

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: .5" duff
6.5" recovery

Time: 1147 Station No.: DU-441 TP-1 SP-B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1B-100617-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duft
BD

Time: 1147 Station No.: DU-441 TP-1 SP-B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: D-441-1B-100617-0-6 No. sample containers: 1

Soil Volume: shelby tube, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
OSJ - soil moisture

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/6/2017 Sampling Crew: ME, JL

Weather: warm, clear Sampling Equipment Soil Probe, DPT Rig

Time: 1155 Station No.: DU-441 TP-1 SP-B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1B-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
permeability

Time: 1208 Station No.: DU-441 TP-1 SP-B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1B-100617-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: shelby, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
BD

Time: ~~[illegible]~~ ME 1256 Station No.: DU-441 TP-1 SP-B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: Refer to COC Depth: 12"-24"

Sample analysis: D-441-1B-~~0~~00617-12-24 No. sample containers: 1

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Macrocore
3/4" duff
6.5" recovery

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/6/2017 Sampling Crew: ME, JL, RB

Weather: Overcast, cool Sampling Equipment Soil Probe, DPT Rig

---

Time: 1307 Station No.: DU-44 /TP-1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1D-100617-0-3 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby tube, push

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
BD

Time: 1315 Station No.: DU-441 TP-1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1D-100617-0-6 Depth: 0"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: OSU
Soil Moisture
1/4" duff

Time: 1318 Station No.: DU-441 TP-1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 0"-6"

Sample analysis: ~~D-441-1D-100617-0-6~~ ME No. sample containers: 1

D-441-1D-100617-0-6

Soil Volume: shelby, jack hammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: 1/4" duff
permeability

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/06/2017 Sampling Crew: ME, SL, RB

Weather: Overcast, cool Sampling Equipment Soil Probe, DPT Rig

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Time: 1326 Station No.: DU - 441 TP- 1 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-441-1D-100617-6-9 Depth: 6"-9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby, jackhammer

Vegetation: ___

Photograph numbers: Refer to Photo Log

Comments: BD NR

1/4" duff

Time: 1335 Station No.: DU - 441 TP- 1 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-441-1D-100617-12-28 Depth: 12"-28"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore, jackhammer

Vegetation: ___

Photograph numbers: Refer to Photo Log

Comments: Macro-core 1/4" duff

refusal at 28" 7" recovery

Time: ___ Station No.: DU - ___ TP- ___ SP - ___ Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: ___

Sample analysis: ___ No. sample containers: ___

Soil Volume: ___

Vegetation: ___

Photograph numbers: Refer to Photo Log

Comments: ___

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: ME, MM, JL, RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1005 Station No.: DU - 401 TP-2 SP - D Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: D-401-2D-101317-0-2 Depth: 0"-2"
Sample analysis: Refer to COC No. sample containers: 1
Soil Volume: 50g
Vegetation: clear cut pine forest
Photograph numbers: Refer to Photo Log
Comments: north sidewall of test pit

Time: 1006 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: D-401-2D-101317-2-4 Depth: 2"-4"
Sample analysis: Refer to COC No. sample containers: 1
Soil Volume: 46g
Vegetation: clear cut pine forest
Photograph numbers: Refer to Photo Log
Comments: north sidewall of test pit

Time: 1007 Station No.: DU - 401 TP-2 SP - D Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: Refer to COC Depth: 4"-6"
Sample analysis: D-401-2D-101317-4-6 No. sample containers: 1
Soil Volume: 50g
Vegetation: clear cut pine forest
Photograph numbers: Refer to Photo Log
Comments: north sidewall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: ME/JL/MM/RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1008 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-401-2D-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 70 g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

north sidewall of test pit

Comments:

Time: 1009 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-401-2D-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94 g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

north sidewall of test pit

Comments:

Time: 1010 Station No.: DU - 401 TP- 2 SP - D Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-401-2D-101317-10-12 No. sample containers: 1

Soil Volume: 103 g

Vegetation: clear cut

Photograph numbers: Refer to Photo Log

north sidewall of test pit

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1011 Station No.: DU -401 TP-2 SP -B Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: D-401-2B-101317-02 Depth: 0"-2"
Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 45g
Vegetation: clear cut pine forest
Photograph numbers: Refer to Photo Log
Comments: north wall of test pit

Time: 1012 Station No.: DU -401 TP-2 SP -B Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: D-401-2B-101317-2-4 Depth: 2"-4
Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 55g
Vegetation: clear cut pine forest
Photograph numbers: Refer to Photo Log
Comments: north wall of test pit

Time: 1013 Station No.: DU -401 TP-2 SP -B Elevation: N/A
Latitude: ____ Longitude: ____ Accuracy: ____
Sample ID: Refer to COC Depth: 4"-6"
Sample analysis: D-401-2B-101317-4-6 No. sample containers: 1

Soil Volume: 185g
Vegetation: clear cut pine forest
Photograph numbers: Refer to Photo Log
Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool, cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1014 Station No.: DU - 401 TP- 2 SP - B Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 177g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1015 Station No.: DU - 401 TP- 2 SP B Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2B-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 192g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1016 Station No.: DU - 401 TP- 2 SP B Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-401-2B-101317-10-12 No. sample containers: 1

Soil Volume: 201g

Vegetation: clear cut pine forest

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1020 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2A-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 47g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1021 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2A-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 76g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1022 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-401-2A-101317-4-6 No. sample containers: 1

Soil Volume: 51g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1023 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 69g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1024 Station No.: DU - 401 TP- 2 SP - A Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2A-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 72g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1025 Station No.: DU - 401 TP-2 SP - A Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: Refer to COC Depth: 10"-12

Sample analysis: D-401-2A-101317-10-12 No. sample containers: 1

Soil Volume: ~~10~~ 112g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/RE, RB, JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1028 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2C-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 100g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1029 Station No.: DU 401 TP- 2 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-2C-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 79g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1030 Station No.: DU -401 TP- 2 SP C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 4"-6

Sample analysis: D-401-2C-101317-4-6 No. sample containers: 1

Soil Volume: 91g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/SL/RB

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1031 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2C-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 89g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1032 Station No.: DU -401 TP- 2 SP C Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-2C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 112g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1033 Station No.: DU -401 TP- 2 SP - C Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-401-2C-101317-10-12 No. sample containers: 1

Soil Volume: 101g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13 /2017 Sampling Crew: ____

Weather: cool / cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1034 Station No.: DU - 401 TP- 2 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-2C-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 89g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
collected at same depth as 2"-4" sample

Time: 1040 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1A-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: ____

Soil Volume: 32g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1041 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-401-1A-101317-2-4 No. sample containers: 1

Soil Volume: 112g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13 /2017 Sampling Crew: MM / ME / BB / JL

Weather: cool & cloudy Sampling Equipment: Soil Probe, DPT Rig

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Time: 1042 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1A-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 123g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1043 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 127g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1044 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-401-1A-101317-8-10 No. sample containers: 1

Soil Volume: 159g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1045 Station No.: DU - 401 TP- 1 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-1A-101317-10-12" Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 146g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1051 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-1B-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 100g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1052 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-401-1B-101317-2-4 No. sample containers: 1

Soil Volume: 89g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: cool & cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1053 Station No.: DU - 401 TP- 1 SP - 1B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1B-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 80g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1054 Station No.: DU - 401 TP- 1 SP - 1B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1055 Station No.: DU - 401 TP- 1 SP - 1B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-401-1B-101317-8-10 No. sample containers: 1

Soil Volume: 91g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of ~~sample~~ test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew:

Weather: Sampling Equipment Soil Probe, DPT Rig

Time: 1056 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 88g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1057 Station No.: DU - 401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 111g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1059 Station No.: DU - 401 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-401-1C-101317-0-2 No. sample containers: 1

Soil Volume: 79g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: ~~105~~ 1100 Station No.: DU - 401 TP-1 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-1C-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 107g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1101 Station No.: DU - 401 TP- 1 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-401-1C-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 152g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1102 Station No.: DU - 401 TP- 1 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 6"-8"

Sample analysis: D-401-1C-101317-6-8 No. sample containers: 1

Soil Volume: 156g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/ /2017 Sampling Crew: ME/MM/RB/JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1103 Station No.: DU - 401 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 182 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1104 Station No.: DU - 401 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-401-1C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 195 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ~~1105~~ 1116 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-401-1D-101317-0-2 No. sample containers: 1

Soil Volume: 59 g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1117 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-1D-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 72g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1118 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-1D-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 108g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1119 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-401-1D-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 122g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: cool/cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1120 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-401-1D-101317-D-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 123g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1121 Station No.: DU - 401 TP- 1 SP - D Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-401-1D-101317-10-12 Depth: 10"-12

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 99g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1313 Station No.: DU - 258 TP- 3 SP - C Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-258-3C-101317-0-2 No. sample containers: 1

Soil Volume: 62g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: ME/MM/

Weather: partly cloudy Sampling Equipment Soil Probe, DPT Rig

Time: 1314 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3 -101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 73g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1316 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3 -101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 79g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1317 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 6"-8"

Sample analysis: D-258-3 -101317-6-8 No. sample containers: 1

Soil Volume: 120g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: partly cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1318 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3C-101317-8.10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1319 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1315 Station No.: DU -258TP-3 SP - C Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: ~~0"-2"~~ 2"-4

Sample analysis: D-258-3C-101317-2-4-D No. sample containers: 1

Soil Volume: 84g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/LG/RB/JL

Weather: cool/mostly sunny Sampling Equipment Soil Probe, DPT Rig

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Time: 1320 Station No.: DU -258 TP- 3 SP - B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-258-3D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 133g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1321 Station No.: DU -258TP-3 SP - B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-258-3D-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 121g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1322 Station No.: DU -258 TP-3 SP - B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-258-3D-101317-4-6 No. sample containers: 1

Soil Volume: 140g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1323 Station No.: DU - 258TP-3 SP - B Elevation: N/A
Latitude: ___ Longitude: ___ Accuracy: ___
Sample ID: D-258-3B-101317-6-8 Depth: 6"-8"
Sample analysis: Refer to COC No. sample containers: 1
Soil Volume: 162g
Vegetation: grassy field
Photograph numbers: Refer to Photo Log
Comments: north wall of test pit

Time: 1324 Station No.: DU - 258TP-3 SP - B Elevation: N/A
Latitude: ___ Longitude: ___ Accuracy: ___
Sample ID: D-258-3B-101317-8-10 Depth: 8"-10"
Sample analysis: Refer to COC No. sample containers: 1
Soil Volume: 161g
Vegetation: grassy field
Photograph numbers: Refer to Photo Log
Comments: north wall of test pit

Time: 1325 Station No.: DU - 258 TP-3 SP - B Elevation: N/A
Latitude: ___ Longitude: ___ Accuracy: ___
Sample ID: Refer to COC Depth: 10"-12"
Sample analysis: D-253-3B-101317-10-12 No. sample containers: 1
Soil Volume: 159g
Vegetation: grassy field
Photograph numbers: Refer to Photo Log
Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1328 Station No.: DU - 258TP-3 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 63g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1329 Station No.: DU -258 TP-3 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3D-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1330 Station No.: DU -258TP-3 SP - D Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-258-3D-101317-4-6 No. sample containers: 1

Soil Volume: 83g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RP/JL

Weather: mostly Sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1331 Station No.: DU -258 TP- 3 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-258-3D-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94g

Vegetation: grassy Field

Photograph numbers: Refer to Photo Log

north face of test pit

Comments:

Time: 1332 Station No.: DU -258 TP- 3 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: D-258-3D-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 83g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

north edge of test pit

Comments:

Time: 1333 Station No.: DU -258TP- 3 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-258-3D-101317-10-12 No. sample containers: 1

Soil Volume: 110g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

north edge of test pit

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1335 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-258-3A-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 95 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1336 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-258-3A-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 119 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1337 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-258-3A-101317-4-6 No. sample containers: 1

Soil Volume: 125 g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1338 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 133g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1339 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-258-3A-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 128g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1340 Station No.: DU -258 TP-3 SP - A Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-258-3A-101317-10-12 No. sample containers: 1

Soil Volume: 156g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/~~14~~ 13/2017 Sampling Crew: ME/MM/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1435 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1C-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 86g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1436 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1C-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 109g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1437 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 4"-6"

Sample analysis: D-441-1C-101317-4-6 No. sample containers: 1

Soil Volume: 86g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: ME/MM/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1438 Station No.: DU - 441TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1C-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 110g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1439 Station No.: DU - 441TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 116g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1440 Station No.: DU - 441 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 10"-12"

Sample analysis: D-441-1C-101317-10-12 No. sample containers: 1

Soil Volume: 140g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: ME / MM / JL / RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1441 Station No.: DU - 441TP- 1 SP - 1B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1B-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 49g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1442 Station No.: DU -441 TP- 1 SP - 1B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1B-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~63g~~ 70g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1443 Station No.: DU -441 TP- 1 SP - 1B Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-441-1B-101317-2-4-D No. sample containers: 1

Soil Volume: 63g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ___ of ___

Date: 10/13/2017 Sampling Crew: ME/MM/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1444 Station No.: DU-441TP-1 SP-B Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-441-1B-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 76g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1445 Station No.: DU-441TP-1 SP-B Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: D-441-1B-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 75g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1446 Station No.: DU-441TP-1 SP-B Elevation: N/A

Latitude: ___ Longitude: ___ Accuracy: ___

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-441-1B-101317-8-10 No. sample containers: 1

Soil Volume: 92g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1447 Station No.: DU -441 TP- 1 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 91g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1450 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 74g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1451 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-441-1D-101317-2-4 No. sample containers: 1

Soil Volume: 94g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1452 Station No.: DU - 441 TP- 1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1D-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 85g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north face of test pit

Time: 1453 Station No.: DU - 441 TP- 1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1D-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: ____

Soil Volume: 108g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1454 Station No.: DU - 441 TP- 1 SP - D Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-441-1D-101317-8-10 No. sample containers: ____

Soil Volume: 103g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B   Project No.: B0095010.0005   Page: ___ of ___

Date: 10/13/2017   Sampling Crew: ___

Weather: mostly sunny   Sampling Equipment Soil Probe, DPT Rig

Time: 1455   Station No.: DU -441 TP- 1 SP - D   Elevation: N/A

Latitude: ___   Longitude: ___   Accuracy: ___

Sample ID: D-441-1D-101317-10-12   Depth: 10"-12"

Sample analysis: Refer to COC   No. sample containers: 1

Soil Volume: 127g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of ~~soil~~ test pit

Time: 1458   Station No.: DU -441 TP- 1 SP - A   Elevation: N/A

Latitude: ___   Longitude: ___   Accuracy: ___

Sample ID: D-441-1A-101317-0-2   Depth: 0"-2"

Sample analysis: Refer to COC   No. sample containers: 1

Soil Volume: 47g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1459   Station No.: DU -441 TP- 1 SP - A   Elevation: N/A

Latitude: ___   Longitude: ___   Accuracy: ___

Sample ID: Refer to COC   Depth: 2"-4"

Sample analysis: D-441-1A-101317-2-4   No. sample containers: 1

Soil Volume: 36g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: ME/MM/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1500 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1A-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 58g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1501 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: D-441-1A-101317-6-8 Depth: 6"-8"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 91g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1502 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: ________ Longitude: ________ Accuracy: ________

Sample ID: Refer to COC Depth: 8"-10"

Sample analysis: D-441-1A-101317-8-10 No. sample containers: 1

Soil Volume: 97g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1503 Station No.: DU - 441 TP- 1 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: D-441-1A-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC

No. sample containers: 1

Soil Volume: 133g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ____ Station No.: DU - TP- SP - Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: ____ Depth: ____

Sample analysis: Refer to COC

No. sample containers: ____

Soil Volume: ____

Vegetation: ____

Photograph numbers: Refer to Photo Log

Comments: ____

Time: ____ Station No.: DU - TP- SP - Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: ____

Sample analysis: ____

No. sample containers: ____

Soil Volume: ____

Vegetation: ____

Photograph numbers: Refer to Photo Log

Comments: ____

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 19 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/RB/JL

Weather: partly cloudy Sampling Equipment Soil Probe, DPT Rig

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Time: 1318 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-101317-8-10 Depth: 8"-10"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 94g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1319 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3C-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 87g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ~~1315~~ 1314 Station No.: DU-258TP-3 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: ~~0"-2"~~ 2"-4"

Sample analysis: D-258-3C-101317-2-4-D No. sample containers: 1

Soil Volume: ~~84g~~ 76g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

10-16-17: emptied into a ~~jar~~ bag with parent sample, homogenized, & re-jarred prior to lab submittal

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 13 of 34

Date: 10/13/2017 Sampling Crew:

Weather: Sampling Equipment Soil Probe, DPT Rig

Time: 1056 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 88g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: ~~1057~~ 1052 Station No.: DU -401 TP- 1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1B-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~111g~~ 98g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-10-17: emptied jar into bag with parent sample, homogenized, & re-jarred prior to lab submittal

---

Time: 1059 Station No.: DU -401 TP- 1 SP - C Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 0"-2"

Sample analysis: D-401-1C-101317-0-2 No. sample containers: 1

Soil Volume: 79g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B   Project No.: B0095010.0005   Page: 9 of 34

Date: 10/13 /2017   Sampling Crew: MM/ME/SL/RB

Weather: cool/cloudy   Sampling Equipment: Soil Probe, DPT Rig

---

Time: ~~1034~~ 1029   Station No.: DU - 401 TP- 2 SP - C   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-2C-101317-2-4-D   Depth: 2"-4"

Sample analysis: Refer to COC   No. sample containers: 1

Soil Volume: ~~89g~~ 79g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
collected at same depth as 2"-4" sample
10-16-17: emptied into a bag with parent sample, homogenize and rejarred

---

Time: 1040   Station No.: DU - 401 TP- 1 SP - A   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-401-1A-101317-0-2   Depth: 0"-2"

Sample analysis: Refer to COC   No. sample containers:

Soil Volume: 32g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1041   Station No.: DU - 401 TP- 1 SP - A   Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC   Depth: 2"-4"

Sample analysis: D-401-1A-101317-2-4   No. sample containers: 1

Soil Volume: 112g

Vegetation: pine thicket

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 28 of 34

Date: 10/13/2017 Sampling Crew: ME/MM/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1441 Station No.: DU - 441TP-1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 49g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1442 Station No.: DU -441 TP-1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~63g~~ ~~70g~~ 62g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a ~~jar~~ bag with duplicate sample, homogenized, & re-jarred prior to submittal to the lab

---

Time: ~~1443~~ 1442 Station No.: DU -441 TP-1 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1B-101317-2-4-D Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: ~~63g~~ 65 g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit
10-16-17: emptied into a bag with the parent sample, homogenized, & re-jarred prior to submittal to the lab

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 7 of 7

Date: 10/06/2017 Sampling Crew: ME, JL, RB

Weather: overcast, cool Sampling Equipment Soil Probe, DPT Rig

---

Time: ~~1336~~ 1323 Station No.: DU - 44/TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-100617-6-9 Depth: 6" - 9"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Shelby, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: BD

1/4" duff

Time: 1335 Station No.: DU - 44/TP-1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-100617-12-28 Depth: 12"-28"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: Macrocore, jackhammer

Vegetation:

Photograph numbers: Refer to Photo Log

Comments: Macro-core 1/4" duff

refusal at 28" 7" recovery

Time: Station No.: DU - TP- SP - Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth:

Sample analysis: No. sample containers:

Soil Volume:

Vegetation:

Photograph numbers: Refer to Photo Log

Comments:

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 20 of 34

Date: 10/13/2017 Sampling Crew: MM/HE/RB/JL

Weather: cool/mostly sunny Sampling Equipment Soil Probe, DPT Rig

---

Time: 1320 Station No.: DU -258 TP- 3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3~~D~~B-101317-0-2 RWS 10-16-17 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 133g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1321 Station No.: DU -258TP-3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-101317-2-4 Depth: 2"-4"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 121g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1322 Station No.: DU -258 TP-3 SP - B Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-258-3B-101317-4-6 Depth: 4"-6"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 140g

Vegetation: grassy field

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: 30 of 34

Date: 10/13/2017 Sampling Crew: MM/ME/JL/RB

Weather: mostly sunny Sampling Equipment Soil Probe, DPT Rig

Time: 1447 Station No.: DU -441 TP- 1 ~~SP - C~~ -8 Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-~~1C~~ 18-101317-10-12 Depth: 10"-12"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 91g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1450 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: D-441-1D-101317-0-2 Depth: 0"-2"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 74g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

Time: 1451 Station No.: DU -441 TP- 1 SP - D Elevation: N/A

Latitude: Longitude: Accuracy:

Sample ID: Refer to COC Depth: 2"-4"

Sample analysis: D-441-1D-101317-2-4 No. sample containers: 1

Soil Volume: 94g

Vegetation: low shrubs

Photograph numbers: Refer to Photo Log

Comments: north wall of test pit

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/17/2017 Sampling Crew: ____

Weather: sunny & cool Sampling Equipment: Soil Probe, DPT Rig

---

Time: 0840 Station No.: DU - 258 TP-3 SP - A Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: IC-258-3A-101717 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 9,577 g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil - 0"-3" using 2-inch diameter sampler nearly full bucket

---

Time: 0915 Station No.: DU - 258 TP- 3 SP - B Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: IC-258-3B-101717 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 8,284 g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil - 0"-3" using 2-inch diameter sampler

---

Time: 0950 Station No.: DU - 258 TP- 3 SP - C Elevation: N/A

Latitude: ____ Longitude: ____ Accuracy: ____

Sample ID: Refer to COC Depth: 0"-3"

Sample analysis: IC-258-3C-101717 No. sample containers: ____

Soil Volume: 5,463 g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil - 0"-3" using 2-inch diameter sampler

SOIL COLLECTION FIELD FORM

Project Name: UCR - SATES Phase 1B Project No.: B0095010.0005 Page: ____ of ____

Date: 10/17/2017 Sampling Crew: MM/ME/JL

Weather: overcast Sampling Equipment Soil Probe, DPT Rig

Time: 1020 Station No.: DU - 258 TP- 3 SP - D Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: ~~D~~ IC-258-3D-101717 Depth: 0"-3"

Sample analysis: Refer to COC No. sample containers: 1

Soil Volume: 7,074 g

Vegetation: open grassy field

Photograph numbers: Refer to Photo Log

Comments: 2 punches of soil (0"-3") using 2-inch diameter samples

---

Time: ______ Station No.: DU - TP- SP - Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: ______ Depth: ______

Sample analysis: Refer to COC No. sample containers: ____

Soil Volume: ______

Vegetation: ______

Photograph numbers: Refer to Photo Log

Comments: ______

Time: ______ Station No.: DU - TP- SP - Elevation: N/A

Latitude: ______ Longitude: ______ Accuracy: ______

Sample ID: Refer to COC Depth: ______

Sample analysis: ______ No. sample containers: ____

Soil Volume: ______

Vegetation: ______

Photograph numbers: Refer to Photo Log

Comments: ______

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Projects TAI SATES Phase IB

CONTENTS

Max Elias - 805-341-6005

Joe Latham - 541-224-2904

Amy Kephart - 610-331-0113

FedEX # 309 879 465

Project # 300 95010.0005

Rite in the Rain.

10-3-2017

0700 - Meet @ Mustang
0800 - Morning call with Eric - today we will collect the lead, arsenic, & geophysical samples for ALS & Hazen
0900 - Mobilize to DU-401, locate corners of 401-1 & 401-2, & sample locations
1152 - D-401-2-100317-0-3 collected from 45' north of south edge of plot and 10' west of 05-line (1 T-bar push of soil (145g) for ALS, 5 T-bar pushes of soil (631g) for Hazen) ~1.5" of duff

401-1-F04

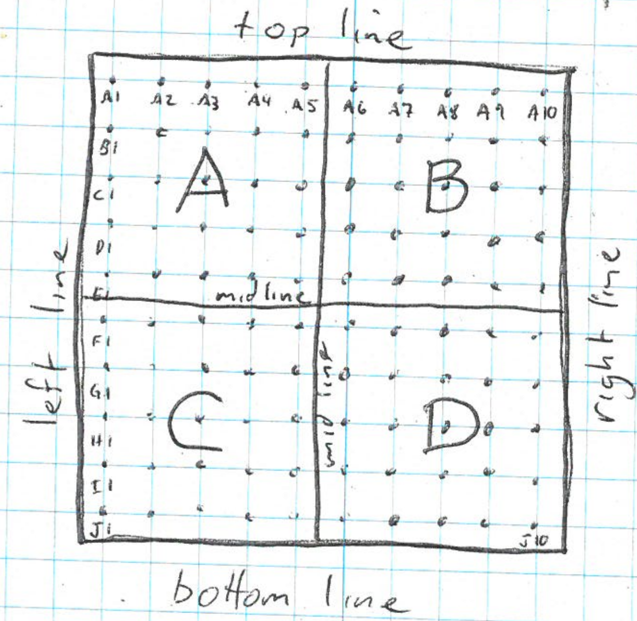
1200 - D-401-1B-100317-0-3 collected from 35' south of north egde of plot and 16' west of east edge of plot (15' west of tree) - (1 T-bar push of soil ~~from~~ (43g) for ALS; 10 T-bar pushes of soil (560g) for Hazen) ~1" of duff

401-2-B04

1230 - Break for lunch
1315 - Mobilize to DU-258-3 for layout
1400 - D-~~@~~258-3C-100317-0-3 collected from 65' SE of NW edge of plot & 15' NE of SW edge of plot (1 T-bar push of soil for ALS (138g) 8 T-bar pushes of soil for Hazen (815g) ½" moss

258-3-C02

①



Test Plots / Sub Plots
LAYOUT

Rite in the Rain ②

1430 - Mobilize to DU-441 for layout
1550 - D-441-1B-100317-0-3 collected from
441-1-B06 15' south of top line, 55' east of left line
(1 T-bar push of soil for ALS [93 g]; 6
T-bar pushes of soil for Hazen [565 g])
1/2" of grass/duff
1615 - Demobe back to The Station
Pack Lead/Arsenic/Soil Mineralogy samples
on ice for the night
1705 - Arcadis out

Ryan C Bell

10-3-17

Note: Request from Ramboll - mark
out edges of test plots at 401-1 &
401-2. We will try to do this on
10/4 if sampling goes quickly -

~~We w~~ They also request
that we collect photos of the
test pits ~~and~~ after they
are dug & after they are
filled in

Rite in the Rain

10-04-2017

0700 - Meet at Mustang Grill
0745 - Prep vehicles
0800 - Call with Eric Epple - plan for the day - collect jackhammer samples at DU-401-1 & 401-2 (re-mark test plot edges - time permitting)
0830 - Mobilize to DU-401-1 & prepare to collect jackhammer samples (shelby tube & macro core split-spoon sampling)
0940 - Collect shelby tube for OSU (soil moisture holding capacity) D-401-1C-100417-0-6
0950 - Collect shelby tube for HWA (In Situ bulk density) D-401-1C-100417-0-3
1000 - Collect shelby tube for HWA (In Situ bulk density) D-401-1C-100417-6-9
1010 - Collect shelby tube for HWA (In Situ Permeability) D-401-1C-100417-0-6
1040 - Collect acetate sleeve for ALS (archive) D-401-1C-100417-12-24 (8" recovery)
1100 - Collect shelby tube for HWA (In Situ bulk density) D-401-1A-100417-0-3
1120 - Collect shelby tube for OSU (soil moisture holding capacity) D-401-1A-100417-0-6

Grid node notes

401-1-F03: subplot 1C
- ~1/2" moss & pine needles
- soil was hard to extract - crumbly sand

401-1-B02: Subplot 1A
- ~1" duff removed
- soil was crumbly & difficult to extract

401-1-D09: Subplot 1B
- ~1.5" duff removed
- directly adjacent to a large tree
- many roots, crumbly soil

401-1-G10 Subplot 1D
- ~1" duff removed
- rocky soil - first acetate liner push brought up one 1.5" rock

Avoid jackhammer use

Things to try

- slide hammer instead of jackhammer
- hand push where possible

End of day notes 10-4-2017:

1630 Prepped shelby tubes for tomorrow
8 3 inchers
8 6 inchers

1830 Update, scan, emailed Eric notes/forms

1915 - RB out

10-04-2017

1130 - Collect Shelby Tube for HWA (In Situ permeability) D-401-1A-100417-0-6

1135 - Collect Shelby Tube for HWA (In Situ bulk density) D-401-1A-100417-6-9

1145 - Break for lunch (Rebecca off site to pick up decon equipment

1235 - Collect acetate liner for ALS (archive) D-401-1A-100417-12-24 (7" recovery)

1251 - Collect Shelby tube for HWA (In Situ bulk density) D-401-1B-100417-0-3 - hand push (no jackhammer)

1300 - Collect Shelby tube for OSU (soil moisture holding capacity) D-401-1B-100417-0-6

1310 - Collect Shelby tube for HWA (In Situ permeability) D-401-1B-100417-0-6

1315 - Collect Shelby tube for HWA (In Situ bulk density) D-401-1B-100417-6-9

1324 - Collect acetate liner for ALS (archive) & drive split-spoon from 12"-30" to increase recovery (per D. Enos) D-401-1B-100417-12-30 (11" recovery)

1356 - Collect shelby tube for HWA (In Situ bulk density) D-401-1D-100417-0-3 (hand push - no jackhammer)

1400 - Collect shelby tube for OSU (soil moisture holding capacity) D-401-1D-100417-0-6

Notes continued

10-04-2017

1404: Collect shelby tube for HWA (In Situ permeability) - D-401-1D-100417-0-6

1416: Collect shelby tube for HWA (In Situ bulk density) - D-401-1D-100417-6-9

1430: Collect acetate line for ALS (archive) & drive split-spoon to 30" to increase recovery (per D. Enos) D-401-1D-100417-12-30 (first attempt: no recovery, second attempt: 7" recovery)

1500: Rebecca leaves site - field crew discuss alternatives to generator/jackhammer use with D. Enos

1535: Demobe to the station & begin processing shelby tube samples. Discuss with E. Epple how to process the tubes we will:

- remove expansion cap
- wax top of sample
- replace expansion cap
- pack void space with paper
- duct tape plastic end caps to top & bottom
- label end caps "top" & "bottom"
- pack in coolers with gel packs

[signature]

10-05-17

0700 - Meet at Mustang Grill
0800 - Meet Whitney (CCT) at station - try to call E. Epple: he is out for the day - pack vehicles for sampling
0820 - Mobilize to DU-401-2
0915 - Max off site to ~~collect~~ deliver lead, arsenic, soil mineralogy samples to FedEx
0940 - Collect shelby tube sample for HWA (In Situ bulk density)
D-401-2A-100517-0-3 [hand push]
0950 - Collect shelby tube sample for HWA (In Situ permeability)
D-401-2A-100517-0-6
1009 - Collect shelby tube for OSU (Soil Moisture Holding Capacity)
D-401-2A-100517-0-6
1017 - Collect shelby tube for HWA (In Situ Bulk Density)
D-401-2A-100517-6-9
1030 - Collect acetate liner for ABS (archive) to 30" per D. Evans
D-401-2A-100517-12-30 (6" recovery)
1050 - Collect shelby tube for HWA (In Situ Bulk Density)
D-401-2B-100517-0-3 [hand push]
1100 - Collect shelby tube for HWA (In Situ Permeability)
D-401-2B-100517-0-6
1105 - Collect shelby tube for OSU (Soil moisture holding capacity)
D-401-2B-100517-0-6

Grid node notes:

C03: located in thicket, thick with saplings, ~2" duff removed from surface, soil is rocky
subplot A

D06: located on clear cut path among tree stumps, ~1/2" duff & wood fragments removed from surface, soil was rocky with tree roots - macrocore refusal @ 24"
subplot B

F04: located in thicket of pine saplings, but little duff observed (~1/2" removed) soil was relatively loose & dry
subplot C

J08: located on clear cut path among tree stumps ~1" wood chips removed before sampling - many roots encountered
subplot D

1115 - Collect shelby tube for HWA (In Situ Bulk Density)
D-401-2B-100517-6-9
1127 - Collect acetate liner for ALS (archive) drive to 30" per D. Enos
D-401-2B-100517-12-~~30~~24 (6" recovery)
refusal @ 24"
1150 - Whitney (CCT) & Amy (Ramboll) offsite
1155 - Collect shelby tube for HWA (In Situ bulk density)
D-401-2C-100517-0-3 [hand push]
1205 - Collect shelby tube for HWA (In situ permeability)
D-401-2C-100517-0-6
1215 - Collect shelby tube for OSU (soil moisture holding capacity)
D-401-2C-100517-0-6
1225 - Collect shelby tube for HWA (In situ bulk density)
D-401-2C-100517-6-9
1230 - Collect acetate liner for ALS (archive) - drive to 30" per D. Enos
D-401-2C-100517-12-30 (recovery = 8")
1240 - Collect shelby tube for HWA (In situ bulk density)
D-401-2D-100517-0-3 [hand push]
1300 - Collect shelby tube for HWA (In situ permeability)
D-401-2D-100517-0-6
1305 - Collect shelby tube for OSU (soil moisture holding capacity)
D-401-2D-100517-0-6
1310 - Collect shelby tube for HWA (bulk density)
D-401-2D-100517-6-9

Notes continued 10-05-2017

1325 : Collect acetate liner for ALS archive - drive to 30" bgs per D. Enos (recovery = 9")
D-401-2D-100517-12-30
1340 : Break for lunch
1405 : Max returns from cooler dropoff
1425 : Per Amy's request we will reflag the edges of 401-1 & 401-2 & re-measure the sample grid node locations:
401-1-B02 : 15' from left line, 15' from topline
401-1-D09 : 16' from right line, 35' from topline
401-1-F03 : 25' from left line, 55' from topline
401-1-G10 : 5' from right line, 66' from topline
401-2-C03 : 26' from left line, 24' from topline
401-2-D06 : 47' from right line, 35' from topline
401-2-F04 : 64' from right line, 45' from bottom line
401-2-J08 : 25' from right line, 5' from bottom line
* 401-2 right line = 104', left line = 96'
1515 : Collect coordinates of Test Plot corners & sample locations using GPS
1615 : Demobe to Station - process shelby tubes
1750 : Scan notes/forms, download points
1900 : Leave station

10/06/17 1/3

0700: Meet at Mustang grill
0800: Call with Eric Epple and Rebecca Andresun to plan for the day. Collect shelby tube and macro-core sample at DU-441. Ryan B. will take samples to Colville to ship to OSU.
0840: MOB to DU-441, haul gear to central area
0920: RB offsite
0930: Collect shelby tube at A03 @ 0-3" for BD. D-441-1A-100617-0-3
0955: Collect shelby tube at A03 @ 0-6". Rocky. Soil moisture holding capacity (OSU). D-441-1A-100617-0-6
1000: Refusal at 4", beat shelby tube - retry.
1005: Collect shelby tube at A03 @ 0-6" for permeability test. D-441-1A-100617-0-6
1020: Collect shelby tube at A03 @ 6-9" for BD test. D-441-1A-100617-6-9
1030: Collect macrocore sample at A03 @ 12-24", 9" recovery. D-441-1A-100617-12-24

1040: MOB to F04
1057: Collect shelby tube from 0-3" @ F04, bulk density testing D-441-1C-100617-0-3
1105: Collect shelby tube from 0-6" @ F04 soil moisture (OSU). D-441-1C-100617-0-6
1112: Collect shelby tube from 0-6" @ F04, permeability test, D-441-1C-100617-0-6
1117: Collect shelby tube from 6-9" @ F04, BD test. D-441-1C-100617-6-9
1125: Collect macro-core from 12-24" @ F04, D-441-1C-100617-0-6, 6.5" recovery
1130: MOB to B06
1142: Collect shelby tube from 0-3" @ B06 for bulk density. D-441-1B-100617-0-3
1147: Collect shelby tube from 0-3" @ B06 for soil moisture (OSU) D-441-1B-100617-0-6
1155: Collect shelby tube from 0-6" @ B06 for permeability. D-441-1B-100617-0-6
1208: Collect shelby tube from 6-9" @ B06 for bulk density. D-441-1B-100617-6-9
1256: Collect macro-core from 12-30" @ B06. D-441-1B-100617-12-30
1300: MOB to F09

1307: Collect shelby tube from
0-3" @ F09, D-441-1D-100617-0-3

1315: Collect shelby tube from 0-6"
@ F09 for soil moisture (OSU)
D-441-1D-100617-0-6

1318: Collect shelby tube from 0-6"
@ F09 for ~~soil moisture~~ ME permeability.
D-441-1D-100617-0-6

1323: Collect shelby tube from 6-9"
@ F09 for BD, D-441-1D-100617-6-9

1335: Collect macro-core from 12-28"
@ F09, Refusal at 28", 7" recovered.
D-441-1D-100617-12-28

1400: Demobe to The Station - process
shelby tube samples, start COCs
for

1530: Max & Joe out

1600: Ryan out

10/6/17

10-07-2017

0700 - Meet up at Mustang Grill

0745 - Pack up vehicles for sampling

0800 - Skype call w/ Rebecca & Eric review
plan for the day

0830 - Mobilize to DU-258-3

0905 - Collect shelby tube for HWA (In Situ bulk density)
D-258-3D-100717-0-3

0915 - Collect shelby tube for OSU (soil moisture)
D-258-3D-100717-0-6

0920 - Collect shelby tube for HWA (In Situ Permeability)
D-258-3D-100717-0-6 [hand push]

0925 - Collect shelby tube for HWA (In-situ bulk density)
D-258-3D-100717-6-9 [hand push]

0930 - Collect acetate liner for ALS (archive). drive to 30"
D-258-3D-100717-12-30 (15" recovery)
we will only drive to 24" at this DU

0937 - Collect shelby tube for HWA (Insitu bulk density)
D-258-3C-100717-0-3 [hand push]

0942 - Collect shelby tube for OSU (soil moisture)
D-258-3C-100717-0-6

0946 - Collect shelby tube for HWA (In Situ permeability)
D-258-3C-100717-0-6

10-07-2017 notes - continued

0952 - Collect shelby tube for HWA (In Situ bulk density)
D-258-3C-100717-6-9

0955 - Collect acetate liner for ALS Archive - drive to 24"
D-258-3C-100717-12-24 (recovery = 10")

1000 - Collect shelby tube for HWA (bulk density)
D-258-3A-100717-0-3 [hand push]

1005 - Collect shelby tube for OSU (soil moisture)
D-258-3A-100717-0-6

1011 - Collect shelby tube for HWA (permeability)
D-258-3A-100717-0-6

1015 - Collect shelby tube for HWA (bulk density)
D-258-3A-100717-6-9

1017 - Collect acetate liner for ALS Archive - drive to 24"
D-258-3A-100717-12-24 (recovery = 10")

1020 - Collect shelby tube for HWA (bulk density)
D-258-3B-100717-0-3 [hand push]

1028 - Collect shelby tube for OSU (soil moisture)
D-258-3B-100717-0-6

1033 - Collect shelby tube for HWA (permeability)
D-258-3B-100717-0-6

1036 - Collect shelby tube for HWA (bulk density)
D-258-3B-100717-6-9

1040 - Collect acetate liner for ALS Archive - drive to 24"
D-258-3B-100717-12-24 (recovery = 8.5")

10-07-2017 Notes Continued

1045: Clean up at the DU, pack samples into truck and demobe from decision unit at 1100

1120: Arrive back at The Station, process shelby tubes for shipping - consolidate boxes scan notes & upload photos

1230: J. Latham out

1300: M. Elias out - R. Brauchla e-mails daily progress report

1323: Mobe to DU-258-3 to collect GPS coordinates (reading them off the screen rather than marking them with waypoints)

1352: Mobe to DU-401-1

1430: Mobe to DU-401-2

1445: Mobe to DU-441-1

1520: Demobilize to The Station & scan notes

1540: R. Brauchla out

10-7-17

DU/Subplot/Grid Node	Latitude	Longitude	Elevation	Accuracy
258-3/A/D01	48° 57' 15.66"N	117° 43' 07.81"W	422 m	59 cm
258-3/B/B08	48° 57' 16.30"N	117° 43' 07.17"W	422 m	62 cm
258-3/C/G02	48° 57' 15.38"N	117° 43' 07.42"W	423 m	63 cm
258-3/D/I09	48° 57' 15.69"N	117° 43' 06.54"W	422 m	83 cm
401-1/A/B02	48° 58' 13.47"N	117° 40' 27.82"W	405 m	77 cm
401-1/B/D09	48° 58' 13.40"N	117° 40' 26.77"W	411 m	65 cm
401-1/C/F03	48° 58' 13.12"N	117° 40' 27.54"W	409 m	61 cm
401-1/D/G10	48° 58' 13.14"N	117° 40' 26.48"W	408 m	70 cm
401-2/A/C03	48° 58' 13.91"N	117° 40' 25.67"W	408 m	63 cm
401-2/B/D06	48° 58' 13.73"N	117° 40' 25.27"W	405 m	63 cm
401-2/C/F04	48° 58' 13.56"N	117° 40' 25.54"W	408 m	63 cm
401-2/D/J08	48° 58' 13.13"N	117° 40' 24.92"W	409 m	68 cm
441-1/A/A03	48° 55' 23.34"N	117° 47' 22.67"W	410 m	46 cm
441-1/B/B06	48° 55' 22.30"N	117° 47' 22.20"W	407 m	47 cm
441-1/C/F04	48° 55' 21.86"N	117° 47' 22.47"W	409 m	57 cm
441-1/D/F09	48° 55' 21.86"N	117° 47' 21.75"W	409 m	49 cm

Grid Node Notes:

D01 - 1/2" of duff - soil relatively loose underneath shallow roots (moss & grass)

B08 - 1/4" grass - soil loose, grid node in a clearing

G02 - 1/2" moss & grass - grid node in a large clearing with loose soil

I09 - 1" duff - soil loose beneath shallow roots - grid node near edge of clearing by some shrubs

10-09-2017

0700: Meet at Mustang Grill in Northport
0800: At The Station - skype with Eric Epple & Rebecca Andresen - go over plan for day - IC layout at 401-1 & 401-2; J. Latham will take samples & trash & equipment back to ~~seattle~~ spokane
0835: J. Latham out
0900: Arcadis (R. Brauchle & M. Elias) & Ramboll (M. Raposo) mobe to DU-401
0920: H&S meeting on site. Wildlife, wind
0940: Verify lengths & midpoints for 401-1.

Topline - 102' midpoint = 51'
Leftline - 101' midpoint = 50.5'
Bottomline - 100' midpoint = 50'
Rightline - 97' midpoint = 48.5'
Midline (top to bottom) - 99.5'
Midline (right to left) - 100'

1040: Begin flagging IC locations in 401-1 using midpoints as our starting coordinates

10-09-2017 notes continued

1200 - Break for lunch

1230 - R. Bravchla begins recording GPS coordinates of IC points. M. Elms & M. Raposo verify lengths & midpoints for DU-401-2:

Topline = 102', midpoint = 51'
Leftline = 97', midpoint = 48.5'
Bottomline = 100', midpoint = 50'
Rightline = 103', midpoint = 51.5'

Midline (top to bottom) = 99'
Midline (left to right) = 100'

GPS coordinates - Decision Unit 401-1
Subplot A

IC Point	Latitude	Longitude	Accuracy
1	48°58'13.74"N	117°40'27.45"W	49 cm
2	48°58'13.63"N	117°40'27.38"W	61 cm
3	48°58'13.52"N	117°40'27.32"W	51 cm
4	48°58'13.42"N	117°40'27.29"W	53 cm
5	48°58'13.36"N	117°40'27.27"W	54 cm
6	48°58'13.71"N	117°40'27.50"W	57 cm
7	48°58'13.66"N	117°40'27.55"W	53 cm
8	48°58'13.49"N	117°40'27.46"W	66 cm
9	48°58'13.43"N	117°40'27.39"W	59 cm
10	48°58'13.35"N	117°40'27.37"W	88 cm

10-09-2017 notes Continued

GPS Coordinates - Decision Unit 401-1
Subplot A

IC Point	Latitude	Longitude	Accuracy
11	48°58'13.63"N	117°40'27.56"W	63 cm
12	48°58'13.57"N	117°40'27.53"W	58 cm
13	48°58'13.49"N	117°40'27.56"W	63 cm
14	48°58'13.41"N	117°40'27.52"W	50 cm
15	48°58'13.29"N	117°40'27.48"W	55 cm
16	48°58'13.61"N	117°40'27.84"W	78 cm
17	48°58'13.53"N	117°40'27.67"W	49 cm
18	48°58'13.49"N	117°40'27.75"W	67 cm
19	48°58'13.41"N	117°40'27.65"W	53 cm
20	48°58'13.33"N	117°40'27.60"W	60 cm
21	48°58'13.64"N	117°40'27.88"W	90 cm
22	48°58'13.58"N	117°40'27.84"W	67 cm
23	48°58'13.48"N	117°40'27.78"W	64 cm
24	48°58'13.39"N	117°40'27.81"W	85 cm
25	48°58'13.32"N	117°40'27.71"W	84 cm
26	48°58'13.62"N	117°40'27.96"W	78 cm
27	48°58'13.56"N	117°40'27.93"W	55 cm
28	48°58'13.42"N	117°40'27.96"W	73 cm
29	48°58'13.35"N	117°40'27.84"W	61 cm
30	48°58'13.25"N	117°40'27.84"W	58 cm

10-09-2017 notes continued

GPS Coordinates - Decision Unit 401-1

Subplot B

IC Point	Latitude	Longitude	Accuracy
1	48°58' 13.38" N	117°40' 26.51" W	91 cm
2	48°58' 13.32" N	117°40' 26.62" W	70 cm
3	48°58' 13.28" N	117°40' 26.78" W	69 cm
4	48°58' 13.26" N	117°40' 26.86" W	78 cm
5	48°58' 13.26" N	117°40' 27.02" W	88 cm
6	48°58' 13.46" N	117°40' 26.49" W	65 cm
7	48°58' 13.42" N	117°40' 26.64" W	71 cm
8	48°58' 13.43" N	117°40' 26.74" W	72 cm
9	48°58' 13.42" N	117°40' 26.90" W	66 cm
10	48°58' 13.39" N	117°40' 27.06" W	84 cm
11	48°58' 13.57" N	117°40' 26.55" W	60 cm
12	48°58' 13.52" N	117°40' 26.71" W	65 cm
13	48°58' 13.48" N	117°40' 26.83" W	74 cm
14	48°58' 13.46" N	117°40' 26.95" W	69 cm
15	48°58' 13.43" N	117°40' 27.07" W	58 cm
16	48°58' 13.68" N	117°40' 26.50" W	72 cm
17	48°58' 13.67" N	117°40' 26.73" W	69 cm
18	48°58' 13.63" N	117°40' 26.84" W	70 cm
19	48°58' 13.60" N	117°40' 26.98" W	71 cm
20	48°58' 13.58" N	117°40' 27.10" W	70 cm
21	48°58' 13.62" N	117°40' 26.53" W	66 cm

10-09-2017 notes continued

GPS Coordinates - Decision Unit 401-1

Subplot B

IC Point	Longitude	Latitude	Accuracy
22	48°58' 13.63" N	117°40' 26.70" W	62 cm
23	48°58' 13.62" N	117°40' 26.85" W	83 cm
24	48°58' 13.62" N	117°40' 26.98" W	70 cm
25	48°58' 13.60" N	117°40' 27.09" W	80 cm
26	48°58' 13.77" N	117°40' 26.57" W	83 cm
27	48°58' 13.68" N	117°40' 26.76" W	75 cm
28	48°58' 13.71" N	117°40' 26.91" W	79 cm
29	48°58' 13.72" N	117°40' 26.98" W	83 cm
30	48°58' 13.65" N	117°40' 27.06" W	80 cm
Subplot C	Subplot C	Subplot C	Subplot C
1	48°58' 13.13" N	117°40' 27.81" W	87 cm
2	48°58' 13.16" N	117°40' 27.72" W	70 cm
3	48°58' 13.08" N	117°40' 27.60" W	64 cm
4	48°58' 13.16" N	117°40' 27.45" W	80 cm
5	48°58' 13.16" N	117°40' 27.36" W	78 cm
6	48°58' 13.00" N	117°40' 27.87" W	77 cm
7	48°58' 13.02" N	117°40' 27.73" W	68 cm
8	48°58' 13.09" N	117°40' 27.53" W	72 cm
9	48°58' 13.10" N	117°40' 27.44" W	74 cm
10	48°58' 13.07" N	117°40' 27.33" W	72 cm
11	48°58' 12.91" N	117°40' 27.79" W	82 cm

10-09-2017 notes continued

GPS Coordinates - Decision Unit 401-1

Subplot C

IC Point	Longitude	Latitude	Accuracy
12	48°58' 12.82 "N	117°40' 27.74 " W	63 cm
13	48° 58' 12.98 "N	117°40' 27.59 " W	60 cm
14	48°58' 12.99 "N	117°40' 27.42 " W	65 cm
15	48°58' 12.95 "N	117°40' 27.30 " W	54 cm
16	48°58' 12.73 "N	117°40' 27.85 " W	85 cm
17	48°58' 12.83 "N	117°40' 27.65 " W	70 cm
18	48°58' 12.85 "N	117°40' 27.53 " W	78 cm
19	48°58' 12.85 "N	117°40' 27.45 " W	59 cm
20	48°58' 12.91 "N	117°40' 27.28 " W	57 cm
21	48°58' 12.73 "N	117°40' 27.78 " W	67 cm
22	48°58' 12.78 "N	117°40' 27.68 " W	76 cm
23	48°58' 12.83 "N	117°40' 27.55 " W	90 cm
24	48°58' 12.77 "N	117°40' 27.41 " W	64 cm
25	48°58' 12.82 "N	117°40' 27.29 " W	73 cm
26	48°58' 12.73 "N	117°40' 27.78 " W	74 cm
27	48°58' 12.73 "N	117°40' 27.74 " W	65 cm
28	48°58' 12.71 "N	117°40' 27.49 " W	85 cm
29	48°58' 12.73 "N	117°40' 27.35 " W	63 cm
30	48°58' 12.77 "N	117°40' 27.23 " W	71 cm

Subplot D on next page

1330 - M. Elias & M. Raposo begin flagging IC locations in 401-2A

10-09-2017 notes continued

GPS Coordinates - Decision Unit 401-1

Subplot D

IC Point	Latitude	Longitude	Accuracy
1	48°58' 12.77 "N	117°40' 26.99 "W	60 cm
2	48°58' 12.85 "N	117°40' 27.03 "W	60 cm
3	48°58' 12.93 "N	117°40' 27.06 "W	80 cm
4	48°58' 12.88 "N	117°40' 27.13 "W	73 cm
5	48°58' 13.04 "N	117°40' 27.11 "W	83 cm
6	48°58' 12.74 "N	117°40' 26.90 "W	63 cm
7	48°58' 12.86 "N	117°40' 26.88 "W	59 cm
8	48°58' 12.99 "N	117°40' 26.95 "W	69 cm
9	48°58' 12.95 "N	117°40' 27.01 "W	60 cm
10	48°58' 13.14 "N	117°40' 26.97 "W	70 cm
11	48°58' 12.74 "N	117°40' 26.82 "W	58 cm
12	48°58' 12.85 "N	117°40' 26.81 "W	58 cm
13	48°58' 12.91 "N	117°40' 26.78 "W	59 cm
14	48°58' 13.04 "N	117°40' 26.88 "W	82 cm
15	48°58' 13.17 "N	117°40' 26.90 "W	60 cm
16	48°58' 12.86 "N	117°40' 26.64 "W	57 cm
17	48°58' 12.93 "N	117°40' 26.67 "W	72 cm
18	48°58' 12.99 "N	117°40' 26.71 "W	56 cm
19	48°58' 13.07 "N	117°40' 26.77 "W	80 cm
20	48°58' 13.14 "N	117°40' 26.78 "W	61 cm
21	48°58' 12.84 "N	117°40' 26.55 "W	60 cm

10-09-2017 notes continued

GPS Coordinates - Decision Unit 401-1
Subplot D

IC Point	Latitude	Longitude	Accuracy
22	48°58' 12.92 "N	117°40' 26.60 "W	64 cm
23	48°58' 12.97 "N	117°40' 26.69 "W	59 cm
24	48°58' 13.01 "N	117°40' 26.68 "W	50 cm
25	48°58' 13.19 "N	117°40' 26.75 "W	75 cm
26	48°58' 12.77 "N	117°40' 26.39 "W	63 cm
27	48°58' 12.97 "N	117°40' 26.42 "W	80 cm
28	48°58' 13.04 "N	117°40' 26.49 "W	63 cm
29	48°58' 13.13 "N	117°40' 26.55 "W	76 cm
30	48°58' 13.23 "N	117°40' 26.60 "W	72 cm

1500 • Begin recording GPS Coordinates for 401-2 IC Points

GPS Coordinates - Decision Unit 401-2 - Subplot A

IC Point	Latitude	Longitude	Accuracy
1	48°58' 14.08 "N	117°40' 25.40 "W	77 cm
2	48°58' 13.95 "N	117°40' 25.39 "W	61 cm
3	48°58' 13.85 "N	117°40' 25.37 "W	59 cm
4	48°58' 13.74 "N	117°40' 25.34 "W	60 cm
5	48°58' 13.65 "N	117°40' 25.37 "W	64 cm
6	48°58' 14.10 "N	117°40' 25.54 "W	59 cm
7	48°58' 13.94 "N	117°40' 25.55 "W	64 cm

10-09-2017 notes continued

GPS Coordinates - Decision Unit 401-2 : Subplot A

IC Point	Latitude	Longitude	Accuracy
8	48°58' 13.79 "N	117°40' 25.53 "W	68 cm
9	48°58' 13.74 "N	117°40' 25.57 "W	85 cm
10	48°58' 13.71 "N	117°40' 25.55 "W	84 cm
11	48°58' 14.16 "N	117°40' 25.63 "W	85 cm
12	48°58' 13.91 "N	117°40' 25.62 "W	49 cm
13	48°58' 13.83 "N	117°40' 25.65 "W	72 cm
14	48°58' 13.73 "N	117°40' 25.64 "W	60 cm
15	48°58' 13.68 "N	117°40' 25.64 "W	60 cm
16	48°58' 13.99 "N	117°40' 25.81 "W	90 cm
17	48°58' 13.94 "N	117°40' 25.75 "W	48 cm
18	48°58' 13.84 "N	117°40' 25.80 "W	55 cm
19	48°58' 13.80 "N	117°40' 25.83 "W	63 cm
20	48°58' 13.67 "N	117°40' 25.82 "W	57 cm
21	48°58' 13.97 "N	117°40' 25.94 "W	63 cm
22	48°58' 13.93 "N	117°40' 25.91 "W	71 cm
23	48°58' 13.85 "N	117°40' 25.89 "W	48 cm
24	48°58' 13.76 "N	117°40' 25.87 "W	62 cm
25	48°58' 13.66 "N	117°40' 25.88 "W	83 cm
26	48°58' 14.07 "N	117°40' 26.01 "W	60 cm
27	48°58' 13.95 "N	117°40' 26.01 "W	51 cm
28	48°58' 13.88 "N	117°40' 26.01 "W	54 cm
29	48°58' 13.78 "N	117°40' 26.01 "W	50 cm
30	48°58' 13.70 "N	117°40' 26.01 "W	50 cm

10-09-2017 notes continued

1530 - M. Raposo requests that we collect the corners of the test plots for the sake of completeness

GPS Point	Latitude	Longitude	Accuracy
401-1 top left	48°58'13.56"N	117° 40' 28.03"W	61 cm
401-1 top right	48° 58' 13.78"N	117° 40' 26.56"W	53 cm
401-1 bottom left	48°58'12.70"N	117° 40' 27.70"W	67 cm
401-1 bottom right	48°58' 12.83"N	117° 40' 26.33"W	74 cm
401-2 top left	48°58'14.10"N	117°40'26.07"W	70 cm
401-2 bottom left	48° 58' 13.07"N	117° 40' 26.05"W	58 cm
401-2 top right	48°58' 14.01"N	117° 40' 24.50"W	55 cm
401-2 bottom right	48°58' 12.99"N	117°40' 24.53"W	55 cm

1600 - Demobe to station - scan field notes & inventory leftover sampling material
- 35 shelby tubes
- 1½ boxes of wax

1720 - R. Brauchla / M. Elias out 1635

1730 - J. Lathem returns from Spokane

10.9.17

10-10-2017

0700: Meet at Mustang Grill - J. DeJong, M. MacDaniel & M. Raposo also on site

0800: Morning call with R. Andresen & E. Epple
Plan for the day - finish layout & GPS (store points on unit rather than recording them by hand) for 401-2 & begin sampling 401-1 for IC sampling

0840: Mobe to 401-2

0900: Begin marking out Subplots B, C & D @ DU-401-2 with IC sample locations

0945: Mike from Ramboll approaches with concerns about safety (bear spray required) & sampling procedure (we may want to treat the edges of the test plot and the transition zones as obstacles during DUP & TRIP collection - stay tuned for more information)

1030: Layout complete, begin sample collection

1058: Begin collecting IC-401-1A-101017

1155: Begin collecting IC-401-1B-101017

1245: Break for lunch

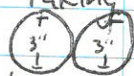
1330: Final weight of IC-401-1A-101017 was measured at 6,565 g (≥500 g required): phone calls begin.

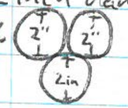
~~Note: IC samples on IC DUP will shift down instead of up~~

see next page

10-10-2017 notes continued

Note: Lack of weight is due to using 2-inch diameter samplers. Calls in to Ramboll & Arcadis about whether we need to take more punches

1415 - Per Ramboll, instead of taking 2 3-inch diameter plunges like so: 

we will take 3 2-inch diameter plunges in this orientation: 

We will maintain the <5cm gap between parent & duplicate/triplicate but will orient them so that they don't leave the subplot or enter the transition zone (401-1C-DUP will be collected toward the bottom line, 401-2A-TRIPs will be collected toward the bottom line & toward the left line

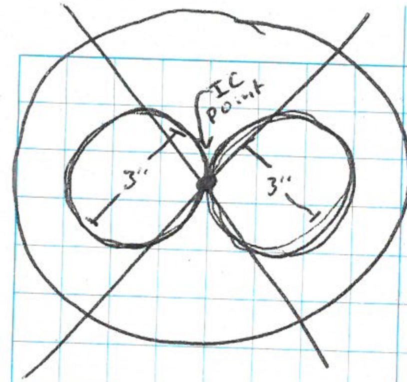
1445 - Complete the IC samples, placing an additional punch of material in each bag

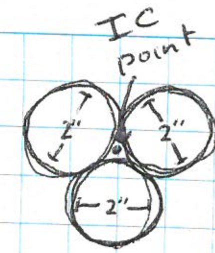
IC-401-1A-101017 = 10,457 g

IC-401-1B-101017 = 13,511 g

1620 - Demobe to station - M. Elias to Colville for

1650 - Called Eric re: buckets & coolers we will load 2 buckets per cooler & order 20 more buckets. J. Latham out @ 1720; R. Brauchla out @ 1815; M. Elias out @ 1930





- 2 buckets per sample - will have to be composited in the lab
- Keep buckets together (2 buckets per cooler) - since if one bucket is gone the whole sample is worthless
- No extra room in cooler - pack with double-bagged ice - ship Macrocore samples in separate cooler

10-11-2017 notes

0700 - Meet at Mustang
0805 - Skype call with E. Epple going over plan of day: Max to ship samples/stop at storage unit for samplers & gear for other crew; Joe/Ryan/Michael return to 401 to sample
0830 - Pack coolers for ALS
0940 - Max leaves for Spokane, Joe/Ryan leave for DU-401
1023 - Begin collecting IC-401-1C-101117
1210 - Break for lunch (Joe on site @ 1155
1235 - Begin collecting IC-401-1C-101117-D
1305 - Joe leaves site @ 1305
1400 - Begin collecting IC-401-D-101117
Collect 2 punches rather than 3 punches for this sample (and all others) per Amy & Michael (Ramboll)
We only need 4,000 grams
1538 - Begin collecting IC-401-2B-101117
Note: IC point #17 was shifted 6" to the north to avoid a tree
1635 - Kris from Teck comes to DU for site visit as we're cleaning up
Rebecca joins her

1705 - Demobe to station; re-ice buckets overnight, scan field documentation
1800 - Arcadis out

Ryan Bubl

10/12/17

0700 - Meet at Mustang Grill
0830 - Max and Joe MOB to 401, Ryan to pack coolers and ship from Colville.
0920 - Begin sampling 401-2A
~~1000~~ 401-2A collected (IC1-401-2A-101217)
1015 - Begin ~~collected~~ collecting 401-2A dup IC2-401-2A-101217
~~[illegible]~~ collected
1055: Begin collecting ~~[illegible]~~ IC3-401-2A-101217 (trip)
1145: IC3-401-2A-101217 collected MOB to 2C
1200: Take lunch
1230: Begin prep for 401-2C
1250: Begin sampling IC-401-2C-101217
1335: Complete collection of IC-401-2C-101217 MOB to 401-2D
1340: Ryan B. on-site
1400 - Begin collecting IC-401-2D-101217
1450 - Sampling complete - demobilize to The Station
1520 - Pack samples in ice - scan documents
1615 - Arcadis out

10-12-17

10-13-2017

0700: Meet at the Mustang Grill
0800: Skype call with E. Epple reviewing the plan of the day: DIG for Justin from UW for soil descriptions
0815: Pack coolers for ~~[illegible]~~ shipping - J. De Jong will take them to FedEx Spokane this afternoon
0845: Mobilize to DU-401-1/401-2 begin digging test pits
1000: Test pits complete - begin sidewall sampling - see sample log for time & other info
1130: Break for lunch.
1210: Pack up & mobe to 258-3
1300: Begin test pits / channel sampling at 253-3
1345: Sampling complete - mobilize to DU-441
1420: Begin sampling @ DU-441
1525: Demobe to the Station
1600: Ice samples - scan documents
1615: J. Latham, M. Elias out
1650: R. Bravchla out

10-13-17

10-14-2017

0700 - Meet at Mustang Grill

0800 - Skype call with E. Epple & R. Andresen
- they request that we not collect samples on a Saturday - we will flag IC sample locations at DUs 258 & 441

0830 - Mobilize to DU-441-1 - verify lengths & midpoints:

Topline = 99.5' midpoint
Bottomline = 101' midpoint = 50.5'
Leftline = 101' midpoint = 50.5'
Rightline = 100' midpoint = 50'
Midline (top to bottom) = 104' centerpoint = 52'
Midline (left to right) = 100' centerpoint = 50'

0855 - Lay out DU-441 IC sample points

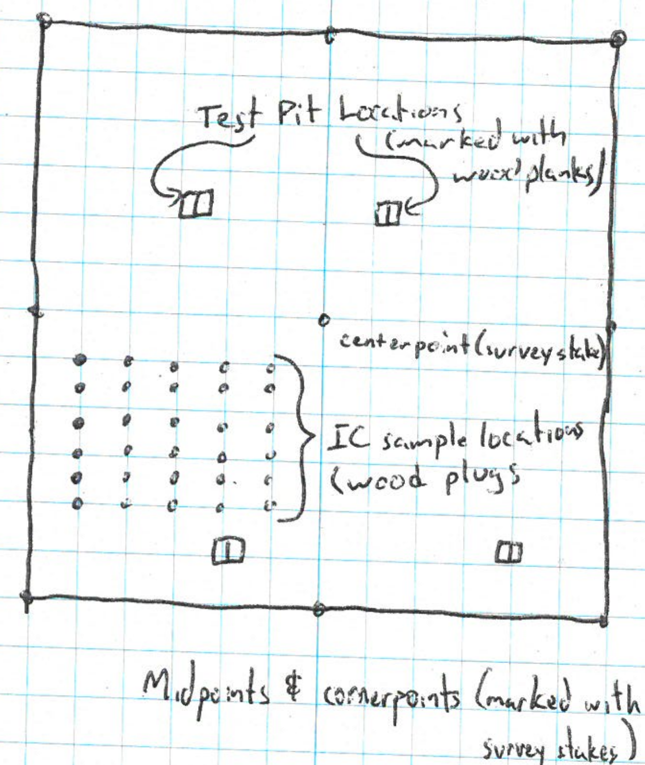
1000 - Mobilize to DU-258-3 & verify lengths/midpoint

Topline = 101' midpoint = 50.5'
Bottomline = 99' midpoint = 49.5'
Leftline = 100' midpoint = 50'
Rightline = 100' midpoint = 50'
Midline (top to bottom) = 100' midpoint = 50'
Midline (left to right = 101' midpoint = 50.5'

1020 - Lay out DU-2583 IC sample points

1110 - Demobe to station

1145 - JL/ME/MM out - RB to Colville to get boards (testpit markers) returned @ 1430



10-16-2017

0700 - Meet at mustang grill
0800 - Skype call with E. Epple & R. Andresen
plan for the day - continue IC sampling
0840 - J. Latham takes samples from Friday to
Colville FedEx, R. Brauchla & M. Elias
mobe to DU-441, M. MacDaniel will meet
them on site when he is available
0915 - Begin collecting IC-441-1A-101617
1015 - Begin collecting IC-441-1B-101617
1100 - J. Latham returns to The Station
- per instructions from E. Epple he
will empty all parent/duplicate
sample jars in to a bag (1 bag per set)
and homogenize the samples before re-jarring
them in clean jars, he will then re-
pack & ship out the samples
1125 - Begin collecting IC-441-1C-101617
1215 - Break for lunch
1250 - MM/RB begin collecting ~~IC~~ IC-441-1D-101617
ME begins photographing, redutting, deflagging test
plot (Test pit markers installed)
1420 - Mobilize to DU 401 to place
test pit markers, flagging & survey markers

10-16-17

What remains at each DU?

- Survey markers (orange, metal, low-profile) & flagging (orange/red) mark test plot corners, midpoints & center point
- Wooden plugs (2-inch diameter) mark all IC Sample locations
- Wooden planks (2 1"x12"x24") mark the 2'x2' test pit locations (one per subplot)
- All pin flags have been removed
- 441-1/401-1/401-2 cleaned up today,
- 258-3 will be cleaned up tomorrow

1530 - Demobe to station, prep coolers & COCs for shipping tomorrow
1725 - Arcadis out

[signature]
10-16-17

10-17-2017 notes

0700 - Meet @ Mustang Grill
0800 - ~~Skype~~ call with R. Andresen - review plans for today: sample/close out 258-3
0820 - Mobilize to DU-258-3
0840 - Begin collecting IC-258-3A-101717
0915 - Begin collecting IC-258-3B-101717
0950 - Begin collecting IC-258-3C-101717
1020 - Begin collecting IC-258-3D-101717
1115 - After positioning markers for test, return to The station
1145 - Pack samples for shipping
1215 - Break for lunch
1305 - Samples packed - M. Elias takes ALS Samples & ALS gel packs to FedEx in Spokane
1400 - R. Brauchla / J. Latham pack up equipment, build boxes, ship GPS back to WDS and wax/expansion caps/shelby tubes to
1500 - R. Brauchla renews icepacks in HWA coolers & completes/scans paperwork
1630 - Arcadis out

[signature]
10-17-17

Ship GPS to:

Western Data Systems
14722 Regnal
Houston, TX 77039

USPS TRACKING # & CUSTOMER RECEIPT 9114 9014 9645 1207 2987 72
For Tracking or inquiries go to USPS.com or call 1-800-222-1811.

+43

Ship wax/shelby tubes/expansion caps to:

Diedrich Drill
5 Fisher Street
LaPorte, IN 46350

USPS TRACKING # & CUSTOMER RECEIPT 9114 9014 9645 1207 2987 89
For Tracking or inquiries go to USPS.com or call 1-800-222-1811.

USPS TRACKING # & CUSTOMER RECEIPT 9114 9014 9645 1207 2987 96
For Tracking or inquiries go to USPS.com or call 1-800-222-1811.

USPS TRACKING # & CUSTOMER RECEIPT 9114 9014 9645 1207 2988 02
For Tracking or inquiries go to USPS.com or call 1-800-222-1811.

USPS TRACKING # & CUSTOMER RECEIPT 9114 9014 9645 1207 2988 19
For Tracking or inquiries go to USPS.com or call 1-800-222-1811.

10-18-2017

0700 - Meet @ Mustang Grill
0800 - Skype call with R. Andresen
& E. Epple review plan for the day
0820 - J. Latham takes VRA Pine Boxes
to FedEx & attempts to return unused drums
0850 - R. Brauchla takes HWA samples to
HWA Labs in Bothell
1545 - Drop off samples
1710 - Return to office

10-18-17

(43)

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	258-3 D01	DU and Test Plot:	258-3 B08
Sub-Plot:	A	Sub-Plot:	B
Completed By:	RB, ME, JL	Completed By:	RB, ME, JL
Date:	10-13-17	Date:	10-13-17

Punch Bar Samples: 1/2" moss & grass

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-7-17 1005
In Situ Bulk Density (0-3")	10-7-17 1000
In Situ Bulk Density (6-9")	10-7-17 1015
In Situ Permeability (0-6")	10-7-17 1011

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-7-17 1017

Soil horizon descriptions	10/13/17

Punch Bar Samples: 1/4" moss/grass loose pine needles

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-7-17 1028
In Situ Bulk Density (0-3")	10-7-17 1020
In Situ Bulk Density (6-9")	10-7-17 1036
In Situ Permeability (0-6")	10-7-17 1033

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-7-17 1040

Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	258-3 G02
Sub-Plot:	C
Completed By:	RB, RKA, ME, JL
Date:	10/03

0.5 in duff (moss/grass)

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1400
Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1400

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-7-17 0942
In Situ Bulk Density (0-3")	10-7-17 0937
In Situ Bulk Density (6-9")	10-7-17 0952
In Situ Permeability (0-6")	10-7-17 0946

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-7-17 0955

Soil horizon descriptions	10/13/17

DU and Test Plot:	258-3 I09
Sub-Plot:	D
Completed By:	RB ME, JL
Date:	10-13-17

Punch Bar Samples: 1" duff

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-7-17 0915
In Situ Bulk Density (0-3")	10-7-17 0905
In Situ Bulk Density (6-9")	10-7-17 0925
In Situ Permeability (0-6")	10-7-17 0920

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-7-17 0930

Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	401-1 B02	DU and Test Plot:	401-1 P09
Sub-Plot:	A	Sub-Plot:	B
Completed By:	RB, ME, JL	Completed By:	RB, ME, JL
Date:	10/4/17	Date:	10/04/17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—	Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1200
Lead/Arsenic and General Soil Mineralogy (0-3")	—	Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1200

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17	Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-4-17 1120	Soil Moisture Holding Capacity (0-6")	10-4-17 1300
In Situ Bulk Density (0-3")	10-4-17 1100	*In Situ* Bulk Density (0-3")	10-4-17 1251
In Situ Bulk Density (6-9")	10-4-17 1135	*In Situ* Bulk Density (6-9")	10-4-17 1315
In Situ Permeability (0-6")	10-4-17 1130	*In Situ* Permeability (0-6")	10-4-17 1310

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-4-17 1239	Soil Collected for Future Analysis (12-30" ~~24"~~)	10-4-17 1324

Soil horizon descriptions	10/13/17	Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	401-1 F03
Sub-Plot:	C
Completed By:	RB, ME, JL
Date:	10/04/17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-4-17 940 (CSU)
In Situ Bulk Density (0-3")	10-4-17 950
In Situ Bulk Density (6-9")	10-4-17 1000
In Situ Permeability (0-6")	10-4-17 1010

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-4-17 1040
Soil horizon descriptions	10/13/17

DU and Test Plot:	401-1 G10
Sub-Plot:	D
Completed By:	RB, ME, JL
Date:	10/04/17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-4-17 1400
In Situ Bulk Density (0-3")	10-4-17 1356
In Situ Bulk Density (6-9")	10-4-17 1416
In Situ Permeability (0-6")	10-4-17 1404

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-4-17 1430
Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	401-2 C03	DU and Test Plot:	401-2 D06
Sub-Plot:	A	Sub-Plot:	B
Completed By:	RB, ME JL	Completed By:	RB, ME, JL
Date:	10-13-17	Date:	10-13-17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—	Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—	Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17	Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 1009	Soil Moisture Holding Capacity (0-6")	10-5-17 1105
In Situ Bulk Density (0-3")	10-5-17 0940	*In Situ* Bulk Density (0-3")	10-5-17 1050
In Situ Bulk Density (6-9")	10-5-17 1017	*In Situ* Bulk Density (6-9")	10-5-17 1115
In Situ Permeability (0-6")	10-5-17 0950	*In Situ* Permeability (0-6")	10-5-17 1100

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1030	Soil Collected for Future Analysis (12-24")	10-5-17 1127
Soil horizon descriptions	10/13/17	Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	401-2 F04
Sub-Plot:	C
Completed By:	~~RVA~~ JL, RB, ME
Date:	10/03/17

Punch Bar Samples: Duff= 1.5-in

Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1152
Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1152

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 ~~[illegible]~~ 1215
In Situ Bulk Density (0-3")	10-5-17 1155
In Situ Bulk Density (6-9")	10-5-17 1225
In Situ Permeability (0-6")	10-5-17 1205

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1230

Soil horizon descriptions	10/13/17

DU and Test Plot:	401-2 J08
Sub-Plot:	D
Completed By:	RB, ME JL
Date:	10-13-17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	10-5-17 1305
In Situ Bulk Density (0-3")	10-5-17 1240
In Situ Bulk Density (6-9")	10-5-17 1310
In Situ Permeability (0-6")	10-5-17 1300

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	10-5-17 1325

Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	441-1 A03
Sub-Plot:	A
Completed By:	ME
Date:	10-13-17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—	
Lead/Arsenic and General Soil Mineralogy (0-3")	~	

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17	

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	0955	10/06/17
In Situ Bulk Density (0-3")	0930	10/06/17
In Situ Bulk Density (6-9")	1020	10/06
In Situ Permeability (0-6")	1005	10/06

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	1030	10/06
Soil horizon descriptions	10/13/17	

DU and Test Plot:	441-1 B06
Sub-Plot:	~~B~~ B
Completed By:	RB/ME
Date:	10-13-17

Punch Bar Samples: 1" duff

Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1550	
Lead/Arsenic and General Soil Mineralogy (0-3")	10-3-17 1550	

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17	

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	1147	10/06
In Situ Bulk Density (0-3")	1142	10/06
In Situ Bulk Density (6-9")	1208	10/06
In Situ Permeability (0-6")	1155	10/06

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	1256	10/06
Soil horizon descriptions	10/13/17	

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
Discrete Samples

DU and Test Plot:	441-1
Sub-Plot:	~~A~~ C

Completed By:	ME, JL
Date:	10/6/17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	1105	10/06
In Situ Bulk Density (0-3")	1057	10/06
In Situ Bulk Density (6-9")	1117	10/06
In Situ Permeability (0-6")	1112	10/06

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	1125	10/06

Soil horizon descriptions	10/13/17

DU and Test Plot:	441-1
Sub-Plot:	D

Completed By:	ME, JL
Date:	10/6/17

Punch Bar Samples:

Lead/Arsenic and General Soil Mineralogy (0-3")	—
Lead/Arsenic and General Soil Mineralogy (0-3")	—

Sidewall Samples:

Total TAL Metals (except Hg) (0-12") in 2" increments	10/13/17

Shelby Tube Samples:

Soil Moisture Holding Capacity (0-6")	1315	10/06
In Situ Bulk Density (0-3")	1307	10/06
In Situ Bulk Density (6-9")	1323	10/06
In Situ Permeability (0-6")	1318	10/06

Macro-Core Samples:

Soil Collected for Future Analysis (12-24")	1335 ~~1330~~ ME	10/06

Soil horizon descriptions	10/13/17

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate or TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot: 258-3
Sub-Plot: A
Completed By: MM/ME/JL
Date: 10-17-17 0840

Increment per Sub-Plot:

1	320	11	354	21	341
2	284	12	362	22	343
3	368	13	347	23	343
4	317	14	375	24	428
5	280	15	293	25	238
6	284	16	252	26	309
7	240	17	272	27	358
8	308	18	373	28	332
9	301	19	338	29	349
10	309	20	326	30	233

9,577g

DU and Test Plot: 258-3
Sub-Plot: B
Completed By: MM/ME/JL
Date: 10-17-17 0915

Increment per Sub-Plot:

1	283	11	239	21	281
2	401	12	281	22	262
3	277	13	318	23	274
4	356	14	224	24	247
5	292	15	277	25	176
6	250	16	293	26	203
7	314	17	263	27	263
8	282	18	292	28	240
9	300	19	314	29	217
10	363	20	262	30	240

8,284g

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot: 258-3
Sub-Plot: C
Completed By: MM/ME/JL
Date: 10-17-17 950

Increment per Sub-Plot:

1	176	11	174	21	160
2	151	12	116	22	202
3	180	13	216	23	216
4	91	14	170	24	159
5	215	15	165	25	215
6	159	16	185	26	114
7	125	17	133	27	127
8	242	18	280	28	220
9	195	19	158	29	271
10	206	20	212	30	230

5,463g

DU and Test Plot: 258-3
Sub-Plot: D
Completed By: MM/ME/JL
Date: 10-17-17 1020

Increment per Sub-Plot:

1	151	11	259	21	237
2	198	12	201	22	126
3	316	13	170	23	249
4	182	14	324	24	269
5	277	15	297	25	363
6	172	16	301	26	224
7	88	17	189	27	174
8	209	18	263	28	253
9	232	19	276	29	317
10	204	20	224	30	329

7,074g

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	401-1	Completed By:	RB/JL
Sub-Plot:	A	Date:	10-10-17 1058

10,457 g

Increment per Sub-Plot:

1	317	11	224	21	345
2	446	12	275	22	399
3	354	13	342	23	150
4	384	14	343	24	315
5	247	15	~~[illegible]~~ 347	25	439
6	448	16	429	26	353
7	386	17	493	27	264
8	212	18	321	28	542
9	324	19	281	29	319
10	293	20	383	30	480

=3,412 =3,438 =3,607

DU and Test Plot:	401-1 ~~A~~	Completed By:	JL/RB
Sub-Plot:	~~A~~ B	Date:	10-10-17 1155

Increment per Sub-Plot:

1	245	11	477	21	413
2	375	12	487	22	516
3	394	13	396	23	513
4	437	14	379	24	545
5	540	15	476	25	499
6	497	16	485	26	499
7	383	17	456	27	470
8	448	18	477	28	513
9	465	19	419	29	502
10	339	20	438	30	416

4,123 4,490 4,898

= 13,511 g

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	401-1	Completed By:	RB/JL
Sub-Plot:	C	Date:	10-11-2017 1023

Increment per Sub-Plot: Total: 11,403 g

1	170	11	385	21	364
2	369	12	410	22	387
3	276	13	536	23	411
4	203	14	388	24	351
5	270	15	415	25	433
6	286	16	498	26	391
7	477	17	441	27	379
8	456	18	345	28	382
9	325	19	410	29	390
10	388	20	454	30	413

~~3020~~ 3220 ~~4024~~ 4282 3901

DU and Test Plot:	401-1	Completed By:	RB /JL
Sub-Plot:	C (DUP)	Date:	10-11-2017 1235

Increment per Sub-Plot: Total: 12,555 g

1	307	11	432	21	385
2	443	12	465	22	348
3	465	13	513	23	357
4	402	14	489	24	411
5	360	15	416	25	441
6	427	16	421	26	548
7	464	17	420	27	400
8	418	18	450	28	426
9	376	19	426	29	340
10	458	20	459	30	288

4,120 4,491 3,944

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	401-1	Completed By:	RB/JL
Sub-Plot:	D	Date:	10/11/17

total: 5,453g

Increment per Sub-Plot:

1	202	11	206	21	233
2	150	12	352	22	193
3	165	13	280	23	263
4	137	14	105	24	127
5	80	15	144	25	114
6	207	16	89	26	221
7	230	17	168	27	201
8	315	18	184	28	177
9	203	19	73	29	179
10	202	20	72	30	181
	1891		1,673		1,889

DU and Test Plot:	~~401-2~~	Completed By:	
Sub-Plot:	~~A~~	Date:	

Increment per Sub-Plot:

1		11		21	
2		12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	401-2	Completed By:	RB / JL
Sub-Plot:	B	Date:	10/11/17 1538

Total: 7,639

Increment per Sub-Plot:

1	126	11	178	21	338
2	196	12	198	22	110
3	304	13	346	23	258
4	240	14	426	24	237
5	237	15	437	25	280
6	293	16	154	26	227
7	253	17	185	27	239
8	294	18	206	28	207
9	374	19	394	29	276
10	297	20	187	30	142
	2,614		2711		2314

DU and Test Plot:	401-2	Completed By:	ME/JL 0920
Sub-Plot:	A	Date:	10/12/17 ~~[illegible]~~

Increment per Sub-Plot:

1	~~[illegible]~~ 239	11	156	21	255
2	254	12	216	22	222
3	290	13	200	23	227
4	247	14	155	24	229
5	201	15	225	25	219
6	180	16	210	26	~~2~~ 242
7	233	17	187	27	287
8	125	18	232	28	209
9	249	19	188	29	170
10	223	20	277	30	183
	2231		2046		2623

=6,900

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	401-2	Completed By:	ME/JL
Sub-Plot:	A ~~(DUP)~~ (TRIP) 1/2	Date:	10/12/17 1015

Increment per Sub-Plot:

1	190	11	223	21	268
2	202	12	254	22	293
3	265	13	243	23	264
4	240	14	213	24	172
5	194	15	278	25	192
6	241	16	242	26	228
7	133	17	205	27	272
8	180	18	235	28	269
9	241	19	204	29	186
10	263	20	240	30	190

2,199 2,337 2,334

=6,870

DU and Test Plot:	401-2	Completed By:	ME/JL 1055
Sub-Plot:	A (Trip) 2/2	Date:	10/12/17 ~~1015~~

Increment per Sub-Plot:

1	137	11	263	21	263
2	257	12	182	22	238
3	218	13	285	23	153
4	212	14	219	24	240
5	255	15	203	25	298
6	282	16	284	26	282
7	271	17	205	27	214
8	154	18	315	28	228
9	223	19	157	29	307
10	252	20	273	30	240

2,261 2,386 2,566

=7,213

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	401-2	Completed By:	ME/JL	
Sub-Plot:	C	Date:	10/12/17	1250

Increment per Sub-Plot:

1	239	11	286	21	245
2	266	12	236	22	257
3	320	13	285	23	224
4	314	14	295	24	269
5	313	15	217	25	271
6	254	16	229	26	232
7	241	17	236	27	260
8	208	18	231	28	234
9	235	19	238	29	294
10	320	20	165	30	291

7,683g

2,577

DU and Test Plot:	401-2	Completed By:	ME/JL	
Sub-Plot:	D	Date:	10/12/17	1400

Increment per Sub-Plot:

1	182	11	295	21	279
2	279	12	182	22	216
3	190	13	266	23	215
4	257	14	207	24	326
5	210	15	309	25	366
6	219	16	174	26	248
7	181	17	141	27	326
8	343	18	165	28	263
9	239	19	195	29	201
10	254	20	237	30	240

7,205g

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	441-1	Completed By:	RB, ME, MM
Sub-Plot:	A	Date:	10/16/17 915

Increment per Sub-Plot:

1	145	11	131	21	181
2	164	12	253	22	118
3	244	13	278	23	386
4	337	14	273	24	278
5	153	15	286	25	322
6	76	16	255	26	130
7	321	17	93	27	252
8	160	18	131	28	272
9	274	19	412	29	350
10	271	20	364	30	220

7,130g

DU and Test Plot:	441-1	Completed By:	RB, ME, MM
Sub-Plot:	B	Date:	10/16/17 1015

Increment per Sub-Plot:

1	264	11	322	21	238
2	277	12	253	22	201
3	338	13	182	23	272
4	144	14	162	24	304
5	251	15	272	25	273
6	370	16	231	26	135
7	319	17	151	27	365
8	166	18	322	28	216
9	193	19	266	29	201
10	243	20	424	30	176

7,531g

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

UPPER COLUMBIA RIVER (UCR)
2017 SATES
ARCADIS Project Number B0095010
Teck Sub-Plot Checklist
IC Samples

DU and Test Plot:	441-1	Completed By:	MM/ME/RB
Sub-Plot:	~~Q~~ D	Date:	10-16-17 ~~1125~~ 1250

Increment per Sub-Plot:

1	205	11	113	21	199
2	192	12	340	22	167
3	170	13	211	23	230
4	177	14	137	24	172
5	173	15	227	25	221
6	303	16	301	26	229
7	122	17	219	27	147
8	201	18	156	28	201
9	98	19	219	29	246
10	178	20	118	30	101

5,773g

DU and Test Plot:	441-1	Completed By:	MM/ME/RB
Sub-Plot:	~~R~~ C	Date:	10-16-17 1125

Increment per Sub-Plot:

1	209	11	143	21	212
2	196	12	128	22	209
3	81	13	41	23	260
4	173	14	81	24	195
5	237	15	119	25	190
6	105	16	134	26	158
7	230	17	189	27	192
8	140	18	170	28	177
9	195	19	199	29	182
10	203	20	167	30	195

5,110g

*To be completed by Field Leads before leaving Test Plot.
*Write DUP for duplicate and TRIP for triplicate.

~~ALS Environmental-Kelso~~ OSU

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10/05/17
PAGE 1 OF 1
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: Ryan W Bra...

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1C-100417-0-6	10/04/17	0940		S	1				X			
D-401-1A-100417-0-6	10/04/17	1120		S	1				X			
D-401-1B-100417-0-6	10/04/17	1300		S	1				X			
D-401-1D-100417-0-6	10/04/17	1400		S	1				X			
D-401-2A-100517-0-6	10/05/17	1009		S	1				X			
D-401-2B-100517-0-6	10/05/17	1105		S	1				X			
D-401-2C-100517-0-6	10/05/17	1215		S	1				X			
D-401-2D-100517-0-6	10/05/17	1300		S	1				X			
				S								
				S								

Analysis Requested

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date:______

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Ryan W Bra...	Signature:	Signature:	Signature:
Printed Name: Ryan W Braechle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-06-17 1000	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date ______
PAGE 1 OF 2
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3A-100717-12-24	10/7/17	1017		S	1							
D-258-3B-100717-12-24	10/7/17	1040		S	1							
D-258-3C-100717-12-24	10/7/17	0955		S	1							
D-258-3D-100717-12-30	10/7/17	0930		S	1							
D-401-1A-100417-12-24	10/4/17	1235		S	1							
D-401-1B-100417-12-30	10/4/17	1324		S	1							
D-401-1C-100417-12-24	10/4/17	1040		S	1							
D-401-1D-100417-12-30	10/4/17	1430		S	1							
D-401-2A-100517-12-30	10/5/17	1030		S	1							
D-401-2B-100517-12-24	10/5/17	1127		S	1							

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Samples collected for future analysis

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date ______

PAGE 2 OF 2

SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2C-100517-12-	10/5/17	1230		S	1							
D-401-2C-100517-12-	10/5/17	1325		S	1							
D-441-1A-100617-12-	10/6/17	1030		S	1							
D-441-1B-100617-12-	10/6/17	1256		S	1							
D-441-1C-100617-12-	10/6/17	1125		S	1							
D-441-1D-100617-12-	10/6/17	1335		S	1							
				S								
				S								
				S								
				S								

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Samples collected for future analysis

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental Kelso~~ HWA

~~1317~~ [redacted] 1068

Date ______

PAGE 1 OF 5

SR# ______

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1A-100417-0-3	10/4/17	1100		S	1					X		
D-401-1A-100417-0-6	10/4/17	1130		S	1						X	
D-401-1A-100417-6-9	10/4/17	1135		S	1					X		
D-401-1B-100417-0-3	10/4/17	1251		S	1					X		
D-401-1B-100417-0-6	10/4/17	1310		S	1						X	
D-401-1B-100417-6-9	10/4/17	1315		S	1					X		
D-401-1C-100417-0-3	10/4/17	0950		S	1					X		
D-401-1C-100417-0-6	10/4/17	1010		S	1						X	
D-401-1C-100417-6-9	10/4/17	1000		S	1					X		
D-401-1D-100417-0-3	10/4/17	1356		S	1					X		

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

X ____ II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X ____ V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

HWA

~~ALS Environmental Kelso~~
~~1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068~~

Date ______
PAGE 2 OF 5
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1D-100417-0-6	10/4/17	1404		S	1						X	
D-401-1D-100417-6-9	10/4/17	1416		S	1					X		
D-401-2A-100517-0-3	10/5/17	0940		S	1					X		
D-401-2A-100517-0-6	10/5/17	0950		S	1						X	
D-401-2A-100517-6-9	10/5/17	1017		S	1					X		
D-401-2B-100517-0-3	10/5/17	1050		S	1					X		
D-401-2B-100517-0-6	10/5/17	1100		S	1						X	
D-401-2B-100517-6-9	10/5/17	1115		S	1					X		
D-401-2C-100517-0-3	10/5/17	1155		S	1					X		
D-401 2C-100517-0-6	10/5/17	1205		S	1						X	

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day
X Standard (10 days)
____ Provide FAX Preliminary Results
Requested Report Date: ______

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
____ III. Data Validation Report (includes raw data)
____ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ HWA

~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360) 636-1068~~

Date ______
PAGE 3 OF 5
SR# ______

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2C-100517-6-9	10/5/17	1225		S	1					X		
D-401-2D-100517-0-3	10/5/17	1240		S	1					X		
D-401-2D-100517-0-6	10/5/17	1300		S	1						X	
D-401-2D-100517-6-9	10/5/17	1310		S	1					X		
D-441-1A-100617-0-3	10/6/17	0930		S	1					X		
D-441-1A-100617-0-6	10/6/17	1005		S	1						X	
D-441-1A-100617-6-9	10/6/17	1020		S	1					X		
D-441-1B-100617-0-3	10/6/17	1142		S	1					X		
D-441-1B-100617-0-6	10/6/17	1155		S	1						X	
D-441-1B-100617-6-9	10/6/17	1208		S	1					X		

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ______

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

X ____ II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X ____ V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ HWA
[redacted]

Date ______
PAGE 4 OF 5
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-441-1C-100617-0-3	10/6/17	1057		S	1					X		
D-441-1C-100617-0-6	10/6/17	1112		S	1						X	
D-441-1C-100617-6-9	10/6/17	1117		S	1					X		
D-441-1D-100617-0-3	10/6/17	1307		S	1					X		
D-441-1D-100617-0-6	10/6/17	1318		S	1						X	
D-441-1D-100617-6-9	10/6/17	1323		S	1					X		
D-258-3A-100717-0-3	10/7/17	1000		S	1					X		
D-258-3A-100717-0-6	10/7/17	1011		S	1						X	
D-258-3A-100717-6-9	10/7/17	1015		S	1					X		
D-258-3B-100717-0-3	10/7/17	1020		S	1					X		

TURNAROUND REQUIREMENTS

_____ 24 hr _____ 48 hr _____ 5 day
__X__ Standard (10 days)
_____ Provide FAX Preliminary Results
Requested Report Date: ______

REPORT REQUIREMENTS

_____ I. Routine Report: Results, Method Blank, Surrogate, as required
x____ II. Report Dup., MS, MSD as required
_____ III. Data Validation Report (includes raw data)
_____ IV. CLP Deliverable Report
X____ V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

HWA

[redacted]

Date ______
PAGE 5 OF 5
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3B-100717-0-6	10/7/17	1033		S	1						X	
D-258-3B-100717-6-9	10/7/17	1036		S	1					X		
D-258-3C-100717-0-3	10/7/17	0937		S	1					X		
D-258-3C-100717-0-6	10/7/17	0946		S	1						X	
D-258-3C-100717-6-9	10/7/17	0952		S	1					X		
D-258-3D-100717-0-3	10/7/17	0905		S	1					X		
D-258-3D-100717-0-6	10/7/17	1011		S	1						X	
D-258-3D-100717-6-9	10/7/17	1015		S	1					X		
				S								
				S								

TURNAROUND REQUIREMENTS

_____ 24 hr _____ 48 hr _____ 5 day

X Standard (10 days)

_____ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

_____ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

_____ III. Data Validation Report (includes raw data)

_____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

OSU

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10/05/17
PAGE 1 OF 1
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: Ryan W Brachle

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1C-100417-0-6	10/04/17	0940		S	1				X			
D-401-1A-100417-0-6	10/04/17	1120		S	1				X			
D-401-1B-100417-0-6	10/04/17	1300		S	1				X			
D-401-1D-100417-0-6	10/04/17	1400		S	1				X			
D-401-2A-100517-0-6	10/05/17	1009		S	1				X			
D-401-2B-100517-0-6	10/05/17	1105		S	1				X			
D-401-2C-100517-0-6	10/05/17	1215		S	1				X			
D-401-2D-100517-0-6	10/05/17	1305		S	1				X			
				S								
				S								

TURNAROUND REQUIREMENTS
____ 24 hr ____ 48 hr ____ 5 day
X Standard (10 days)
____ Provide FAX Preliminary Results
Requested Report Date:________

REPORT REQUIREMENTS
____ I. Routine Report: Results, Method Blank, Surrogate, as required
x II. Report Dup., MS, MSD as required
____ III. Data Validation Report (includes raw data)
____ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Ryan W Brachle	Signature:	Signature:	Signature:
Printed Name: Ryan W Brachle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-06-17 1000	Date/Time:	Date/Time:	Date/Time:

ALS Envir...mental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date ______
PAGE 1 OF 2
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3A-100717-12-24	10/7/17	1017		S	1							
D-258-3B-100717-12-24	10/7/17	1040		S	1							
D-258-3C-100717-12-24	10/7/17	0955		S	1							
D-258-3D-100717-12-30	10/7/17	0930		S	1							
D-401-1A-100417-12-24	10/4/17	1235		S	1							
D-401-1B-100417-12-30	10/4/17	1324		S	1							
D-401-1C-100417-12-24	10/4/17	1040		S	1							
D-401-1D-100417-12-30	10/4/17	1430		S	1							
D-401-2A-100517-12-30	10/5/17	1030		S	1							
D-401-2B-100517-12-24	10/5/17	1127		S	1							

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Samples collected for future analysis

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

ALS Envir(...)mental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date ____
PAGE 2 OF 2
SR# ____

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2C-100517-12-30	10/5/17	1230		S	1							
D-401-2C-100517-12:30	10/5/17	1325		S	1							
D-441-1A-100617-12-24	10/6/17	1030		S	1							
D-441-1B-100617-12-30	10/6/17	1256		S	1							
D-441-1C-100617-12-24	10/6/17	1125		S	1							
D-441-1D-100617-12-28	10/6/17	1335		S	1							
				S								
				S								
				S								
				S								

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ____

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Samples collected for future analysis

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: ____	Signature: ____	Signature: ____	Signature: ____
Printed Name: ____	Printed Name: ____	Printed Name: ____	Printed Name: ____
Firm: ____	Firm: ____	Firm: ____	Firm: ____
Date/Time: ____	Date/Time: ____	Date/Time: ____	Date/Time: ____

HWA

[redacted]

Date ____________

PAGE 1 OF 5

SR# ____________

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: Ryan W [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1A-100417-0-3	10/4/17	1100		S	1					X		
D-401-1A-100417-0-6	10/4/17	1130		S	1						X	
D-401-1A-100417-6-9	10/4/17	1135		S	1					X		
D-401-1B-100417-0-3	10/4/17	1251		S	1					X		
D-401-1B-100417-0-6	10/4/17	1310		S	1						X	
D-401-1B-100417-6-9	10/4/17	1315		S	1					X		
D-401-1C-100417-0-3	10/4/17	0950		S	1					X		
D-401-1C-100417-0-6	10/4/17	1010		S	1						X	
D-401-1C-100417-6-9	10/4/17	1000		S	1					X		
D-401-1D-100417-0-3	10/4/17	1356		S	1					X		

TURNAROUND REQUIREMENTS

_____ 24 hr _____ 48 hr _____ 5 day

X Standard (10 days)

_____ Provide FAX Preliminary Results

Requested Report Date: ____________

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

_____ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

_____ III. Data Validation Report (includes raw data)

_____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

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~~1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068~~

Date ______
PAGE 2 OF 5
SR# ______

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature:

						Analysis Requested						
Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1D-100417-0-6	10/4/17	1404		S	1						X	
D-401-1D-100417-6-9	10/4/17	1416		S	1					X		
D-401-2A-100517-0-3	10/5/17	0940		S	1					X		
D-401-2A-100517-0-6	10/5/17	0950		S	1						X	
D-401-2A-100517-6-9	10/5/17	1017		S	1					X		
D-401-2B-100517-0-3	10/5/17	1050		S	1					X		
D-401-2B-100517-0-6	10/5/17	1100		S	1						X	
D-401-2B-100517-6-9	10/5/17	1115		S	1					X		
D-401-2C-100517-0-3	10/5/17	1155		S	1					X		
D-401 2C-100517-0-6	10/5/17	1205		S	1						X	

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ______

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ HWA

~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360) 636-1068~~

Date ______
PAGE 3 OF 5
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2C-100517-6-9	10/5/17	1225		S	1					X		
D-401-2D-100517-0-3	10/5/17	1240		S	1					X		
D-401-2D-100517-0-6	10/5/17	1300		S	1						X	
D-401-2D-100517-6-9	10/5/17	1310		S	1					X		
D-441-1A-100617-0-3	10/6/17	0930		S	1					X		
D-441-1A-100617-0-6	10/6/17	1005		S	1						X	
D-441-1A-100617-6-9	10/6/17	1020		S	1					X		
D-441-1B-100617-0-3	10/6/17	1142		S	1					X		
D-441-1B-100617-0-6	10/6/17	1155		S	1						X	
D-441-1B-100617-6-9	10/6/17	1208		S	1					X		

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental Kelso~~ HWA

[redacted]

Date ______
PAGE 4 OF 5
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-441-1C-100617-0-3	10/6/17	1057		S	1					X		
D-441-1C-100617-0-6	10/6/17	1112		S	1						X	
D-441-1C-100617-6-9	10/6/17	1117		S	1					X		
D-441-1D-100617-0-3	10/6/17	1307		S	1					X		
D-441-1D-100617-0-6	10/6/17	1318		S	1						X	
D-441-1D-100617-6-9	10/6/17	1323		S	1					X		
D-258-3A-100717-0-3	10/7/17	1000		S	1					X		
D-258-3A-100717-0-6	10/7/17	1011		S	1						X	
D-258-3A-100717-6-9	10/7/17	1015		S	1					X		
D-258-3B-100717-0-3	10/7/17	1020		S	1					X		

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

[redacted] HWA

[redacted]

Date ____________
PAGE 5 OF 5
SR# ____________

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3B-100717-0-6	10/7/17	1033		S	1						X	
D-258-3B-100717-6-9	10/7/17	1036		S	1					X		
D-258-3C-100717-0-3	10/7/17	0937		S	1					X		
D-258-3C-100717-0-6	10/7/17	0946		S	1						X	
D-258-3C-100717-6-9	10/7/17	0952		S	1					X		
D-258-3D-100717-0-3	10/7/17	0905		S	1					X		
D-258-3D-100717-0-6	10/7/17	~~1011~~ 0920		S	1						X	Sample Time: 0920
D-258-3D-100717-6-9	10/7/17	~~1015~~ 0925		S	1					X		Sample Time: 0925
				S								
				S								

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ____________

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10-10-17
PAGE 1 OF 1
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	REMARKS
IC-401-1A-101017	10-10-17	1058		S	2	X	X	X	X	X	X	X	X			Composite containers
IC-401-1B-101017	10-10-17	1155		S	2	X	X	X	X	X	X	X	X			prior to analysis
				S												
				S												
				S												
				S												
				S												
				S												
				S												
				S												

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (10 days)
___ Provide FAX Preliminary Results
Requested Report Date: ___

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS
___ I. Routine Report: Results, Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes raw data)
___ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-S2D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-11-17 1000	Date/Time:	Date/Time:	Date/Time:

ALS Envir...mental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date ______
PAGE 1 OF 2
SR# ______

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3A-100717-12-24	10/7/17	1017		S	1							
D-258-3B-100717-12-24	10/7/17	1040		S	1							
D-258-3C-100717-12-24	10/7/17	0955		S	1							
D-258-3D-100717-12-30	10/7/17	0930		S	1							
D-401-1A-100417-12-24	10/4/17	1235		S	1							
D-401-1B-100417-12-30	10/4/17	1324		S	1							
D-401-1C-100417-12-24	10/4/17	1040		S	1							
D-401-1D-100417-12-30	10/4/17	1430		S	1							
D-401-2A-100517-12-30	10/5/17	1030		S	1							
D-401-2B-100517-12-24	10/5/17	1127		S	1							

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (10 days)
___ Provide FAX Preliminary Results
Requested Report Date: ______

REPORT REQUIREMENTS
___ I. Routine Report: Results, Method Blank, Surrogate, as required
x II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes raw data)
___ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder
Samples collected for future analysis

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-11-17 1000	Date/Time:	Date/Time:	Date/Time:

ALS Enviro...mental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date ______
PAGE 2 OF 2
SR# ______

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2C-100517-12-30	10/5/17	1230		S	1							
D-401-2C-100517-12-30	10/5/17	1325		S	1							
D-441-1A-100617-12-24	10/6/17	1030		S	1							
D-441-1B-100617-12-30	10/6/17	1256		S	1							
D-441-1C-100617-12-24	10/6/17	1125		S	1							
D-441-1D-100617-12-28	10/6/17	1335		S	1							
~~IC-401-1A-101017~~	~~10/10/17~~	~~1058~~		S	~~2~~							~~Composite prior to analysis~~
~~IC-401-1B-101017~~	~~10/10/17~~	~~1155~~		S	~~2~~							~~Composite prior to analysis~~
				S								
				S								

TURNAROUND REQUIREMENTS
_____ 24 hr _____ 48 hr _____ 5 day
X Standard (10 days)
_____ Provide FAX Preliminary Results
Requested Report Date: ______

REPORT REQUIREMENTS
_____ I. Routine Report: Results, Method Blank, Surrogate, as required
x II. Report Dup., MS, MSD as required
_____ III. Data Validation Report (includes raw data)
_____ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder
~~M~~ Samples collected for future analysis

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-11-17 1000	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

K1712145

Date ______
PAGE 1 OF 2
SR# ______

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3A-100717-12-24	10/7/17	1017	1	S	1							
D-258-3B-100717-12-24	10/7/17	1040	2	S	1							
D-258-3C-100717-12-24	10/7/17	0955	3	S	1							
D-258-3D-100717-12-30	10/7/17	0930	4	S	1							
D-401-1A-100417-12-24	10/4/17	1235	5	S	1							
D-401-1B-100417-12-30	10/4/17	1324	6	S	1							
D-401-1C-100417-12-24	10/4/17	1040	7	S	1							
D-401-1D-100417-12-30	10/4/17	1430	8	S	1							
D-401-2A-100517-12-30	10/5/17	1030	9	S	1							
D-401-2B-100517-12-24	10/5/17	1127	10	S	1							

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (10 days)
___ Provide FAX Preliminary Results
Requested Report Date: ______

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS
___ I. Routine Report: Results, Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes raw data)
___ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder
Samples collected for future analysis

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name: Krish Morrow	Printed Name:	Printed Name:
Firm: Arcadis	Firm: ALS	Firm:	Firm:
Date/Time: 10-11-17 1000	Date/Time: 10/12/17 0930	Date/Time:	Date/Time:

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

K1712145

Date ______
PAGE 2 OF 2
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2C-100517-12-30	10/5/17	1230	11	S	1							
~~D-401-2C-100517-12-30~~	10/5/17	1325	12	S	1							Sample ID: D-401-2D-100517-12-30
D-441-1A-100617-12-24	10/6/17	1030	13	S	1							
D-441-1B-100617-12-30	10/6/17	1256	14	S	1							
D-441-1C-100617-12-24	10/6/17	1125	15	S	1							
D-441-1D-100617-12-28	10/6/17	1335	16	S	1							
~~IC-401-1A-101017~~	~~10/10/17~~	~~1258~~		S	2							~~Composite prior to analysis~~
~~IC-401-1B-101017~~	~~10/10/17~~	~~1155~~		S	2							~~Composite prior to analysis~~
				S								
				S								

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (10 days)
___ Provide FAX Preliminary Results
Requested Report Date: ______

REPORT REQUIREMENTS
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x ___ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes raw data)
___ IV. CLP Deliverable Report
X ___ V. EDD

Comments/Special Instructions:
Hold Remainder
~~M~~ Samples collected for future analysis

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Printed Name: Ryan W Brauchle	Printed Name: K Morrow	Printed Name:	Printed Name:
Firm: Arcadis	Firm: ALS	Firm:	Firm:
Date/Time: 10-11-17 1000	Date/Time: 10/12/17 0930	Date/Time:	Date/Time:

ALS

Cooler Receipt and Preservation Form

PC MH

Client Teck

Received: 10/12/17 Opened: 10/12/17 By: [illegible] Service Request K17 12145 Unloaded: 10/12/17 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* ________ NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? ________
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
0.3	–	6.1	–	~~0~~	386		7880 4531 3012	
0.1	0.0	–	–	-0.1	382		7880 4531 2998	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* lg. Plastic Bags
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: ________

7/25/16

Page ____ of ____

ALS Enviro… …ntal-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10-11-17
PAGE 1 OF 1
SR# ____

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	REMARKS
IC-401-1C-101117	10-11-17	1023		S	2	X	X	X	X	X	X	X	X			Sample weight: 11,403g
IC-401-1C-101117-D	10-11-17	1235		S	2									X		Sample weight: 12,555g
IC-401-1D-101117	10-11-17	1400		S	1	X	X	X	X	X	X	X	X			Sample weight: 5,453g
IC-401-2B-101117	10-11-17	1538		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,639g
				S												
				S												Composite 2 bucket
				S												samples at the
				S												lab, prior to any
				S												analysis
				S												

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (10 days)
___ Provide FAX Preliminary Results
Requested Report Date: ____

REPORT REQUIREMENTS
___ I. Routine Report: Results, Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes raw data)
___ IV. CLP Deliverable Report
X V. EDD

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992…

Comments/Special Instructions:
Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-12-17	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10-12-2017
PAGE 1 OF 1
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature:

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	REMARKS
IC1-401-2A-101217	10-12-17	0920		S	1	X	X	X	X	X	X	X	X			Sample weight: 6,900g
IC2-401-2A-101217	10-12-17	1015		S	1										X	Sample weight: 6,870g
IC3-401-2A-101217	10-12-17	1055		S	1										X	Sample weight: 7,213g
IC-401-2C-101217	10-12-17	1250		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,683g
IC-401-2D-101217	10-12-17	1400		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,205g
				S												
				S												Composite samples
				S												prior to analysis
				S												
				S												

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
X Standard (10 days)
___ Provide FAX Preliminary Results
Requested Report Date:

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS
___ I. Routine Report: Results, Method Blank, Surrogate, as required
x II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes raw data)
___ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan Brauchle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-13-2017	Date/Time:	Date/Time:	Date/Time:

OSU

~~ALS Environmental-Kelso~~
~~1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068~~

Date 10-13-17
PAGE 1 OF 10
SR#

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010 *	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3A-101317-0-2	10-13-17	1335		S	1			X				
D-258-3A-101317-2-4	10-13-17	1336		S	1			X				
D-258-3A-101317-4-6	10-13-17	1337		S	1			X				
D-258-3A-101317-6-8	10-13-17	1338		S	1			X				
D-258-3A-101317-8-10	10-13-17	1339		S	1			X				
D-258-3A-101317-10-12	10-13-17	1340		S	1			X				
D-258-3B-101317-0-2	10-13-17	1320		S	1			X				
D-258-3B-101317-2-4	10-13-17	1321		S	1			X				
D-258-3B-101317-4-6	10-13-17	1322		S	1			X				
D-258-3B-101317-6-8	10-13-17	1323		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ___

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

* Analyze for TAL-Total Metals

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

OSU

~~ALS Environmental-Kelso~~
~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360) 636-1068~~

Date 10-13-17
PAGE 2 OF 10
SR# ______

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
						Analysis Requested						
D-258-3B-101317-8-10	10-13-17	1324		S	1			X				
D-258-3B-101317-10-12	10-13-17	1325		S	1			X				
D-258-3C-101317-0-2	10-13-17	1313		S	1			X				
D-258-3C-101317-2-4	10-13-17	1314		S	1			X				
D-258-3C-101317-2-4-D	10-13-17	1315		S	1			X				
D-258-3C-101317-4-6	10-13-17	1316		S	1			X				
D-258-3C-101317-6-8	10-13-17	1317		S	1			X				
D-258-3C-101317-8-10	10-13-17	1318		S	1			X				
D-258-3C-101317-10-12	10-13-17	1319		S	1			X				
D-258-3D-101317-0-2	10-13-17	1328		S	1			X				

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day
X Standard (10 days)
____ Provide FAX Preliminary Results
Requested Report Date: ______

REPORT REQUIREMENTS

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Hold Remainder

Invoice Information
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Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

OSU

~~ALS Environmental-Kelso~~
13~~12 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360)~~636-1068

Date 10-13-17
PAGE 3 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-258-3D-101317-2-4	10-13-17	1329		S	1			X				
D-258-3D-101317-4-6	10-13-17	1330		S	1			X				
D-258-3D-101317-6-8	10-13-17	1331		S	1			X				
D-258-3D-101317-8-10	10-13-17	1332		S	1			X				
D-258-3D-101317-10-12	10-13-17	1333		S	1			X				
D-401-1A-101317-0-2	10-13-17	1040		S	1			X				
D-401-1A-101317-2-4	10-13-17	1041		S	1			X				
D-401-1A-101317-4-6	10-13-17	1042		S	1			X				
D-401-1A-101317-6-8	10-13-17	1043		S	1			X				
D-401-1A-101317-8-10	10-13-17	1044		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ___

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Braechle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ OSU
~~1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360)~~ 636-1068

Date 10-13-17
PAGE 4 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: Ryan W Brauchla

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1A-101317-10-12	10-13-17	1045		S	1			X				
D-401-1B-101317-0-2	10-13-17	1051		S	1			X				
D-401-1B-101317-2-4	10-13-17	1052		S	1			X				
D-401-1B-101317-2-4-D	10-13-17	1057		S	1			X				
D-401-1B-101317-4-6	10-13-17	1053		S	1			X				
D-401-1B-101317-6-8	10-13-17	1054		S	1			X				
D-401-1B-101317-8-10	10-13-17	1055		S	1			X				
D-401-1B-101317-10-12	10-13-17	1056		S	1			X				
D-401-1C-101317-0-2	10-13-17	1059		S	1			X				
D-401-1C-101317-2-4	10-13-17	1100		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ___

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Ryan W Brauchla	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-2017	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ OSU
~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222~~ ~~FAX (360) 636-1068~~

Date 10-13-17
PAGE 5 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-1C-101317-4-6	10-13-17	1101		S	1			X				
D-401-1C-101317-6-8	10-13-17	1102		S	1			X				
D-401-1C-101317-8-10	10-13-17	1103		S	1			X				
D-401-1C-101317-10-12	10-13-17	1104		S	1			X				
D-401-1D-101317-0-2	10-13-17	1116		S	1			X				
D-401-1D-101317-2-4	10-13-17	1117		S	1			X				
D-401-1D-101317-4-6	10-13-17	1118		S	1			X				
D-401-1D-101317-6-8	10-13-17	1119		S	1			X				
D-401-1D-101317-8-10	10-13-17	1120		S	1			X				
D-401-1D-101317-10-12	10-13-17	1121		S	1			X				

TURNAROUND REQUIREMENTS
____ 24 hr ____ 48 hr ____ 5 day
X Standard (10 days)
____ Provide FAX Preliminary Results
Requested Report Date: ____

REPORT REQUIREMENTS
____ I. Routine Report: Results, Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
____ III. Data Validation Report (includes raw data)
____ IV. CLP Deliverable Report
X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ OSU

~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360) 636-1068~~

Date 10-13-17
PAGE 6 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2A-101317-0-2	10-13-17	1020		S	1			X				
D-401-2A-101317-2-4	10-13-17	1021		S	1			X				
D-401-2A-101317-4-6	10-13-17	1022		S	1			X				
D-401-2A-101317-6-8	10-13-17	1023		S	1			X				
D-401-2A-101317-8-10	10-13-17	1024		S	1			X				
D-401-2A-101317-10-12	10-13-17	1025		S	1			X				
D-401-2B-101317-0-2	10-13-17	1011		S	1			X				
D-401-2B-101317-2-4	10-13-17	1012		S	1			X				
D-401-2B-101317-4-6	10-13-17	1013		S	1			X				
D-401-2B-101317-6-8	10-13-17	1014		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ______

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Bruehl	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental-Kelso~~ OSU
~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360) 636-1068~~

Date 10-13-17
PAGE 7 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2B-101317-8-10	10-13-17	1015		S	1			X				
D-401-2B-101317-10-12	10-13-17	1016		S	1			X				
D-401-2C-101317-0-2	10-13-17	1028		S	1			X				
D-401-2C-101317-2-4	10-13-17	1029		S	1			X				
D-401-2C-101317-2-4-D	10-13-17	1034		S	1			X				
D-401-2C-101317-4-6	10-13-17	1030		S	1			X				
D-401-2C-101317-6-8	10-13-17	1031		S	1			X				
D-401-2C-101317-8-10	10-13-17	1032		S	1			X				
D-401-2C-101317-10-12	10-13-17	1033		S	1			X				
D-401-2D-101317-0-2	10-13-17	1005		S	1			X				

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ____

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Bracehls	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-2017	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental Kelso~~ OSU
~~1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068~~

Date 10-13-17
PAGE 8 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-401-2D-101317-2-4	10-13-17	1006		S	1			X				
D-401-2D-101317-4-6	10-13-17	1007		S	1			X				
D-401-2D-101317-6-8	10-13-17	1008		S	1			X				
D-401-2D-101317-8-10	10-13-17	1009		S	1			X				
D-401-2D-101317-10-12	10-13-17	1010		S	1			X				
D-441-1A-101317-0-2	10-13-17	1458		S	1			X				
D-441-1A-101317-2-4	10-13-17	1459		S	1			X				
D-441-1A-101317-4-6	10-13-17	1500		S	1			X				
D-441-1A-101317-6-8	10-13-17	1501		S	1			X				
D-441-1A-101317-8-10	10-13-17	1502		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ___

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchla	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

~~ALS Environmental Kelso~~ OSU
~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222 FAX (360)~~ 636-1068

Date 10-13-17
PAGE 9 OF 10
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-441-1A-101317-10-12	10-13-17	1503		S	1			X				
D-441-1B-101317-0-2	10-13-17	1441		S	1			X				
D-441-1B-101317-2-4	10-13-17	1442		S	1			X				
D-441-1B-101317-2-4-D	10-13-17	1443		S	1			X				
D-441-1B-101317-4-6	10-13-17	1444		S	1			X				
D-441-1B-101317-6-8	10-13-17	1445		S	1			X				
D-441-1B-101317-8-10	10-13-17	1446		S	1			X				
D-441-1B-101317-10-12	10-13-17	1447		S	1			X				
D-441-1C-101317-0-2	10-13-17	1435		S	1			X				
D-441-1C-101317-2-4	10-13-17	1436		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ___

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:
Hold Remainder

Invoice Information
P.O. # UCR-ALS-D34-17
Bill to: Cristy Kessel - Teck American
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:
Signature: [signature]
Printed Name: Ryan W Broechle
Firm: Arcadis
Date/Time: 10-16-17

RECEIVED BY:
Signature:
Printed Name:
Firm:
Date/Time:

RELINQUISHED BY:
Signature:
Printed Name:
Firm:
Date/Time:

RECEIVED BY:
Signature:
Printed Name:
Firm:
Date/Time:

~~ALS Environmental-Kelso~~ OSU

~~1317 South 13th, Kelso, WA 98626~~ ~~(360) 577-7222~~ FAX (360) 636-1068

Date 10-13-17

PAGE 10 OF 10

SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: Ryan W Burchell

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	NRMRL QMP L18735 Athena	QEMSCAN® Process	USEPA 6010*	ASTM D2216	ASTM D 7263	ASTM D2434	REMARKS
D-441-1C-101317-4-6	10-13-17	1437		S	1			X				
D-441-1C-101317-6-8	10-13-17	1438		S	1			X				
D-441-1C-101317-8-10	10-13-17	1439		S	1			X				
D-441-1C-101317-10-12	10-13-17	1440		S	1			X				
D-441-1D-101317-0-2	10-13-17	1450		S	1			X				
D-441-1D-101317-2-4	10-13-17	1451		S	1			X				
D-441-1D-101317-4-6	10-13-17	1452		S	1			X				
D-441-1D-101317-6-8	10-13-17	1453		S	1			X				
D-441-1D-101317-8-10	10-13-17	1454		S	1			X				
D-441-1D-101317-10-12	10-13-17	1455		S	1			X				

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date:

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

x II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Ryan W Burchell	Signature:	Signature:	Signature:
Printed Name: Ryan Burchell	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-16-17	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso
1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10-17-17
PAGE 1 OF 1
SR#

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00002

Project Contact: Kady Young Company: Arcadis

Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961

Sampler's Signature: [signature]

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	REMARKS
IC-258-3A-101717	10-17-17			S		X	X	X	X	X	X	X	X			Sample weight:
IC-258-3B-101717	10-17-17			S		X	X	X	X	X	X	X	X			Sample weight:
IC-258-3C-101717	10-17-17			S		X	X	X	X	X	X	X	X			Sample weight:
IC-258-3D-101717	10-17-17			S		X	X	X	X	X	X	X	X			Sample weight:
IC-441-1A-101617	10-16-17	0915		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,130g
IC-441-1B-101617	10-16-17	1015		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,531g
IC-441-1C-101617	10-16-17	1125		S	1	X	X	X	X	X	X	X	X			Sample weight: 5,110g
IC-441-1D-101617	10-16-17	1250		S	1	X	X	X	X	X	X	X	X			Sample weight: 5,773g
				S												
				S												

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr ____ 5 day

X Standard (10 days)

____ Provide FAX Preliminary Results

Requested Report Date: ____

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992

REPORT REQUIREMENTS

____ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

____ III. Data Validation Report (includes raw data)

____ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-17-2017	Date/Time:	Date/Time:	Date/Time:

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626 (360) 577-7222 FAX (360) 636-1068

Date 10-17-17

PAGE 1 OF 1

SR#

Project Name: Teck American - UCR SATES **Project Number:** B0095010.0005.00002

Project Contact: Kady Young **Company:** Arcadis

Company/Address: 189 North Cedar Street **Phone:** 307-203-3510 or 307-949-0330

City, State, Zip: Buffalo, WY 82834 **FAX:** 307-684-5961

Sampler's Signature: Ryan W Brauchle

Analysis Requested

Sample I.D.	Date	Time	LAB ID	Matrix	Number of Containers	USEPA 6010/USEPA 6010B	SM 2510B	USEPA 300.0	SM 4500-S2D	Bremner and Mulvaney 1982, Nelson and Sommers 1982	USEPA 9060A	ASTM D422	NRMRL QMP L18735 Athena	Duplicate Analytical List	Triplicate Analytical List	REMARKS
IC-258-3A-101717	10-17-17	0840		S		X	X	X	X	X	X	X	X			Sample weight: 9,577g
IC-258-3B-101717	10-17-17	0915		S		X	X	X	X	X	X	X	X			Sample weight: 8,284g
IC-258-3C-101717	10-17-17	0950		S		X	X	X	X	X	X	X	X			Sample weight: 5,463g
IC-258-3D-101717	10-17-17	1020		S		X	X	X	X	X	X	X	X			Sample weight: 7,074g
IC-441-1A-101617	10-16-17	0915		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,130g
IC-441-1B-101617	10-16-17	1015		S	1	X	X	X	X	X	X	X	X			Sample weight: 7,531g
IC-441-1C-101617	10-16-17	1125		S	1	X	X	X	X	X	X	X	X			Sample weight: 5,110g
IC-441-1D-101617	10-16-17	1250		S	1	X	X	X	X	X	X	X	X			Sample weight: 5,773g
				S												
				S												

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

X Standard (10 days)

___ Provide FAX Preliminary Results

Requested Report Date: ______

Invoice Information

P.O. # UCR-ALS-D34-17

Bill to: Cristy Kessel - Teck American

501 N Riverpoint Blvd, Suite 300 Spokane, WA 992(

REPORT REQUIREMENTS

___ I. Routine Report: Results, Method Blank, Surrogate, as required

X II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes raw data)

___ IV. CLP Deliverable Report

X V. EDD

Comments/Special Instructions:

Hold Remainder

Duplicate Analysis List - Mehlich III Extractable Lead and Phosphorous (USEPA 6010), Electrical Conductivity (SM 2510B), Chloride/Sulfate (USEPA 300. Sulfide (SM 4500-52D), Total Carbon and Nitrogen (Gremner and Mulvaney/Nelson and Sommers), Total Organic Carbon (USEPA 9060A)

Triplicate Analysis List - Total TAL Metals/SPLP TAL Metals (USEPA 6010), Bioaccessible Arsenic and Lead at pH 1.5 and pH 2.5 (USEPA 6010B)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Ryan W Brauchle	Signature:	Signature:	Signature:
Printed Name: Ryan W Brauchle	Printed Name:	Printed Name:	Printed Name:
Firm: Arcadis	Firm:	Firm:	Firm:
Date/Time: 10-17-2017	Date/Time:	Date/Time:	Date/Time:

Control Number: TSM- B0095010.0006.00001

ARCADIS Design & Consultancy for natural and built assets

TSM + project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year

TAILGATE HEALTH & SAFETY MEETING FORM

Project Name: TAF SATES Phase IB			Project Location: Northport, WA
Date: 10/3/17	Time:	Conducted by: Ryan Braeuhle	Signature/Title: [illegible] / AFS Field Tech 2

Issues or concerns from previous day's activities:

Task anticipated to be performed today: Soil sampling

☐ Additional permits/checklists attached

USE TRACK! Evaluate the hazards (h) for the tasks being performed today and rank as Low (L), Medium (M) or High (H). Use relevant JSAs, FHSHB, permit or other work standard to communicate controls (c) to be used to eliminate or mitigate identified hazards.

☒ Gravity (i.e., ladder, trips) (L M H) h: rocks / branches c: select walkway	☒ Motion (i.e., traffic, moving water) (L M H) h: repetative stress c:	☒ Mechanical (i.e., augers, motors) (L M H) h: pinch points c: gloves
☒ Electrical (i.e., utilities, lightning) (L M H) h: generator c:	☐ Pressure (i.e., gas cyl., wells) (L M H) h: c:	☒ Environment (i.e., heat, cold, ice) (L M H) h: cold c: dress in layers
☐ Chemical (i.e., fuel, acid, paint) (L M H) h: c:	☒ Biological (i.e., ticks, poison ivy) (L M H) h: bears c: fight 'em	☐ Radiation (i.e., alpha, sun, laser) (L M H) h: c:
☒ Sound (i.e., machinery) (L M H) h: generator, jackhammer c: ear plugs, limit use	☒ Personal (i.e. alone, night) (L M H) h: remote c: multiple lines of communication	☒ Driving (i.e. car, ATV, boat, dozer) (L M H) h: backroads c: slow - no tailgating

☐ Refer to the attached Hazard Analysis Sheet(s) or JSA

Comments:

Signature and Certification: I have read and understand the project specific HASP for this project.

Printed Name/Signature/Company	Sign In Time	Sign Out Time
Ryan Braeuhle / [illegible] / AUS		

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB,** I will perform **TRACK;** and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call **WorkCare at 1.888.449-7787** and then notify the field supervisor.

Utility strike, motor vehicle accident or 3rd party property damage - field supervisor will immediately notify the Project or Task Manager

[illegible] - 10/4/17; 10-5-17, 10/6/17, 10/7/17, 10-09-17

Control Number: TSM- B0095010.0006.00001

ARCADIS Design & Consultancy for natural and built assets

TSM + project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year

TAILGATE HEALTH & SAFETY MEETING FORM

Project Name: TAI SATES 1B	**Project Location:** Northport WA
Date: 10-10-17 **Time:** 0815 **Conducted by:** Ryan Bravchlk	**Signature/Title:** [signature] AES

Issues or concerns from previous day's activities:

S/T/F - downed trees

Task anticipated to be performed today:

☐ Additional permits/checklists attached

USE TRACK! Evaluate the hazards (h) for the tasks being performed today and rank as Low (L), Medium (M) or High (H). Use relevant JSAs, FHSHB, permit or other work standard to communicate controls (c) to be used to eliminate or mitigate identified hazards.

☒ Gravity (i.e., ladder, trips) (L M H) — H circled h: S/T/F - downed trees c: take it slow	☒ Motion (i.e., traffic, moving water) (L M H) — M circled h: cars, trees c: communicate	☐ Mechanical (i.e., augers, motors) (L M H) h: c:
☐ Electrical (i.e., utilities, lightning) (L M H) h: c:	☐ Pressure (i.e., gas cyl., wells) (L M H) h: c:	☒ Environment (i.e., heat, cold, ice) (L M H) h: cold c: cold weather
☐ Chemical (i.e., fuel, acid, paint) (L M H) h: c:	☒ Biological (i.e., ticks, poison ivy) (L M H) — M circled h: dogs, wildlife c: avoid	☐ Radiation (i.e., alpha, sun, laser) (L M H) h: c:
☐ Sound (i.e., machinery) (L M H) h: c:	☐ Personal (i.e. alone, night) (L M H) h: c:	☒ Driving (i.e. car, ATV, boat, dozer) (L M H) h: offroading, fire hazard c: fire extinguishers

☐ Refer to the attached Hazard Analysis Sheet(s) or JSA

Comments:

Signature and Certification: I have read and understand the project specific HASP for this project.

Printed Name/Signature/Company	Sign In Time	Sign Out Time
Ryan W Bravchlk / [signature] / AVS	0815	
Joe Latham / [signature]	0815	
Max Elias / [signature] / ANA	0815	
Michael Rogers / [signature] / Rowland Environ	0815	
[signature] / Arcadis	0815	
Michael MacDaniel / [signature] / NASI AVS	0815	

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB,** I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call **WorkCare at 1.888.449-7787** and then notify the field supervisor.

Utility strike, motor vehicle accident or 3rd party property damage - field supervisor will immediately notify the Project or Task Manager

DRAFT

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
IC1-401-2A-101217	401	2	A	10/12/2017	9:20	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/EPA	--	
IC-258-3A-101717	258	3	A	10/17/2017	8:40	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/EPA	--	
IC-258-3B-101717	258	3	B	10/17/2017	9:15	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/EPA	--	
IC-258-3C-101717	258	3	C	10/17/2017	9:50	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/EPA	--	
IC-258-3D-101717	258	3	D	10/17/2017	10:20	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/EPA	--	

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
IC-401-1A-101017	401	1	A	10/10/2017	10:58	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	Composite sample
IC-401-1B-101017	401	1	B	10/10/2017	11:55	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	Composite sample
IC-401-1C-101117	401	1	C	10/11/2017	10:23	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	Composite sample
IC-401-1C-101117-D	401	1	C	10/11/2017	12:35	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	Composite sample
IC-401-1D-101117	401	1	D	10/11/2017	14:00	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
IC-401-2B-101117	401	2	B	10/11/2017	15:38	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	
IC-401-2C-101217	401	2	C	10/12/2017	12:50	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	
IC-401-2D-101217	401	2	D	10/12/2017	14:00	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	
IC-441-1A-101617	441	1	A	10/16/2017	9:15	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	
IC-441-1B-101617	441	1	B	10/16/2017	10:15	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
IC-441-1C-101617	441	1	C	10/16/2017	11:25	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	
IC-441-1D-101617	441	1	D	10/16/2017	12:50	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU); Electrical Conductivity; Chloride, Sulfate; Sulfide; Total Carbon and Nitrogen; Total Organic Carbon; Grain Size Analysis; Lead/Arsenic and General Soil Mineralogy	USEPA 6010/USEPA 6010B (ALS and OSU) SM 2510B (OSU) USEPA 300.0 (OSU) SM 4500-S2D (ALS) Bremmer and Mulvaney 1982, Nelson and Sommers 1982 (OSU) USEPA 9060A (ALS) ASTM D422 (OSU) NRMRL QMP L18735 Athena (EPA)	ALS Environmental-Kelso/OSU/ EPA	--	
D-258-3A-100717-0-3	258	3	A	10/7/2017	10:00	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-258-3A-100717-0-6	258	3	A	10/7/2017	10:11	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-258-3A-100717-0-6	258	3	A	10/7/2017	10:05	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-258-3A-100717-12-24	258	3	A	10/7/2017	10:17	Macro-Core	12	24		--	ALS Environmental-Kelso	0.5	Sample on hold
D-258-3A-100717-6-9	258	3	A	10/7/2017	10:15	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-258-3A-101317-0-2	258	3	A	10/13/2017	13:35	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3A-101317-10-12	258	3	A	10/13/2017	13:40	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3A-101317-2-4	258	3	A	10/13/2017	13:36	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3A-101317-4-6	258	3	A	10/13/2017	13:37	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3A-101317-6-8	258	3	A	10/13/2017	13:38	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3A-101317-8-10	258	3	A	10/13/2017	13:39	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3B-100717-0-3	258	3	B	10/7/2017	10:20	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.25	
D-258-3B-100717-0-6	258	3	B	10/7/2017	10:33	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.25	
D-258-3B-100717-0-6	258	3	B	10/7/2017	10:28	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.25	
D-258-3B-100717-12-24	258	3	B	10/7/2017	10:40	Macro-Core	12	24		--	ALS Environmental-Kelso	0.25	Sample on hold
D-258-3B-100717-6-9	258	3	B	10/7/2017	10:36	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.25	
D-258-3B-101317-0-2	258	3	B	10/13/2017	13:20	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3B-101317-10-12	258	3	B	10/13/2017	13:25	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3B-101317-2-4	258	3	B	10/13/2017	13:21	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3B-101317-4-6	258	3	B	10/13/2017	13:22	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3B-101317-6-8	258	3	B	10/13/2017	13:23	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3B-101317-8-10	258	3	B	10/13/2017	13:24	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3C-100317-0-3	258	3	C	10/3/2017	14:00	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	QEMSCAN® Process	Hazen Labs	0.5	
D-258-3C-100317-0-3	258	3	C	10/3/2017	14:00	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	NRMRL QMP L18735 Athena software data analysis	USEPA Cyclotron Kirk Scheckel	0.5	
D-258-3C-100717-0-3	258	3	C	10/7/2017	9:37	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-258-3C-100717-0-6	258	3	C	10/7/2017	9:46	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-258-3C-100717-0-6	258	3	C	10/7/2017	9:42	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-258-3C-100717-12-24	258	3	C	10/7/2017	9:55	Macro-Core	12	24		--	ALS Environmental-Kelso	0.5	Sample on hold
D-258-3C-100717-6-9	258	3	C	10/7/2017	9:52	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-258-3C-101317-0-2	258	3	C	10/13/2017	13:13	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-258-3C-101317-10-12	258	3	C	10/13/2017	13:19	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-258-3C-101317-2-4	258	3	C	10/13/2017	13:14	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-258-3C-101317-2-4-D	258	3	C	10/13/2017	13:14	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
D-258-3C-101317-4-6	258	3	C	10/13/2017	13:16	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-258-3C-101317-6-8	258	3	C	10/13/2017	13:17	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-258-3C-101317-8-10	258	3	C	10/13/2017	13:18	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-258-3D-100717-0-3	258	3	D	10/7/2017	9:05	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-258-3D-100717-0-6	258	3	D	10/7/2017	9:20	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	1.0	
D-258-3D-100717-0-6	258	3	D	10/7/2017	9:15	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	1.0	
D-258-3D-100717-12-30	258	3	D	10/7/2017	9:30	Macro-Core	12	30		--	ALS Environmental-Kelso	1.0	Sample on hold
D-258-3D-100717-6-9	258	3	D	10/7/2017	9:25	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-258-3D-101317-0-2	258	3	D	10/13/2017	13:28	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3D-101317-10-12	258	3	D	10/13/2017	13:33	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3D-101317-2-4	258	3	D	10/13/2017	13:29	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3D-101317-4-6	258	3	D	10/13/2017	13:30	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3D-101317-6-8	258	3	D	10/13/2017	13:31	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-258-3D-101317-8-10	258	3	D	10/13/2017	13:32	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1A-100417-0-3	401	1	A	10/4/2017	11:00	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-401-1A-100417-0-6	401	1	A	10/4/2017	11:30	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	1.0	
D-401-1A-100417-0-6	401	1	A	10/4/2017	11:20	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	1.0	
D-401-1A-100417-12-24	401	1	A	10/4/2017	12:35	Macro-Core	12	24		--	ALS Environmental-Kelso	1.0	Sample on hold
D-401-1A-100417-6-9	401	1	A	10/4/2017	11:35	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-401-1A-101317-0-2	401	1	A	10/13/2017	10:40	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1A-101317-10-12	401	1	A	10/13/2017	10:45	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1A-101317-2-4	401	1	A	10/13/2017	10:41	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1A-101317-4-6	401	1	A	10/13/2017	10:42	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1A-101317-6-8	401	1	A	10/13/2017	10:43	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1A-101317-8-10	401	1	A	10/13/2017	10:44	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1B-100317-0-3	401	1	B	10/3/2017	12:00	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	QEMSCAN® Process	Hazen Labs	1.5	
D-401-1B-100317-0-3	401	1	B	10/3/2017	12:00	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	NRMRL QMP L18735 Athena software data analysis	USEPA Cyclotron Kirk Scheckel	1.5	
D-401-1B-100417-0-3	401	1	B	10/4/2017	12:51	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	1.5	
D-401-1B-100417-0-6	401	1	B	10/4/2017	13:10	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	1.5	
D-401-1B-100417-0-6	401	1	B	10/4/2017	13:00	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	1.5	
D-401-1B-100417-12-30	401	1	B	10/4/2017	13:24	Macro-Core	12	30		--	ALS Environmental-Kelso	1.5	Sample on hold
D-401-1B-100417-6-9	401	1	B	10/4/2017	13:15	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	1.5	
D-401-1B-101317-0-2	401	1	B	10/13/2017	10:51	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-1B-101317-10-12	401	1	B	10/13/2017	10:56	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-1B-101317-2-4	401	1	B	10/13/2017	10:52	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-401-1B-101317-2-4-D	401	1	B	10/13/2017	10:52	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-401-1B-101317-4-6	401	1	B	10/13/2017	10:53	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-1B-101317-6-8	401	1	B	10/13/2017	10:54	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-1B-101317-8-10	401	1	B	10/13/2017	10:55	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-1C-100417-0-3	401	1	C	10/4/2017	9:50	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-401-1C-100417-0-6	401	1	C	10/4/2017	10:10	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-401-1C-100417-0-6	401	1	C	10/4/2017	9:40	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-401-1C-100417-12-24	401	1	C	10/4/2017	10:40	Macro-Core	12	24		--	ALS Environmental-Kelso	0.5	Sample on hold
D-401-1C-100417-6-9	401	1	C	10/4/2017	10:00	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-401-1C-101317-0-2	401	1	C	10/13/2017	10:59	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1C-101317-10-12	401	1	C	10/13/2017	11:04	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1C-101317-2-4	401	1	C	10/13/2017	11:00	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1C-101317-4-6	401	1	C	10/13/2017	11:01	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1C-101317-6-8	401	1	C	10/13/2017	11:02	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1C-101317-8-10	401	1	C	10/13/2017	11:03	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1D-100417-0-3	401	1	D	10/4/2017	13:56	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-401-1D-100417-0-6	401	1	D	10/4/2017	14:04	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	1.0	

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
D-401-1D-100417-0-6	401	1	D	10/4/2017	14:00	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	1.0	
D-401-1D-100417-12-30	401	1	D	10/4/2017	14:30	Macro-Core	12	30		--	ALS Environmental-Kelso	1.0	Sample on hold
D-401-1D-100417-6-9	401	1	D	10/4/2017	14:16	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-401-1D-101317-0-2	401	1	D	10/13/2017	11:16	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1D-101317-10-12	401	1	D	10/13/2017	11:21	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1D-101317-2-4	401	1	D	10/13/2017	11:17	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1D-101317-4-6	401	1	D	10/13/2017	11:18	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1D-101317-6-8	401	1	D	10/13/2017	11:19	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-1D-101317-8-10	401	1	D	10/13/2017	11:20	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-2A-100517-0-3	401	2	A	10/5/2017	9:40	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	2.0	
D-401-2A-100517-0-6	401	2	A	10/5/2017	9:50	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	2.0	
D-401-2A-100517-0-6	401	2	A	10/5/2017	10:09	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	2.0	
D-401-2A-100517-12-30	401	2	A	10/5/2017	10:30	Macro-Core	12	30		--	ALS Environmental-Kelso	2.0	Sample on hold
D-401-2A-100517-6-9	401	2	A	10/5/2017	10:17	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	2.0	
D-401-2A-101317-0-2	401	2	A	10/13/2017	10:20	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2A-101317-10-12	401	2	A	10/13/2017	10:25	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2A-101317-2-4	401	2	A	10/13/2017	10:21	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2A-101317-4-6	401	2	A	10/13/2017	10:22	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2A-101317-6-8	401	2	A	10/13/2017	10:23	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2A-101317-8-10	401	2	A	10/13/2017	10:24	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2B-100517-0-3	401	2	B	10/5/2017	10:50	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-401-2B-100517-0-6	401	2	B	10/5/2017	11:00	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-401-2B-100517-0-6	401	2	B	10/5/2017	11:05	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-401-2B-100517-12-24	401	2	B	10/5/2017	11:27	Macro-Core	12	24		--	ALS Environmental-Kelso	0.5	Sample on hold
D-401-2B-100517-6-9	401	2	B	10/5/2017	11:15	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-401-2B-101317-0-2	401	2	B	10/13/2017	10:11	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2B-101317-10-12	401	2	B	10/13/2017	10:16	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2B-101317-2-4	401	2	B	10/13/2017	10:12	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2B-101317-4-6	401	2	B	10/13/2017	10:13	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2B-101317-6-8	401	2	B	10/13/2017	10:14	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2B-101317-8-10	401	2	B	10/13/2017	10:15	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2C-100317-0-3	401	2	C	10/3/2017	11:52	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	QEMSCAN® Process	Hazen Labs	1.5	
D-401-2C-100317-0-3	401	2	C	10/3/2017	11:52	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	NRMRL QMP L18735 Athena software data analysis	USEPA Cyclotron Kirk Scheckel	1.5	
D-401-2C-100517-0-3	401	2	C	10/5/2017	11:55	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-401-2C-100517-0-6	401	2	C	10/5/2017	12:05	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-401-2C-100517-0-6	401	2	C	10/5/2017	12:15	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-401-2C-100517-12-30	401	2	C	10/5/2017	12:30	Macro-Core	12	30		--	ALS Environmental-Kelso	0.5	Sample on hold
D-401-2C-100517-6-9	401	2	C	10/5/2017	12:25	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-401-2C-101317-0-2	401	2	C	10/13/2017	10:28	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2C-101317-10-12	401	2	C	10/13/2017	10:33	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2C-101317-2-4	401	2	C	10/13/2017	10:29	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-401-2C-101317-2-4-D	401	2	C	10/13/2017	10:21	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-401-2C-101317-4-6	401	2	C	10/13/2017	10:30	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2C-101317-6-8	401	2	C	10/13/2017	10:31	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2C-101317-8-10	401	2	C	10/13/2017	10:32	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-401-2D-100517-0-3	401	2	D	10/5/2017	12:40	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-401-2D-100517-0-6	401	2	D	10/5/2017	13:00	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	1.0	
D-401-2D-100517-0-6	401	2	D	10/5/2017	13:05	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	1.0	
D-401-2D-100517-12-30	401	2	D	10/5/2017	13:25	Macro-Core	12	30		--	ALS Environmental-Kelso	1.0	Sample on hold
D-401-2D-100517-6-9	401	2	D	10/5/2017	13:10	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	1.0	
D-401-2D-101317-0-2	401	2	D	10/13/2017	10:05	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-2D-101317-10-12	401	2	D	10/13/2017	10:10	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-2D-101317-2-4	401	2	D	10/13/2017	10:06	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
D-401-2D-101317-4-6	401	2	D	10/13/2017	10:07	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-2D-101317-6-8	401	2	D	10/13/2017	10:08	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-401-2D-101317-8-10	401	2	D	10/13/2017	10:09	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1A-100617-0-3	441	1	A	10/6/2017	9:30	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-441-1A-100617-0-6	441	1	A	10/6/2017	10:05	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-441-1A-100617-0-6	441	1	A	10/6/2017	9:55	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-441-1A-100617-12-24	441	1	A	10/6/2017	10:30	Macro-Core	12	24		--	ALS Environmental-Kelso	--	Sample on hold
D-441-1A-100617-6-9	441	1	A	10/6/2017	10:20	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-441-1A-101317-0-2	441	1	A	10/13/2017	14:58	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1A-101317-10-12	441	1	A	10/13/2017	15:03	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1A-101317-2-4	441	1	A	10/13/2017	14:59	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1A-101317-4-6	441	1	A	10/13/2017	15:00	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1A-101317-6-8	441	1	A	10/13/2017	15:01	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1A-101317-8-10	441	1	A	10/13/2017	15:02	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1B-100317-0-3	441	1	B	10/3/2017	15:50	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	QEMSCAN® Process	Hazen Labs	1.0	
D-441-1B-100317-0-3	441	1	B	10/3/2017	15:50	Punch Bar	0	3	Lead/Arsenic and General Soil Mineralogy	NRMRL QMP L18735 Athena software data analysis	USEPA Cyclotron Kirk Scheckel	1.0	
D-441-1B-100617-0-3	441	1	B	10/6/2017	11:42	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.3	
D-441-1B-100617-0-6	441	1	B	10/6/2017	11:55	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.25	
D-441-1B-100617-0-6	441	1	B	10/6/2017	11:47	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.25	
D-441-1B-100617-12-30	441	1	B	10/6/2017	12:56	Macro-Core	12	30		--	ALS Environmental-Kelso	0.25	Sample on hold
D-441-1B-100617-6-9	441	1	B	10/6/2017	12:08	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.25	
D-441-1B-101317-0-2	441	1	B	10/13/2017	14:41	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-441-1B-101317-10-12	441	1	B	10/13/2017	14:47	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-441-1B-101317-2-4	441	1	B	10/13/2017	14:42	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-441-1B-101317-2-4-D	441	1	B	10/13/2017	14:42	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit; Homogenized with parent sample
D-441-1B-101317-4-6	441	1	B	10/13/2017	14:44	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-441-1B-101317-6-8	441	1	B	10/13/2017	14:45	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-441-1B-101317-8-10	441	1	B	10/13/2017	14:46	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North wall of test pit
D-441-1C-100617-0-3	441	1	C	10/6/2017	10:57	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-441-1C-100617-0-6	441	1	C	10/6/2017	11:12	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.5	
D-441-1C-100617-0-6	441	1	C	10/6/2017	11:05	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.5	
D-441-1C-100617-12-24	441	1	C	10/6/2017	11:25	Macro-Core	12	24		--	ALS Environmental-Kelso	0.5	Sample on hold
D-441-1C-100617-6-9	441	1	C	10/6/2017	11:17	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.5	
D-441-1C-101317-0-2	441	1	C	10/13/2017	14:35	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1C-101317-10-12	441	1	C	10/13/2017	14:40	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1C-101317-2-4	441	1	C	10/13/2017	14:36	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1C-101317-4-6	441	1	C	10/13/2017	14:37	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1C-101317-6-8	441	1	C	10/13/2017	14:38	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1C-101317-8-10	441	1	C	10/13/2017	14:39	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1D-100617-0-3	441	1	D	10/6/2017	13:07	Shelby Tube	0	3	In Situ Bulk Density	ASTM D7263	HWA	0.25	
D-441-1D-100617-0-6	441	1	D	10/6/2017	13:18	Shelby Tube	0	6	In Situ Permeability	ASTM D2434	HWA	0.25	
D-441-1D-100617-0-6	441	1	D	10/6/2017	13:15	Shelby Tube	0	6	Soil Moisture Holding Capacity	ASTM D2216	OSU	0.25	
D-441-1D-100617-12-28	441	1	D	10/6/2017	13:35	Macro-Core	12	28		--	ALS Environmental-Kelso	0.25	Sample on hold
D-441-1D-100617-6-9	441	1	D	10/6/2017	13:23	Shelby Tube	6	9	In Situ Bulk Density	ASTM D7263	HWA	0.25	
D-441-1D-101317-0-2	441	1	D	10/13/2017	14:50	Grab	0	2	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1D-101317-10-12	441	1	D	10/13/2017	14:55	Grab	10	12	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1D-101317-2-4	441	1	D	10/13/2017	14:51	Grab	2	4	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1D-101317-4-6	441	1	D	10/13/2017	14:52	Grab	4	6	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1D-101317-6-8	441	1	D	10/13/2017	14:53	Grab	6	8	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit
D-441-1D-101317-8-10	441	1	D	10/13/2017	14:54	Grab	8	10	Total TAL Metals (except Hg)	USEPA 6010 TAL - Total Metals	OSU	--	North sidewall of test pit

Sample ID	Decision Unit	Test Plot	Sub Plot	Sample Date	Sample Time	Sampling Equipment	Sample Top Depth (in)	Sample Bottom Depth (in)	Sample Analysis	Sample Analysis Method Reference	Analytical Laboratory	Duff Thickness (in)	Notes
IC2-401-2A-101217	401	1	A	10/12/2017	10:15	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU)	USEPA 6010/ USEPA 6010B	ALS Environmental-Kelso	--	Shifted 5 cm south
IC3-401-2A-101217	401	2	A	10/12/2017	10:55	Punch Bar	0	3	SPLP TAL Metals (ALS) Total TAL Metals, Bioaccessible As and Pb (pH 1.5 and 2.5), Mehlich III Extractable Lead and Phosphorus (OSU)	USEPA 6010/ USEPA 6010B	ALS Environmental-Kelso	--	Shifted 5 cm west

Notes:
-- = Not available
in = Inches
cm = Centimeter

APPENDIX B-3

SITE SPECIFIC HEALTH AND SAFETY PLAN

Site Specific Health and Safety Plan

Revision 14c

Project Name:	Upper Columbia River Soil Amendment Technology Evaluation Study
Project Number:	B00095010.0005
Client Name:	Teck American Incorporated
Date:	7/28/2017
HASP Expires	7/28/2018
Revision:	

Approvals:

HASP Developer:	Alex Pink
Project Manager:	Rebecca Andresen
HASP Reviewer:	Eric Epple

Emergency Information

Site Address: Northport, WA

Emergency Phone Numbers:

Emergency (fire, police, ambulance)		911
Emergency (facility specific, if applicable):		
	Providence Mt Carmel Hospital - ER	509.685.5120
	NE WA Medical Group - Kettle Falls	509.685.7848
Emergency Other (specify)	Kettle Falls Vol. Fire	509.738.6633
Client Contact	Kris McCaig	509.434.8542
WorkCare (non-life-threatening injury/illness)		1-888-449-7787
Project H&S	Kurt Merkle	215.534.0435 (cell)
Task Manager	Eric Epple	206.578.5812
Project Manager	Rebecca Andresen	206.295.3273 (cell)
Corporate H&S Specialist	Alec MacAdam	720-454-0948
Corporate H&S Director	Denis Balcer	614-778-9171

Hospital Name and Address: Providence Mt Carmel Hospital
982 E Columbia Ave
Colville, WA 99114

Hospital Phone Number: 509.685.5100

Incident Notification Process

TECK AMERICAN INC. WILL BE NOTIFIED OF ALL INCIDENTS

1. Dial 911/Facility Emergency Number/WorkCare as applicable
2. Contact PM/Supervisor — Rebecca Andresen
3. Contact Corporate H&S — Denis Balcer
4. Contact Client — Kris McCaig

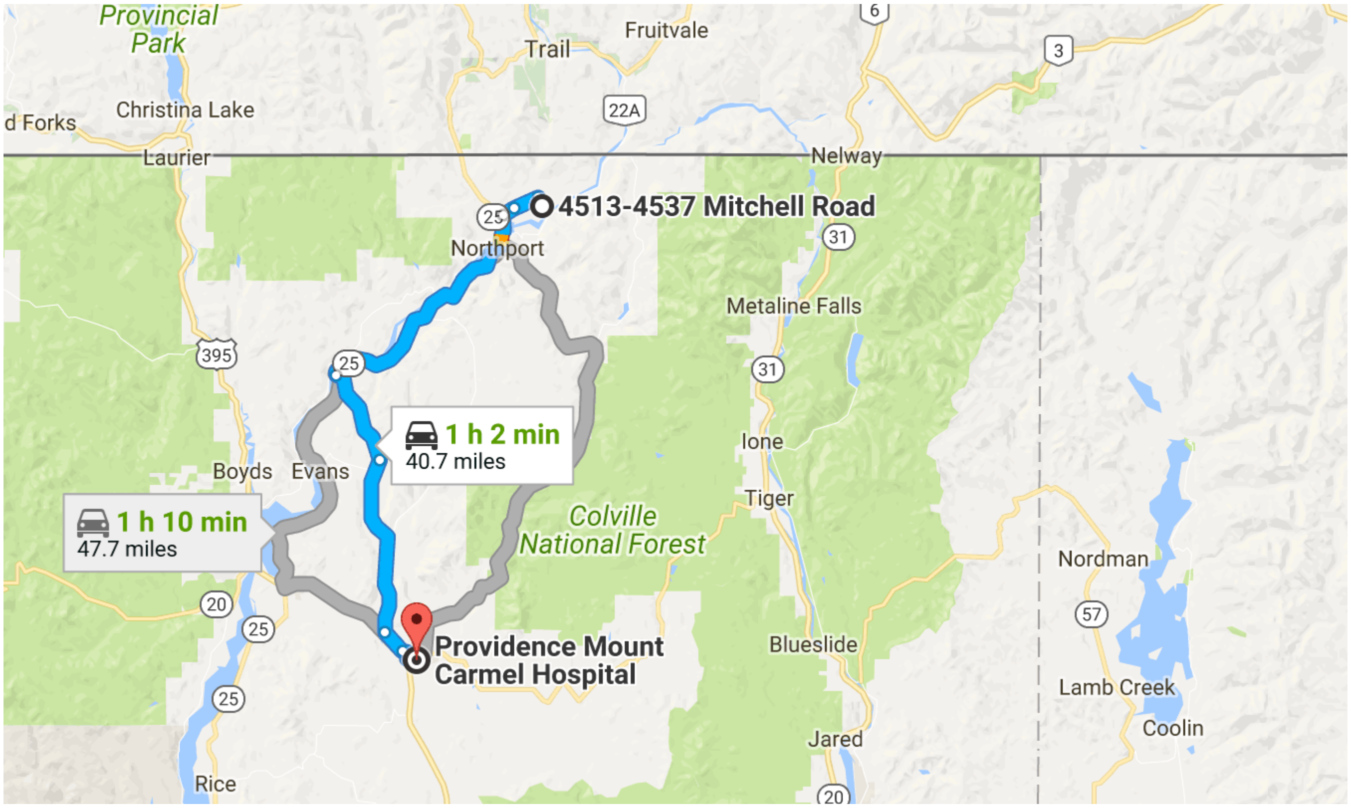
Complete below, as applicable, or clear cell contents:

Location of Assembly Area(s): DU-specific.
See field binders and discuss at each tailgate meeting.

Nearest AED location: N/A

Nearest Storm Shelter: field vehicles

Directions from 4513-4537 Mitchell Rd to Providence Mount Carmel Hospital



4513-4537 Mitchell Rd
Northport, WA 99157

Follow Mitchell Rd to WA-25 S

2.6 mi

Head southwest on Mitchell Rd

1.8 mi

Turn right to stay on Mitchell Rd

0.8 mi

Follow WA-25 S and Williams Lake Rd to E Birch Ave in Colville

37.4 mi

Turn left onto WA-25 S

17.1 mi

Turn left onto Williams Lake Rd

6.4 mi

Merge onto Williams Lake Rd

11.5 mi

Turn left onto US-395 S

1.6 mi

At the traffic circle, take the 2nd exit onto US-395 E

0.8 mi

Continue on E Birch Ave. Drive to E Columbia Ave

0.6 mi

Turn left onto E Birch Ave

0.5 mi

Turn right onto S Alder St

374 ft

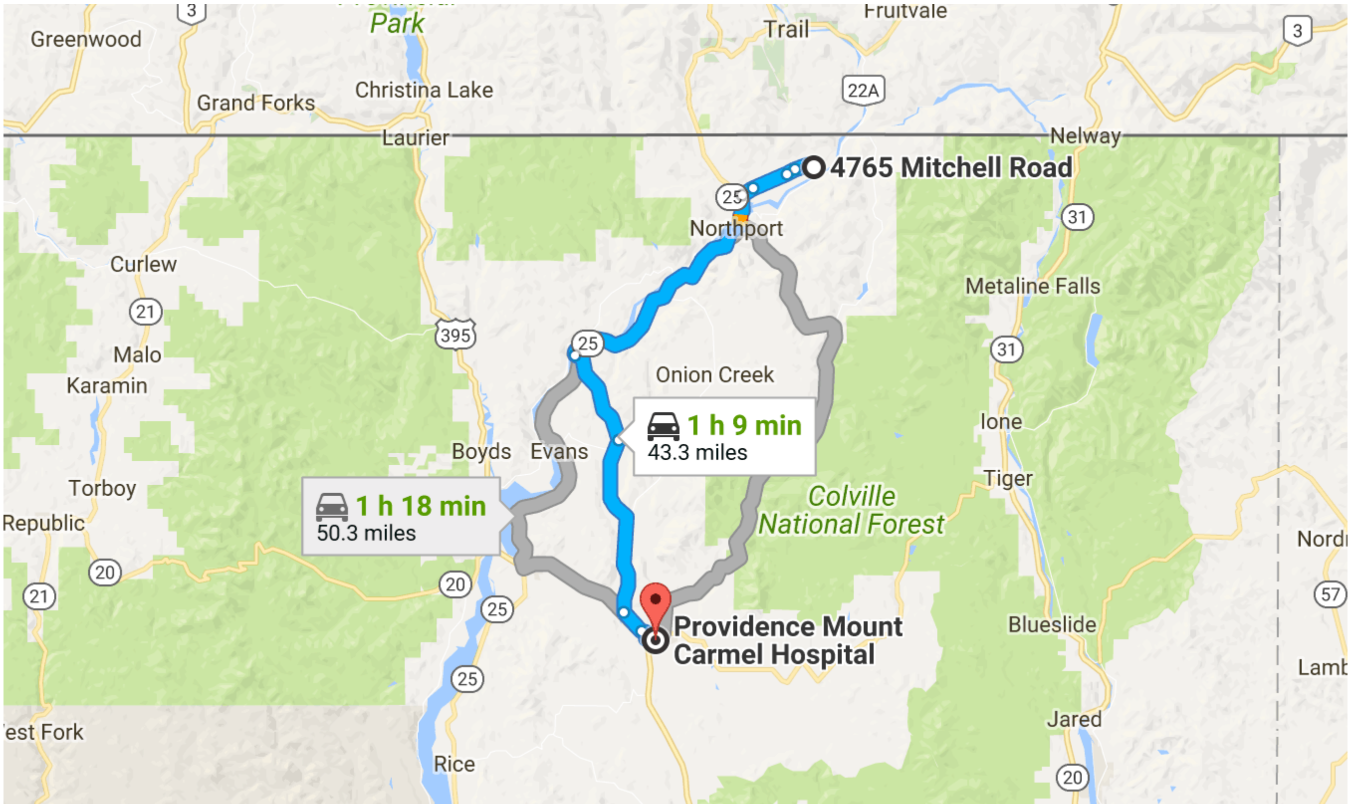
Turn left onto E Columbia Ave

Destination will be on the right

305 ft

Providence Mount Carmel Hospital
982 E Columbia Ave, Colville, WA 99114

Directions from 4765 Mitchell Rd to Providence Mount Carmel Hospital



4765 Mitchell Rd
Northport, WA 99157

Take Mitchell Rd to WA-25 S

5.2 mi

Head west on Mitchell Rd

0.4 mi

Turn left to stay on Mitchell Rd

1.0 mi

Mitchell Rd turns slightly left and becomes Moraski Flat Rd

0.6 mi

Continue onto Mitchell Rd

2.4 mi

Turn right to stay on Mitchell Rd

0.8 mi

Follow WA-25 S and Williams Lake Rd to E Birch Ave in Colville

37.4 mi

Turn left onto WA-25 S

17.1 mi

Turn left onto Williams Lake Rd

6.4 mi

Merge onto Williams Lake Rd

11.5 mi

Turn left onto US-395 S

1.6 mi

At the traffic circle, take the 2nd exit onto US-395 E

0.8 mi

Continue on E Birch Ave. Drive to E Columbia Ave

0.6 mi

Turn left onto E Birch Ave

0.5 mi

Turn right onto S Alder St

374 ft

Turn left onto E Columbia Ave

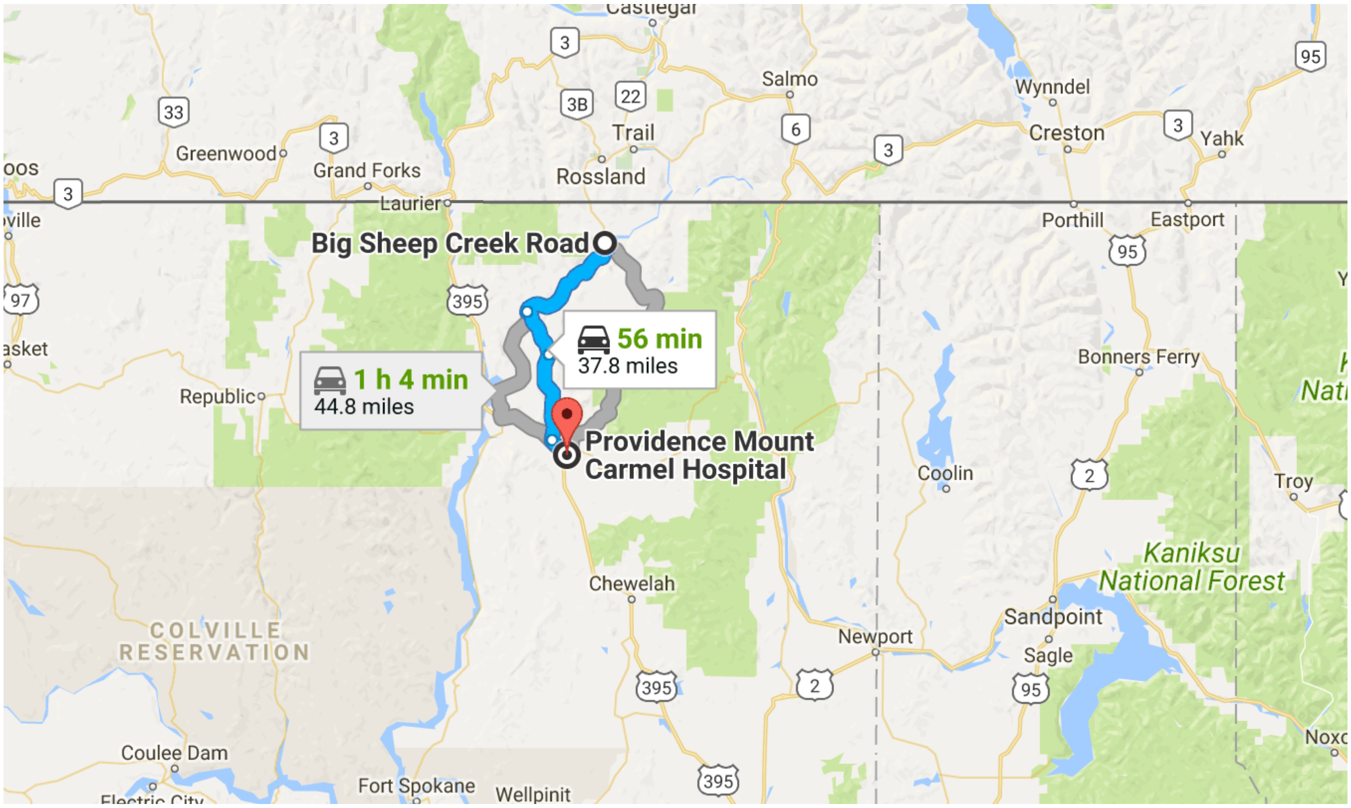
Destination will be on the right

305 ft

Providence Mount Carmel Hospital
982 E Columbia Ave, Colville, WA 99114

Directions from Big Sheep Creek Rd to Providence Mount Carmel Hospital

Google



Big Sheep Creek Rd
Northport, WA 99157

Head south toward Northport Flat Creek Rd

0.3 mi

Follow WA-25 S and Williams Lake Rd to E Birch Ave in Colville

36.9 mi

- Turn left onto Northport Flat Creek Rd
  0.8 mi
- Turn right onto WA-25 S
  15.8 mi
- Turn left onto Williams Lake Rd
  6.4 mi
- Merge onto Williams Lake Rd

11.5 mi

Turn left onto US-395 S

1.6 mi

At the traffic circle, take the 2nd exit onto US-395 E

0.8 mi

Continue on E Birch Ave. Drive to E Columbia Ave

0.6 mi

Turn left onto E Birch Ave

0.5 mi

Turn right onto S Alder St

374 ft

Turn left onto E Columbia Ave

Destination will be on the right

305 ft

Providence Mount Carmel Hospital
982 E Columbia Ave, Colville, WA 99114

General Information

Site Type (select all applicable where work will be conducted):

- ☐ Active
- ☐ Bridge
- ☐ Buildings
- ☐ Commercial
- ☐ Construction
- ☐ Military Installation
- ☐ Inactive Industrial
- ☐ Active Industrial
- ☐ Landfill
- ☐ Marine
- ☐ Mining
- ☐ Parking Lot/Private Roadway
- ☐ Railroad
- ☑ Remote Area
- ☑ Residential
- ☐ Retail
- ☐ Roadway (public, including right-of-way)
- ☐ Water Treatment Plant
- ☐ Unknown
- ☑ Security Risk Site/Location
- ☐ Utility
- ☐ Other (specify): ____________

For class I railroads, work within 25 ft of the rails is prohibited unless FRA On-Track Safety and railroad specific trained. For other railroads, contact your H&S Specialist for assistance with any special training needs. If a lone worker is used on the project, additional communication and emergency action planning for lone worker required. Preparation of a Site Security Plan is required.

Surrounding Area and Topography (select one):

- ☐ Surrounding area and topography are presented in the project work plan
- ☑ Surrounding area and topography (*briefly describe*):

  Area is remote wilderness, mountainous and high desert

Simultaneous Operations (SimOps)

- ☐ Not applicable
- ☑ SimOps will exist on this project

  Evaluate impacts and address necessary controls associated with SimOps on project work activities in the Task Hazard Analysis and Emergency Action Plan.

Site Background (select one):

- ☑ Site background is presented in the project work plan
- ☐ Site background (*briefly describe)* :

Project Tasks

The following tasks are identified for this project: Select: All Activities

Select applicable tasks from the drop down menu

1	Driving - Motor vehicles
2	Inspections and audits - Nonbuilding including non-secure/non-controlled areas
3	Sampling - Soil sampling using shovel, spade, spoon or trowel
4	Decontamination - Small or hand-held objects using manual methods
5	Select
6	Select
7	Select
8	Select
9	Select
10	Select

☐ Subcontractor H&S information is attached

☑ Utility clearance required.

☐ Journey Management Plan attached

☑ State specific H&S required:

Requires preparation of the Arcadis Heat Illness Prevention Plan in accordance with Washington State regulations.

☐ The following H&S Standards are attached:

☑ Required Checklists/Work Forms

Tailgate Safety Briefing Form

Vehicle Inspection Checklist

☐ Required Permits

Not Applicable

Roles and Responsibilities

	Name	*Role*
1	Rebecca Andresen	Project Manager
2	Eric Epple	Assistant Project Manager
3	Alex Baird	Site Safety Officer/Field Lead
4	Watson Metsutnan	Sample Manager
5		
6		
7		
8		
9		
10		

Training

All Arcadis employees are required to have the following training to be on site:

- H&S Program Orientation
- HAZCOM GHS/EAP
- Defensive Driving - Smith On-Line
- BBP (Bloodborne Pathogens)
- First Aid/CPR
- Hazwoper 40 Hour
- Lead General Awareness
- PPE
- DOT HazMat #1
- None
- None
- None
- None

Client specific:

Site Specific Training

Other:

Selected Arcadis employees are required to have the following additional training:

	Names or Numbers from above
Boating Safety	
DOT - CMV Drivers	
None	
None	
None	
None	
None	
None	
None	
None	
None	
None	
None	
None	
None	

Other:

Hazard Analysis

The task hazard analysis uses a hazard ranking process utilizing the chart below. The ranking will automatically populate. However, the ranking may be adjusted manually, if required.

Risk Assessment Matrix		Likelihood Ratings			
Consequences Ratings		A	B	C	D
People	Property	0 Almost Impossible	1 Possible but Unlikely	2 Likely to Happen	4 Almost Certain to Happen
1-Slight or No Health Effect	Slight or No Damage	0-Low	1-Low	2-Low	3-Low
2-Minor Health Effect	Minor Damage	0-Low	2-Low	4-Medium	6-Medium
3-Major Health Effect	Local Damage	0-Low	3-Low	6-Medium	9-High
4-Fatalities	Major Damage	0-Low	4-Medium	8-High	12-High

Hazard Analysis

Task 1:	Driving - Motor vehicles						
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low)						Suggested FHSHB Ref	III V
Biological	-	Chemical	-	Driving	H	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	L	Pressure	-	Radiation	-	Sound	-

Hazard #1

Driving - On road - Injury or vehicle damage from motor vehicle accident or incident

Suggested FHSHB Ref: III V, W, U, AO

Overall Unmitigated Risk: HIGH — Mitigated Risk: MEDIUM if utilizing:

Controls that should be Considered: Primary: TRACK JSAs Smith System (on line) Secondary: Field H&S Handbook (see ref. above)

Enter Required Controls: **TRACK, JSAs, Smith System**

Hazard #2

Driving - Driver - Injury, death or property damage due to driver distraction, fatigue, etc.

Suggested FHSHB Ref: III V, AO

Overall Unmitigated Risk: HIGH — Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK JSAs Smith System (on line) Secondary: Operator Competency per Standard

Enter Required Controls: **TRACK, JSAs, Smith System**

Hazard #3

Environmental - Thermal stress - Injury or illness from heat or cold

Suggested FHSHB Ref: III M

Overall Unmitigated Risk: MEDIUM — Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK JSAs Engineering Controls (specify below) Admin. Controls (specify below) PPE (see HASP "PPE" section) First Aid/CPR Training (designed person) Secondary: Field H&S Handbook (see ref. above) WorkCare

Enter Required Controls:

Hazard #4

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #5

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #6

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

If you need to list more hazards for this task, unhide "Extended Hazard Analsyis".

Hazard Analysis

Task 2:	Inspections and audits - Nonbuilding including non-secure/non-controlled areas						
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low)				Suggested FHSHB Ref:		III F	
Biological	L	Chemical	L	Driving	M	Electrical	L
Environmental	L	Gravity	M	Mechanical	L	Motion	L
Personal Safety	L	Pressure	L	Radiation	L	Sound	L

Hazard #1

Biological - bites or stings from exposure to insects or arachnids

Suggested FHSHB Ref:	III N			
Overall Unmitigated Risk:	MEDIUM	Mitigated Risk:	LOW	if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Engineering Controls (specify below) Job Briefing/Site Awareness PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) PPE (see HASP "PPE" section) WorkCare First Aid/CPR Training (designed person)			
Enter Required Controls:	**Insect Repellant, PPE**			

Hazard #2

Biological - skin or eye injury from exposure to mammal, reptile, amphibian, fish, bird or invertebrate bites

Suggested FHSHB Ref:	III N			
Overall Unmitigated Risk:	MEDIUM	Mitigated Risk:	LOW	if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Engineering Controls (specify below) Job Briefing/Site Awareness PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) PPE (see HASP "PPE" section) WorkCare First Aid/CPR Training (designed person)			
Enter Required Controls:	**Bear Spray**			

Hazard #3

Biological - skin or eye injury from exposure to mammal, reptile, amphibian, fish, bird or invertebrate claws, beaks (pecking), spines, fins, or scales

Suggested FHSHB Ref:	III N			
Overall Unmitigated Risk:	MEDIUM	Mitigated Risk:	LOW	if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Engineering Controls (specify below) Job Briefing/Site Awareness PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) PPE (see HASP "PPE" section) WorkCare First Aid/CPR Training (designed person)			
Enter Required Controls:	**Bear Spray**			

Hazard #4

Biological - cuts, scrapes, skin/eye puncture from exposure to physically damaging plants

Suggested FHSHB Ref:	III N, AE			
Overall Unmitigated Risk:	MEDIUM	Mitigated Risk:	LOW	if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Engineering Controls (specify below) Job Briefing/Site Awareness PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) PPE (see HASP "PPE" section) WorkCare First Aid/CPR Training (designed person)			
Enter Required Controls:	**PPE, Removal of brush where necessary and allowed**			

Hazard #5

Biological - skin/eye irritation or damage from poisonous plants

Suggested FHSHB Ref:	III N, AE			
Overall Unmitigated Risk:	MEDIUM	Mitigated Risk:	LOW	if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Engineering Controls (specify below) Job Briefing/Site Awareness PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) PPE (see HASP "PPE" section) WorkCare First Aid/CPR Training (designed person)			
Enter Required Controls:	**PPE, Removal of brush where necessary and allowed, topical treatment for exposure**			

Hazard #6

Gravity - Falls - Injury due to slips and trips

Suggested FHSHB Ref:	III F			
Overall Unmitigated Risk:	HIGH	Mitigated Risk:	LOW	if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs PPE (see HASP "PPE" section) Site Awareness Inspections Housekeeping Secondary: Field H&S Handbook (see ref. above)			
Enter Required Controls:	**clearly mark potential trip hazards, regular site housekeeping**			

If you need to list more hazards for this task, unhide "Extended Hazard Analsyis".

Hazard Analysis

Hazard #7

Environmental - Wind -Skin injury from sun or wind exposure

Suggested FHSHB Ref: III M

Overall Unmitigated Risk: MEDIUM   Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK JSAs PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) 0

Enter Required Controls: **PPE, shelter in vehicle when necessary**

Hazard #8

Environmental - Thermal stress - Injury or illness from heat or cold

Suggested FHSHB Ref: III M

Overall Unmitigated Risk: MEDIUM   Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK JSAs Engineering Controls (specify below) Admin. Controls (specify below) PPE (see HASP "PPE" section) First Aid/CPR Training (designed person) Secondary: Field H&S Handbook (see ref. above) 0

Enter Required Controls: **Sunscreen, hydration, regular breaks in shade/air conditioning**

Hazard #9

Environmental - Inclement weather -Injury or equipment damage from inclement weather

Suggested FHSHB Ref: III I

Overall Unmitigated Risk: MEDIUM   Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK JSAs Cont./Emerg. Planning 0Site Awareness Secondary: Field H&S Handbook (see ref. above)

Enter Required Controls: **shelter in vehicle**

Hazard #10

Environmental - Altitude - Injury or illness from working at high altitudes

Suggested FHSHB Ref: NA

Overall Unmitigated Risk: MEDIUM   Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK Specialized Equipment (specify below) Medical SurveillanceSite AwarenessJSAs Secondary: Field H&S Handbook (see ref. above) First Aid/CPR Training (designed person)

Enter Required Controls: **regular breaks, hydration**

Hazard #11

Environmental - Lightning - Injury or property damage working in poorly lit areas

Suggested FHSHB Ref: III O

Overall Unmitigated Risk: MEDIUM   Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK Engineering Controls (specify below) JSAs Secondary: Field H&S Handbook (see ref. above)

Enter Required Controls: **stop work in low light**

Hazard #12

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked   Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard Analysis

Task 3:	Sampling - Soil sampling using shovel, spade, spoon or trowel						
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low)				Suggested FHSHB Ref:	III F		
Biological	L	Chemical	L	Driving	-	Electrical	-
Environmental	M	Gravity	M	Mechanical	-	Motion	H
Personal Safety	L	Pressure	L	Radiation	-	Sound	L

Hazard #1

Personal safety - Violence - Injury from violence in unsafe area

Suggested FHSHB Ref:	II I
Overall Unmitigated Risk:	MEDIUM — Mitigated Risk: LOW if utilizing:
Controls that should be Considered:	Primary: TRACK Lone Worker Plan Site Awareness Jouney Management Plan Specialized Training per Standard Secondary: Field H&S Handbook (see ref. above) Job Briefing/Site Awareness Communications Plan
Enter Required Controls:	**TRACK, Site Awareness, Work in Teams**

Hazard #2

Environmental - Altitude - Injury or illness from working at high altitudes

Suggested FHSHB Ref:	NA
Overall Unmitigated Risk:	MEDIUM — Mitigated Risk: LOW if utilizing:
Controls that should be Considered:	Primary: TRACK Specialized Equipment (specify below) Medical SurveillanceSite Awareness JSAs Secondary: Field H&S Handbook (see ref. above) First Aid/CPR Training (designed person)
Enter Required Controls:	**TRACK, Site Awareness, First Aid/CPR Training**

Hazard #3

Motion - Musculoskeletal - Injury from repeated work activity or body motion

Suggested FHSHB Ref:	III AF
Overall Unmitigated Risk:	MEDIUM — Mitigated Risk: LOW if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs PPE (see HASP "PPE" section) Engineering Controls (specify below) Admin. Controls (specify below) Secondary: Field H&S Handbook (see ref. above) Housekeeping Medical SurveillanceWorkCare First Aid/CPR Training (designed person)
Enter Required Controls:	**TRACK, Correct body posture using T-Bar sampler**

Hazard #4

Motion - Cuts and scrapes - Injury from moving object impacting skin or eye

Suggested FHSHB Ref:	III S
Overall Unmitigated Risk:	MEDIUM — Mitigated Risk: LOW if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Site Awareness Engineering Controls (specify below) PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) Job Briefing/Site Awareness H&S Standards WorkCare First Aid/CPR Training (designed person)
Enter Required Controls:	**cut gloves, nitriles, and eye protection when handling glassware**

Hazard #5

Environmental - Wind -Skin injury from sun or wind exposure

Suggested FHSHB Ref:	III M
Overall Unmitigated Risk:	MEDIUM — Mitigated Risk: LOW if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs PPE (see HASP "PPE" section) Secondary: Field H&S Handbook (see ref. above) WorkCare
Enter Required Controls:	**PPE, shelter in vehicle when necessary**

Hazard #6

Environmental - Thermal stress - Injury or illness from heat or cold

Suggested FHSHB Ref:	III M
Overall Unmitigated Risk:	MEDIUM — Mitigated Risk: LOW if utilizing:
Controls that should be Considered:	Primary: TRACK JSAs Engineering Controls (specify below) Admin. Controls (specify below) PPE (see HASP "PPE" section) First Aid/CPR Training (designed person) Secondary: Field H&S Handbook (see ref. above) WorkCare
Enter Required Controls:	**sunscreen, hydration, regular breaks in shade/air conditioning**

If you need to list more hazards for this task, unhide "Extended Hazard Analysis".

Hazard Analysis

Hazard #7

Environmental - Inclement weather -Injury or equipment damage from inclement weather

Suggested FHSHB Ref: III I

Overall Unmitigated Risk: MEDIUM | Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK JSAs Cont./Emerg. Planning 0Site Awareness Secondary: Field H&S Handbook (see ref. above)

Enter Required Controls: **shelter in vehicle**

Hazard #8

Environmental - Altitude - Injury or illness from working at high altitudes

Suggested FHSHB Ref: NA

Overall Unmitigated Risk: MEDIUM | Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK Specialized Equipment (specify below) Medical SurveillanceSite AwarenessJSAs Secondary: Field H&S Handbook (see ref. above) First Aid/CPR Training (designed person)

Enter Required Controls: **regular breaks, hydration**

Hazard #9

Environmental - Lightning - Injury or property damage working in poorly lit areas

Suggested FHSHB Ref: III O

Overall Unmitigated Risk: MEDIUM | Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK Engineering Controls (specify below) JSAs Secondary: Field H&S Handbook (see ref. above)

Enter Required Controls: **stop work in low light**

Hazard #10

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked | Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #11

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked | Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #12

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked | Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard Analysis

Task 4:	Decontamination - Small or hand-held objects using manual methods						
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low)				Suggested FHSHB Ref:		III G	
Biological	L	Chemical	M	Driving	-	Electrical	-
Environmental	L	Gravity	L	Mechanical	-	Motion	L
Personal Safety	L	Pressure	L	Radiation	-	Sound	L

Hazard #1

Chemical - liquids, skin or eye irritation/damage/allergy

Suggested FHSHB Ref: III C, F, G, K, S, AG

Overall Unmitigated Risk: MEDIUM — Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK HASP JSAs PPE (see HASP "PPE" section) See HASP "Monitoring" section Secondary: Job Briefing/Site Awareness Hazcom Training SDS (see also HASP Hazcom/GHS section) Client Training/Briefing Specialized Equipment (specify below) WorkCare

Enter Required Controls: **TRACK, JSAs, SDSs, PPE**

Hazard #2

Chemical - solids/particulates, injury or illness from inhalation

Suggested FHSHB Ref: III C, F, G, K, S, AG

Overall Unmitigated Risk: MEDIUM — Mitigated Risk: LOW if utilizing:

Controls that should be Considered: Primary: TRACK HASP JSAs PPE (see HASP "PPE" section) See HASP "Monitoring" section Secondary: Job Briefing/Site Awareness Hazcom Training SDS (see also HASP Hazcom/GHS section) Client Training/Briefing Specialized Equipment (specify below) WorkCare

Enter Required Controls: **TRACK, JSAs, SDSs, PPE**

Hazard #3

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #4

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #5

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

Hazard #6

None

Suggested FHSHB Ref: None

Overall Unmitigated Risk: Not Ranked — Mitigated Risk: Not Ranked if utilizing:

Controls that should be Considered: Primary: Secondary:

Enter Required Controls:

If you need to list more hazards for this task, unhide "Extended Hazard Analysis".

Hazard Communication (HazCom)/Global Harmonization System (GHS)

☐ HAZCOM/GHS for this project is managed by the client or general contractor

List the chemicals anticipated to be used by Arcadis on this project per HazCom/GHS requirements. (Modify quantities as needed)

	Preservatives	Qty		Decontamination	Qty		Calibration	Qty.
☐	Not applicable		☐	Not applicable		☑	Not applicable	
☐	Hydrochloric acid	<500 ml	☑	Alconox	≤ 5 lbs	☐	Isobutylene/air	1 cyl
☐	Nitric acid	<500 ml	☑	Liquinox	≤ 1 gal	☐	Methane/air	1 cyl
☐	Sulfuric acid	<500 ml	☐	Acetone	≤ 1 gal	☐	Pentane/air	1 cyl
☐	Sodium hydroxide	<500 ml	☐	Methanol	≤ 1 gal	☐	Hydrogen/air	1 cyl
☐	Zinc acetate	<500 ml	☐	Hexane	≤ 1 gal	☐	Propane/air	1 cyl
☐	Ascorbic acid	<500 ml	☐	Isopropyl alcohol	≤ 4 gal	☐	Hydrogen sulfide/air	1 cyl
☐	Acetic acid	<500 ml	☐	Nitric acid	≤ 1 L	☐	Carbon monoxide/air	1 cyl
☐	Isopropyl alcohol	< 4 gal.	☐	Other:		☐	pH standards (4,7,10)	≤ 1 gal
☐	Formalin (<10%)	< 4 gal.				☐	Conductivity standards	≤ 1 gal
☐	Methanol	<500 ml				☐	Other:	
☐	Sodium bisulfate	<500 ml						

	Fuels	Qty.		Kits		Qty.
☑	Not applicable		☑	Not applicable		
☐	Gasoline	≤ 5 gal	☐	Hach (specify):		1 kit
☐	Diesel	≤ 5 gal	☐	DTECH (specify):		1 kit
☐	Kerosene	≤ 5 gal	☐	Other:		1 kit
☐	Propane	1 cyl				
☐	Other:					

	Remediation	Qty.		Other:	Qty.	DOT(1):	Qty.
☐	Not applicable		☑	Not applicable		MOT eligible soils	
☐			☐	Spray paint	≤ 6 cans	MOT eligible water	
☐			☐	WD-40	≤ 1 can	MOT eligible solids	
☐			☐	Pipe cement	≤ 1 can	MOT eligible liquids	
☐			☐	Pipe primer	≤ 1 can		
☐			☐	Mineral spirits	≤ 1 gal		
			☐				

(1) Attach applicable Materials of Trade (MOT) generic shipping determination. SDS not generally applicable to this category.

Safety Data Sheets (SDSs) must be available to field staff. Indicate below how SDS information will be provided:

☐ Not applicable
☑ Printed copy in company vehicle
☑ Printed copy in the project trailer/office
☐ Printed copy attached
☑ Electronic copy on field computer

☐ Contractor SDSs are not applicable
☐ Contractor SDSs are attached
☐ Contractor SDSs will be on site and located:

☐ Bulk quantities of the following materials will be stored:

Contact the project H&S contact for information in determining code and regulatory requirements associated with bulk storage of materials.

Monitoring

☑ Chemical air monitoring is not required for this project or is the responsibility of contractor.

For projects requiring air monitoring, list the *<u>relevant</u>* *constituents representing a hazard to site workers.*

Constituent	Max. Conc.	Units	TWA	Units	STEL	Units	IDLH	Units	LEL/UEL (%)	RGD Air=1	IP (eV)
None			9999	-	0	-	0	-	0	0	0
None			9999	-	0	-	0	-	0	0	0
None			9999	-	0	-	0	-	0	0	0
None			9999	-	0	-	0	-	0	0	0
None			9999	-	0	-	0	-	0	0	0
None			9999	-	0	-	0	-	0	0	0

Notes: TWAs are ACGIH 8 hr.-TLVs unless noted.

p-ppm m-mg/m3
s- skin c-ceiling
r- respirable i-inhalable

c2- ceiling (2 hr.) se-sensitizer
"9999" - NA O-OSHA PEL
N-NIOSH 10 hr. REL

A - Arcadis specific TWA*
"#N/A"-Manually enter

Monitoring Equipment and General Protocols

Air monitoring is required for any task or activity where employees have potential exposure to vapors or particulates above the TWA. Action levels below are appropriate for most situations. *<u>Contact the project H&S contact for all stop work situations</u>*. *Select monitoring frequency and instruments to be used.*

Monitoring Frequency:

Indicator Tube/Chip Frequency: Indicator tube/chip monitoring not required

Instrument	Action Levels	Actions
☐ Photoionization Detector	< 0.000	Continue work
	0.000 - 0.0	Sustained >5 min. continuous monitor, review eng. controls and PPE, proceed with caution
Lamp (eV):	> 0.0	Sustained >5 min. stop work, contact SSO
☐ Flame Ionization Detector (FID)	< 0.0	Continue work
	0.0 - 0.0	Sustained >5 min. continuous monitor, review eng. controls and PPE, use caution
	> 0.0	Sustained >5 min. stop work, contact SSO
☐ LEL/O2 Meter	0-5% LEL	Continue work
	>5-10% LEL	Continuous monitor, review eng. controls, proceed with caution
	>10% LEL	Stop work, evacuate, contact SSO
	19.5%-23.5% O2	Normal, continue work
	<19.5% O2	O2 deficient, stop work, evacuate, cont.
	>23.5% O2	O2 enriched, stop work, evacuate, contact
☐ Indicator: ☐ tube ☐ chip	≤PEL/TLV	Continue work
	>PEL/TLV	Stop work, review eng. controls and PPE, contact SSO
Compound(s):		
☐ Particulate Monitor	< 1.5	Continue work
(mists, aerosols, dusts in mg/m^3)	1.5 - 3.000	Use engineering controls, monitor continuous
	> 3.000	Stop work, review controls, contact SSO
☐ Other:	Specify:	Specify:

* Arcadis administrative TWAs ensure mixture component TWAs are not exceeded that would require additional monitoring or medical surveillance.

Personal Protective Equipment (PPE)

See JSA or Permit for the task being performed for required PPE *. If work is not conducted under a JSA or Permit, refer to the governing document for PPE requirements. At a minimum, the following checked PPE is required for* *<u>all tasks during field work</u>* *(outside of field office trailers and vehicles) not covered by a JSA or Permit on this project:*

Minimum PPE required to be worn by all staff on project: Specify Type:

			Specify Type
☑ Hard hat	☑ Snake chaps/guards	☐ Coveralls:	
☑ Safety glasses	☑ Briar chaps	☐ Apron:	
☐ Safety goggles	☐ Chainsaw chaps	☑ Chem. resistant gloves:	nitriles
☐ Face shield	☐ Sturdy boot	☑ Gloves other:	kevlar gloves
☐ Hearing protection	☑ Steel or comp. toe boot	☐ Chemical boot:	
☐ Rain suit	☐ Metatarsal boot	☐ Boot other:	
☑ Other:		☑ Traffic vest, shirt or coat:	Class II
mobile phone		☑ Life vest:	for boat work only

Task specific PPE:

Comments:

Medical Surveillance (*check all that apply*)

☐ Medical Surveillance is not required for this project.
☑ HAZWOPER medical surveillance applies to all Arcadis site workers on the project.
☐ HAZWOPER medical surveillance applies to all subcontractors on the project.
☐ HAZWOPER medical surveillance applies to all site workers on the project except:

☐ Other medical surveillance required (describe type and who is required to participate):

☐ Client drug and/or alcohol testing required. ☐ DOT drug and/or alcohol testing required.

Hazardous Materials Shipping and Transportation (*check all that apply*)

☐ Not applicable, no materials requiring a Shipping Determination (SD) will be transported or shipped
☐ A SD has been reviewed and provided to field staff
☑ A SD is attached
☐ All HazMat will be transported under Materials of Trade by Arcadis (see generic MOT SD Form)
☐ Other (specify):

Traffic Safety Plan (TSP) (*check all that apply*)

☑ Not applicable for this project
☐ All or portions of the work conducted under a Right-of-Way (ROW) TSP
☐ All or portions of the work conducted under a Non-ROW TSP
☐ TSP provided to field staff
☐ TSP attached
☐ Other (specify):

Arcadis Commercial Motor Vehicles (CMVs)

This section is applicable to Arcadis operated vehicles only *(select one)*

☑ This project will **<u>not</u>** utilize CMV drivers ☐ This project will utilize CMV drivers

This project will NOT utilize vehicles (alone or in combination with a trailer) with a gross vehicle weight rating (GVWR) of 10,001 pounds or more. GVWR Truck + GVWR Trailer = <10,001 pounds

Site Control (*check all that apply*)

- ☐ Not applicable for this project.
- ☑ Site control protocols are addressed in JSA or other supporting document (attach)
- ☐ Maintain an exclusion zone of ________ ft. around the active work area
- ☐ Site control is integrated into the TSP for the project
- ☐ Level C site control - refer to Level C Supplement attached
- ☐ Other (specify):

Decontamination (*check all that apply*)

- ☐ Not applicable for this project.
- ☐ Decontamination protocols are addressed in JSA or other governing document (attach)
- ☑ Wash hands and face prior to consuming food, drink or tobacco.
- ☐ Remove gloves and coveralls and contain, wash hands and face prior to consuming food, drink or tobacco. Ensure footwear is clean of site contaminants
- ☐ Respiratory protection- refer to the Level C supplement attached.
- ☐ Other (specify):

Sanitation *(check all that apply)*

- ☑ Mobile operation with access to off-site restrooms and potable water
- ☐ Restroom facilities on site provided by client or other contractor
- ☑ Project to provide portable toilets (1 per 20 workers)
- ☐ Potable water available on site
- ☐ Project to provide potable water (assume 1 gal./person/day)
- ☐ Project requires running water (hot and cold, or tepid) with soap and paper towels

Safety Briefings (*check all that apply*)

- ☐ Safety briefing required daily
- ☐ Safety briefing required twice a day
- ☐ Safety briefings required at the following frequency: ________
- ☑ Subcontractors to participate in Arcadis safety briefings
- ☑ Arcadis to participate in client/contractor safety briefings
- ☐ Other (specify):

Safety Equipment and Supplies

Safety equipment/supply requirements are addressed in the JSA or Permit for the task being performed*. If work is not performed under a JSA or Permit, the following safety equipment is required to be present on site in good condition (Check all that apply):*

- ☑ First aid kit
- ☐ Bloodborne pathogens kit
- ☑ Fire extinguisher
- ☐ Eyewash (ANSI compliant)
- ☑ Eyewash (bottle)
- ☑ Drinking water
- ☐ Other: ________
- ☑ Insect repellent
- ☑ Sunscreen
- ☑ Air horn
- ☑ Traffic cones
- ☑ 2-way radios
- ☐ Heat stress monitor
- ________
- ________

International Travel

☑ This project does not involve international travel
☐ This project involves international travel

Behavior Based Safety Program (*check all that apply*)

☑ TIP required at the following frequency on this project:
Select One: 500 mhrs ______ time(s) ______ Define: ______
☑ H&S Field Assessment required at the following frequency on this project:
Select One: 1000 mhrs ______ time(s) ______ Define: ______
☐ Other (specify):

Signatures

I have read, understand and agree to abide by the requirements presented in this health and safety plan. I understand that I have the absolute right to stop work if I recognize an unsafe condition affecting my work until corrected.

Printed Name	Signature	Date

Add additional sheets if necessary

You have an absolute right to STOP WORK if unsafe conditions exist!

Attachments

THIS FORM MUST BE COMPLETED IN ENTIRETY PRIOR TO BEGINNING ANY INTRUSIVE WORK

Project: Upper Columbia River Soil Amendment Technology Evalua
Project Number: B0095010.0005
Form Completion Date: ____________ Form Expiration Date: ____________
(15 business days post form completion date)

Pre-Field Work

Required: One Call or "811" notified 48-72 hours in advance of work? #: ____________
Ticket Expiration Date ____________ (Review State Requirements)
Utility companies notified during the One Call process ☐ See attached ticket

____________ ____________ ____________ ____________
____________ ____________ ____________ ____________

List any other utilities requiring notification: ☐ None

____________ ____________ ____________ ____________

Private Locator Contacted ☐ Yes ☐ No

Plan private utility clearance subcontractor assignments, areas, required clearance equipment, depth of clearance needed, types of utilities. When possible re-clear 811 markings to confirm utility locations.

Client provided utility maps or "as built" drawings showing utilities? ☐ Yes ☐ No

Field Work - This must be completed on site, by staff who have a minimum of one year of field experience in identifying utilities. Review Check list with PM or designee prior to beginning intrusive work.

List Soil Boring / Well IDs or Excavation Locations applicable to this clearance checklist:

3 Reliable Lines of Evidence Required Prior to Starting any Subsurface Intrusive Work

☐ One Call/"811" (Reliable as a line of evidence when working in public right of way or easement)
Utility Markings Present: ☐ Paint ☐ Pin flags/stakes ☐ Other ☐ None

☐ Client Provided Maps/Drawings **OR** ☐ Maps/Drawings requested but not provided
☐ Client Clearance Name(s)/Affiliation(s) ____________
☐ Interview(s): Name(s)/Affiliation(s) ____________

Did person(s) interviewed indicate depths of any utilities in the subsurface?
☐ Yes, depths provided: ☐ Did not know or refused to answer
Additional Comments:

☐ Site Inspection (**Complete Page 2 & Photo Document Marked Utilities & Utility Structures**)
☐ Public Records / Maps / Asbuilits
☐ Private Locator: (Name and Company) ____________
☐ Ground Penetrating Radar (GPR)
☐ Radiofrequency (RFLoc)
☐ Electromagnetic (EM)
☐ Metal Detector

Soft Dig Methods
☐ Termination Depth ______ft. bgs
☐ Potholing / Vacuum Extraction
☐ Air-Knife ☐ Hydro-Knife
☐ Probing
☐ Hand Auguring

Tips for Successful Utility Location:
1. Don't forget to look up
2. Be on site with Private Utility Locators
3. Ask Private Locators to "confirm" other's markings
4. Select alternate/backup locations during clearance process
5. Mark out all known utilities. Leave nothing to question
6. No hammering - no pickaxes - no digging bars - no shortcutting
7. No excessive turning or downward force of hand augers/shovels
8. Utilities may run in or directly under asphalt/concrete

☐ Other: ____________
☐ Marine Locator: (Name and Company) ____________

During the site inspection look for the following: **("YES" requires additional investigation and the utility must be marked properly prior to beginning subsurface intrusive work)**:

Site Inspection		Utility Color Codes	Present	
a)	Natural gas line present (evidence of a gas meter)?	Yellow	☐ Yes	☐ No
	i) Feeder Lines to buildings or homes?		☐ Yes	☐ No
b)	Evidence of electric lines:	Red		
	i) Conduits to ground from electric meter or along wall?		☐ Yes	☐ No
	iii) Conduits from power poles running into ground?		☐ Yes	☐ No
	ii) Light poles, electric devices with no overhead lines?		☐ Yes	☐ No
	iii) Overhead electric lines present? (See Section l)		☐ Yes	☐ No
c)	Evidence of sewer drains:	Green		
	i) Restrooms or kitchen on site?		☐ Yes	☐ No
	ii) Sewer cleanouts present?		☐ Yes	☐ No
	iii) Combined sewer /storm lines or multiple sewer lines?		☐ Yes	☐ No
d)	Evidence of water lines:	Blue		
	i) Water meter on site or multiple water lines?		☐ Yes	☐ No
	ii) Fire hydrants in vicinity of work?		☐ Yes	☐ No
	iii) Irrigation systems? (Sprinkler heads, valve boxes, controls in building)		☐ Yes	☐ No
e)	Evidence of storm drains:	Green		
	i) Open curbside or slotted grate storm drains		☐ Yes	☐ No
	ii) Gutter down spouts going into ground		☐ Yes	☐ No
f)	Evidence of telecommunication lines:	Orange		
	i) Fiber optic warning signs in areas?		☐ Yes	☐ No
	iv) Aboveground cable boxes or housings or wires in work area?		☐ Yes	☐ No
g)	Underground storage tanks:			
	i) Tank pit present, tank vent present?		☐ Yes	☐ No
	ii) Product lines running to dispensers/buildings?		☐ Yes	☐ No
h)	Do utilities enter or exit existing structures/buildings?			
	If Yes, confirm the utility markings outside of structure/building match up.		☐ Yes	☐ No
i)	Proposed excavation marked in white?	White	☐ Yes	☐ No
j)	Unclassed utilities / anomalies marked in pink?	Pink	☐ Yes	☐ No
k)	**Overhead** Utilities/Communication Lines - **Look Up**:			
	i) Overhead electrical conduit, pipe chases, cable trays, product lines?		☐ Yes	☐ No
	ii) Overhead fire sprinkler system?		☐ Yes	☐ No
l)	**Overhead** Power lines in or near the work area:			
	i) < 50 kV within 10 ft. of work area?		☐ Yes	☐ No
	ii) >50 - 200 kV within 15 ft. of work area?		☐ Yes	☐ No
	iii) >200-350 kV within 20 ft. of work area?		☐ Yes	☐ No
	iv) >350-500 kV within 25 ft. of work area?		☐ Yes	☐ No
	v) >500-750 kV within 35 ft. or work area?		☐ Yes	☐ No
	vi) >750-1000 kV within 45 ft. of work area?		☐ Yes	☐ No
m)	Other:			
	i) Evidence of linear asphalt or concrete repair?		☐ Yes	☐ No
	ii) Evidence of linear ground subsidence or change in vegetation?		☐ Yes	☐ No
	iii) Unmarked manholes or valve covers in work area?		☐ Yes	☐ No
	iv) Warning signs ("Call Before you Dig", etc.) on or adjacent to site?		☐ Yes	☐ No
	v) Utility color markings not illustrated in this checklist?	i.e. Purple	☐ Yes	☐ No
n)	Has the Utilities & Structures Checklist been reviewed by the PM or Designee		☐ Yes	☐ No
	PM or Designee Name: ____________________			

Name and Signature of person completing the checklist: ____________________

Date: ____________ ____________________

Do not perform **mechanized** intrusive work within 30 inches of a utility marking without receiving pre-approval by Corporate H&S .

Health and Safety Field Forms

Arcadis Weekly Vehicle Inspection Form

Vehicle # / License Plate # ____________ **Lease Plan # / Last 6 of Vin #** ____________

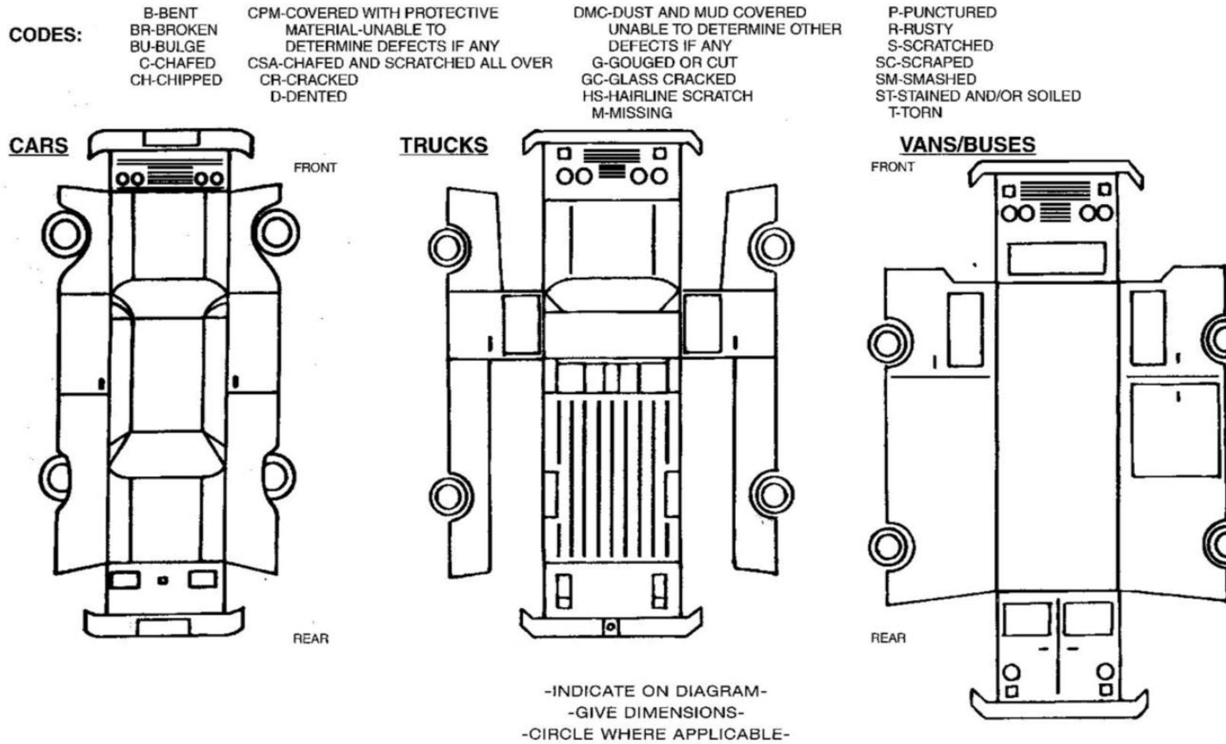
	Inspection Date												
	Odometer reading												
	Driver / Inspector Name												
	Check the appropriate box and enter repair date for identified repairs:	OK	Needs Repair	Repair Date	OK	Needs Repair	Repair Date	OK	Needs Repair	Repair Date	OK	Needs Repair	Repair Date
Interior	Horn operational												
	Door Locks operational												
	Seat Belts in good repair												
	Seats and Seating Controls												
	Steering Wheel - No Excessive Play												
	Interior Lights and Light Controls												
	Instrument Panel/Gauges												
	Wiper Controls operational												
	Heat/Defrost/Air Conditioning working												
	Rear View Mirror present												
	Backup Camera/Sensors working												
	Jack and Lug Wrench present												
Exterior[1]	Lights and Signals operational												
	Tires properly inflated/good tread depth												
	Spare Tire properly inflated												
	Doors operational												
	Windows Not Cracked/Damaged												
	Side View Mirrors												
	Body Panels and Bumpers												
Engine & Brakes	Engine Start & Running Smoothly												
	Fluid Levels, No Noticeable Leaks												
	Belts tight, no cracks												
	Brakes operational, no squeaking												
Emergency Equipment[2]	First Aid Kit, inspected weekly												
	Fire Extinguisher properly secured												
	Fire Extinguisher inspected weekly												
	Orange/Yellow emergency warning light												
	Roadside Assistance Information												
	Recommend spotter cones available												
Cargo	Cargo Secure and Properly Distributed												
	Securing Devices in Good Condition												
Registration	License Plate /Tags												
	Registration and Insurance												
	City/State Inspection Decal												
	Lease Plan information/Fuel Card												

[1] **Note all damages to the vehicle on the back of this page**

[2] **Emergency Equipment required per Motor Vehicle Standard ARC HSGE024**

Note All Vehicle Damage Below

All Vehicle Damage must be reported to Sue Berndt (Corporate Legal), Andrew McDonald (Corporate H&S), and Roger Elliot (Corporate Fleet Manger)



Notes:

Tread guide: If a tread gauge is not available coins may be used to determine remaining tread. 2/32" is the minimum by law in most states (top of Lincoln's head on penny), 4/32" is minimum recommended for wet surfaces (top of Washington's head on quarter), 6/32" is minimum recommended for snowy surfaces (top of Lincoln Memorial on penny).Vehicle tires should be replaced if the tread depth is less than 6/32".

2/32" remaining   4/32" remaining   6/32" remaining

Reference JSA 10907 For Weekly Vehicle Inspection

Control Number: TSM- B0095010.0005

TSM + project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year

TAILGATE HEALTH & SAFETY MEETING FORM

Project Name:	**Upper Columbia River Soil Amendment Technology Evaluation Study**	**Project Location:**	
Date:	**Time:**	**Conducted by:**	**Signature/Title:**

Issues or concerns from previous day's activities:

Task anticipated to be performed today:

The following was used to communicate H&S information in this briefing (check all that apply):

- ☐ HASP (*including THA*)
- ☐ JSAs (*specify JSA #s*): ____________
- ☐ Permits (*specify type or #*): ____________
- ☐ Traffic Safety Plan
- ☐ FHSHB (*specify sections*): ____________
- ☐ H&S Standard (*specify number*): ____________
- ☐ H&S checklist (*specify type*): ____________
- ☐ Activity specific hazard analysis:

Activity: ____________

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	☐	Chemical	☐	Driving	☐	Electrical	☐
Environmental	☐	Gravity	☐	Mechanical	☐	Motion	☐
Personal Safety	☐	Pressure	☐	Radiation	☐	Sound	☐

Controls required to be used:

PPE Required (If not using JSA or Permit with PPE requirements):

- ☐ Hard hat
- ☐ Safety glasses
- ☐ Face shield
- ☐ Safety goggles
- ☐ Steel/composite toe boots
- ☐ Traffic vest *(specify II or III)*: ____________
- ☐ Life Vest (*specify type*): ____________
- ☐ Protective Suit (*specify type*):
- ☐ Protective gloves (*specify type*):
- ☐ Other (*specify*):

Signature and Certification: I have read and understand the project specific HASP for this project.

Printed Name/Signature/Company	Sign In Time	Sign Out Time

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB,** I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call **WorkCare at 1.888.449-7787** and then notify the field supervisor.

Utility strike, motor vehicle accident or 3rd party property damage - field supervisor will immediately notify the Project or Task Manager

What You Need to Know

Emergency Phone: 911 *WorkCare Phone:* 1-888-449-7787

Your nearest hospital: Providence Mt Carmel Hospital 982 E Columbia Ave Colville, WA 99114 0 0 509.685.

H&S Specialist for this project: Alec MacAdam *Cell Phone:* 720-454-0948

Project Site Safety Officer: 0

Nearest assembly area(s): DU-specific. See field binders and discuss at each tailgate meeting.

Nearest storm shelter(s): N/A

Simultaneous operations (SimOps): SimOps is not applicable to this project.

Site Security: The Site Security Plan requires review of security controls daily in the safety briefing.

Utility Clearance: Review of utility clearance checklist and daily site walkover for utility identification is required.

State Specific Requirements: State specific H&S requirements do not apply this project.

You are required to have current training in the following:

H&S Program Orientation, HAZCOM GHS/EAP, Defensive Driving - Smith On-Line, BBP (Bloodborne Pathogens), First Aid/CPR, Hazwoper 40 Hour, Lead General Awareness, PPE , DOT HazMat #1 , Client specific:, Site Specific Training,

SDSs for this project are located: Printed copy in company vehicle

Primary chemical constituents of concern for this project:

Refer to the applicable HASP extended air monitoring worksheet for the activity to be performed for constituent information.

PID action levels for this project:

<	0.0			Continue work
	0.0	-	0.0	Sustained >5 min. continuous monitor, review eng. controls and PPE, proceed with caution
>	0.0			Sustained >5 min. stop work, contact SSO

* Arcadis administrative TWAs ensure mixture component TWAs are not exceeded that would require additional monitoring or medical surveillance.

For work not conducted under a JSA or permit, you must wear the following PPE:

Hard hat, Safety glasses, Steel or comp. toe boot, Traffic vest, shirt or coat: Class II, Briar chaps, Chainsaw chaps, Metatarsal boot, Gloves other:kevlar gloves, Chemical boot:0, Life vest:for boat work only

You are required to be current on your medical surveillance.

You are not authorized to work until you have reviewed and agree with shipping determinations that are applicable to your project.

TSPs are not required for your work.

The following safety equipment and supplies are required to be on site for this project:

First aid kit, Fire extinguisher, Eyewash (bottle), Drinking water, Insect repellent, Sunscreen, Air horn, Traffic cones, 2-way radios,

Site Control: Site control is integrated into the TSP for the project

Decontamination: Wash hands and face prior to consuming food, drink or tobacco.

Sanitation: Mobile operation with access to off-site restrooms and potable water

Safety Briefings: Subcontractors to participate in Arcadis safety briefings

This project has the following TIP goals: 1 per 500 mhrs

Arcadis Visitor Acknowledgement and Acceptance of HASP Signature Form

By signing below, I waive, release and discharge the owner of the site and Arcadis and their employees from any future claims for bodily and personal injuries which may result from my presence at, entering, or leaving the site and in any way arising from or related to any and all known and unknown conditions on the site.

Printed Name	Signature	Company	Date/Time On Site	Date/Time Off Site

Heat Illness Prevention Plan

Heat Related Illness Prevention Plan

Date Completed: 7/28/2017 — Revised 6/19/2017

The purpose of this document is to serve as a planning tool and implementation guide to help the Project Team Site, Site Safety Officer (SSO) or other designated responsible party to comply with the requirements set forth by Cal/OSHA Title 8 CCR 3395 Heat Illness Prevention Standard and the Washington State Outdoor Heat Exposure Regulations 296-62-09510 thru 09560.

Note: This HASP Supplement is required to be used in California and Washington states. The Arcadis Health and Safety Standards ARC HSIH013 Heat Stress Prevention, and ARC HSGE008 Injury and Illness Prevention Program (IIPP) must accompany this HASP Supplement. To completely address the regulatory requirements for work in CA and WA states these standards are required to be used in association with the project-specific HASP and this supplement.

Project sites in other states and provinces can use this HASP Supplement as a Best Management Practice to prevent heat illness related injury.

The scope of this HIPP applies to Arcadis projects which include, but are not limited to: outdoor operations conducted in hot weather such as construction, refining, oil and gas extraction, asbestos removal, and hazardous waste site activities, especially those that require employees to wear semi-permeable or impermeable protective clothing that are more likely to cause heat stress for the user. This HIPP provides guidance to prevent or reduce the risk of work-related heat illness. This HASP Supplement provides site specific instructions for actions to be completed at the project site.

Form Color Key

(grey)	*Enter requested Information*
(white)	*Calculation Completed*

Project Site Name Upper Columbia River Soil Amendment Technology Evaluation Study **Project Manager** Rebecca Andresen

Authority and Implementation

The following designated individuals have authority and responsibility for implementing the provisions of this program at the project work site indicated above.

Site Safety Officer (SSO) Alex Baird **Designated Alternate** Joe Latham

Procedures for Provision of Water

The SSO or designee will be responsible for implementing the following when conditions at the site are anticipated to exceed 80 degrees Fahrenheit (F) (26.6 Celsius [C]):

1. Proper hydration is critical to preventing heat related illness and injury.

Project sites need to maintain an adequate supply of suitably cool, fresh and pure potable water on site at all times to allow each employee to consume **1 quart (1 L) of water per hour**, ideally at a rate of four 8-oz (250 mL) cups per hour. Fresh and pure is defined as "odor free" and "suitably cool" is defined as water being cooler than the ambient temperature but not so cold as to cause discomfort or prevent drinking.

Note: Electrolyte replacement drinks or "Sports Drinks" should be used to replace essential minerals lost during sweating. Sports drinks should supplement water intake e.g. one "sport drink" to every three bottles of water (3 waters : 1 sport drink).

Also, a teaspoon of salt added to every gallon of water could also be used. Entering the requested information into the formula provided below calculates the number of quarts of water required per employee, per hours worked per day.

2. During the Tailgate Safety Meeting and site briefings identify and communicate the type and location of the water source. The water source must provide suitably cool, fresh and pure water in sufficient quantity for all employees at the site. Water shall be provided free of charge or expenses will be reimbursed for employees. Note in the line below what type of water source will be provided (e.g. onsite potable plumbed system, chilled coolers containing bottled water, or drinking water coolers and disposable cups in sufficient quantity to support all field staff present). If the source is potable plumbed water do not complete Item 6 of this Section.

	Potable plumbed source	x	Bottled water in chilled cooler.		Drinking water dispensers & cups

3. Communicate to staff whether all water for the day will be provided at the start of the shift (e.g., 2 gallons (8 L) per employee for an 8-hour shift), or how and when water will be replenished.

Note: A sufficient quantity of water must always be present and readily accessible to allow every employee to consume at least 1 quart (1L) of water per hour. It is suggested to have a minimum of three hours supply of water per employee on hand.

4. Water supplies must be positioned as close as reasonable possible to site workers. Placing water only in shaded areas or by toilet facilities is not sufficient, particularly at large work sites or at multi-story construction sites. Drinking water sources need to be close enough to workers to allow for routine consumption.

5. Inspect the coolers / water dispensers for cleanliness and replenishment of water and cooling ice routinely based on temperatures and staff size. Cooling ice will be stored in clean coolers if added directly to water dispensers.

Note: If the site temperature exceeds 90 deg. F (32 C) the frequency of the cooler inspection will increase to verify water remains cool and the water supply is maintained.

6. Oversee the daily inspection and maintenance of coolers to ensure they are kept clean and in good condition.

Number of Employees	30	**Number of Work Hours Per Day**	10	**Quarts of Water Needed**	300

Below are calculations for using either water dispensers, or coolers stocked with bottles of water.

Gallons of Water Needed	75	**Number of Coolers Needed**	8	**Amount of 16-oz Bottles Required**	192

NOTE - Cooler/bottle calculation accounts for one cooler stocked with 16-ounce (500 mL) bottles to be provided for every four workers. Water dispensers come in variety of sizes (e.g. 3, 5, 7 & 10 gallon. The gallons calculation is provided to clarify what size is sufficient for the onsite staff.

Check which situation applies. Must check at least one box, or provide additional detail.

x	Ice will be purchased at the start of each day by the site SSO or designee.
	Ice will be distributed from on-site machine or service meeting applicable potable water standards.
	Additional details:

Checklist of materials to order and keep on hand.

	Anti-microbial hand cleaner.	x	Food Safe cleaning product for water cooler.
x	Paper towels.		Sufficient amount of drinking cups for each employee and water dispenser.
x	Potable water to clean coolers.		Other Items -

Access to Shade

1. The SSO or designee is responsible for directing how shade will be coordinated and placed when temperatures exceed **80 deg. F (26 C)**.

2. Before the start of work, the location of the shade areas, the importance of taking shade breaks, recognizing the signs and symptoms of heat illness, the schedule of shade breaks, and the location of shade break locations (if not portable) will be addressed during each Tailgate Safety Meeting and site briefing. Access to shade must be allowed at all times.

Note: Where required by regulation, shade breaks will be taken at a minimum rate of 10 minutes of shade for every two hour work period. As temperature increases shade breaks will increase in frequency. See the Heat Index table below for Heat Index specific Action Levels defining shade break frequency and duration.

3. The amount of shaded areas must be able to accommodate all employees taking a recovery or rest break including those employees who are on meal breaks. This doesn't mean that the shaded area(s) must provide shade to accommodate all employees on a site or working a shift at the same time. An example includes rotating routine breaks among employees. Also, additional portable shade structures can be erected on an "as-needed" basis. Employees must have enough shaded space so they can sit in a normal posture fully in the shade with enough space to allow for sitting without being in physical contact with each other. **Employees who desire access to shade must not be deprived of it due to lack of space.**

4. Employees who take a preventative cool-down rest; (1) shall be monitored and asked if they are experiencing symptoms of heat related illness (2) shall be encouraged to remain in the shade; (3) shall not be ordered back to work until signs or symptoms of heat illness have abated, but in no event less than 5 minutes in addition to the time needed to access the shade.

If an employee exhibits signs or symptoms of heat illness while taking a preventative cool-down rest the SSO will provide appropriate support (e.g. additional hydration and/or call to WorkCare) or emergency response support as needed based on symptoms.

5. Shade structures will be relocated to follow along with the crew for moving tasks. Shade structures will be placed within 50 feet of the work area, if practical. Shade structures must be no further than a short walk away (e.g. 2-3 minutes) from the work area. This consideration becomes critical as the temperature rises above **80 deg. F (26 C)**.

6. In situations where it is not safe or feasible to provide shade, the SSO will document in the HASP Supplement the unsafe or unfeasible conditions, and include the steps taken to provide alternative cooling measures equivalent to shade.

Check Available Option

x	Provide vehicle(s) with working air conditioner to all employees on recovery or rest breaks as well as employees taking onsite meal breaks on the shift at any time.)
x	Provide temporary or mobile shade structure(s) that are either ventilated or open to air movement (Secure against wind.)

Building or permanent structure(s) in close proximity to the work area that provide a cooling environment either through mechanical ventilation or are open to air movement will be used for shade. (Job trailer, pavilion, manufacturing building, etc.)

Monitoring of Weather

1. The SSO or designee must check the extended weather forecast in advance of the upcoming work on a weekly basis. Work schedules will be adjusted in advance, taking into consideration whether high temperatures or a heat wave is expected.
Accepted weather forecasting resources include webpages such as: http://www.noaa.gov/ or http://www.weather.com/ or the OSHA Heat Safety Tool app.

2. Before work starts for the day or for the shift, the SSO will review the forecasted temperature and humidity for the work site and compare conditions against the National Weather Service Heat Index (below) to evaluate the risk level for heat illness. Determination will be made of whether or not workers will be exposed to a combination of temperature and humidity characterized as “Extreme Caution”, "Danger" or “Extreme Danger” for heat illnesses. It is important to note that the temperature at which these warnings occur must be adjusted if site workers are working in full sunlight with no breeze.

3. Where state regulations apply a thermometer or similar on-site monitoring device will be used at the job site to monitor for sudden increases in temperature. The SSO will be responsible for obtaining a thermometer prior to the start of the project and making it readily accessible or mounting it in an area where it can easily be monitored throughout the course of the day.

3a. If the temperature exceeds **80 deg. F (26 C)** shade structures will be opened and made available to workers.

3b. If the temperature equals or exceeds **95 deg F (35 C)** additional preventive measures (such as those outlined in the High Heat Procedures) will be implemented.

NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution Extreme Caution Danger Extreme Danger

Metrication of Template:HeatTable

Relative Humidity (%)	temperature (°C) 27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
40	27	28	29	30	31	32	34	35	37	39	41	43	46	48	51	54	57
45	27	28	29	30	32	33	35	37	39	41	43	46	49	51	54	57	
50	27	28	30	31	33	34	36	38	41	43	46	49	52	55	58		
55	28	29	30	32	34	36	38	40	43	46	48	52	55	59			
60	28	29	31	33	35	37	40	42	45	48	51	55	59				
65	28	30	32	34	36	39	41	44	48	51	55	59					
70	29	31	33	35	38	40	43	47	50	54	58						
75	29	31	34	36	39	42	46	49	53	58							
80	30	32	35	38	41	44	48	52	57								
85	30	33	36	39	43	47	51	55									
90	31	34	37	41	45	49	54										
95	31	35	38	42	47	51	57										
100	32	36	40	44	49	54											

or Strenuous Activity

Caution Extreme Caution Danger Extreme Danger

Note: The NOAA Index wa[illegible]ducted in direct/full sunlight (e.g. no breeze or partial shade) adds up to 15 deg. F (8 C) to the Heat Index evaluation

Heat Index Action Levels (Contact Project Manager & Notify that Actions Levels have been triggered.

Below are recommended additional controls. Each level is additive.

If Heat Index indicates **"CAUTION" 80 - 89 F.(26 - 32 C).** Implement one or more of the following:

Provide hydration, schedule breaks, wear lightweight clothing, shaded break areas

If Heat Index indicates **"EXTREME CAUTION" 90 - 97 F (32 - 39 C)**. Implement all the above and add one or more of the following:

Provide light duty PPE, cooled break areas, shaded work areas.

NOTE: "Light Duty PPE" includes items such as hard hat sun shades, sun hats, and dry or wet evaporative cooling vests, microfiber towels, scarves, headbands, hard hat neck shades, hard hat suspension inserts and sweatbands.

If Heat Index indicates **"DANGER" 98 - 107 F (39 - 43 C)**. Add one or more of the following:

Provide cooled work areas, modify work schedule, provide heavy duty PPE, vital sign monitoring & Stop Work

NOTE: "Heavy Duty PPE" includes phase-change cooling vests, gel pack and ice pack equipped cooling vests.Ice pack vests are generally offer the coldest option and should not be worn directly against the skin.

If Heat index indicates **"EXTREME DANGER" >108 F (44 + C).** or greater Stop Work until conditions change or hazards are effectively controled.

Procedures for High Heat Conditions and Heat Waves

These procedures are additional preventative measures to be implemented when the temperature is $\geq$ 95 deg F (35 C).

The SSO or designee is responsible for ensuring effective observation and monitoring of employees during periods of high heat by implementing one or more of the following procedures:

1. SSO or designee will supervise 20 or fewer employees.
2. The "Buddy System" is mandatory. Conduct routine checks for early signs of Heat Illness. Set and verify routine consumption of water & sports drinks in a 3:1 ratio.
3. Maintain regular communication between Project Manager or SSO / designee and field staff (e.g. via mobile phone, radio or another effective means) for observation of early signs of heat illness.
4. Designate one or more employees as authorized to contact emergency medical services and communicating that if no designate is identified and the SSO is unavailable that any employee can call for emergency medical assistance.
5. Modify work schedule to avoid hottest parts of the day **(DEFINE THIS TIME PERIOD AND IF ABLE TO, START EARLIER OR WORK LATER)**.

Tailgate Safety Meetings will include a review the high heat procedures, encourage employees to drink plenty of water, and remind employees of the importance to take a preventative or recovery cool-down rest when necessary.

The "Buddy System" must be implemented. Particular attention needs to be paid to new employees or employees who have yet to acclimate to high heat conditions. Additionally, frequent communication will be maintained with employees working by themselves (via cell phone or two-way radio), to be on the lookout for possible symptoms of heat illness.

Employees will be observed for alertness and signs and symptoms of heat illness at regular intervals to be documented in the field book or field log.

When the SSO is not available, an alternate responsible person must be assigned to look for signs and symptoms of heat illness. Such a designated observer will be trained and know what steps to take if heat illness occurs.

"Heat Wave" Procedures

A "heat wave" as defined by the National Oceanic and Atmospheric Administration (NOAA), is a period of abnormally and uncomfortably hot and unusually humid weather." Typically, a heat wave lasts 2 or more days. A "Heat Wave" as defined for the purposes of this Standard is when temperatures are sustained above 80 deg F (26 C).
During a heat wave or if site conditions indicate the potential for "Extreme Caution", "Danger" or "Extreme Danger" per the NOAA Heat Index Table the following steps will be taken:

Work schedules will be modified to protect workers from heat illnesses. The SSO or designee in coordination with the project team, will use their Stop Work Authority and evaluate the following actions and document the action in the daily field log

1 Modify work hours.
2 Reschedule or suspend work or specific tasks that are strenuous.
3 Cease work for the day.

If schedule modifications are not possible, the Heat Illness Prevention Plan will be reviewed before work resumes. At a minimum, procedures for heat illness prevention, the provisions of the high heat procedures, the weather forecast and emergency response protocols will be reviewed.

Employees will be provided with additional water and rest breaks and will be observed more frequently. During work activities and rest breaks, employees will be observed for signs and symptoms of heat illness.

All employees will maintain frequent communication with the SSO or designee, who will be monitoring workers for possible symptoms of heat illness. In the event of large project sites where the SSO may be unable to be near the workers (to directly observe or communicate with them), then communication via a cell phone or radio may be used for this purpose provided reception in the area is reliable.

Procedure for Emergency Response

Emergency procedures include recognizing the symptoms of heat related illness. A critical step also involves ensuring that effective communication is established either through voice, direct observation or electronic means such as via mobile phones or 2-way radios. In an emergency situation it is critical that employees understand the process and contact information for requesting emergency medical support. The reception coverage for the site must be evaluated and understood to ensure adequate communication is in place across the project site

1. The SSO or designee is responsible for implementing the following procedures for emergency response. These procedures include, but are not limited to, the following:

2. Prior to assigning staff to a particular work site, during the Tailgate H&S Tailgate Safety Meeting all site workers will review a map of the Site along with clear and precise directions (such as streets or road names, distinguishing features, and distances to major roads), to avoid a delay of emergency medical services.

3. Prior to assigning staff to a particular work site, efforts will be made to ensure that a qualified and appropriately trained and equipped person is available at the site to render first aid, if necessary.

4. Prior to the start of the morning Tailgate Safety Meeting, a determination will be made of whether or not a language barrier is present at the site, and steps will be taken (such as assigning the responsibility to call emergency medical services to the SSO or an English speaking worker) to ensure that emergency medical services can be immediately called in the event of an emergency in accordance with the HASP.

5. All SSOs and supervisors will carry cell phones or other means of communication to ensure that emergency medical services can be called. Checks will be made to ensure that these electronic devices are allowed on site, have adequate reception across the site, and are functional prior to each shift.

6. When an employee reports symptoms, or is observed displaying symptoms of possible heat illness, steps will be taken immediately to keep the affected employee cool and comfortable until emergency service responders have been called and treatment guidance is provided, or until they arrive at the Site (to reduce the progression to more serious illness).

7. During a heat wave or hot temperatures, workers will be reminded and encouraged to immediately report to the SSO any signs or symptoms they are experiencing.

Procedure for Handling a Sick Employee

1. The SSO or designee is responsible for implementing the following procedures for handling a sick employee.
These procedures include the following:

2. When an employee displays possible signs or symptoms of heat illness, the SSO or designee will check the sick employee and determine whether resting in the shade and drinking cool water will suffice or if emergency service providers will need to be called. In the event of a non-emergency incident the SSO will contact the employees supervisor or the project manager as well as calling **WorkCare Incident Intervention Hotline 1-888-449-7787** for non-emergency medical assistance.
A sick worker will not be left alone, and will be monitored closely for the remainder of the day or until emergency support arrives.

3. Signs of the onset of Heat Illness are: excessive fatigue, heavy sweating, headaches, cramps, dizziness, elevated pulse.
Signs of Heat Exhaustion are: Cool, moist, pale or flushed skin, nausea or vomiting, disorientation or confusion.
Signs of Heat Stroke are: hot, red skin which can feel dry to the touch, or moist from overexertion, changes in consciousness, rapid or weak pulse, shallow rapid breathing.

4. When an employee displays possible signs or symptoms of heat illness and no trained first aid worker or supervisor is available at the site, emergency service providers will be called.

5. Emergency service providers will be called immediately if an employee displays signs or symptoms of heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face) or does not get better after drinking cool water in intervals of 8 ounces every 15 minutes and resting in the shade. While the ambulance is in route, first aid will be administered (**cool the worker: place the worker in the shade, remove excess layers of clothing, place ice pack in the armpits and groin area and fan the victim**). A worker determined to be suffering heat illness will not be allowed to leave the site except under medical care.

6. If an employee displays signs or symptoms of severe heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face), and the work site is located more than 20 minutes away from a hospital, call emergency service providers, communicate the signs and symptoms of the victim, and request an Air Ambulance if necessary.

Revisions, notes, amendments, and clarifications specific to this plan will be detailed in the space below:

Job Safety Analyses (JSAs)

Job Safety Analysis

General

JSA ID	11452	**Status**	(2) Review
Job Name	General Industry-Driving - passenger vehicles	**Created Date**	8/5/2014
Task Description	Driving in remote areas to project locations, often on unpaved backroads, timber roads, 4x4 likely required.	**Completed Date**	
Template	False	**Auto Closed**	False

Client / Project

Client	TECK AMERICAN INC
Project Number	B00950100000
Project Name	TECK American Inc. - SOIL STUD
PIC	
Project Manager	ANDRESEN, REBECCA

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Flomerfelt, Jonathan	8/26/2014	8/5/2014	Annis, Matthew	þ
HASP Reviewer	Merkle, Kurt	8/19/2014		Nelson, Denice	þ

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Pre-Trip Inspection	1	Failing to perform pre-trip inspections may cause mechanical failure, accident or injury	Perform walk around of vehicle with particular attention to tire inflation and condition. Check lights, wipers, and seatbelts for proper operating condition. Properly adjust seat and mirrors prior to vehicle operation. Use or review vehicle inspection checklist as required under the MVSP.	ARC HSGE024 Motor Vehicle Safety Standard (MVSP)
		2	Scrapes, cuts, burns to hand if inspecting engine fluids and/or tires. Eye splash hazard if inspecting engine fluids. Pinch or crush hazards when opening or closing hood, trunk or tailgate.	Wear protective gloves and safety glasses as described below when checking under hood or tires. Use TRACK and keep hands clear when opening/closing hood, trunk, or tailgate to avoid crush or pinch hazard.	
		3	Improperly secured cargo may dislodge creating injury, property damage or road hazard.	Ensure all cargo is properly secured to prevent movement while the vehicle is in operation. This includes cargo in the cab of the vehicle.	
2	Offroad Driving	1	Failing to keep your eyes on the road and aware of potential hazards like holes, puddles covering deep potholes, sharp objects, rocks, and fallen trees.	Obey posted speed signs. Drive at speeds appropriate for the road conditions. Brake early and often, be aware that road debris can result in severe tire damage and damage to critical parts of the vehicle.	
		2	Washboard roads and bumpy rides.	Ensure that all crew members are buckled in before beginning off-road journey. Ensure all equipment is tied down or secured with cargo nets. Vibrations will cause items to be jarred and potentially damaged if they end bounce around the vehicle. Unsecured items could also strike driver or passengers.	
		3	Increased likelihood of animals or wildlife on unpaved roads	Given the surrounding area to be remote and wooded, there's an increased chance of striking an animal during these journeys. Be aware of surroundings and speeds. Slow down around blind curves to minimize animal strikes.	

		4	Increased likelihood of collisions on blind curves	If unpaved road is not wide enough for two vehicles, approach with caution and slow down to avoid any potential on-coming traffic. Drive with lights on during the daytime.	
3	Driving a motor vehicle on public streets	1	Failing to observe traffic flow ahead increases risk of hard braking resulting in potential impact of vehicle ahead, being struck by another vehicle from behind and decreases decision making time.	Use Smith System Key #1, "Aim High in Steering". **Look ahead (15 seconds if possible) to observe traffic flow and traffic signals.** Adjust speed accordingly to keep vehicle moving and avoid frequent braking. Select lane of least traffic and adjust speed based on observed signal timing when possible. Avoid following directly behind large vehicles that obscure view ahead.	Smith System "5-Keys" is a registered trademark of Smith System Driver Improvement Institute, Inc.
		2	Failing to observe vehicles, pedestrians, bicyclists and other relevant objects in vicinity of your vehicle increases risk of side swipes, rear ending, and third party injury.	Use Smith System Key #2, "Get the Big Picture". **Maintain 360 degrees of awareness around vehicle.** Check a mirror every 6-8 seconds, maintain space around the vehicle, and choose a lane that avoids being boxed in. Look for pedestrian activity ahead in crosswalks or sidewalks. Watch for construction zone approach signs and act early by executing lane changes and reducing speed.	
		3	Failing to keep your eyes moving increases risk of not seeing relevant vehicles, pedestrians and objects in your vicinity that may impair your ability to make timely and appropriate driving decisions and also increases risk of accident.	Use Smith System Key #3, "Keep Your Eyes Moving". **Move your eyes every 2 seconds and avoid staring while evaluating relevant objects.** Scan major and minor intersections prior to entering them. Check mirrors.	
		4	Failing to maintain space around and in front of your vehicle increases risk of striking another vehicle or being struck by another vehicle. Insufficient space shortens time for effective driving decision making resulting in increased accident risk.	Use Smith System #4, "Leave You an Out". **Use 4 second rule when following a vehicle.** Avoid driving in vehicle clusters by adjusting speed and using lanes that permit maximum space and visibility. When stopped, keep one car length space in front of vehicle ahead or white line.	
		5	Failing to communicate with other drivers and pedestrians increases risk of striking vehicles, pedestrians, or being struck by other vehicles, especially from the rear.	Use Smith System Key #5, "Make Sure They See You". **Brake early and gradually when stopping to reduce potential of being rear ended.** Keep foot on brake while stopped. Use turn signals and horn effectively. Establish eye contact with other drivers and pedestrians to extent practical. Use vehicle positioning that promotes being seen.	
		6	Distractions within the vehicle takes focus off driving, increases risk of accident decreases time for making effective driving decisions.	**Cell phone use (any type or configuration) is prohibited while the vehicle is in motion.** Familiarize yourself with vehicle layout and controls (radio, temperature controls, etc.) prior to operating unfamiliar vehicles. Set controls prior to operating vehicle. Use GPS in unfamiliar areas to avoid use of paper maps/directions while driving. Set GPS prior to vehicle operation. Pull over and stop to modify GPS functions. Avoid consuming food or drink while driving.	
4	Parking	1	Parking vehicle in areas of clustered parked vehicles or near facility entrance may impair visibility to oncoming traffic in lot and increase exposure to pedestrian traffic.	**Use pull through parking or back into parking space when permitted or practical.** When practical and safe to do so, park away from other vehicles and avoid parking near the facility entrance or loading docks. If available, use a spotter to aid in backing activity. Back no further than necessary and back slowly. Get out and look (GOAL) if uncertain of immediate surroundings. Tap horn prior to backing.	

PPE	Personal Protective Equipment		
Type	**Personal Protective Equipment**	**Description**	**Required**
Eye Protection	safety glasses	While checking engine or tires	Required
Hand Protection	work gloves (specify type)	Leather or equivalent checking engine or tires	Required

Supplies			
Type	**Supply**	**Description**	**Required**
Communication Devices	mobile phone	Satellite phone as necessary	Required
	other	Vehicle kit (applies to company trucks)	Required
	Personal Locator Beacon	GPS Locator	Required
	Radio		Required
Miscellaneous	fire extinguisher	Applies to company trucks	Required
	first aid kit	Applies to company trucks	Required

Job Safety Analysis

General

JSA ID	11472	**Status**	(2) Review
Job Name	Environmental-Other	**Created Date**	8/8/2014
Task Description	Hiking to sampling/monitoring locations in remote and rugged terrain.	**Completed Date**	
Template	False	**Auto Closed**	False

Client / Project

Client	TECK AMERICAN INC
Project Number	B00950100000
Project Name	TECK American Inc. - SOIL STUD
PIC	
Project Manager	ANDRESEN, REBECCA

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Flomerfelt, Jonathan	8/29/2014	8/8/2014	Annis, Matthew	☑
Developer	Silverman, David	8/29/2014	8/8/2014	Dunn, Shannon	☑
HASP Reviewer	Flomerfelt, Jonathan	8/22/2014		Annis, Matthew	☑

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Secure vehicle and equipment that will not be carried while accessing sampling location.	1	Bodily injury from improperly stowed vehicle.	Leave vehicle in a location that is out of the way (out of road). Be sure to engage parking brake and utilize wheel chocks to avoid vehicle rolling. Ensure that vehicle has flag on it and is visible from afar.	
		2	Loss due to improperly stowed equipment.	Ensure that equipment is properly stowed and can withstand inclement weather while away from vehicle. Roll up windows and lock vehicle. If theft is a concern, be sure to put all equipment in the cab of the car (as opposed to the bed of truck). Place sample coolers in locked cab of car or place a custody seal on it to maintain chain of custody.	
2	Accessing remote or rugged sampling/monitoring location.	1	Injury from slips, trips, and falls while hiking to destination.	Hike slowly and deliberately. Keep eyes on ground looking for uneven surfaces. Avoid steep inclines/ declines where possible. Keep hands free and where work gloves if one should need to use hands for balance. Wear appropriate footwear (steel-toed hiking boots). Use a backpack for equipment to avoid carrying equipment in hands while hiking. Be careful in areas of heavy underbrush. Leaf piles and debris may cover unseen hazards such as holes and snakes.	
		2	Injury from hazards associated with hiking in/on snow or mud during the winter, spring, and fall.	Wear appropriate footwear for the conditions. If snow or mud is present wear water-proof or rubber boots (steel-toed) or hip waiters (steep-toed). Avoid hiking through deep snow. Avoid hiking in muddy areas that may be very slippery. Always have hands free in case of fall if it is necessary to hike on mud or snow. Be careful in areas of heavy underbrush. Leaf piles and debris may cover unseen hazards such as holes and snakes.	
		3	Slips, trips, and falls on uneven terrain that is obscured by tall vegetation during the Summer.	Wear appropriate footwear that provides stiff ankle support. During Summer months when vegetation is tall take special care to avoid walking in or stepping on rocks or pot holes. Hike in areas of highest ground visibility	

				where the hazards can be seen. Be careful in areas of heavy underbrush. Leaf piles and debris may cover unseen hazards such as holes and snakes.	
		4	Injury from conflict with wildlife, hunters, or hostile landowners.	Keep a safe distance from wildlife. As always, wear high-visibility clothing. Treat hostile landowners with respect and never escalate the situation. Leave premises and notify field manager if there is a perceived threat. Do not cross/walk through barbed wire fence	
		5	Lack of access to help due to isolation.	Always use the buddy system. Do not hike into remote/ rugged locations alone. Know the site communication plan and test it (i.e., test the radio, satellite phone, and/or cell phone booster that you will be using). Know the phone numbers or channels for contacting first responders and the project team. Always notify the project team of your plans. Carry emergency survival kit and first aid kit. Carry SPOT GPS locator.	
		6	Injury from inclement weather while hiking to or from destination.	Carry appropriate clothing/outerwear for extreme weather conditions. Check the forecast before departing to avoid being stuck in rain, snow, or other extreme weather.	
		7	Injury from over-exertion during strenuous hiking, especially during the summer when there is intense heat and sun.	Take frequent breaks if needed. Always bring plentiful water and food. Wear clothing that will offer protection from the sun.	
		8	Sunburn due to intense sun exposure during any season.	Wear sun block, sun protective clothing, and tinted safety glasses.	
		9	Injury from exposure to biological hazards, including ticks and mosquitoes among others.	Wear long sleeved pants and shirts. Use insect repellant. Practice good hygiene at the end of each field day and look for possible ticks or bug bites.	

PPE	**Personal Protective Equipment**		
Type	**Personal Protective Equipment**	**Description**	**Required**
Dermal Protection	long sleeve shirt/pants		Required
Eye Protection	safety glasses		Required
Foot Protection	Other	Steep-toed rubber boots or hip waders.	Required
	steel-toe boots		Required
Hand Protection	work gloves (specify type)	Leather or equivalent	Required
Head Protection	hard hat		Required
Miscellaneous PPE	personal flotation device	If near water	Required

Supplies			
Type	**Supply**	**Description**	**Required**
Communication Devices	mobile phone	with cell phone booster if necessary	Required
	other	Satellite phone	Required
	Radio		Required
	Personal Locator Beacon	GPS Locator	Required
Miscellaneous	first aid kit		Required
	flashlight		Required
	Other	Survival kit, extra food, and water.	Required
Personal	insect repellant		Required
	sunscreen		Required

Job Safety Analysis

General

JSA ID	11467	**Status**	(2) Review
Job Name	Environmental-Sample cooler handling	**Created Date**	8/8/2014
Task Description	Sample cooler handling.	**Completed Date**	
Template	False	**Auto Closed**	False

Client / Project

Client	TECK AMERICAN INC
Project Number	B00950100000
Project Name	TECK American Inc. - SOIL STUD
PIC	
Project Manager	ANDRESEN, REBECCA

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Flomerfelt, Jonathan	8/29/2014	8/8/2014	Annis, Matthew	þ
Developer	Silverman, David	8/29/2014	8/8/2014	Dunn, Shannon	þ
HASP Reviewer	Merkle, Kurt	8/22/2014		Nelson, Denice	þ

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Transfer field samples to sample packing area	1	Lifting heavy coolers may result in muscle strain especially to lower back.	Use proper lifting techniques and keep back straight. Use buddy system for large coolers, Use mechanical aids like hand trucks if readily available to move coolers. Do not over fill coolers with full sample containers for temporary movement to the sample prep area. Ensure an adequate supply of sample coolers are in field.	
		2	Hazards to hands from broken glass caused by over tightening lids or improper placement in cooler	Inspect all bottles and bottle caps for cracks/leaks before and after filling container. Do not over tighten sample lids. Clean up any broken bottles immediately, avoid contact with sample preservatives. Wear leather gloves when handling broken glass.	
		3	Exposure to chemicals (acid preservatives or site contaminants) on the exterior of sample bottles after filling.	Wear protective gloves for acid preservatives and safety glasses with side shields during all sample container handling activities (before and after filling), Once filled follow project specific HASP PPE requirements for skin and eye protection.	
		4	Samples containing hazardous materials may violate DOT/IATA HazMat shipping regulations	All persons filling a sample bottle or preparing a cooler for shipment must have complete ARCADIS DOT HazMat shipping training. Compare the samples collected to the materials described in the Shipping Determination for the Project and ensure consistent. Re-perform all Shipping determinations if free product is collected and not anticipated during planning.	
2	Sample cooler selection	1	Sample coolers with defective handles, lid hinges, lid hasps cracked or otherwise damaged may result in injury (cuts to hands, crushing of feet if handle breaks etc.)	Only use coolers that are new or in like new condition, No rope handled coolers unless part of the manufacturer's handle design.	ARCADIS Shipping Guide US-001
		2	Selection of excessively large coolers introduces lifting hazards once the cooler is filled.	Select coolers and instruct lab to only provide coolers of a size appropriate for the material being shipped. For ordinary sample shipping sample coolers should be 48 quart capacity or smaller to reduce lifting hazards.	

3	Pack Samples	1	Pinch points and abrasions to hands from cooler lid closing unexpectedly	Beware that lid could slam shut; block/brace if needed; be wary of packing in strong winds. New coolers may be more prone to self-closing, tilt cooler back slightly to facilitate keeping lid open.	
		2	Awkward body positions and contact stress to legs and knees when preparing coolers on irregular or hard ground surfaces.	Plan cooler prep activities. Situate cooler where neutral body positions can be maintained if practical, like truck tailgate. Avoid cooler prep on rough gravel surfaces unless knees and legs protected during kneeling.	
		3	Frostbite or potential for oxygen deficiency when packing with dry ice. Contact cold stress to fingers handling blue ice or wet ice	Dry ice temperature is -109.30F. Wear thermal protective gloves. DO NOT TOUCH with bare skin! Dry ice sublimates at room temp and could create oxygen deficiency in closed environment. Maintain adequate ventilation! Do not keep dry ice in cab of truck. Wear gloves when handling blue ice or gaging wet ice. Dry Ice is DOT regulated for air shipping, follow procedures in Shipping Determination.	
4	Sealing, labeling and Marking Cooler	1	Cuts to hands and forearms from strapping tape placement or removing old tape and labels	Do not use a fixed, open-blade knife to remove old tags/labels, USE SCISSORS or other safety style cutting device. Only use devices designed for cutting. Do not hurry through task.	
		2	Lifting and awkward body position hazards from taping heavy coolers, dropping coolers on feet during taping.	Do not hurry through the taping tasks; ensure samples in cooler are evenly distributed in cooler to reduce potential for overhanging cooler falling off edge of tailgate/table when taping.	
		3	Improper labeling and marking may result in violation of DOT/IATA HazMat shipping regulations delaying shipment or resulting in regulatory penalty	Do not deviate from ARCADIS Shipping Guide or Shipping Determination marking or labeling requirements.	
5	Offering sample cooler to a carrier or lab courier for shipment.	1	Lifting heavy coolers may result in muscle strain especially to lower back.	See lifting hazard controls above.	
		2	Carrier refusal to accept cooler may cause shipping delay and/or result in violation of DOT HazMat shipping regulations.	Promptly report all rejected and refused shipments to the ARCADIS DOT Program Manager. Do Not re-offer shipment if carrier requires additional labels markings or paperwork inconsistent with your training or Shipping Determination without contacting the ARCADIS DOT Compliance Manager.	

PPE Personal Protective Equipment

Type	Personal Protective Equipment	Description	Required
Dermal Protection	long sleeve shirt/pants		Required
Eye Protection	safety glasses		Required
Foot Protection	steel-toe boots		Required
Hand Protection	chemical resistant gloves (specify type)	nitrile	Required
	work gloves (specify type)	leather	Required

Supplies

Type	Supply	Description	Required
Miscellaneous	first aid kit		Required
	Personal Locator Beacon	GPS Locator	Required
	Other	Paper towels or absorbent material	Required
	Other	Scissors	Required

Job Safety Analysis

General

JSA ID	11453	**Status**	(4) Revise
Job Name	General Industry-Site inspection/walkover - undeveloped	**Created Date**	8/5/2014
Task Description	Site walk and reconnaissance in remote areas of the Upper Columbia River. Teams of two assessing access to back-country locations	**Completed Date**	
Template	False	**Auto Closed**	False

Client / Project

Client	TECK AMERICAN INC
Project Number	B00950100000
Project Name	TECK American Inc. - SOIL STUD
PIC	
Project Manager	ANDRESEN, REBECCA

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Flomerfelt, Jonathan	8/22/2014		Annis, Matthew	þ
HASP Reviewer	Merkle, Kurt			Nelson, Denice	þ

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Undeveloped Site Walk(Winter Conditions)	1	Slippery/icy conditions	Use caution and proper footwear with traction	
		2	Eye/face injury	Use caution when walking through trees and brush. Wear proper eye protection to avoid eye injury	
		3	Hypothermia/frostbite	Assess weather conditions and wear proper clothing to avoid hypothermia/frostbite and freezing	
		4	Falling ice/snow	Assess the site for falling ice/snow from trees/power lines. Use caution when walking around trees and power lines. Wear hard hat	
		5	Stray animals	Make lots of noise while walking through the site. Carry repellent in the event of encountering stray animals. If a dangerous or aggravated animal is spotted, leave the area, return to your vehicle and contact animal control.	
		6	Vehicular traffic	Asses the site and the surrounding area for vehicle traffic. Use caution when walking near busy roadways. Wear type II or III traffic vest.	
2	Undeveloped Site Walk (Summer Conditions)	1	Slips/trips/falls	Use caution when walking on un-even surfaces. Use proper footwear with traction	
		2	Eye injury	Use caution when walking through areas of trees and brush. Wear proper eye protection to avoid eye injury from tree limbs	
		3	Dehydration	Drink plenty of water and avoid long periods of direct sun exposure	
		4	Sunburn	Wear sunscreen. Avoid long periods of direct sun exposure. Work in the shade if possible.	
		5	Vehicular traffic	Assess the site and the surrounding area for vehicular traffic. Use caution when walking near busy roadways. Wear type II or III traffic vest.	
		6	Stray animals, ticks, bugs	Make lots of noise when traveling through the site and carry repellent spray. If a dangerous	

				or aggravated animal is spotted, leave the area and return to your vehicle and contact animal control. Wear long pants/long sleeve shirt and use insect repellent as necessary	
		7	Wildlife	Assess the area for signs of wildlife: scat, tracks, and markings. If there's visual observation, follow procedures identified in the Field Health and Safety Handbook for the animal in question. Make lots of noise when walking and consider carrying repellent spray. Return to the vehicle and leave the area	
		8	Confrontational Property owners/townsfolk	If during the course of site inspections property owners display aggressive behavior toward field crews, be sure to act passively and do not engage the owner except to offer apologies and project manager contact information. Note the location and address for future crews. Leave the area as quickly as possible	

PPE Personal Protective Equipment

Type	Personal Protective Equipment	Description	Required
Dermal Protection	long sleeve shirt/pants		Required
Foot Protection	steel-toe boots		Required

Supplies

Type	Supply	Description	Required
Communication Devices	mobile phone		Required
	Satellite Phone		Required for remote areas
	Radios		Required
	Personal Locator Beacon	GPS Locator	Required
Miscellaneous	first aid kit		Required
Personal	eye wash (specify type)		Required
	insect repellant		Recommended
	sunscreen		Recommended

Job Safety Analysis

General

JSA ID	11466	**Status**	(2) Review
Job Name	Environmental-Soil sampling/well installation - manual	**Created Date**	8/8/2014
Task Description	Soil sampling using manual methods (hand auger).	**Completed Date**	
Template	False	**Auto Closed**	False

Client / Project

Client	TECK AMERICAN INC
Project Number	B00950100000
Project Name	TECK American Inc. - SOIL STUD
PIC	
Project Manager	ANDRESEN, REBECCA

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Flomerfelt, Jonathan	8/22/2014	8/8/2014	Annis, Matthew	☑
Developer	Silverman, David	8/22/2014	8/8/2014	Dunn, Shannon	☑
HASP Reviewer	Merkle, Kurt	8/22/2014		Nelson, Denice	☑

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Sampling set-up	1	Underground utilities could be encountered during hand augering	Follow the Utility Clearance HS Standard, if applicable at sampling location.	Utility Clearance HS Standard ARCHSF019
		2	Muscle fatigue can occur from lifting heavy equipment in and out of vehicle	Park as close as possible to the sample locations. Use lifting techniques outlined in the Field H&S Handbook	
		3	Slips/trips/falls could occur from uneven walking and working surfaces	Remove any gravel or debris from sampling location. Gravel will get stuck in auger and continue to fall back down in hole.	
2	Sampling set-up	1	Underground utilities could be encountered during hand augering	Follow the Utility Clearance HS Standard, if applicable at sampling location.	Utility Clearance HS Standard ARCHSF019
		2	Muscle strains can occur from lifting heavy equipment in and out of vehicle	Park as close as possible to the sampling locations. Use lifting techniques as outlined in the Field H&S Handbook.	
		3	Slips/trips/falls could occur from uneven walking and working surfaces	Remove any gravel or debris from sample location. Gravel will get stuck in auger or will continue to fall back down in hole.	
3	Installation of hand auger boring	1	Muscle strains from pulling/pushing could occur when installing the boring, and when removing the auger from the hole	Stretch out arms/back/shoulder muscles prior to beginning. Using firm grip on handle, slowly turn auger and progress downward. Slowly pull auger from hole- use legs to pull auger out of hole. If water is encountered, suction will be created when trying to remove the auger. Ask for assistance from another worker if you can't remove safely on your own.	
		2	Hand strain and blisters could develop from prolonged hand augering	Select proper gloves for task, usually leather type work gloves or mechanics style gloves. If hot spots develop on hands (Hot Spots are where blisters start to form) readjust gloves or change to better padded glove. If blisters begin to form, stop work so as not to worsen blistering.	
		3	Over-exertion could occur when trying to force an auger forward if there is refusal.	If refusal occurs, Stop Work. Remove auger from hole and check hole with flashlight if possible. DO NOT overexert by using	

				excessive force.	
		4	Fatigue can occur due to strenuous nature of hand augering activities	Take rest breaks as needed or switch out task with another employee.	
4	Collect Sample Soil Sample	1	Staff can come into contact with impacted soils	Wear chemical protective gloves as outlined in the HASP, and wear safety glasses.	
5	Decon Hand Auger NOTE: Use 3-step process for decon: tap water rinse, alconox spray, tap water rinse	1	Exposure to COCs while deconing equipment.	Wear chemical protective gloves as outlined in the HASP, and wear safety glasses.	
		2	Cleaning solutions can splash while deconing equipment	Use PPE as outlined in the HASP, and try to minimize splashing. Wear splash guard when deconing	
		3	The end of the hand auger has sharp edges, and lacerations can occur	Use brush to scrub off soils and not hands. Do not reach into the nose (the end with teeth) of the auger with hand.	

PPE	**Personal Protective Equipment**		
Type	**Personal Protective Equipment**	**Description**	**Required**
Dermal Protection	long sleeve shirt/pants		Required
Eye Protection	safety glasses		Required
Foot Protection	steel-toe boots		Required
Hand Protection	chemical resistant gloves (specify type)		Required
	work gloves (specify type)	Leather gloves	Required
Head Protection	hard hat		Required
Hearing Protection	ear plugs		Required
Miscellaneous PPE	traffic vest--Class II or III		Required
	Splash guard	Apron/face shield	Required
Respiratory Protection	dust mask		Recommended

Supplies			
Type	**Supply**	**Description**	**Required**
Communication Devices	mobile phone	Satellite phone	Recommended
	Personal Locator Beacon	GPS Locator	Required
	Radio		Required
Decontamination	Decon supplies (specify type)		Required
Miscellaneous	first aid kit		Required
	Other	Safety/survival kit.	Required
Personal	eye wash (specify type)	bottle	Required
	sunscreen		Required
Traffic Control	traffic cones		Required

Standard Operating Procedures (SOPs)

EXECUTIVE SUMMARY

It is the policy of ARCADIS to prevent and minimize occupational exposure to blood borne pathogens through the use of engineering and administrative controls and personal protective equipment (PPE).

Blood borne Pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Corporate H&S Department has the responsibility to communicate the policy and standard requirements with all ARCADIS-US (AUS) offices.

ARCADIS Managers and Supervisors (including project and task managers) have the responsibility to provide oversight management for the Health & Safety (H&S) of employees in their respective operations, and ensure that the HSS is being implemented.

ARCADIS Employees have the responsibility to adhere to this HSS and to communicate H&S concerns, issues and questions to their supervisor or to the corporate Health and Safety staff.

Each office or jobsite subject to this standard will have a written Exposure Control Plan that is to be reviewed annually. The Plan will outline methods to be utilized and schedules to be kept to maintain compliance with this standard. The Plan is designed to eliminate or minimize employee exposure. A copy of the plan should be accessible to all employees.

The Hepatitis B (HBV) vaccination series and post-exposure evaluation and follow-up will be made available to all employees who fall under this standard at no cost to the employee. Initial and annual training will be provided to all employees who have been designated as first aid responders or are expected to render first aid and/or are expected to clean an area contaminated with blood or other potentially infectious materials.

All exposure and medical records shall be kept for the duration of employment plus 30 years.

All employee training records will be kept from the date on which the training occurred and maintained for the duration of employment plus 10 years.

1. POLICY

It is the policy of ARCADIS to comply with the OSHA's Blood borne Pathogens (BBP) Standard as it relates to the work we do.

2. PURPOSE AND SCOPE

2.1 Purpose

ARCADIS is committed to providing a healthy and safe work environment for its employees, subcontractors, clients and visitors. To this end, ARCADIS embraces this policy to eliminate or minimize exposure to blood borne pathogens.

2.2 Scope

The standard applies to all employees who have been designated as first aid responders or who are expected to render first aid and/or are expected to clean an area contaminated with blood or other potentially infectious materials as part of their job responsibilities. This standard does not cover employees who perform unanticipated "good Samaritan acts" at work.

3. DEFINITIONS

There are a number of definitions associated with this standard. These definitions are presented in **Exhibit 1** of this document.

4. Responsibilities

4.1 Corporate H&S Department – has the responsibility to:

- Communicate the policy and standard requirements with all ARCADIS-US (AUS) offices.
- Establish a written Exposure Control Plan template for offices and projects to utilize that is designed to eliminate or minimize employee exposure.
- Ensure that a copy of this plan is accessible to employees in accordance with 29 CFR 1910.1020(e).
- Ensure that this Health and Safety Standard (HSS) is reviewed annually and revised as necessary.
- Facilitating the implementation of this HSS and providing "hands-on" assistance to ARCADIS staff in its implementation.
- ARCADIS Managers and Supervisors (including project and task managers) – provide oversight management for the Health & Safety (H&S) of employees in their respective operations, and ensure that the HSS is being implemented.

4.2 ARCADIS Employees – have the responsibility to adhere to this HSS and to communicate H&S concerns, issues and questions to their supervisor or to the corporate Health and Safety staff.

5. PROCEDURE

5.1 General Requirements

Each office or jobsite that is subject to this standard will have a written Exposure Control Plan that is to be reviewed annually.

5.2 Written Exposure Control Plan

The Written Exposure Control Plan is designed to eliminate or minimize employee exposure. The plan will be reviewed and updated at least annually, including any changes in technology and any devices that have been considered/purchased that may eliminate or decrease employee exposure. A copy of the plan will be accessible to all employees. A template plan can be found in Exhibit 2. The plan should address the following:

- Exposure Determination to include employees who, without regard to PPE, have potential exposures and what tasks (e.g. providing First Aid) could so expose them.
- Methods of Compliance;
- Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up;
- Labeling and Signs - Communication of Hazards;
- Recordkeeping; and
- How the route of exposure and circumstances under which it occurred will be documented.

5.3 Methods of Compliance

The written Exposure Control Plan will outline what methods will be utilized and what schedules must be kept to maintain compliance with this standard. The following will be addressed in the plan:

- Universal Precautions will be observed to prevent contact with blood or other potentially infectious materials; examples include gloves, masks or eye protection.
- Engineering and Work Practice Controls will be used to eliminate or minimize employee exposure. These include:
    - o Hand washing facilities will be readily available. If this is not feasible, antiseptic hand cleanser, single use towels or antiseptic towelettes will be made available with hand washing to be done as soon as possible thereafter.

- Requiring that employees wash their hands as soon as possible after removal of PPE, and that they wash any skin or flush mucous membranes with water as soon as possible after contact with potentially infectious materials.

- Education of employees so that splashing, spraying, or spattering of blood or body fluids will be minimized.

- PPE will be considered appropriate only if it does not permit blood or other infectious material to pass through or reach clothes, undergarments, skin, eyes, mouth or other mucous membranes under normal conditions of use. **Exhibit 3** is a guide to blood borne pathogen PPE.

  - PPE that is appropriate to the potential exposure will be made available and, where necessary, made of hypoallergenic material. If the employee declines to wear PPE, the circumstances will be investigated and documented.

  - PPE will be removed prior to leaving the incident area and placed in an appropriately designated container for decontamination or disposal. Defective, damaged or questionable PPE will be repaired or replaced as needed.

  - Gloves will be worn when it is reasonably anticipated that the employee may have hand contact with blood or other potentially infectious materials, mucous membranes and/or non-intact skin. They will also be worn when handling or touching contaminated items or surfaces. Gloves must be disposable and will be exchanged for a new pair when contaminated, torn or punctured. Disposable (single use) gloves shall not be washed or decontaminated for re-use.

  - Masks, eye protection and face shields are required whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

  - Gowns, aprons, and other protective body clothing are required when splashing, splattering or spraying of the body with blood or other potentially infections materials is reasonably anticipated.

- Cleaning and Decontamination of all surfaces by an appropriate disinfectant will be done as soon as possible after contact with blood or other potentially infectious materials. Contaminated waste and/or laundry such as bloodied bandages or clothing will be placed in leak-proof containers or bags and labeled or color coded as noted in Section 5.5. Contaminated sharps such as broken glass will be picked up by mechanical means such as a brush/dust pan, and will be discarded immediately in a container that is puncture resistant, leak-proof and labeled or color coded as noted in Section 5.5.

- If contaminated sharps (e.g., needles, metal or glass) or other contaminated material is an expected/potential hazard at a project site, the H&S Plan will include instruction for its removal by a professional company/service. If such items are unexpectedly found at a site, stope work, isolate the area in question, contact the client and discuss with the client options for contracting with a professional company service for clean up and removal.

5.4 Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up

The Hepatitis B (HBV) vaccination series and post-exposure evaluation and follow-up will be made available to all employees who fall under this standard at no cost to the employee. The healthcare provider who examines the employee will document if HBV vaccination is indicated and if the employee received the vaccination. If an employee declines the vaccination, a declination form as shown in **Exhibit 4** will be signed by the employee. However, if the employee later decides to have the vaccination **and** is still covered under this standard, the vaccination will be made available at that time.

Post-Exposure Evaluation and Follow-up will be made available immediately following an exposure incident. The ARCADIS office will supply to the physician a description of the employee's duties as they relate to the exposure incident, the route and circumstances of exposure, the results of the source individual's testing if known and the employee's medical records including HBV vaccination status if not already available to the physician.

The medical provider will supply his/her written medical opinion to ARCADIS which will contain only that the employee has been informed of the results of the evaluation and has been told about any medical conditions that require further evaluation or treatment. The employee should receive a more detailed confidential medical evaluation from the medical provider.

- Testing of the employee's blood will be done as soon as possible as recommended by the medical provider. If the employee decides to give consent for the blood to be drawn but not tested, the employee will have 90 days in which to change his/her mind as the sample must be preserved for 90 days.

5.5 Labeling and Signs

All contaminated waste, laundry and sharps will be labeled as required by this standard.

Red bags or containers may be substituted for labels. Labels will be fluorescent **orange or orange-red** with lettering and symbols in a contrasting color and include the following legend:

6. Training

All employees who have been designated as first aid responders or are expected to render first aid and/or are expected to clean an area contaminated with blood or other potentially infectious materials, will receive training upon initial assignment and then annually thereafter by a vendor approved by Corporate H&S.

A copy of the regulatory text of this standard will be made available to all applicable employees. Training will include opportunity for interactive questions and will include at a minimum:

- A general explanation of modes of transmission and symptoms associated with blood borne pathogens;
- An explanation and the location of the written exposure control plan;
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and PPE;
- Information on the types, basis for selection, proper use, location, removal, handling, decontamination and disposal of PPE;
- Information on the Hepatitis B vaccine;
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials including information on post-exposure evaluation and follow-up; and
- An explanation of the signs and labels and/or color coding.

Training records will include the training date, a summary of the training sessions, the name and qualifications of person conducting the training, and names and job titles of all persons attending the training sessions. The trainer will provide their qualifications and a training content summary.

7. REFERENCES (regulation citation, technical links, publications, etc.)

CFR 1910.1030 “Blood borne Pathogens”

OSHA Interpretation Letters:

- 12/4/92: “Applicability of Blood borne Pathogens Standard to Emergency Responders, Decontamination, Housekeeping, and Good Samaritan Acts”

- 12/15/92: “Blood borne Pathogens Impact on Non-Health Care Industries”

- 10/5/92: “Employee Training in First Aid”

8. RECORDS

Complete employee medical records regarding exposure will be established and maintained for each employee with occupational exposure by the approved medical provider in accordance with 29CFR 1910.120.

These records will be kept confidential and will not be disclosed without an employee's written consent except as required by this standard or by law.

Exposure and medical records shall be kept for the duration of employment plus 30 years

All employee training records will be kept from the date on which the training occurred and maintained for the duration of employment plus 10 years.

9. APPROVALS AND HISTORY OF CHANGE

Tony Tremblay, CSP – Infrastructure Division Director of H&S

Tony Tremblay

History of Change

Revision Date	Revision Number	Standard Developed/Reviewed By or Revised By	Reason for change
June 2003	01	Sue Byers/Pat Vollertsen	Original document
24 February 2010	02	Sue Byers	Change to new format
5 December 2011	03	Sue Byers/Tony Tremblay	Review and update
13 April 2012	04	Camille Carollo/Tony Tremblay	Added Executive Summary; moved definitions from Section 3 to Exhibit 1
15 February 2013	05	Amanda Tine/Tony Tremblay	Added language about required length of time for keeping medical/exposure records and training records in executive summary and in Section 8.
28 February 2014	06	Pat Vollertsen/Tony Tremblay	Added information to section 5.3 regarding contaminated items found at project sites and added ECP template as exhibit 2

EXHIBIT 1

BLOODBORNE PATHOGENS – DEFINITIONS

Blood means human blood, human blood components, and products made from human blood.

Blood bore Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Decontamination means the use of physical or chemical means to remove, inactivate, or destroy blood borne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

Exposure Incident means a specific eye, mouth, other mucous membrane, non-intact skin, or needle contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Licensed Healthcare Professional is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by paragraph (f) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

Hand washing Facilities means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Occupational Exposure means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Other Potentially Infectious Materials means (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Parenteral means piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

Personal Protective Equipment is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to, ARCADIS employees, subcontractors, clients or other persons who have sustained an injury.

Sterilize means the use of a physical or chemical procedure to destroy all microbial life including highly resistant bacterial endospores.

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other blood borne pathogens.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

EXHIBIT 2

EXPOSURE CONTROL PLAN TEMPLATE

EXHIBIT 3

BLOODBORNE PATHOGENS

GENERAL GUIDELINES FOR PPE

(taken from Safetyinfo.com)

TASK	GLOVES	PROTECTIVE CLOTHING	MASK	EYEWEAR
Bleeding with spurting blood	X	X	X	X
Minimal bleeding with no spurting blood	X			
Cleaning up/Decontamination with no splashing/splattering	X			
Cleaning up/Decontamination with Splashing/splattering	X	X	X	X

These examples are based on the application of Universal Precautions.

EXHIBIT 4

BLOODBORNE PATHOGENS

HEPATITIS B VACCINATION DECLINATION FORM

(29 CFR 1910.1030 APP A)

HEPATITIS B DECLINATION

I understand that due to the potential of my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to receive the Hepatitis B vaccination series, at no charge to myself.

If you are declining the vaccination, please select one of the following:

☐ I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease.

> *If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.*

☐ I decline Hepatitis B vaccination as I have already had the Hepatitis B vaccination series.

____
Employee's Name – Printed

______________________________ __________
Employee's Signature Date

______________________________ __________
Witness' Signature Date

Revised 2/15/13

EXECUTIVE SUMMARY

The primary purpose of the Emergency Response Plan is to inform employees on what to do in the event of an emergency, including how and where to evacuate. ARCADIS offices may utilize a Plan provided by their property owner or Management Company, but must ensure that the Plan meets all requirements as outlined in this Health and Safety Standard (HSS) and, if it does not, amend the Plan so that requirements are met.

This standard provides guidelines so that ARCADIS office locations can ensure that an appropriate Emergency Response and Fire Prevention Plan (“Plan”), specific to the office location, is in place.

Corporate Health & Safety ensures that a review with necessary changes are done at least annually on this standard, communicates the program to appropriate staff and provides technical assistance as necessary.

Health and Safety Coordinators responsibilities include:

- ensures that the Plan is available to staff and reviewed annually, and revised as necessary;
- ensures completion of monthly fire extinguisher, housekeeping, and, where applicable, first aid kit and AED inspections; and
- assists in making training available regarding the Plan to new hires and assists in coordinating annual Emergency Response Warden training.
- distribution of Plan reminder to office location staff as described in this standard

The Emergency Response Plan will include the following:

- Emergency evacuation procedures and evacuation route assignments;
- Employee notification procedures during an emergency;
- Preferred means of reporting fires and other emergencies;
- Actions to be taken in an emergency;
- Rescue and medical duties for those employees who are to perform them; and
- Emergency Response Warden and Buddy names and responsibilities.

The primary purpose of the Fire Safety Plan is to minimize the possibility of fires in the work place. The plan should include the following:

- A list of fire hazards in the work place;
- Housekeeping procedures that will be followed;
- Explanation of alarm system in place at the office along with any fire suppression and/or smoke alarm systems;
- Names or titles of personnel or vendors who are responsible for maintenance of equipment and systems installed to prevent or control fires; and
- Presence or absence of fire extinguishers.

1. POLICY

It is the policy of ARCADIS to inform employees of evacuation, emergency response and fire safety procedures by means of a location-specific Emergency Response and Fire Safety Plan ("Plan").

2. PURPOSE AND SCOPE

2.1 Purpose

This standard provides guidelines so that ARCADIS office locations can ensure that an appropriate Emergency Response and Fire Prevention Plan ("Plan"), specific to the office location, is in place. The Plan includes response to emergency situations that can be reasonably expected, including fire, and notification and evacuation procedures, process by which employees will be accounted for, and where employees may go to for additional information or questions.

2.2 Scope

Ensuring that an appropriate Emergency Response and Fire Safety plan ("Plan") is in place is required of all ARCADIS office locations. ARCADIS offices may utilize a Plan provided by their property owner or Management Company, but must ensure that the Plan meets all requirements as outlined in this standard and, if it does not, amend the Plan so that requirements are met.

Offices with less than 10 employees may communicate this information verbally unless otherwise required by a local or state regulatory authority.

3. DEFINITIONS

There are a number of definitions associated with this standard. These definitions are presented in Exhibit 1 of this document.

4. RESPONSIBILITIES

4.1 Director, Health and Safety (H&S) Administration

- Ensures that a review with necessary changes is done at least annually on this standard.
- Communicates the program to appropriate staff.
- Provides technical assistance as necessary.

4.2 Corporate H&S Assistant

- On annual basis reviews and, as necessary, updates this standard.
- Promotes this standard so that ARCADIS employees have access to relevant resources.

4.3 Health and Safety Coordinators

- When a written Plan is applicable to their office location, prepare a Plan and ensure that the Plan is available to staff.
- Review the Plan at least annually and revised as necessary.
- To ensure completion of monthly fire extinguisher, housekeeping, and, where applicable, first aid kit and AED inspections.

- Assist in making training regarding the Plan available to new hires and assist in coordinating annual Emergency Response Warden training.

- Annually, at a minimum, distribute Plan reminder to office location staff as described in this standard.

4.4 Location Leads

Location leads are responsible for ensuring that:

- Resources are available to implement the Plan such as identification of Emergency Response Wardens and Buddies; and

- Training is held as defined in this standard.

4.5 Supervisors

Supervisors ensure that new hires for which they are responsible are aware of the location of the Plan or if a written Plan is not required, that the Plan is described to them, and that the new hire completes the required training and quiz.

Supervisors shall assign fire extinguisher training to those staff required to use a fire extinguisher (client or project related requirement) and for those employees who are assigned company vehicles that have a fire extinguisher as part of the vehicle equipment.

4.6 Emergency Response Wardens (“Wardens”)

Be aware of all persons within their assigned area and aware of those who may require assistance in an emergency, whether temporary or permanent in nature.

- Assist and direct employees and guests in an evacuation and other emergency response actions.

- Notify the Primary Warden of the need to assign an Emergency Response Buddies.

- Notify the Primary Warden or H&S Coordinator of any concern regarding the Plan or any issue seen during an evacuation (real or drill).

4.7 Emergency Response Buddy (“Buddy”)

- Buddies are responsible for helping employees who need assistance in an evacuation or other emergency situation; assistance may be temporary or permanent in nature. In an evacuation, the buddy will do one of the following:

  - If the employee needing assistance is able to safely navigate to the exit and assigned meeting location, the Buddy will escort him/her to the designated meeting location.

  - If the employee needing assistance is not able to safely navigate to the exit and/or assigned meeting location, one Buddy will escort the employee to a designated area such as an enclosed **stairwell** and wait until Emergency personnel arrive to assist. The other Buddy will notify Emergency Personnel or a Warden of their location in the building.

4.8 **Receptionist** (at ARCADIS locations that have a receptionist)

Receptionists are responsible for understanding the overall Plan for their location and, as applicable, their role in case of emergency. Their role may include but is not limited to:

- Calling 911 or other authority.
- Making an overhead announcement with instructions for staff such as building evacuation, location of the emergency (e.g., fire, gas odor), weather warning, etc.
    - Receptions will make such announcements only if it is safe to do so.
- Directing Emergency Personnel to the location of the employee, client, or visitor who has been injured.
    - If a location has given the Receptionist responsibilities in an emergency, their role will be outlined as suggested in Exhibit 2.

4.9 ARCADIS employees

- Employees will take part in Emergency Response and Hazard Communication training upon hire which will cover emergency response procedures, fire prevention, fire extinguisher use, and hazard communication.
- Employees are responsible for being knowledgeable of the Plan for their office location, including safe exits and location of their designated meeting area.
- Employees will review and comply with the Plan for their location or project site unless otherwise directed by Emergency Personnel, Warden or Primary Warden.

5. PROCEDURE

5.1 Emergency Response Plan

The primary purpose of the Emergency Response Plan is to inform employees on what to do in the event of an emergency, including how and where to evacuate. ARCADIS offices may use a Plan provided by their property owner or Management Company, but must ensure that the Plan meets all requirements as outlined in this standard and, if it does not, amend the Plan so that requirements are met. If no Plan is available via the property owner/management company, a Plan will be developed. Exhibit 3 has a template plan that may be used.

- Offices with less than 10 employees may communicate this information verbally unless otherwise required by a local or state regulatory authority.

Evacuation and meeting location maps should be posted in locations regularly used by employees, should include exit and alarm locations and may include designated meeting locations and Warden names/areas of responsibility.

As part of the plan, a sufficient number of persons will be designated and trained as Emergency Response Wardens, and a Lead Emergency Response Warden named. OSHA recommends one Warden for every 20 employees.

The Emergency Response Plan will include the following:

- Emergency evacuation procedures and evacuation route assignments:

- Evacuation maps will be posted in areas visible to all employees,
- Refuge or safe areas will be designated, both inside and outside the building, and
- Outside meeting locations and procedures to account for all employees will be designated.

- Employee notification procedures during an emergency.
- Preferred means of reporting fires and other emergencies.
  - Emergency phone numbers should be posted in conspicuous locations when telephones serve as a means of reporting emergencies.
- Actions to be taken in an emergency.
  - All location specific Plans will include actions to take:
    - In fire emergencies
    - In bomb threat situations
    - In the case of gas leak or noxious odors
    - In suspicious mail or threatening individual situations; and
    - In the event of a serious injury to an employee or visitor
  - In addition, location specific Plans will include actions to take in emergencies specific to their geographical area, such as:
    - Tornados
    - Earthquakes
    - Hurricanes
    - Flooding
    - Blizzards, ice storms
- Rescue and medical duties for those employees who are to perform them (details in section 5.3).
- Emergency Response Warden and Buddy names and responsibilities

Where applicable, the Plan will also include the procedures for employees who remain behind to operate critical equipment. (This is generally not applicable to ARCADIS offices. Critical equipment is equipment that would endanger lives or aggravate the emergency situation if it ceased to function.)

5.2 Fire Safety

The primary purpose of the Fire Safety Plan is to minimize the possibility of fires in the work place.

In the event of a fire, employees are required to immediately follow the evacuation process set forth in the office Plan. Fire extinguishers located at ARCADIS office locations are not intended for employee use. While no ARCADIS employee is required to use a fire extinguisher, all employees are advised in the Emergency Response and Hazard Communication training as to the general principles of fire extinguisher use and the hazards involved in incipient stage fire fighting. Employees should never attempt to use an extinguisher if there is any question that their personal safety could be compromised.

The plan should include the following:

- A list of fire hazards in the work place. For each of these fire hazards, the plan should include:
  - Proper handling and storage procedures,
  - Potential ignition sources,
  - Control procedures,
  - Type of equipment that can control a fire involving the source, and
  - Names or titles of personnel responsible for the control of fire hazards.
- Housekeeping procedures that will be followed to eliminate or reduce the accumulation of combustible materials in the work place. Monthly housekeeping inspections, done to help eliminate fire hazards and keep pathways clear, should be documented. Exhibit 4 is a sample inspection form that can be used for this purpose.
- Explanation of alarm system in place at the office along with any fire suppression and/or smoke alarm systems.
  - Alarm systems should provide warning for necessary emergency action and should be capable of being distinguished above ambient noise and light levels.
  - Alarm systems generally include an audible smoke and/or fire alarm and visual alarm (e.g., strobe lights), but alarm systems may vary depending on state and local fire codes and building age.
  - For most offices, these systems are installed and maintained by the building property managers.
- Names or titles of personnel or vendors who are responsible for maintenance of equipment and systems installed to prevent or control fires.
- Presence or absence of fire extinguishers.
  - Although ARCADIS employees are not designated to use fire extinguishers at office locations, if they are provided in the ARCADIS suite, monthly visual inspections are recommended unless done by building management. Names of those responsible for the inspection should be noted in the Plan.
  - Documentation of the inspection is maintained for each extinguisher and can be recorded on the extinguisher tag or on an inspection form such as the one found in Exhibit 4 and should include the inspection date, who did the inspection, and any corrective action taken.

Check with building management in regard to fire extinguisher annual maintenance/service, and periodic testing, and note these completion dates on the inspection documentation form/tag.

5.3 First Aid/CPR

First Aid/Emergency Response personnel will be designated if medical/emergency facilities are not located in near proximity.

OSHA has long interpreted the term "near proximity" to mean that emergency care must be available within no more than 3-4 minutes from the workplace. Medical literature establishes that, for serious injuries such as those involving stopped breathing, cardiac arrest, or uncontrolled bleeding, first aid treatment must be provided within the first few minutes to avoid permanent medical impairment or death. Accordingly, in workplaces where serious accidents such as those involving falls, suffocation, electrocution, or amputation are possible, emergency medical services must be available within 3-4 minutes, if there is no employee on the site who is trained to render first aid. OSHA exercises discretion in enforcing the first aid requirements in particular cases. OSHA recognizes that a somewhat longer response time of up to 15 minutes may be reasonable in workplaces, such as offices, where the possibility of such serious work-related injuries is more remote.

Personnel designated to perform First Aid/Emergency Response will receive annual Blood borne Pathogen training, biennial CPR/First Aid Training and be offered the Hepatitis B vaccination series.

6. TRAINING

6.1 New Hires

New hires, regardless of job function or hours worked per week, will be trained on their location Plan. Training will include the following:

- Location of the written Plan (if location is required to have a written plan);
- Employee responsibilities under the Plan;
- Evacuation procedures and meeting location;
- Emergency procedures; and
- Identification and responsibilities of persons tasked with implementation of the Plan.

Employees identified as Emergency Response Wardens and other whose work may deem it necessary will undergo fire extinguishers training annually.

6.2 Current Employees

Annually, the H&S Coordinator at each location will send out a communication to all location staff highlighting significant points of the Plan. In addition, training will be provided whenever an employee's responsibilities or designated actions under the Plan or the Plan changes. Although employees are not required to use fire extinguishers those employees who may be more likely to use fire extinguishers as part of their work including; employees working on project sites where it is required, employees assigned to company vehicles that have fire extinguishers as part of their equipment, and any others as applicable, are required to undergo training annually.

6.3 Wardens

Employees who have been identified as Emergency Response Wardens shall be trained on their responsibilities as follows:

- Upon assignment
- Annually, and
- Whenever their responsibilities or designated actions under the Plan or the Plan changes.

Exhibit 5 provides a sample agenda for this training.

7. REFERENCES

7.1 State Plans

Office locations must ensure that the Plan also meets any requirements set forth by an applicable state OSHA or local fire code. REFERENCES (regulation citation, technical links, publications, etc.)

OSHA Regulations (Standards – 29 CFR) Part 1910 Subpart E "Means of Egress"

OSHA Regulations (Standards – 29 CFR) Part 1910 Subpart L "Fire Protection"

8. RECORDS - DATA RECORDING AND MANAGEMENT

8.1 Fire Extinguisher Checks

Fire extinguisher check documentation should be maintained until the annual maintenance check is completed. All records will be kept locally by the Health and Safety Coordinator in the office.

8.2 Housekeeping Checks

A record of the housekeeping checks shall be maintained and kept by the H&S Coordinator.

8.3 Emergency Response and Fire Safety Plan

The Plan will be reviewed at least annually and revised as appropriate. When revised, the revision date/number will be documented under "History of Change" and the prior plan achieved per company policy.

9. APPROVALS AND HISTORY OF CHANGE

Tony Tremblay, CSP – Infrastructure Division Director of H&S

History of Change

Revision Date	Revision Number	Reason for change
28 Oct 2009	01	Original document
15 Feb 2013	02	ARCADIS logo updated; Executive Summary added; Definitions moved into Exhibit 1; Exhibit references were hyperlinked; Near Proximity definition in section 5.3 was corrected with current OSHA Interpretive Guidance; Added information regarding specific employee training on use of fire extinguishers; Added Supervisor responsibility for assigning fire extinguisher training; Added Exhibit 6

Exhibit 1 - Definitions

Emergency Personnel – Ambulance, Fire Department, Police or other authority responding to an emergency.

Emergency Response "Buddy" – Employees who volunteer to aid personnel needing temporary or permanent assistance during an evacuation or other emergency situation.

Emergency Response Warden ("Warden") – Employees who volunteer and are trained to assist in an evacuation and other emergency response actions, and who can be contacted by any employee who needs more information about the Plan or their responsibilities under the plan.

Exit – Either the portion of an exit route that is generally separated from other areas to provide a protected way of travel to the exit discharge (e.g., a fire resistance-rated enclosed stairway that leads from one floor to another or to the outside), or the door or other means by which a room or building may be vacated in an emergency.

Lead Warden – One who oversees and assists the Emergency Wardens and Buddies in the event of an emergency.

Meeting Area – That designated area where staff gathers following an evacuation alarm or announcement. May be a location inside or outside a building.

Receptionist – Front desk personnel.

Exhibit 2 – Receptionist Emergency Procedures

If you think a situation requires immediate emergency response, call 911 first and then notify your property management service and the Facilities Manager or H&S.

Emergency Numbers

Agency/Resource	Phone Number
Fire Rescue - Non-emergency…………………………………	
Police Department - Non-emergency…………………………	
(Gas leaks)…………………………………….......................	
Elevator Services…………………………………………………	
National Weather Service………………………………………	
Poison Control Center…………………………………………..	
Public Health Department…………………………………….…..	
(Water leaks)………………….………………………………..	

FIRE

- You may be asked to call the fire department **(911)**.
- You may be asked to make an overhead announcement. If so, and it is safe for you to do so:
  1. Ask that all employees evacuate the building and proceed to their designated meeting locations (if possible, include the location of the fire); and
  2. Evacuate and proceed to your meeting location.

BOMB THREAT

- If you receive a call, try to remain calm as you:
  1. Try to wave someone down to **call 911** while you're on the phone.
  2. **Call 911** as soon as you are able to do so.
  3. Notify you Property Management Service and the Location Lead or, if not available, H&S.
  4. Fill out Bomb Threat Questionnaire**.**
- If someone else receives a call, you may be asked to contact 911 and/or do an overhead announcement.
- Follow instructions given by Police or Fire Department.

POSSIBLE NATURAL OCCURANCES FOR YOUR AREA (Tornado, Earthquake, etc.)

POWER FAILURE

PERSON TRAPPED IN THE ELEVATOR

ACCIDENT OR ILLNESS

1. Call (911) FIRST* and report “a medical emergency.” This will guarantee the quickest response.
2. Someone should meet the emergency unit in front of your building in order to direct them to the scene of the accident/illness.

The fire department will arrive and administer first aid, followed by paramedics and police. If necessary, an ambulance will then take the victim for further assistance.

SUSPICIOUS PERSON or PERSONS

- If you question the appearance of a visitor, contact the Facilities Manager or Property Management Services to verify the presence of contract workers.
- Solicitors or suspicious person(s) should be reported to your Property Management Services.
- If in doubt, contact the Facilities or Health & Safety Manager or the authorities.
- If you are alarmed, and it is safe to do so, call 911.

CHEMICAL SPILL OUTSIDE OF THE BUILDING

- If we are notified of a chemical spill outside of the building, we will follow the instructions of the authority in charge.
- You may need to make announcements as instructed by the authorities.
- You may be asked to contact your Property Management Services to shut down the ventilation system.

OTHER EMERGENCIES

You may be asked to make overhead announcements and/or call the authorities.

Exhibit 3 – Template for Emergency Response Plan

(Available in Word on The Source US/H&S/Office H&S Program)

ARCADIS

EMERGENCY RESPONSE PLAN

TITLE PAGE

Your Office

Your address

TABLE OF CONTENTS

The following general information has been designed to assist you with the safe and efficient handling of an emergency situation. **Please read it carefully.** This information is in no way all-inclusive, and may be expanded, altered or revised periodically.

EMERGENCY CONTACT PHONE NUMBERS

LOCAL EMERGENCY CONTACTS

Fire Rescue – Emergency……………………………………………….

Fire Rescue - Non-emergency……………………………….……..

Sheriff Department – Emergency……………………..……………..

Sheriff Department - Non-emergency…………………………….….

NEAREST HOSPITAL

ADDRESS:

General Information…………………………………………...….

Emergency Services-24 hours……………………………….

TDD Calls (Hearing Impaired)………………………………..….

(Gas leaks) …………………………………………………...

Elevator Service Co.…………………………………………….

National Weather Service…………………………………….

Poison Control Center………………………………………..…..

Public Health Department…………………………

(Water leaks)………………

OTHER CONTACTS

BUILDING MANAGEMENT EMERGENCY NUMBERS

24 Hour Emergency Line……………………………………..

ARCADIS Emergency Plan Contacts:

Facility Related Questions:

Emergency Plan Questions:

1. EMERGENCY PREDAREDNESS

This manual has been prepared to provide an outline of responsibilities and action to take in the event of an emergency. However, not all emergency situations are covered in this manual.

As part of the overall safety and emergency preparedness program, employees will participate in an annual fire drill

Emergency Response Wardens will evaluate staff response during fire drills and during an actual emergency, the Fire/Emergency Wardens serve as liaison between ARCADIS staff and Emergency personnel, and provide invaluable assistance should an evacuation be necessary. Wardens will be trained annually on evacuation procedures

2. OVERVIEW OF LIFE SAFETY SYSTEMS

Provide overview of fire safety systems – should be provided by property management.

3. ELEVATOR EMERGENCY

If applicable, provide elevator services emergency procedures

4. EVACUATION PROCEDURES

A. When an alarm sounds/is seen or an announcement made, evacuate immediately through the closest, safe exit and go to your predesignated meeting location.

1. Before opening any door, check first for heat/smoke.
2. Close the door to your office as you leave. Do not return for coats, purses, etc.
3. If visitors are in your suite, please assume the responsibility for their evacuation. Visitors are to report to the re-assembly area that has been designed for the party whom they are visiting.
4. Follow the predetermined procedures for evacuating any physically impaired personnel. (See Section 4.1 of the ARCADIS policy ARC HSMS008)
5. Listen to the instructions of the Emergency Response Wardens and Emergency Response personnel

B. Fire/Emergency Wardens should check for employees/visitors in the surrounding area as they evacuate.

- Emergency Response Wardens account for staff at their designated area of re-assembly and will report any personnel unaccounted for (and/or location of personnel remaining in the building) to Emergency Response Agency Personnel or, if not yet on site, the Lead Warden.

C. The last person exiting an area should close the doors behind them. DO NOT go back to close the doors.

D. Use enclosed stairwells. **Do not use the elevators.**

E. Keep talking to a minimum. Listen for instructions from authorized personnel and follow them.

F. Keep calm. Walk; **do not run** – proceed single file down the stairs.

G. **Do not** leave the evacuation area or re-enter your building/suite until the Fire Department or other Emergency Response Agency has authorized you to do so.

4.1 INDIVIDUALS NEEDING ASSISTANCE:

Staff needing assistance in an emergency, whether temporary or permanent, should notify an Emergency Response Warden so that 1-2 Emergency Response Buddies can be assigned.

The name of the employee and assigned Buddies will be given to the Wardens.

If the employee NOT on the ground floor and:

- Is able to safely walk down the steps with assistance, the buddies will escort him/her to the stairs and to the designated meeting location.
- Is not able to safely walk down the stairs, one buddy will escort the employee to the closest **enclosed stairwell** and wait with the employee until the Fire Department arrives to assist. The other buddy will notify a Warden, H&S Administrator, Facilities Manager, or the Fire Department as to their location.

5. FIRE / LIFE SAFETY

No ARCADIS staff is designated to use fire extinguishers unless required at project sites.

Space heaters are serious fire hazards and should not be used unless specifically approved by property management service.

Candles are a serious fire hazards and are not allowed.

- **Do not** use unapproved extension cords
- **Do not** place items in the designated exit ways (paths of egress)

In the event of a fire:

A. If possible and available, close off area in which fire is located by closing the door
B. Pull the fire alarm manual pull if the fire alarm is not already sounding
C. Follow evacuation procedures
    - **Do not** attempt to fight fire

6. ACCIDENT/ILLNESS – EMERGENCY MEDICINE

In the event that an employee or visitor should become seriously injured or ill:

- Call **(911) FIRST*** and report “a medical emergency.” This will guarantee the quickest response.

If you have to dial a number to get an outside line, dial that number first + *911.

- Be prepared to give the following information:
    - ü Your name
    - ü The company name
    - ü The address of the building
    - ü The location within the building where the medical emergency is taking place
    - ü The phone number from which you are calling
    - ü Do not hang up until asked to do so

- Arrange to have someone meet the emergency unit in front of your building in order to direct them to the scene of the accident/illness.
- Do not attempt to move the injured or ill person. Try to make him/her comfortable.
- Someone should stay with the injured or ill person until arrival of emergency personnel.

7. <u>PROCEDURES FOR POSSIBLE LOCAL PHENOMENON</u> (Earthquake, Tornado, etc.)

8. <u>GAS LEAK – NOXIOUS ODORS</u>

If a natural gas or other noxious odor is present in the building:

- Exit to a safe area
- Call 911 *
- Call the receptionist or a Warden to report the situation and determine if evacuation is necessary

HAZARDS:

- Do no switch lights on/off or use electrical outlets, as sparks may be created
- Do not stop to turn off anything
- Refrain from smoking until the all clear is given
- Do not close or open anything
- If ordered to evacuate, do not return to the building/suite for any reason until told to do so by Emergency Response Agency Personnel

9. <u>POWER OUTAGE</u>

10. <u>UNFORSEEN INCLEMENT WEATHER: BLIZZARDS, ICE STORMS, etc.</u>

Please refer to Section 2.15 of the Employee Handbook on the HR page of APEX:

If conditions become so dangerous during the normal workday, local management may decide that it would be in the best interest and safety of the staff to send the staff home. Only the Overhead Manager, Location Lead or their designated representative can make the decision to close an office.

11. <u>INTRUDERS AND SOLICITORS</u>

Soliciting, selling, petitioning, and posting of signs is strictly prohibited. If you observe any of these activities in the building or parking lot, please notify property management service.

In general, any solicitor or suspicious person(s) should be reported to Property management service and, when in doubt, the authorities.

12. <u>COPING WITH THREATS AND VIOLENCE</u>

For an angry or hostile customer or coworker:

- Stay calm. Listen attentively.
- Maintain eye contact
- Be courteous. Be patient
- Keep the situation in your control.

For a person shouting, swearing, and threatening

- Signal a coworker, or supervisor, that you need help. (Use a duress alarm system or prearranged code words.)
- Do not make any calls yourself.
- Have someone call the FPS, contract guard, or local police.

For someone threatening you with a gun, knife, or other weapon

- Stay calm. Quietly signal for help. (Use a duress alarm or code words.)
- Maintain eye contact.
- Stall for time.
- Keep talking -- but follow instructions from the person who has the weapon.
- Don't risk harm to yourself or others.
- Never try to grab a weapon.
- Watch for a safe chance to escape to a safe area.

Federal Protective Service
U. S. General Services Administration

http://www.opm.gov/Employment_and_Benefits/WorkLife/OfficialDocuments/handbooksguides/WorkplaceViolence

13. BOMB THEAT

In the unlikely event that you receive a bomb threat, it is important to remain calm.

Police or Fire Official authority exceeds that of ARCADIS and their instructions are to be followed.

If the decision is made to evacuate the building, Follow evacuation procedures.

- If a suspected device is found, **do not touch it.** Evacuate the area and contact the authority conducting the search.
- Two-way radios, cell phones, and pagers **should not be** used in the area of a suspected device.
- **Do not use the elevator**

Telephone Threats

When a bomb threat is received by telephone, keep your voice as calm as possible and gather as much of the information as you can that is noted on the Bomb Threat Questionnaire (Exhibit 5). As soon as possible, notify your supervisor or call 911.

- You or your supervisor should then call 911 and an Emergency Response Warden

Emergency Response Warden should also notify Building Management . If possible, while you are talking with the caller, signal someone so they can notify your supervisor. **Do not make statements to newspapers, radio, or television news.** As soon as possible, complete the Bomb Threat Questionnaire and give it to your supervisor or the Facilities Manager.

Written Threats

Written threats must be dealt with just as carefully and if an item you receive looks suspicious **do not touch it.** Notify your supervisor.

- Supervisors should call 911 and an Emergency Response Warden
- Emergency Response Warden should also notify Building Management

Searching Procedures

It is the responsibility of the authorities to **decide how, when and who** is to search building areas. You may be asked to help them search your work area – this is voluntary and if you do not wish to do so, you should decline.

14. SUSPICIOUS MAIL

Identifying Suspicious Mail

- Excessive postage, or marked with restrictive endorsements such as “Personal” or “Confidential”.
- Handwritten or poorly typed addresses and/or misspelling of common words.
- Incorrect titles, a title with no name or a title with the wrong name.
- Addressed to someone no longer with our company or otherwise outdated.
- Unexpected or from someone unfamiliar to you.
- Postmarked or stamped from a foreign address that is unexpected, unknown or otherwise suspicious.
- Shows a city or state in the postmark that does not match the return address, or has no return address or one that can’t be verified as legitimate.
- Oily stains, discolorations or crystallization appear on the wrapper or there is an odor.
- Excessive or unusual weight given the size of the parcel, or one that is lopsided, oddly shaped or uneven.
- Protruding wires or aluminum foil, and/or a ticking sound.
- Excessive security material such as masking tape or string, and other visual distractions.

If you receive or identify suspicious mail:

- Isolate the parcel and alert others who are nearby.
- Do not try to open it, pass it to others to look at, shake it or empty its contents.
- Place the parcel in a plastic bag or some other type of container to prevent leakage of contents or, if you do not have a container, cover the parcel with anything (e.g., clothing, paper, trash can, etc.) and do not remove this cover.
- If any substance has spilled from parcel, do not try to clean it up but cover it and do not remove the cover.
- Turn off local fans and contact Building Management to see if / ventilation units can/should be shut down.
- Evacuate the immediate area and close all doors to the area gently.
- Wash your hands with soap and water to prevent spreading any powder.
- Contact 911 and an Emergency Response Warden. **Once authorities have been notified, they will determine the need for any further action.**

- If possible, list all people who were in the room or area, especially those who may have had contact with the parcel or powder.

15. ACTS OF TERRORISM

To report suspected illegal intelligence or terrorism activity against the interest of the United States, telephone the ANSIR coordinator at the Denver FBI Field Office, telephone 303-629-7171.

Maps for your building defining Zones and listing Wardens

BOMB THREAT QUESTIONNAIRE

All bomb threats must be taken seriously. If the caller is familiar with the building and specific about the location of the bomb, the call should be regarded with a high degree of urgency.

LISTEN CAREFULLY AND REMAIN CALM

DATE: __________TIME CALL WAS RECEIVED: __________ TIME CALL TERMINATED:_____________

EXACT WORDS OF CALLER:____

____

QUESTIONS TO ASK:

- WHEN will the bomb go off? ____
- WHERE is the bomb located? ______________________________________
- WHAT kind of bomb is it? ____
- WHAT does it look like? ____
- WHAT will cause it to explode? ____________________________________
- DID the caller place the bomb? ____________________________________
- WHY did the caller place the bomb? _________________________________

CHARACTERISTICS OF CALLER:

Male _____ Female _____ Race _____ Age ______ Other ______

VOICE/SPEECH:

Loud __ Soft __ High __ Low __ Fast __ Slow __ Distorted __ Clear __ Stutter __ Slurred __

Nervous __ Calm __ Nasal __ Accent __ Other ____

BACKGROUND NOISES:

Quiet __ Traffic __ Voices __ Music __ Machines __ Airplanes __ Other _______________________

ADDITIONAL INFORMATION:

Did the caller indicate knowledge of facility? If so, how? _____________________________

Extension Called? ___________ Local or long distance? ____________

Police or Fire Department called? __________ Property Management notified? __________

Do not discuss the situation with anyone except your immediate supervisor, H&S Manager or the Police or Fire Department.

Name & Job Title: ____

Date and Time Questionnaire Completed: ____

Phone: (Office) ______________________________ (Home) ____________________

Exhibit 4 – Monthly Inspection Checklist

MONTHLY INSPECTION CHECKLIST

MONTHLY INSPECTION CHECKLIST - Check for issues such as: *Insert or delete rows as needed*

Fire Extinguishers:	First Aid Kits:	Housekeeping:
1. Gauge reading in the green area? 2. Any leakage from the injection port and is port free from obstruction? 3. Current for annual visual inspection and 5 year hydrostatic testing? 4. Extinguisher secure (e.g., in brackets, cabinet, etc)? 5. Extinguisher is accessible and not blocked 6. Extinguisher is mounted or available at a height accessible by all 7. All extinguishers are present 8. Location is marked with a sign	1. Missing and outdated items 2. Kit in good condition 3. Kit in appropriate location(s) 4. No indication of misuse (extraordinary amount of one or two materials used)	1. Blocked, malfunctioning or non-functioning exit doors (e.g., locked, hard to open, etc.). 2. Blocked or cluttered exit passageways or other means of exit (e.g., halls, stairwells). 3. Unnecessary boxes, paper or other flammable/combustible items. 4. Improper shelving organization (e.g., heavy items on top shelves) or shelving stability. 5. Overloaded outlets and electrical cords creating tripping hazards 6. IT equipment "graveyards" 7. Spills or leaks of liquids 8. Other hazardous situations

If a potential problem is identified, list appropriate supervisor/manager and notify so problem can be fixed.

Checked by:												
Date of inspection:												
2010	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Fire Extiguishers												
List here												
First Aid Kits												
Aisles												
File Rooms												
Closets												
Stairwells												
Corrective Action	List the problem, person contacted and result of notification - was corrective action taken and issue resolved?											
* Issue 1												
Result												
** Issue 2												
Result												
*** Issue 3												
Result												
**** Issue 4												
Result												
***** misc.												
Result												

Exhibit 5 – Emergency Response Warden Training – Sample Agenda

1. Overview of Importance of Emergency Preparedness
2. Emergency Warden Materials and Responsibilities
3. Life Safety Systems – Fire alarm, sprinklers, emergency lighting
4. Fire Drills
5. Evacuation Procedures
   a. Individuals needing assistance
6. Fire/Life Safety
7. Accident/Illness
8. Severe Weather
9. Gas/Noxious Odors
10. Power Outage
11. Intruders
12. Threats and Violence
13. Bomb Threat
14. Suspicious Mail
15. Earthquake
16. Acts of Terrorism
17. Map of building – go over exits, fire alarm boxes, fire extinguisher locations, meeting areas and severe weather shelter locations.

Exhibit 6 – Fire Extinguisher Training Requirements

Job Group Determination Codes Definitions:

RNE	GR	C	NG
RNE: Required No Exceptions	**GR: Generally Required,** but exceptions can be made based on employee responsibilities and/or other courses completed	**C: Consider** based on employee's roles and responsibilities	**NG: Not Generally** required HOWEVER, if employe performs activities described in column B, the training may be required

As with all other aspects of project work - it is imperative that you follow any client requirements that may go beyond what is provided bel

Course Name	Roles/ Responsibilities That Necessitate The Training	If Needed	JOB GROUP General ENV Field Staff	General ENV PMs and TMs	CES Field Staff	CES PMs and TMs	IH & Safety Field Staff	Sr. Mgrs., and TKI & Client Dev. Staff	EN Office Support & Admin	Training Frequency	Primary Delivery Method	Estimated Training Time
Fire Extinguisher	If required by a project site and for those employees who are assigned company vehicles that have a fire extinguisher as part of the vehicle equipment.		GR	C	GR	C	GR	NG	NG	Annual	Online or Hands-On	30 minutes

EXECUTIVE SUMMARY

It is the policy of ARCADIS to comply with OSHA's Medical Services and First Aid Standard as it relates to the work we do. According to OSHA, the employer will ensure the "ready availability of medical personnel", but how this is implemented is dependent on the circumstances of each place of work.

The Medical Services and First Aid standard applies to all ARCADIS offices that designate or expect employee(s) to act as First Aid Responders at the office location and/or a job site. Employees who are not designated or expected to act as a First Aid Responder may render first aid voluntarily if they are trained in first aid, but their actions are not covered under the OSHA standard.

If the office or job site is in near proximity to medical services, employees do not need to be designated or expect to act as First Aid Responders unless required to do so by a particular OSHA standard or client requirement. However, if the office or job site is not in near proximity to medical services, an employee or employees will be designated and trained to render first aid.

Note: OSHA has long interpreted the term "near proximity" to mean that emergency care must be available within no more than 3-4 minutes from the workplace. Accordingly, in workplaces where serious accidents such as those involving falls, suffocation, electrocution, or amputation are possible, emergency medical services must be available within 3-4 minutes, if there is no employee on the site who is trained to render first aid. OSHA exercises discretion in enforcing the first aid requirements in particular cases. OSHA recognizes that a somewhat longer response time of up to 15 minutes may be reasonable in workplaces, such as offices, where the possibility of such serious work-related injuries is more remote.

The PIC, PM, Location Leader, and/or Office H&S Coordinator determines if they are required to designate First Aid Responders at the office location and/or at any particular job site. The types of accidents/injuries that could occur, location/availability of medical facilities, and the response time of emergency services are considered in making this determination.

In the absence of an infirmary, clinic or hospital in near proximity to the workplace, an employee(s) will be trained to render First Aid/CPR. This may also be necessary if required to do so by another standard (i.e. more stringent ARCADIS standard or State OSHA standard) or client requirements. First aid supplies are readily available if an employee is designated as a First Aid Responder.

Employees designated or expected to act as First Aid Responders must have first aid supplies readily available. The type of work being done, worksite and office sites are considered when determining the contents of a first aid kit. If exposure to the weather is possible, the contents of the first aid kit must be protected.

Employees designated or expected to act as First Aid Responders will be offered the Hepatitis B vaccination series. The employee may decline the vaccination and, if so, asked to sign a declination form.

First Aid/CPR/AED/Bloodborne Pathgens (BBP) training occurs prior to assignment as a First Aid Responder. First Aid/CPR/AED training is certified by the American Heart Association (AHA) or the Red Cross and is required on a bi-annual (every two years) basis. BBP training is required annually.

1. POLICY

It is the policy of ARCADIS to comply with OSHA's Medical Services and First Aid Standard as it relates to the work we do. According to OSHA, the employer will ensure the "ready availability of medical personnel", but how this is implemented is dependent on the circumstances of each place of work.

2. PURPOSE AND SCOPE

2.1 Purpose

This policy and standard assists ARCADIS employees in determining if the OSHA standard applies to their project sites, and assists in evaluating appropriate training needs for employees.

2.2 Scope

The Medical Services and First Aid standard applies to all ARCADIS offices that designate or expect employee(s) to act as First Aid Responders at the office location and/or a job site. Employees who are not designated or expected to act as a First Aid Responder may render first aid voluntarily if they are trained in first aid, but their actions are not covered under the OSHA standard.

If the office or job site is in near proximity to medical services, employees do not need to be designated or expect to act as First Aid Responders unless required to do so by a particular OSHA standard or client requirement. However, if the office or job site is not in near proximity to medical services, an employee or employees will be designated and trained to render first aid.

3. DEFINITIONS

There are a number of definitions associated with this standard. These definitions are presented in **Exhibit 1** of this document.

4. RESPONSIBILITIES

4.1 Principal in Charge (PIC) and Project Manager (PM) – Determines if a First Aid Responder is required for their project site. Ensures that employees working on their project sites have the proper training as required by this policy and standard.

4.2 Location Leader and Office H&S Coordinator – Determines if a First Aid Responder is required for their office location. Ensures that employees working in those locations have the proper training as required by this policy and standard.

4.3 Employees – If designated as a First Aid Responder, ensures that training is up to date as required by this HSS.

5. PROCEDURE

5.1 Designation of First Aid Responders

The PIC, PM, Location Leader, and/or Office H&S Coordinator determines if they are required to designate First Aid Responders at the office location and/or at any particular job site. The types of accidents/injuries that could occur, location/availability of medical facilities, and the response time of emergency services are considered in making this determination.

In the absence of an infirmary, clinic or hospital in near proximity to the workplace, an employee(s) will be trained to render First Aid/CPR. This may also be necessary if required to do so by another standard (i.e. more stringent ARCADIS standard or State OSHA standard) or client requirements. First aid supplies are readily available if an employee is designated as a First Aid Responder.

If the office and/or job site is in near proximity of emergency medical services (within 3-4 minutes of medical care), and if not required to do so by some other standard or client, there is no requirement to designate First Aid Responders. However, if the decision is made to designate First Aid Responders, all requirements of this HSS apply.

This HSS does not apply to employees who voluntarily obtain First Aid/CPR certification for their own personal benefit, and were not designated by ARCADIS as a First Aid Responder.

5.2 Transport Medical Facility

If an injured or ill employee is required to be transported to a medical facility, this should be done in accordance with the guidance provided in the ARCADIS Field Health and Safety Handbook. All ARCADIS field staff are provided with a copy of the Handbook. Where the illness/injury is acute or severe it is generally best that Emergency Medical Services (EMS) is contacted and another employee, preferably a designated First Aid Responder if possible, stay with the injured/ill employee and wait for professional EMS to arrive to transport the injured employee to the hospital.

Where the injury or illness is minor or where waiting for ambulatory services is impractical, an injured or ill employee may be driven to a medical facility. The injured or ill person should be accompanied by at least one other employee, preferable a designated First Aid Responder in addition to the operator of the vehicle.

5.3 First Aid Supplies/Kits

Employees designated or expected to act as First Aid Responders must have first aid supplies readily available. The type of work being done, worksite and office sites are considered when determining the contents of a first aid kit. If exposure to the weather is possible, the contents of the first aid kit must be protected.

The OSHA standard does not specify what should be in a kit, but does reference the recommendations by ANSI in their Z308.1-1998 publication, “Minimum Requirements for Workplace First Aid Kits” which provides types of kits and basic and optional contents. Since the OSHA regulation was published, the ANSI Z308.1 publication was last updated in 2009. The contents of a basic first aid kit are provided in **Exhibit** 2. Please note that same state OSHA programs require additional contents within First Aid Kits. Additional reccomendations from WorkCare in regards to the contents of a first aid kit are included in **Exhibit 5.** Employees are responsible for verifying and complying with state-specific requirements.

The first aid kit will also contain appropriate PPE and waste disposal supplies as required in OSHA’s Bloodborne Pathogens standard described in the ARCADIS Bloodborne Pathogen HSS (ARC HSGE005). First aid kits will not contain medications that have potential to cause drowsiness or contain prescription medications.

Some sort of routine inventory must be done on all first aid kits. For job site first aid kits, the inventory is checked when it is initially taken to the job site, weekly thereafter, and anytime first aid is rendered. For office first aid kits, the inventory is checked monthly and anytime first aid is rendered. An example of an inventory form is included in **Exhibit** 3.

5.4 Emergency Eye Wash and Body Wash Equipment

Where the eyes or body of an employee may be exposed to injurious corrosive materials, suitable facilities for emergency drenching/flushing of the eyes and body is provided within the "immediate" work area.

5.4 Hepatitis B Vaccination Series

The Hepatitis B vaccination series will be made available to all employees who are designated or expected to act as First Aid Responders. If an employee declines the vaccination, a declination form, as shown in **Exhibit** 4, will be signed by the employee.

Additional information regarding the Hepatitis B vaccination series can be found in the ARCADIS Bloodborne Pathogens Standard.

6. TRAINING

First Aid/CPR/AED training occurs prior to assignment as a First Aid Responder. Training is certified by the American Heart Association (AHA) or Red Cross. Exceptions to using the AHA or Red Cross certified training needs to be approved by the Corporate Training Team before proceeding with training.

CPR certification is provided on a bi-annual (every two years) basis. Due to the importance of First Aid training, certification is required bi-annually at the same time as the CPR certification. Bloodborne pathogen training is required annually per OSHA's Bloodborne Pathogens standard described in ARCADIS Bloodborne Pathogen HSP (ARC HSIH005).

7. REFERENCES

CFR 1910.151, "Medical Surveillance and First Aid"

CFR 1926.50, "Medical Services and First Aid"

OSHA Technical Links, "Medical and First Aid

OSHA Best Practices Guide: Fundamentals of a Workplace First-Aid Program

OSHA January 16, 2007 – OSHA Interpretation Letter Compliance for "in near proximity" and "serious injury"

ANSI Z308.1-1998 publication, "Minimum Requirements for Workplace First Aid Kits"

ANSI/ISEA Z308.1-2009 American National Standard - Minimum Requirements for Workplace First Aid Kits and Supplies

ARCADIS Bloodborne Pathogens Standard (ARC HSIH005)

8. RECORDS

Upon completion of the AHA or Red Cross First Aid/CPR/AED course, certification cards are issued. Copies of the certification cards are sent to the ARCADIS HR Solutions Centert.

9. APPROVALS AND HISTORY OF CHANGE

Approved By: Tony Tremblay, CSP - Corporate H&S, Director of Technical Programs

History of Change

Revision Date	Revision Number	Standard Developed By/Revised By/Reviewed By	Reason for change
10 January 2008	01	Mija Coppola	Original document
28 April 2010	02	Cindy Larweth	Add clarification of "near proximity" in section 5.1
3 April 2012	03	Camille Carollo/Tony Tremblay	Executive Summary added; Health and Safety Procedure revised to Health and Safety Standard; Serious Injury definition added as Section 3.4; Section 5.1 reference to near proximity changed to 3-4 minutes; OSHA "in near proximity" reference document in Section 8 updated; first aid kit content must comply with state OSHA reference added to Exhibit 1
19 November 2012	04	Pat Vollertsen/Tony Tremblay	Addition of information and exhibit related to Hepatitis B vaccination series
12 February 2013	05	Pat Vollertsen/Tony Tremblay	Section 3 Definitions moved to Exhibit 1; Added Section 5.2 Transport to Medical Facility (information about transport of injured personnel to medical facilities) and renumbered other Section 5 subsections

Revision Date	Revision Number	Standard Developed By/Revised By/Reviewed By	Reason for change
24 June 2014	06	Pat Vollertsen and Amanda Tine/ Tony Tremblay	Revised Executive summary and section 6 to include Red Cross training;revised section 8 to include Red Cross and revise where records are to be sent; Revised Section 5.3 ANSI Z308.1-2009 Minimum requiremetns for workplace first aid kit; updated header/footer format; Updated Exhibit 2 First Aid kit contents; Exhibit 5 licensed physician letter for first aid kit content

Exhibit 1 – Definitions

First Aid Responder – An employee designated by ARCADIS to receive First Aid/CPR training so that he/she can respond to emergency situations and administer First Aid/CPR until medical attention can be administered by medical professionals.

HSS – Health & Safety Standard

Near Proximity – The ability to respond and start to administer first aid within 3 to 4 minutes.

Note: OSHA has long interpreted the term "near proximity" to mean that emergency care must be available within no more than 3-4 minutes from the workplace. Medical literature establishes that, for serious injuries such as those involving stopped breathing, cardiac arrest, or uncontrolled bleeding, first aid treatment must be provided within the first few minutes to avoid permanent medical impairment or death. Accordingly, in workplaces where serious accidents such as those involving falls, suffocation, electrocution, or amputation are possible, emergency medical services must be available within 3-4 minutes, if there is no employee on the site who is trained to render first aid. OSHA exercises discretion in enforcing the first aid requirements in particular cases. OSHA recognizes that a somewhat longer response time of up to 15 minutes may be reasonable in workplaces, such as offices, where the possibility of such serious work-related injuries is more remote.

Serious Injury – Medical literature establishes that, for serious injuries such as those involving stopped breathing, cardiac arrest, or uncontrolled bleeding, first aid treatment must be provided within the first few minutes to avoid permanent medical impairment or death. Accordingly, in workplaces where serious accidents such as those involving falls, suffocation, electrocution, or amputation are possible, emergency medical services must be available within 3-4 minutes, if there is no employee on the site who is trained to render first aid. OSHA exercises discretion in enforcing the first aid requirements in particular cases. OSHA recognizes that a somewhat longer response time of up to 15 minutes may be reasonable in workplaces, such as offices, where the possibility of such serious work-related injuries is more remote.

Exhibit 2 – Basic First Aid Kit Contents

(ANSI Publication Z308.1-2009 and ARCADIS Best Practice*)

Item and Minimum Size or Volume	**Minimum Quantity**
Absorbent Compress, 32 sq. inches with no side smaller than 4 inches. (81.3 sq. cm. with no side smaller than 10 cm)[1]	1 (sealed and sterile)
Adhesive Bandages, 1x3 inches (2.5x7.5 cm)	16 (sterile & individually packaged)
Adhesive Tape, 3/8 in. x 2.5 yards total (0.95 x 228.6 cm)	1
Antibiotic treatment, 0.9 g (0.14 fl. oz)	6
Antiseptic application, 0.5g (0.14 fl. oz.)[2]	10 (individual use packets)
Burn Treatment, 0.9g (1/32. oz.)[3]	6 (individual use packets)
First Aid Guide[4]	1
Medical Exam Disposable Gloves	2 pair
Sterile pad, 3x3 inches (7.5x7.5 cm)	4 (individually packaged pads)
Triangular Bandage, 40x40x56 inches (101x101x142 cm)	1
Breathing barrier for cardiopulmonary resuscitation (CPR) *	1 (individually packaged)

[1] Compresses must have an absorbency of at least 2.7 fl. oz. (70 g).

[2] Swabs, wipes or towelettes may be used. Spray containers with a minimum of 10 – 0.14 fl. oz. applications can also be used

[3] Spray containers with a minimum of six – 1/32 oz. (0.9 g) applications can also be used. For use on minor burns only

[4] A list of topics to be covered in the first-aid guide can be found in ANSI/ISEA Z308.1-2009 Appendix A

Optional items and sizes may be added to the basic contents listed above to augment a first-aid kit, based on the specific hazards existing in a particular work environment. Optional items addressed in ANSI/ISEA Z308.1-2009 are listed below:

Item and Minimum Size or Volume
Analgesic (should contain no ingredients that are known to cause drowsiness)
Bandage compress(es) in sizes 2 in. x 2 in. (5 cm. x 5 cm.), 3 in. x 3 in. (7.5 cm. x 7.5 cm.) or 4 in. x 4 in. (10 cm. x 10 cm.)
Burn dressing(s) at least 12 sq. in. (77.4 cm.^{2})
Cold pack(s) at least 4 x 5 in. (10 x 12.5 cm.)
Eye covering(s)[5]
Eye/skin wash, 4 fl. oz. (15 ml.)[6][7]
Hand sanitizer with a minimum of 61 percent ethyl alcohol[8]
Roller bandage(s) at least 2 in. (5 cm.) wide and at least 4 yds. (365 cm.) long, unstretched and individually packaged[9]

Please note that some state OSHA programs may require additional contents within First Aid Kits. Employees are responsible for verifying and complying with state-specific requirements.

[5] Can be either two single eye pads or a single covering that covers both eyes

[6] Contained in 0.5 fl. oz. (15 ml.) individual-use containers

[7] Does not replace emergency eyewash and shower equipment where needed

[8] A spray container with a minimum of six – 1/32 oz. (0.9 g) applications meets this requirement

[9] A conforming bandage that can stretch to at least four yards can be substituted

Exhibit 3 – Sample First Aid Kit Inspection Form

MONTHLY CHECK OF FIRST AID CABINET

If any items appear missing, **(responsible ARCADIS party name or vendor name)** will be contacted that same day so that replacement supplies can be ordered. **(Responsible ARCADIS party name vendor name)** will also inspect, replace and remove and replace out-dated items every **(#)** days.

Year ______

Date Checked	Checked By	Date Checked	Checked By

Checked by:

1.________________________

2.________________________

3.________________________

Replacement: Place an asterisk (*) beside the date a missing item(s) was noted and when the vendor was called; note below when replacement was delivered. Include any other pertinent comments.

____

____

____

____

Exhibit 4 – Hepatitis B Declination Form

(29 CFR 1910.1030 APP A)

ARCADIS

HEPATITIS B DECLINATION

I understand that due to the potential of my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to receive the Hepatitis B vaccination series, at no charge to myself.

If you are declining the vaccination, please select one of the following:

☐ I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease.

> *If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.*

☐ I decline Hepatitis B vaccination as I have already had the Hepatitis B vaccination series.

____
Employee’s Name – Printed

____________________________ __________
Employee’s Signature Date

____________________________ __________
Witness' Signature Date

Exhibit 5 – WorkCare Reccomendations for First Aid Kits

WORKCARE™
Making Health Count

November 4, 2013

Brian Kundert
US Director of H&S
ARCADIS
2000 Powell Street, Suite 700
Emeryville CA 94608

Re: First Aid Kits in California

Pat,

WorkCare is providing the following recommendation with regards to First Aid Kits, specifically those in California:

First aid for employees who become sick or injured on the job comes under the OSHA regulations in section 1910.151 of Subpart K. Such first aid may consist of attention to simple problems that require no further treatment or emergency help for the severely injured until professional medical personnel can take over.

First aid supplies should be stored in a water proof container, located in a visible location with ready access in event of an injury or emergency. Kits should have a periodic schedule to be restocked. Kits should be accessible on each floor. Contents should be specifically selected to deal with events in specific or specialized occupations.

Contents should include:

- Gauze roller bandages 3" (i.e., Kerlix) -- 6
- Adhesive bandages (Band-Aids) (various sizes)- box
- Triangular bandage with safety pins- 3
- Antiseptic applicators or swabs) 10ea
- Alcohol 70% swabs (box) 1
- Eye pads 10
- Wire or thin board splints (SAM splint) 2
- Forceps (tweezers) 1
- Neosporin ointment 1 tube or packets
- Gloves- medium & large sizes plastic or latex 5 pairs ea
- Germicidal hand cleansing solution (Purcell, Vivonex, etc) 1 btl
- Tape 1" adhesive (Micropore, Transpore) 1 roll ea

300 S. Harbor Blvd., Suite 600 • Anaheim, CA 92805 • (714) 978-7488 • Fax (714) 456-2154
1320 Harbor Bay Parkway, Suite 115 • Alameda, CA 94502-6556 • (510) 748-6900 • Fax (510) 748-6915
email: info@workcare.com • website: www.workcare.com

- Burn Cream – Water-Jel or equivalent.
- Tylenol or generic – Purchased/stored in single dose, tamper evident packaging
- Ibruprofen tablets 200mg (generic) for inflammation/pain - Purchased/stored in single dose, tamper evident packaging
- Chemical cold packs 4 pks
- Sterile eye irrigation solution 4oz/8oz bottle 2 btl
- Bloodborne Pathogen clean up kit (gloves, eye shield/goggles, apron or protective garment, Chlorox solution, red bag for disposal) 1ea
- Hydrocortisone ointment 1% for itching, rashes 1ea
- Antihistimine – Moore Brand Phenylephrine (or equivalent **NON Drowsy Formula**) (OTC) for allergic reactions, insect bites, bee stings. Purchased/stored in single dose, tamper evident packaging.
- Betadine solution (8oz bottle) to soak lacerations/cuts 1 btl
- CPR mouth shield 1 ea
- Paramedic scissors 1 ea
- Gauze pads (3x3s) & (4x4s) sterile 1 bx of 50 ea size
- Compression bandage or ABD pads 10 ea
- Reference book on first aid 1 ea
- Ace bandages 3", 4" 2 ea
- Emergency blanket 1 ea
- Penlight flashlight 1 ea
- Sterile cotton tip applicators 1 bx of 50

Should you have any questions regarding this recommendation, please do not hesitate to contact me.

Sincerely,

Peter P. Greaney, MD
Medical Director
WorkCare

EXECUTIVE SUMMARY

This standard serves as the foundation for identifying hazards and assessing the associated H&S risks in the ARCADIS U.S., Inc. (ARCADIS) working environment, and assisting in the identification of the means and methods of controlling those risks.

The Hazard Assessment and Risk Control (HARC) process is the formal ARCADIS tool to be applied to:

- The routine and non-routine activities in ARCADIS offices and project sites
- The activities of all people having access to the workplace
- The facilities and services at the workplace, whether provided or directly controlled by ARCADIS or not (i.e. office renovation work completed by contractors, client activities on an active client site where ARCADIS is providing services, etc.) that could present hazards to our staff.

Employees are trained on the TRACK process during their initial Behavior Based Safety Training.The TRACK process is a less formal tool to be used prior to any activity conducted by an ARCADIS employee. It is an undocumented process that follows similar steps as the HARC process but is less formal and is done frequently throughout the activity.

Corporate H&S with Division and Practice Experts will review and update the corporate HARC listing on an annual basis which provides a listing of the more likely hazards that ARCADIS staff will encounter in the course of their work.

Principal in Charge (PIC), Project Manager (PM), and Task Manager (TM) will ensures that the HARC process is used to assess hazards on projects during the planning and implementation stages of the projects.

Health and Safety Plan Writers and Reviewers will use the HARC process when assessing hazards for the development of Health and Safety Plans (HASP).

All ARCADIS Employees will use the TRACK process regularly and frequently. In addition, employees read and understand all documented hazard identification and risk assessments conducted using the HARC process and documented in HASPs, Job Safety Analysis (JSAs), and other written plans that are associated with their work.

Upon completion of the HARC process on projects, the documentation will be kept with project files. The most current version of the overall company HARC document will be kept on the H&S section of the company intranet.

1.0 POLICY

It is ARCADIS policy to be proactive in the identification, assessment and control of health and safety hazards and associated risks. To those means, ARCADIS uses systematic approaches to identify and assess hazards and risks for the purposes of determining appropriate and effective controls to protect its staff, subcontractors, clients and the public who may be impacted by ARCADIS activities.

2.0 PURPOSE AND SCOPE

2.1 Purpose

This standard serves as the foundation for identifying hazards and assessing the associated H&S risks in the ARCADIS working environment, and assisting in the identification of the means and methods of controlling those risks. The processes and tools described herein are the recommended tools for use to ensure standard and consistent approaches throughout the organization. These hazard identification and risk assessment tools are to be used to supplement such activities as but not limited to:

- Health and Safety Plan development
- Job Safety Analysis development
- Using the TRACK process
- Determining the level of training staff or subcontractors need to complete

2.2 Scope

This standard and the associated tools are to be applied for the identification of hazards, the assessment of the associated risks, and the identification of control methods applicable to the entire ARCADIS operation. It is also to be applied when assessing the risks of hazards identified on individual projects as described herein.

The Hazard Assessment and Risk Control (HARC) process is the formal ARCADIS tool to be applied to:

- The routine and non-routine activities in ARCADIS offices and project sites
- The activities of all people having access to the workplace
- The facilities and services at the workplace, whether provided or directly controlled by ARCADIS or not (i.e. office renovation work completed by contractors, client activities on an active client site where ARCADIS is providing services, etc.) that could present hazards to our staff.

The TRACK process is a less formal tool to be used prior to any activity conducted by an ARCADIS employee. It is an undocumented process that follows similar steps as the HARC process but is less formal and is done frequently throughout the activity.

3.0 DEFINITIONS

Key Definitions for terms used within this standard are found in the ARCADIS H&S Management System document: ARC HSMS000

In general, the definition of hazards is as follows:

Hazard is anything with the potential to cause personal injury or illness or poses potential of damage to property or the environment

Health hazards including physical, chemical, biological, ergonomic and psychological hazards associated with work. Typically, they involve long-term exposure, although short-term exposure can also result in a health hazard. Typical examples include:

- Workplace exposure (e.g. to chemicals, noise, heat) that can lead to illness
- Infections (e.g. insects, snakes, parasites, poisonous plants)
- Ergonomic conditions (e.g. excessive bending, improper lifting, reaching too high or too far and repetitive movements
- Psychological conditions (e.g. aspects of work related stress)

Safety hazards that may result in sudden, unwanted, incidents leading to injury (including, but not limited to, back strain, contusion, permanent or temporary disability, a broken arm, skin laceration, fatality, burn, fires and explosions; spills on land or water) that are immediate in nature.

4.0 RESPONSIBILITIES

4.1 **Corporate H&S with Division and Practice Experts** – on a routine basis, review and update the corporate HARC listing which provides a listing of the more likely hazards that ARCADIS staff will encounter in the course of their work.

4.2 **Principal in Charge (PIC), Project Manager (PM), and Task Manager (TM)** – Ensures that the HARC process is used to assess hazards on projects during the planning and implementation stages of the projects.

4.3 **Health and Safety Plan Writers and Reviewers** – Use the HARC process when assessing hazards for the development of Health and Safety Plans (HASP). The writers and reviewers can use the corporate-wide HARC listing or use the HARC process as appropriate for specific project hazards.

4.4 **All ARCADIS Employees** – Use the TRACK process described below regularly and frequently. In addition, employees read and understand all documented hazard identification and risk assessments conducted using the HARC process and documented in HASPs, JSAs, and other written plans that are associated with their work.

5.0 STANDARD

5.1 Hazard Assessment and Risk Control (HARC)

Applying the HARC process assists in the third step of the ARCADIS TRACK process. Once the tasks of the project or activity are thought through, and the hazards are identified or recognized, HARC assists in assessing the risk of those hazards. The process provides a standardized means for ensuring that hazards and risk are assessed consistently from one activity to another. The HARC assists in assessing the risk based on the following two questions:

- What is/are the (potential) severity of the consequence(s) when the hazard (that which has the potential to cause harm) occurs?; and
- How likely is it that the, unwanted, consequence after the release of the hazard occurs?

The HARC risk assessment process starts with listing, for each individual hazard, what the consequences could be if the controls for that particular hazard fail. During this step it is important to consider that particular **credible** worst case scenario's for one hazard can lead to more than one consequence depending on the scenario. The HARC risk assessment process is comprised of a series hazard analysis tables prepared to provide guidance to staff when completing the HARC process. The HARC hazard analysis tables are incorporated into the ARCADIS Standard Health and Safety Plan templates to beused by staff when preparing HASPs as part of the project planning stage. The HASP templates are provided on the H&S page of the ARCADIS intranet webpage. A link to a copy of the HARC hazard analysis spreadsheet is provided in Exhibit 1 of this Standard.

Subsequently for each consequence the risk is assessed using the "Risk Assessment Matrix" (RAM). Risk is defined as: a combination of the chance or likelihood that a consequence will occur and the severity of that consequence.

The RAM is a tool that standardizes qualitative risk assessment to classify H&S risks into three categories: Low (green and purple areas), Medium (yellow and orange areas) and High (red area). It facilitates this classification process and does not require specific competencies to perform a sound risk assessment. The matrix axes, consistent with the definition of risk, are "Consequence" and "Likelihood". This classification results in different levels of risk control commensurate with the risk.

The RAM is shown below.

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health effect	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low.	4 - Medium.	8 - High	12 - High

5.1.1 Using the RAM:

The scale of consequences from “1” to “4” on the vertical axis is used to indicate increasing severity. The consequences are those of credible – worst case- scenarios (taking the prevailing circumstances into account) that can develop from the release of a hazard. The potential consequences, rather than the actual ones, are used. These can be thought of as the consequences that could have resulted from the released hazard if circumstances are less favorable: e.g. the risk controls failed and developed into a consequence.

After estimating the potential consequence(s), the likelihood ratings from “A” to “D” on the horizontal axis is estimated on the basis of historic evidence or experience that such consequences have materialized within the industry, the company or a smaller unit (Division, Practice or Project). Note that it is the likelihood of the consequence occurring and not the likelihood of the hazard released.

Estimation of the likelihood and the severity of consequences is not an exact science. The consequences are based on foreseen scenarios of what “might happen” and likelihood estimates are based on historical information that such a scenario has happened under similar conditions, knowing very well that circumstances are never exactly the same.

When assessing the risk of a particular scenario, first estimate the severity of the potential consequence starting at the bottom (for people, severity rating 4): “Fatalities”. Ask the question: “in this particular situation can one or more Fatalities occur when all the risk control measures fail?” If this is not possible, move one box up (severity rating 3) and ask the question: “can a Major health effect occur?” If not, again move up one box (severity rating 2) and ask the question: “can a Minor health effect occur?” Suppose the answer is yes, then the next step is the estimation of the likelihood that a “major health effect” occurs. In the RAM go first to the likelihood “D”: “Almost certain to happen”. If this is not the case, move to the next box: likelihood “C”: “Likely to happen”. If the likelihood is less, move to likelihood box “B”: “Possible but unlikely”. Suppose this likelihood is correct, then the estimated risk is “People, 2, B”. This is considered a “low risk” in the RAM.

If consequences can occur to people and property from the same hazard, the risk will be assessed for both with the higher risk level being used for the overall risk ranking.

Likelihoods “D” through “B” are generally well known by staff. The likelihood rating “A” is often not well known by staff. Corporate H&S will maintain a record of likelihoods with a low to very low chance.

Estimating the risk is should be done with a small group of experienced and realistic employees. Their focus should be on what is **probable** (this is more realistic) in a certain situation, rather than on what is **possible** (this is often theoretical). When seriously in doubt whether the risk is in the green / purple (low risk) or yellow / orange area (medium risk), it is advised to accept the more serious situation so as to remain at the safe or conservative level.

5.1.2 Guidance for the Consequence ratings is provided below:

Severity rating	**Description** **Health**	**Description** **Property Damage**
1	**Slight or No Health Effect -** No health effect or one requiring first aid or no treatment	**Slight or No Damage -** Slight or no damage to property up to $500
2	**Minor health effects -** Minor injury or health effects: Medical treatment beyond first aid that typically results in lost time of 2 days or less Examples: - Cut on the hand that requires stitches - Prescription medication - Broken leg that requires hard cast but allows person to return to work before missing more than two days	**Minor property damage -** Minor damage: Costs between $500 and $10,000 Example: - Brief disruption of operation or activity
3	**Major health effects -** Major injury or health effects: Injuries or health effects affecting work performance resulting in loss of time at work of 3 days or greater, an overnight hospital stay or irreversible damage to health. Examples: - Any lost time injury or illness resulting in 3 days or more away from work) - Overnight hospitalization - Illnesses such as sensitization, noise induced hearing loss, chronic back injury, repetitive strain injury or stress.	**Local property damage -** Moderate damage: Costs between $10,000 and $100,000 Example: - Partial shutdown of installation or cessation of part of the activity for a while
4	**Fatality** – any work-related fatality	**Major property damage** - Major damage: Costs more than $100,000 Example: - Shutdown of installation for up to 2 weeks or cessation of the whole activity for up to 2 weeks

5.1.3 Likelihood Ratings

To determine the Likelihood Rating, we want to be as objective as possible so we get consistent rankings across the company. Thus, use not only what has happened within ARCADIS when considering likelihood, but also what you believe would be the likelihood of an incident if a normal, untrained, unprepared person would experience. Think about what you hear in the public, in our industry, in other industries, and anything else you can think of. If we only think about what happens in ARCADIS, we can greatly underestimate or overestimate the true likelihood and risk of our activities.

Likelihood rating	Category	Description
A	**Almost Impossible**	The chances of an incident resulting from an activity is virtually zero. This may be appropriate for a person sitting in a chair and reading a report. The chances of an incident are virtually impossible. ARCADIS will have very few of these levels of likelihood for our activities.
B	**Possible but unlikely**	While there is a chance of an incident with this activity, it is not likely to happen. For example, a person walking on a clear, clean sidewalk, could fall, but it is unlikely to happen. Think about the number of people that walk everyday without falling on a clear, clean sidewalk. ARCADIS will have a significant number of these types of hazards.
C	**Likely to happen**	An incident will probably happen. A person working on a ladder that is not set up appropriately will likely fall, but not always. There is a good chance. ARCADIS will have a significant number of these.
D	**Almost certain to happen**	An incident will happen. A person that enters an uncontrolled confined space with toxic gases or vapors will almost certainly become sick or die. Nearly all of the activities we perform that are considered high hazard like confined space entry, working at heights, working in an excavation, etc., will all be rated with an "Almost certain to happen" in an uncontrolled situation.

5.1.4 Hierarchy of Risk Controls

Risk control is commensurate with the level of risk. The focus of H&S risk(s) control is primarily on measures to prevent hazardous situations. The hierarchy of controls should be used when determining the appropriate control.

The hierarchy of risk controls is a list, in preferential order, of the means by which H&S risks can be controlled:

- Elimination – always look to eliminate the hazard if possible

- Substitution – replace the hazard with a less hazardous tool, process, chemical, etc
- Isolation – isolate the hazard or those who could be harmed so the hazard is not accessible
- Engineering controls – provide an engineering solution to lessen the hazard
- Administrative controls – provide training, shorten exposure times, rotate staff, encourage staff behavioural changes, provide signage or warnings to administratively reduce the hazard
- Personal Protective Equipment (PPE) – this is the last resort, but often used as secondary controls. PPE should not be the first line of defense unless all other controls are not practical, feasible, or it is mandated by local regulatory requirements.

The hierarchy of controls should always be considered when assessing the effectiveness of controls. The higher in the hierarchy, the more effective the control usually is. Elimination of the hazard is always the preferred control. When this is not possible, a control lower in the hierarchy can be considered. This process is repeated until the proper and practical control is selected for each hazard.

5.1.4.1 Control of Low Risks

Risks classified as “Low” can be controlled in a simple manner by reference to specific generic procedures and personal competencies. The basis for control of H&S risks at this level is judgment and experience. For example, walking down the sidewalk often only requires a simple administrative control, the use of TRACK, to ensure a person scans the walking surface for hazards and avoids those hazards that could cause the person to trip or slip and fall.

Examples of General H&S control standards or measures for Low H&S risks:

- Newly recruited staff receives basic training in safety aspects in their area of work as part of their education for the job.
- Newly appointed field staff should attend a general H&S orientation program. This is also applicable for office staff. The TRACK process is very suited for this purpose.
- Training on the job by experienced supervisor or peer
- Refer to Health and Safety Procedures (HSPs)
- Good housekeeping practices as detailed in field Health & Safety Handbook
- Tool box meetings before a new activity is being carried out
- Reading/understanding of and training in company safety standards
- Understanding of vendor specification for use of equipment

For each of these requirements, standards or measures it must be indicated who is responsible for keeping them up to date and who is responsible for their application.

H&S documents the minimum training requirements and standards and measures applied to control H&S risks.

5.1.4.2 Control of Medium Risks

Risks classified as “Medium” are controlled in a more rigorous yet simple way. A main point is that more risk specific information and control measures are provided and documented in, for example, a JSA or HASP. The basis for control of H&S risks at this level is appropriate hazard analysis and risk control in addition to judgment and experience.

In addition, controls can include such things as:

- Specialized training
- Client training
- Contingency/Emergency planning
- Engineering controls
- Administrative controls
- Personal Protective Equipment
- Specialized equipment (i.e., air monitoring, fall protection, ventilation)
- Housekeeping
- Inspections

In many cases it may be appropriate to use a combination of these tools to control Medium risks.

5.1.4.3 Control of High Risks

Risks classified as "High" (including an orange Medium rating for a "Fatalities" consequesnce rating where the likelihood is "Possible but unlikely") have to be thoroughly analyzed and controlled. The principles of the analysis and control of high risks are identical to medium risks but more detailed and with more risk control and recovery measures. High risks are brought to the attention of H&S support staff and their analysis is carried out by competent staff with support by Operational Management and Corporate Health & Safety.

5.2 TRACK

The TRACK process is the second tool that ARCADIS staff use to identify hazards, assess risk, and determine the best ways to control those identified risks. TRACK is the following:

Think through the task
Recognize the hazard
Assess the risk
Control the hazard
Keep H&S first in all things

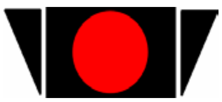
Every ARCADIS employee will use **TRACK** as the hazard awareness methodology:

- At the beginning of the day and when changing tasks during the work period;
- Before undertaking new activities for the first time and for non-routine activities;
- When changes in working conditions occur (e.g., weather, traffic); and
- Immediately following an incident, including near losses.

"Think through the task!"

First, think about the task in relation to how an incident could occur:

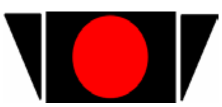
- What are the steps in the task?
- How is the job going to be done?
- What tools will be used; what environment are we in; what techniques will be used?
- Who is involved and who needs to be involved?



"Recognize the hazards!"

Next, recognize the hazards associated with the task and its individual steps:

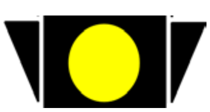
- Is the work area safe?
- What hazards might I encounter while performing these tasks?
- What is the worst that could happen?
- Are tools and equipment in good repair and working properly?
- Are chemicals or biological hazards present?
- Which physical hazards are present (e.g., heat, noise, vibration, awkward positions, lifting)?



"Assess the risks!"

Then, be sure you understand the risks associated with the identified hazards:

- If this hazard was likely to occur, how badly could I or anybody else be hurt?
- How often might I or anybody else be exposed to that hazard as I am doing this task?
- How might I be exposed to identified chemicals and what are the safe levels of those chemicals?
- What is the likelihood of an injury or damage?



"Control the hazards!"

Now, take the necessary steps to eliminate or control the hazards:

- Is there a safer way to do the job?
- Can the hazard be eliminated?
- Can the hazard be engineered out of the task or work area (e.g., guardrails, a fan, ventilation, material substitution to a less hazardous chemical or piece of

equipment)?
- Can administrative controls be implemented to eliminate or minimize the hazard (e.g., rest periods, signage, job rotation, training)?
- If engineering or administrative controls are not practical, will the use of Personal Protective Equipment (PPE) minimize the hazard and risk?

"Keep health and safety first in all things!"

Lastly, always put health and safety first in all things:

- Correct or report safety concerns.
- Suggest ways to improve health and safety and/or eliminate unsafe conditions.
- Monitor health and safety controls for effectiveness.
- Look out for yourself and others.
- Continually be aware of your surroundings and when things change or you have a concern, stop and redo TRACK.
- **Stop work if it's not safe**.

6.0 TRAINING

All employees are trained on the TRACK process during their initial Health & Safety Orientation training. No formal training is required for the HARC process.

7.0 REFERENCES

7.1 HARC information is built into the Hazard Analysis tab of the Excel® HASP templates kept on the H&S page of The Source. In addition, Corporate H&S maintains a master HARC listing broken out by Division and Department within Division.

7.2 ARCADIS Health and Safety Standard ARC HSFS002 – Health and Safety Planning

8.0 RECORDS

As applicable, upon completion of the HARC process on projects not using the standard Excel® HASP templates, the documentation will be kept with project files. The most current version of the overall company HARC spreadsheet document will be kept on the H&S page of the company intranet site (the Source).

9.0 APPROVALS AND HISTORY OF CHANGE

Approved By:

Tony Tremblay, CSP – Corporate Health &Safety, Director of Technical Programs

History of Change

Revision Date	Revision Number	Standard Developed/Reviewed By or Revised By	Reason for change
02 April 2008	01	Mike Thomas/Sam Moyers	Original document
27 June 2012	02	Tony Tremblay	Added Executive Summary; removed Loss Prevention System references to Behavior Based Safety; Updated Header Logo; Updated the HARC process/terms in section 5.1 and updated TRACK in section 5.2
27 January 2014	03	Alec MacAdam and Tony Tremblay	Updated HARC process/terms in Sections 5.1 and 7.0; Include Exhibit 1 hyperlink to HARC Hazard Analysis Spreadsheet.

Exhibit 1 – HARC Hazard Analysis Spreadsheet

Link to HARC Hazard Analysis Spreadsheet

EXECUTIVE SUMMARY

The purpose of this Health and Safety Standard (HSS) is to provide direction on the development and implementation of an office location or project specific Hazard Communication (HazCom) program. Each office or job site that is subject to the HazCom standard shall have a written program regarding chemical use and storage.

ARCADIS is committed to preventing accidents and ensuring the safety and health of our employees. ARCADIS will comply with applicable federal and state health and safety rules. Under this standard, employees will be informed of the contents of the OSHA Hazard Communications standard, the hazardous properties of chemicals in the work area, safe handling procedures and chemical protective measures.

This HazCom HSS applies to all office locations and job sites that store or use hazardous chemicals/products on site (office or field).

Location Leaders and Health & Safety Coordinators are responsible for the development and implementation of a HazCom program in their location.

Employees are responsible for reviewing Safety Data Sheets (SDS) of the substances they are going to work with and make sure they understand all relevant information as well as take necessary precautions.

Every office within ARCADIS shall develop and maintain a written HazCom program specific to their location and activities. With the exception of the sections regarding “Labeling” and “Safety Data Sheets,” use of hazardous chemicals at ARCADIS laboratories is exempt from the requirements of this hazard communication standard.

For project sites, the project Health and Safety plan (HASP) shall serve as the documented written HazCom program for that site.

A Master Inventory List (MIL) is an inventory of all chemicals/products found on-site. At each location or project site, an inventory of the hazardous chemicals present shall be completed at least once per year, or as new chemicals are introduced to or removed from the location and more often as necessary. All primary and secondary containers of hazardous chemicals/products listed on the MIL must be labeled.

The SDS shall be obtained, reviewed and then maintained for each chemical subject to the HazCom standard. It shall be readily available to all employees who may use or may be exposed to the hazardous chemicals.

Employees who may be exposed to hazardous chemicals/products under normal operating conditions or in foreseeable emergency situations shall receive HazCom training. ARCADIS shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area.

The SDSs shall be kept at the office location or in the project files.

HazCom training records will be kept in the corporate training database.

1. POLICY

It is ARCADIS policy to inform all employees of the hazardous chemicals they may encounter during their work activities. This shall be accomplished through the development and implementation of a location and project specific hazard communication process that includes Safety Data Sheets (SDS), container labeling, and training. Hazard Communication (HazCom) requires a written program specific to each location or job site where hazardous chemicals/products are used or stored. The principal goal of the written program is to inform employees, contractors, and subcontractors about potential hazards associated with routinely used chemicals/products. A checklist that will assist in evaluating conformance with this standard is found in Exhibit 1.

The requirements of this standard are intended to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3.

2. PURPOSE AND SCOPE

2.1 Purpose

The purpose of this Health and Safety Standard (HSS) is to provide direction on the development and implementation of an office location or project specific HazCom program. Each office or job site that is subject to the HazCom standard shall have a written program regarding chemical use and storage. The program should describe how the requirements of this standard will be met. The program should address the following:

- Master Inventory List (MIL)
- SDS
- Container Labeling
- Chemicals in Pipes
- Contractor Requirements
- Training

The transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, safety data sheets and employee training.

2.2 Scope

This HazCom HSS applies to office locations and job sites that store or use hazardous chemicals/products on site (office or field) in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency. Use of a hazardous chemical includes generation of that chemical as a byproduct. This HSS meets the requirements outlined in the final rule revising the OSHA Hazard Communication Standard (29 CFR 1910.1200) to be consistent with the United Nations Globally Harmonized system of Classification and Labeling of Chemicals.

3. DEFINITIONS

There are a number of definitions associated with this standard and its associated procedures. These definitions are presented in Exhibit 1 of this document.

4. RESPONSIBILITIES

4.1 Corporate H&S Staff

Corporate H&S staff are responsible for assisting the locations and project sites with the development and implementation of the required HazCom program. In addition, provide the tools and resources for employees to have access to information on hazardous chemicals. In addition, Corporate H&S shall review the program for effectiveness periodically and when program deficiencies are identified.

4.2 Location Leaders and H&S Coordinators

Location Leaders and H&S Coordinators are responsible for the development and implementation of a HazCom program in their location.

As applicable, local H&S Coordinators are responsible for ensuring that employees are provided with training and information about specific labeling systems in use at their office (e.g., HMIS III, NFPA, etc.).

4.3 Employees

Employees are responsible for reviewing SDS of the substances they are going to work with and make sure they understand all relevant information as well as take necessary precautions. They are responsible for ensuring that containers of hazardous chemicals they are using are appropriately labeled and if not, for obtaining the proper labeling.

4.4 Supervisors

Supervisors are responsible for providing the necessary resources for the appropriate development and implementation of an appropriate HazCom program and to ensure the company is operating in accordance with this policy by performing periodic reviews, task observations and/or conformance assessments.

4.5 Managers and Supervisors

Project Managers (PM) and Principals in Charge (PICs) are responsible for ensuring that a HazCom program is developed and implemented on projects where hazardous chemicals are used or encountered. PMs and PICs are also responsible for understanding their clients' requirements for HazCom and that hazardous chemical information is shared with the client and other affected contractors/subcontractors on site.

In addition, PICs and PMs are responsible for ensuring their project staff has had training in HazCom per this HSS.

As applicable, PMs and PICs are responsible for ensuring that employees are provided with training and information about specific labeling systems in use at project sites (e.g., HMIS III, NFPA, etc.).

4.6 Site Safety Officers

Site Safety Officers (SSOs) will act as the HazCom Program Coordinator for the project sites and shall maintain the MIL of hazardous chemicals kept on the job Site. The SSO is responsible for maintaining SDS on Site for those hazardous chemicals being used by ARCADIS staff on site. The SSO is responsible to communicate the location of the SDS and the hazards associated with these chemicals to project Site ARCADIS employees and potentially affected subcontractors during the initial tailgate safety meeting and/or safety orientation. The SSO shall ensure that all containers of chemicals (bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like) are labeled appropriately and will provide additional details regarding any specific labeling system in use at the project location (e.g., HMIS III, NFPA, etc.).

Note: In those instances where an ARCADIS subcontractor is using a hazardous chemical on site, the SSO shall obtain a copy of the SDS and maintain in the on-site project file for reference by ARCADIS employees, contractor employees or client/facility staff.

When working at a multi-employer work-site in which ARCADIS and/or our subcontractor will produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s), including but not limited to facility management and/or our client's employees, may be exposed, then the SSO shall ensure the following is addressed:

- that a copy of the applicable SDS has been provided to those employers;
- discuss any necessary precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and
- the labeling system that will be used in the workplace

5. PROCEDURE

5.1 Written Program

Every office within ARCADIS shall develop and maintain a written HazCom program specific to their location and activities. The program should be developed using the template provided in Exhibit 3 of this standard. The program shall be reviewed annually. The written program shall be maintained in a location that is accessible to each employee when they are in the office. Employees shall be notified of its presence and how to access it.

For project sites, the project H&S plan (HASP) shall serve as the documented written HazCom program for that site. The HASP shall provide information about the chemicals present on the site (inventory), the location of the SDS on site, and the labeling of containers. In addition, the required training shall be part of the site orientation and the daily or more frequent tailgate meetings at the project site.

5.2 Master Inventory List (MIL)

A MIL is an inventory of all chemicals/products found on-site. At each office location or project site, an inventory of the hazardous chemicals present shall be completed at least once per year, or as new chemicals are introduced to or removed from the location and more often as necessary. This inventory shall be developed into a MIL of hazardous chemicals. This inventory includes hazardous chemicals present in piping and those that may be generated as a byproduct of other activities.

Upon completion of the inventory, it shall be determined if any of the chemicals/products identified are exempt from the appropriate HazCom standard that is applicable to the location. If the chemicals/products at the location are exempt from HazCom, it shall be noted on the MIL. The MIL shall be made available to all employees and should be kept current and accurate. The MIL for a project will be found in the HASP. A sample MIL form for office use is found in Exhibit 4.

Common chemical exemptions include:

1. Foods, drugs, or cosmetics intended for personal consumption by employees;

2. Any consumer product or hazardous substance used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers; and

3. Office products to which office workers would have non-route exposure.

Exhibit 5 provides a listing of those chemicals which are commonly determined to be exempt in ARCADIS offices. However, each office and project site must determine what is exempt by using the exemption descriptions above.

The MIL shall be reviewed periodically. Any new chemicals/products will be added and those no longer in use or kept at the office or job site shall be deleted.

5.3 GHS Labeling Requirements

All primary and secondary containers of hazardous chemicals/products listed on the MIL must be labeled. Labels or other forms of warning will be legible, in English, and prominently displayed on the container, or readily available in the work area. For employees who speak another language(s), information may be added in their language to the label or other form of warning.

5.3.1 Labels on Shipped Containers

The chemical manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked. Hazards not otherwise classified do not have to be addressed on the container. Where the chemical manufacturer or importer is required to label, tag or mark the following information shall be provided on containers shipped to ARCADIS:

- Product Identifier
- A signal word, either “Danger” or “Warning.”
- Hazard statement(s).
- A standard pictogram(s).
- Precautionary statement(s); and
- The name, address, and telephone number of the chemical manufacturer, importer or other responsible party.

Chemical manufacturers, importers, distributors, and employers, including ARCADIS, may comply with either §1910.1200, revised as of October 1, 2011, or the current version of the standard or both during the transition period.

Chemical manufacturers, importers, distributors, and employers shall be in compliance with all modified provisions of the OSHA Hazard Communication Standard no later than June 1, 2015, except:

- After December 1, 2015, distributors shall not ship containers labeled by the chemical manufacturer or importer unless the label has been modified to comply with the updated OSHA Hazard Communication Standard.

5.3.2 Workplace Labeling

ARCADIS shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with either:

- A product identifier, a signal word (either “Danger” or “Warning”), hazard statement(s), standard pictogram(s), and precautionary statement(s); or
- Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

Note: ARCADIS may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by the hazardous chemicals in the workplace labeling requirement. ARCADIS must also ensure the written materials are readily accessible to the employees in their work area throughout each work shift.

The supervisor of each work area must ensure that secondary chemical containers are properly labeled. Secondary chemical container labeling can be labeled with the same shipping container labels, or information that communicates the following:

- Identity of the chemical.
- The hazards of the chemical.

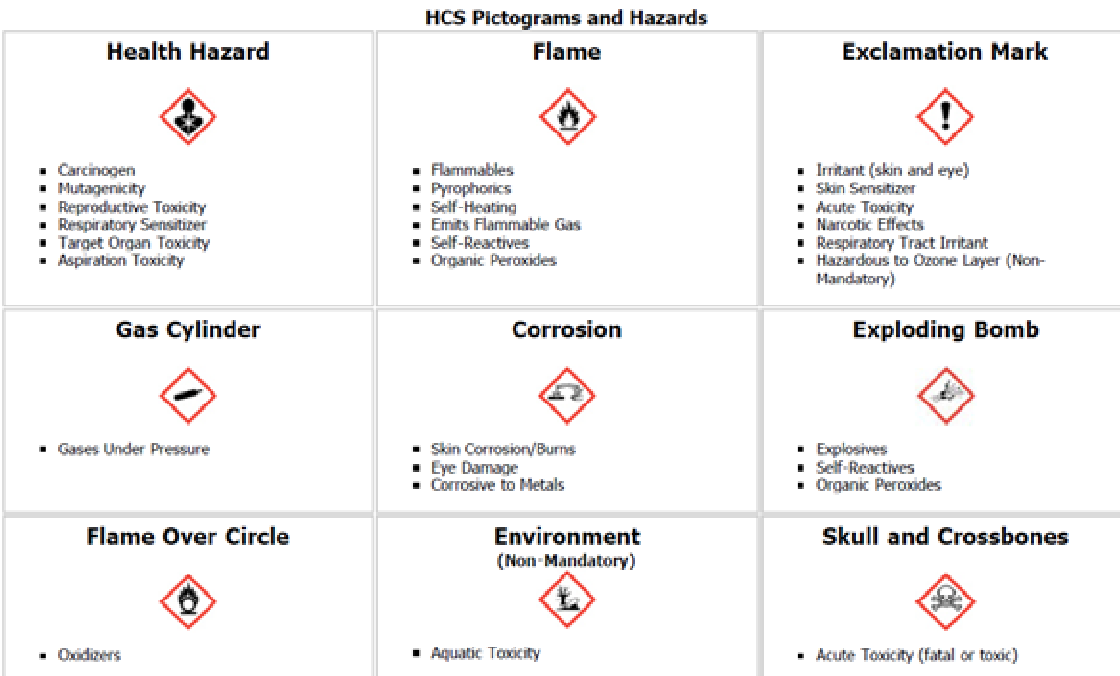
The label may use a combination of words, symbols or pictures to communicate this information. The company will use a standard labeling method for all secondary containers.

Note: ARCADIS is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer, however, best management practice would be that all portable containers, even those intended only for the immediate use by employees, should be labeled with chemical identity and hazard information, where feasible.

Phase-In Compliance Date for Alternative Workplace Labeling: ARCADIS must update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards by June 1, 2016, as applicable.

5.3.3 Hazard Communication Standard Pictograms

The Hazard Communication Standard pictograms and hazards are defined as follows:



HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity	▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides	▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder	**Corrosion**	**Exploding Bomb**
▪ Gases Under Pressure	▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals	▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
Flame Over Circle	**Environment (Non-Mandatory)**	**Skull and Crossbones**
▪ Oxidizers	▪ Aquatic Toxicity	▪ Acute Toxicity (fatal or toxic)

5.3.4 Hazard Classifications

Hazard Class	Type of Hazard	Hazard Category	Comment
Hazard Not Otherwise Classified			Added for hazards like combustible dust
Flammable Liquids	Physical	1-4	
Flammable Solids	Physical	1-2	
Self Reactive Substances	Physical	A-G (types)	
Pyrophoric Liquids	Physical	1	
Pyrophoric Solids	Physical	1	
Self Heating Substances	Physical	1-2	
Substances – emit flammable gas with contact with water	Physical	1-3 and not classified	
Oxidizing Liquids	Physical	1-3	Based on results
Oxidizing Solids	Physical	1-3	Based on results

Hazard Class	Type of Hazard	Hazard Category	Comment
Organic Peroxide	Physical	A-G (type)	A = detonate as packaged
Substances Corrosive to Metal	Physical	1	Based on results
Acute Toxicity	Health	1-5	Further divided by oral, dermal, gases, vapors, dust/mist
Skin Corrosion	Health	1a – 1c; 2-3	
Skin Irritation	Health	1	
Eye Effects	Health	1; 2a – 2b	
Sensitization	Health	Respiratory 1-2 Skin 1	
Germ Cell Mutagenicity	Health	1a – 1b; 2	
Carcinogenicity	Health	1a – 1b; 2	
Reproductive Toxicity	Health	1a – 1b; 2 and lactation	
Target Organ System Toxicity	Health	Single Exposure: 1-3 Repeated Exposure: 1 - 2	
Aspiration Hazard	Health	1-2	
Hazardous to Aquatic Environment	Environmental	N/A	
Acute Aquatic Toxicity	Environmental	1-3	
Chronic Aquatic Toxicity	Environmental	1-4	
Explosive	Physical	1.1 – 1.6 (divisions)	1.1 most severe
Flammable Gasses	Physical	1-2	Based on results
Flammable Aerosols	Physical	1-2	Based on results
Oxidizing Gases	Physical	1	
Gasses Under Pressure (e.g., compressed gas)	Physical	1-4	1 = entirely gaseous

5.3.5 Missing Labels

Labels on received chemicals must not be removed or defaced. Missing, defaced or illegible labels shall be replaced immediately with clean, properly marked ones. Shipments that show damage/leak/or spill are to be refused.

5.4 Safety Data Sheets (SDSs)

A SDS shall be obtained and then maintained for each chemical subject to the Hazard Communication standard. It shall be readily available to all employees who may use or be exposed to the applicable chemicals. The SDS is the principal means of conveying chemical-specific information to the user. SDS's must be present for each hazardous chemical used in the field.

SDS for those hazardous substances purchased or obtained by ARCADIS or are in their original container from the manufacturer or have been transferred from their original container to a secondary container, shall be those specific SDS developed and provided by the manufacturer for that specific substance. Manufacturer SDS often are found on the manufacturer's website. SDS for hazardous substances identified in the environmental media as contaminants can be obtained as generic SDS from an on-line or web-based source.

Currently ARCADIS uses a service known as the HazMat Zone which is linked on the Health & Safety APEX site for access to chemical information and SDS.

The SDS shall contain at least the following:

1. Identification

   - Product identifier used on the label;
   - Other means of identification;
   - Recommended use of the chemical and restrictions on use;
   - (Name, address, and telephone number of the manufacturer, importer, or other responsible party;
   - Emergency phone number

2. Hazard(s) identification

   - Classification of the chemical in accordance with paragraph (d) of §1910.1200;
   - Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones);
   - Describe any hazards not otherwise classified that have been identified during the classification process;
   - Where an ingredient with unknown acute toxicity is used in a mixture at a concentration = 1% and the mixture is not classified based on testing of the

mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.

3. Composition/information on ingredients;

For Substances

- Chemical name;
- (b) Common name and synonyms;
- (c) CAS number and other unique identifiers;
- (d) Impurities and stabilizing additives which are themselves classified and
- which contribute to the classification of the substance.

For Mixtures

In addition to the information required for substances:

- The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards in accordance with paragraph (d) of §1910.1200 and are present above their cut-off/concentration limits; or present a health risk below the cut-off/concentration limits.
- The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with §1910.1200(i), when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures with similar chemical composition. In these cases, concentration ranges may be used.

For All Chemicals Where a Trade Secret is Claimed

- Where a trade secret is claimed in accordance with paragraph (i) of§1910.1200, a statement that the specific chemical identity and/or exact percentage of composition (concentration) has been withheld as a trade secret is required.

4. First-aid measures

- Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion;
- Most important symptoms/effects, acute and delayed.
- Indication of immediate medical attention and special treatment needed, if necessary.

5. Fire-fighting measures

- Suitable (and unsuitable) extinguishing media.
- Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products)

6. Accidental release measures

   - Personal precautions, protective equipment, and emergency procedures.
   - Methods and materials for containment and cleaning up.

7. Handling and storage

   - Precautions for safe handling

8. Exposure controls/personal protection

   - OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
   - Appropriate engineering controls.

9. Physical and chemical properties

   - Appearance (physical state, color, etc.);
   - Odor;
   - Odor threshold;
   - pH;
   - Melting point/freezing point;
   - Initial boiling point and boiling range;
   - Flash point;
   - Evaporation rate;
   - Flammability (solid, gas);
   - Upper/lower flammability or explosive limits;
   - Vapor pressure;
   - Vapor density;
   - Relative density;
   - Solubility(ies);
   - Partition coefficient: n-octanol/water;
   - Auto-ignition temperature;
   - Decomposition temperature;
   - Viscosity.

10. Stability and reactivity

   - Reactivity
   - Chemical stability;
   - Possibility of hazardous reactions;
   - Conditions to avoid (e.g., static discharge, shock, or vibration);
   - Incompatible materials;

- Hazardous decomposition products

11. Toxicological information

Description of the various toxicological (health) effects and the available data used to identify those effects, including:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);
- Symptoms related to the physical, chemical and toxicological characteristics;
- Delayed and immediate effects and also chronic effects from short- and long-term exposure;
- Numerical measures of toxicity (such as acute toxicity estimates).
- Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by OSHA.

12. Ecological information (Non-Mandatory)

To be GHS-compliant the requirements for this section are provided.

- Ecotoxicity (aquatic and terrestrial, where available);
- Persistence and degradability;
- Bioaccumulative potential;
- Mobility in soil;

13. Disposal considerations (Non-)Mandatory

To be GHS-compliant the requirements for this section are provided.

- Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

14. Transport information (Non-Mandatory)

To be GHS-compliant the requirements for this section are provided.

- UN number;
- UN proper shipping name;
- Transport hazard class(es);
- Packing group, if applicable;
- Environmental hazards (e.g., Marine pollutant (Yes/No));
- Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

- Special precautions, which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

15. Regulatory information (Non-Mandatory)

    To be GHS-compliant the requirements for this section are provided.

    - Safety, health and environmental regulations specific for the product in question

16. Other information, including date of preparation or last revision.

    - The date of preparation of the SDS or the last change to it.

A master file of SDSs will be maintained and SDSs shall be made readily available to employees at a central office location or a readily available location at the project site. The SDS master file shall be reviewed, at a minimum, annually or any time the MIL is updated. Any obsolete or outdated SDSs shall be removed from the master file and maintained in a secondary "obsolete" or "outdated" SDS file that shall be retained for at least 30 years.

5.4.1 Multi-Employer Work Sites

If appropriate, the written program will include information regarding how other employers at the workplace will be provided the following:

- Access to SDSs for chemicals/products introduced to the workplace by ARCADIS;
- Information on precautions that should be taken regarding these chemicals/products; and
- Information regarding any site-specific labeling system.

This information will be communicated as part of a contractor site safety orientation. In addition, clients frequently ask for us to provide SDS for the chemicals ARCADIS will bring onto their sites. If ARCADIS or our contractor will produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed, then the ARCADIS SSO must provide the appropriate SDS to the client along with information on precautions that should be taken regarding these chemical products and information about our site specific labeling system.

As applicable, ARCADIS field and office staff can also ask the client or other parties working in their vicinity for SDS of hazardous substances being used by client or other parties at a project or office location.

5.5 Chemicals in Pipes

Some work activities are performed by employees in areas where chemicals are transferred through pipes. Prior to starting work in these areas, employees should contact owner/operator for information regarding:

- The chemicals in the pipes, or the insulation material on the pipe;
- Potential hazards; and
- Safety and emergency evacuation precautions to be taken.

5.6 Laboratories

With the exception of the sections regarding “Labeling” and “Safety Data Sheets,” use of hazardous chemicals at ARCADIS laboratories is exempt from the requirements of this hazard communication standard. Laboratories using hazardous chemicals must comply with the requirements of a Laboratory Chemical Hygiene Plan.

The following Hazard Communication requirements apply to ARCADIS laboratories:

- Laboratory staff shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;
- Laboratory staff shall maintain any safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible during each work-shift to laboratory employees when they are in their work areas;
- Laboratory employees must be provided with information and training in accordance with Section 6 of this standard, excluding information about the location and availability of the written hazard communication program; and
- ARCADIS Laboratories that ship hazardous chemicals are considered to be either a chemical manufacturer or a distributor, and thus must ensure that any containers of hazardous chemicals leaving the laboratory are labeled in accordance with Section 5.3 of this Standard, and that a safety data sheet is provided to distributors and other employers.

6. TRAINING

All employees who may be exposed to hazardous chemicals/products under normal operating conditions, or in foreseeable emergency situations, shall receive Hazard Communication training. ARCADIS shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training is designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information is always available to employees through labels and safety data sheets.

Training will be followed per the requirements and instruction outlined by the Corporate Training group and Corporate H&S.

ARCADIS employees will be informed of:

- The requirements contained in the Hazard Communication Standard 29 CFR 1910.1200;
- Any operations in their work area where hazardous chemicals are present;
- The location and availability of the written HazCom program; and
- The location of the MIL and SDSs;

Initial HazCom training shall include the following elements:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
- The physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area;
- The measures employees can take to protect themselves from these hazards, including specific procedures ARCADIS has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
- The details of the hazard communication program developed by ARCADIS, including an explanation of the labels received on shipped containers and any office/project specific labeling system used by ARCADIS, the safety data sheet, including the order of information and how employees can obtain and use the appropriate hazard information. The training will reinforce that here at ARCADIS the primary and secondary containers of hazardous chemicals/products listed on the MIL must be labeled.

Whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area, each employee of that area will be given information as outlined above.

With regards to the GHS update to the OSHA Hazard Communication Standard, ARCADIS shall train employees regarding the new label elements and safety data sheets format by December 1, 2013.

7. REFERENCES

29 CFR 1910.1200 “Hazard Communication Standard”

Side-by-Side Comparison of OSHA's Existing Hazard Communication Standard (HCS 1994) vs. the Revised Hazard Communication Standard (HCS 2012)

8. RECORDS

The SDSs shall be kept at the office location or in the project files. The Hazard Communication Standard requires that ARCADIS maintain copies of SDSs for each hazardous chemical used in the workplace. ARCADIS may discard a SDS for a mixture, if the new data sheet includes the same hazardous chemicals as the original formulation. If the formulation is different, then ARCADIS must maintain all versions of these SDS for at least 30 years. OSHA standard, 29 CFR 1910.1020, Access to Employee Exposure and Medical Records defines "employee exposure records" to include SDSs. The Access to Employee Exposure and Medical Records standard requires all employee exposure records to be maintained for at least 30 years.

Once a SDS is deemed to be “obsolete”, ARCADIS will indicate the date of last use on the SDS and then maintain a copy of these SDS be placing them into an “obsolete” SDS folder (paper copy or electronic file copy is acceptable) which will be maintained for at least 30 years past the date of last use by an ARCADIS employee.

Employee training records will be kept in the corporate training database.

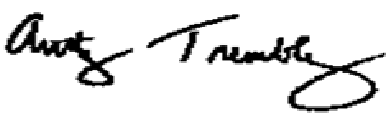
Exhibits for this Section:

- Exhibit 1 – Definitions
- Exhibit 2 – HazCom Program Checklist
- Exhibit 3 – Template HazCom written program document
- Exhibit 4 – Master Chemical Inventory Form
- Exhibit 5 – List of Common Exemptions
- Exhibit 6 – Samples of Common Container Labels

9. APPROVALS AND HISTORY OF CHANGE

Approved By:

Tony Tremblay, CSP – Infrastructure Division Director of H&S



History of Change

Revision Date	Revision Number	Reason for change
1 June 2009	01	Original document
18 April 2012	02	Executive Summary Added
3 December 2012	03	Standard revised to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3; Detailed that as applicable, Local H&S Coordinators and PM/PICs must ensure staff are trained/informed about office or project specific chemical labeling systems in use; Clarified SSO responsibilities as it pertains to multi-employer worksites; Definitions Added/Updated; HazCom Template in Exhibit 3 was revised; Exhibit 4 – Master Chemical Inventory List revised; Exhibit 6 labels updated
18 January 2013	04	SDS Recordkeeping requirements defined in section 8

Exhibit 1 - Definitions

Chemical - Any substance, or mixture of substances

Chemical name - the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that will clearly identify the chemical for the purpose of conducting a hazard classification.

Classification -to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

Container - any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of the Hazard Communication Standard, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Employee - a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

Exposure or exposed - an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

Foreseeable emergency - means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

Hazard category - the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

Hazard class - the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

Hazard not otherwise classified (HNOC) - an adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in this section. This does not extend coverage to adverse physical and health effects for which there is a hazard class addressed in this section, but the effect either falls below the cut-off value/concentration limit of the hazard class or is under a GHS hazard category that has not been adopted by OSHA (e.g., acute toxicity Category 5).

Hazard statement - a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

Hazardous chemical - any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

Health hazard - a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in Appendix A to §1910.1200 -- Health Hazard Criteria.

Label - an appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

Mixture - a combination or a solution composed of two or more substances in which they do not react.

Physical hazard - a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas. See Appendix B to §1910.1200 - Physical Hazard Criteria.

Pictogram - a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

Precautionary statement - a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

Product identifier - the name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

Signal word - a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.

Simple asphyxiant - a substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.

Substance - chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

Use - means to package, handle, react, emit, extract, generate as a byproduct, or transfer.

Workplace - includes any office or job site where hazardous chemicals/products are stored or used.

Exhibit 2 – Hazard Communication Program Checklist

HAZARD COMMUNICATION PROGRAM COMPLIANCE CHECKLIST

ARCADIS Office: ____________________ **Jobsite** (if applicable):_________________

Completed By (name/job title): ________________________ **Date**:_____

	Yes	No	Comments
1. Do you have a copy of 29 CFR 1910.1200?			
· Have you read and understand the requirements?			
2. Do you have a written program?			
· Have program responsibilities been assigned?			
· Does the program establish a procedure to review and evaluate program on an annual basis?			
3. Has a list of all hazardous chemicals/substances in the office/jobsite been prepared?[1]			
· Does the program contain a method for updating this list?			
4. Is there an SDS for each hazardous chemical/substance?			
· Does the program ensure that incoming hazardous chemicals/substances have an SDS?			
5. Does the program ensure that all incoming hazardous chemicals/substances have labels?			
6. Does the program address how to identify new chemicals/substances before they are used?			
· Does the program address how employees will be informed of new chemicals/substances?			

[1] The Chemical Inventory Report Form should be used to complete this list.

7. Do employees understand how to detect the release of hazardous chemicals/substances?			
8. Are employees:			
· Aware of HazCom Standard requirements and information specific to this office/jobsite?			
· Familiar with hazards of the chemicals/substances at this office/jobsite?			
· Informed of the hazards of performing non-routine tasks?			
9. Has training been provided in regard to proper work practices and PPE?			
10. Does the training:			
· Provide information on emergency procedures/first aid including symptoms of overexposure?			
· Provide an explanation of labels and warnings that are used in the work area?			
· Describe where employees can find the SDS?			
· Describe how to read/use an SDS?			

COMMENTS: ____

____

____

____

Exhibit 3 – Template HazCom Written Program for Offices

HAZARD COMMUNICATION PROGRAM

ARCADIS OFFICE:	
WRITTEN BY:	**DATE WRITTEN:**
REVISED BY:	**DATE REVISED:**

Applicability

Where applicable, ARCADIS shall comply with the OSHA Hazard Communication ("HazCom") standard (29CFR 1910.1200) by maintaining a hazardous chemicals list and associated SDS; by ensuring that containers are labeled; and by providing training to applicable employees. This written HazCom program applies to all work locations where there is potential for exposure to hazardous chemicals under normal working conditions or during an emergency situation. A copy of the written program may be obtained from: ________________ Program Coordinator

The ______________________, is the Program Coordinator. The Program Coordinator will be available to answer questions regarding hazards and appropriate protective measures, and shall ensure that:

- The written program is reviewed at least annually, updated as necessary, and that documentation of the reviews are kept with the plan;
- A list of hazardous chemicals is completed on the "Master Chemical Inventory List (MIL) Form" and updated as necessary (see Exhibit 3 of ARC HSGE007);
- An SDS is available for all chemicals on the Chemical Inventory Report form except those that are exempt from the standard;
- SDS that are no longer applicable are archived and maintained for 30 years;
- All hazardous chemicals are properly labeled;
- All applicable employees and new hires have received training before they begin work to which this program applies; and
- Safe work practices are followed in regard to hazardous chemicals.

Exhibit 2 of ARC HSGE007 (Hazard Communication Standard) includes a checklist that may be used as a tool to assure compliance with the HazCom standard

List of Hazardous Chemicals

The Program Coordinator shall make a list of all hazardous chemicals and will review the list at least annually, or more often as necessary, and maintain and update the list as necessary. Hazardous chemicals that are bought for and kept at a particular job site will not be included on this list, but shall be included in the site specific health and safety plan. The completed MIL for the _________ office can be found at _________________.

The Program Coordinator must be informed of all new hazardous chemicals purchased unless the chemical is being purchased for and kept at a particular job site. Upon receiving this information, the Program Coordinator will update the MIL within 10 business days. Employees in a position to purchase materials must adhere to purchasing department guidelines and assure new chemicals are not used until the SDS information has been obtained and appropriate employee training occurs.

Safety Data Sheets (SDS)

SDS provide specific information on the chemicals used by this office. For each chemical listed on the MIL (other than those exempt from the HazCom standard), an SDS shall be kept on file in a location that is easily accessible and known to all applicable employees.

Copies of applicable SDS for this office can be found _____________, in a [indicate if they are kept in a binder, folder or electronically] that is labeled ______________ [if your office maintains SDS in other locations, such as work vehicle or job site, note this information here]. Applicable SDS should accompany the hazardous chemical/chemicals to the jobsite, and the Project Manager shall ensure that each work site has applicable SDS on hand at the job site.

The Program Coordinator is responsible for acquiring and updating SDS and will contact the chemical manufacturer or vendor if additional research is necessary or if an SDS has not been supplied with an initial shipment/purchase.

The Program Coordinator must be informed of all new hazardous chemicals purchased unless the chemical is being purchased for and kept at a particular job site.

Labels and Other Forms of Warning

All primary and secondary containers of hazardous chemicals/products listed on the MIL must be labeled. Labels or other forms of warning will be legible, in English, and prominently displayed on the container, or readily available in the work area. For employees who speak another language(s), information may be added in their language to the label or other form of warning.

The chemical manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked. Hazards not otherwise classified do not have to be addressed on the container. Where the chemical manufacturer or importer is required to label, tag or mark the following information shall be provided on containers shipped to ARCADIS:

- Product Identifier
- A signal word, either “Danger” or “Warning.”
- Hazard statement(s).

- A standard pictogram(s).
- Precautionary statement(s); and
- The name, address, and telephone number of the chemical manufacturer, importer or other responsible party.

Chemical manufacturers, importers, distributors, and employers, including ARCADIS, may comply with either §1910.1200, revised as of October 1, 2011, or the current version of the standard or both during the transition period.

Chemical manufacturers, importers, distributors, and employers shall be in compliance with all modified provisions of the OSHA Hazard Communication Standard no later than June 1, 2015, except:

- After December 1, 2015, distributors shall not ship containers labeled by the chemical manufacturer or importer unless the label has been modified to comply with the updated OSHA Hazard Communication Standard.

Workplace Labeling

ARCADIS shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with either:

- A product identifier, a signal word (either "Danger" or "Warning"), hazard statement(s), standard pictogram(s), and precautionary statement(s); or
- Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

Note: ARCADIS may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by the hazardous chemicals in the workplace labeling requirement. ARCADIS must also ensure the written materials are readily accessible to the employees in their work area throughout each work shift.

The supervisor of each work area must ensure that secondary chemical containers are properly labeled. Secondary chemical container labeling can be labeled with the same shipping container labels, or information that communicates the following:

- Identity of the chemical.
- The hazards of the chemical.

The label may use a combination of words, symbols or pictures to communicate this information. The company will use a standard labeling method for all secondary containers.

Note: ARCADIS is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer, however, best management practice would be that all portable containers, even those intended only for the immediate use by employees, should be labeled with chemical identity and hazard information, where feasible.

Phase-In Compliance Date for Alternative Workplace Labeling: ARCADIS must update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards by June 1, 2016, as applicable.

Where applicable, the contents of pipes or piping systems shall be described in training sessions, and they should be labeled as to their contents. (This will be a site specific issue that should be addressed in site specific safety plans)

[If you utilize stationary containers within a work area, include the following information in this program: If stationary containers within a work area have similar contents and hazards, labels shall be posted on them to convey hazard information.]

Non-Routine Tasks

Where applicable, site specific health and safety plans shall address the chemical hazards associated with non-routine tasks (e.g., cleaning tanks, entering confined spaces, etc.). The site specific plan will inform applicable employees of the hazardous chemicals to which they may be exposed and the precautions they must take to reduce or avoid exposure. It will also address any additional training that may be required.

Training

All employees who may be exposed to hazardous chemicals/products under normal operating conditions, or in foreseeable emergency situations, shall receive Hazard Communication training. ARCADIS shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training is designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information is always available to employees through labels and safety data sheets.

The Program Coordinator____________________ will conduct these training sessions in a ______________ [indicate if you will use classroom, or an online/classroom combination] format. [Whether you are using an online or classroom program, information specific to your office must be part of the training. For example, who is the program coordinator, where is the chemical inventory form kept, where are the SDS located, etc.]

Whenever a new chemical hazard is introduced, additional information shall be provided to applicable employees.

ARCADIS employees will be informed of:

- The requirements contained in the Hazard Communication Standard 29 CFR 1910.1200;
- Any operations in their work area where hazardous chemicals are present;
- The location and availability of the written HazCom program; and
- The location of the MIL and SDSs;

Initial HazCom training shall include the following elements:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
- The physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area;
- The measures employees can take to protect themselves from these hazards, including specific procedures ARCADIS has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
- The details of the hazard communication program developed by ARCADIS, including an explanation of the labels received on shipped containers and the workplace labeling system used by ARCADIS; the safety data sheet, including the order of information and how employees can obtain and use the appropriate hazard information.

The Program Coordinator or his/her designate will provide each employee with office specific information regarding location of the MIL and SDS, any label specific information in use at the office and who to contact about questions. Additional information will be provided to employees when hazards change or when a new chemical hazard is introduced into the workplace.

Contractors

The Program Coordinator shall advise contractors performing work in ARCADIS offices of any chemical hazards that may be encountered in the normal course of their work on the premises, the location of SDS, the labeling system in use, the protective measures to be taken, and the safe handling procedures to be used. Each contractor bringing chemicals on-site must provide the Program Coordinator with the appropriate hazard information for these substances, including SDS, labels, and precautionary measures to be taken when working with or around these chemicals.

Project Managers for ARCADIS projects will follow the requirements of the project health and safety plan for communication with the contractors used on projects.

Additional Information

Employees can obtain further information on this written program, the hazard communication standard, applicable SDS, and chemical information lists from the Program Coordinator.

Exhibit 4 – Master Inventory List form

ARCADIS

MASTER CHEMICAL INVENTORY LIST (MIL) FORM

(Hazardous chemicals/substances bought specifically for one job and kept at that job site aren't listed here, but should be listed in the site specific Health and Safety Plan)

ARCADIS Office: ______________________________

Jobsite Address (if applicable): ______________________________

Date Of Inventory: ____________________ Completed By (name/job title): ______________________________

Chemical Name	Amount On Hand[1]	Container Size	Container Type (e.g., plastic, metal, drum)	Hazard Class (nature of the physical or health hazards)	Type of Hazard (physical, health, environmental)	Hazard Category	SDS On Hand (if no, explain below)	Work Practice(s) Associated With The Chemical	Check if Exempt (Per ARCADIS definition and example list.)

Explain each "No" listed under the MSDS column: ______________________________

____

____

Page ___ of ___

[1] Indicate the amount that is usually kept on hand.

HazCom Standard - ARC HSGE007 Rev. 03, 13Dec2012

ARCADIS

MASTER CHEMICAL INVENTORY LIST (MIL) FORM

(Hazardous chemicals/substances bought specifically for one job and kept at that job site aren't listed here, but should be listed in the site specific Health and Safety Plan)

ARCADIS Office: ______________________________

Jobsite Address (if applicable): ______________________________

Date Of Inventory: ____________________ Completed By (name/job title): ______________________________

Chemical Name	Amount On Hand[1]	Container Size	Container Type (e.g., plastic, metal, drum)	Hazard Class (nature of the physical or health hazards)	Type of Hazard (physical, health, environmental)	Hazard Category	SDS On Hand (if no, explain below)	Work Practice(s) Associated With The Chemical	Check if Exempt (Per ARCADIS definition and example list)

Explain each "No" listed under the MSDS column: ______________________________

____

____

Page ___ of ___

[1] Indicate the amount that is usually kept on hand.

Exhibit 5 – List of Common Exemptions

The following chemicals are exempted from the labeling requirements of the HazCom program:

- Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;
- Any chemical substance or mixture as such terms are defined in the Toxic Substances Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;
- Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials intended for use as ingredients in such products (e.g. flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum-Toxin Act of 1913 (21 U.S.C. 151 et seq.), and regulations issued under those Acts, when they are subject to the labeling requirements under those Acts by either the Food and Drug Administration or the Department of Agriculture;
- Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Bureau of Alcohol, Tobacco, Firearms and Explosives;
- Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission; and
- Agricultural or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act (7 U.S.C. 1551 et seq.) and the labeling regulations issued under that Act by the Department of Agriculture.

For purposes of the ARCADIS HazCom program and to comply with the Occupational Safety and Health Administration Hazard Communication Standard (HCS), the following categories of materials are exempted from the requirements of the HazCom program:

- Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency;
- Any hazardous substance as such term is defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et seq.) when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with Environmental Protection Agency regulations;
- Tobacco or tobacco products;
- Wood or wood products, including lumber which will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to employees is the potential for

flammability or combustibility (wood or wood products which have been treated with a hazardous chemical covered by this standard, and wood which may be subsequently sawed or cut, generating dust, are not exempted);

- Articles defined as:
  - Items that are formed to a specific shape or design during manufacture; and
  - Items that have end use functions dependent in whole or in part upon its shape or design during end use; and
  - Items that do not pose a physical hazard or health risk to employees; and
  - Items that, under normal use, do not release more than very small quantities (e.g., minute or trace amounts of a hazardous chemical).

    Note: If the use and/or repair of the article requires a modification that results in severe alterations of the article (e.g. grinding, cutting, welding, brazing, soldering, etc.), then the material that make up the article and any other material being used to alter the article ARE NOT exempted from the HazCom standard.
- Food or alcoholic beverages which are sold, used, or prepared in a retail establishment (such as a grocery store, restaurant, or drinking place), and foods intended for personal consumption by employees while in the workplace;
- Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (e.g., tablets or pills); drugs which are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);
- Cosmetics which are packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace;
- Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended;
  - Examples of products used at ARCADIS that are used as a consumer would use them are:
    - window cleaner
    - paper correction fluid
    - sealed containers of cartridge toner for copiers
    - cleaning supplies in consumer-available quantities
    - dry cell batteries that could be used in consumer equipment

Note: The following are examples of products that **are not exempt** because they are used in a manner not considered consumer use:

- spray paint used for surveying, utility locates, etc,
- lab chemicals and supplies

- § chemicals used for environmental testing equipment (pH buffers, chemical packets and dyes)
- § cleaning supplies associated with lab work and decontamination (e.g., Alconox detergent)
- § Cements and primers used for making PVC pipe connections
- § Spray lubricants used for industrial equipment maintenance (e.g., WD-40 and rust removers)
- § spray adhesives used as drafting supplies

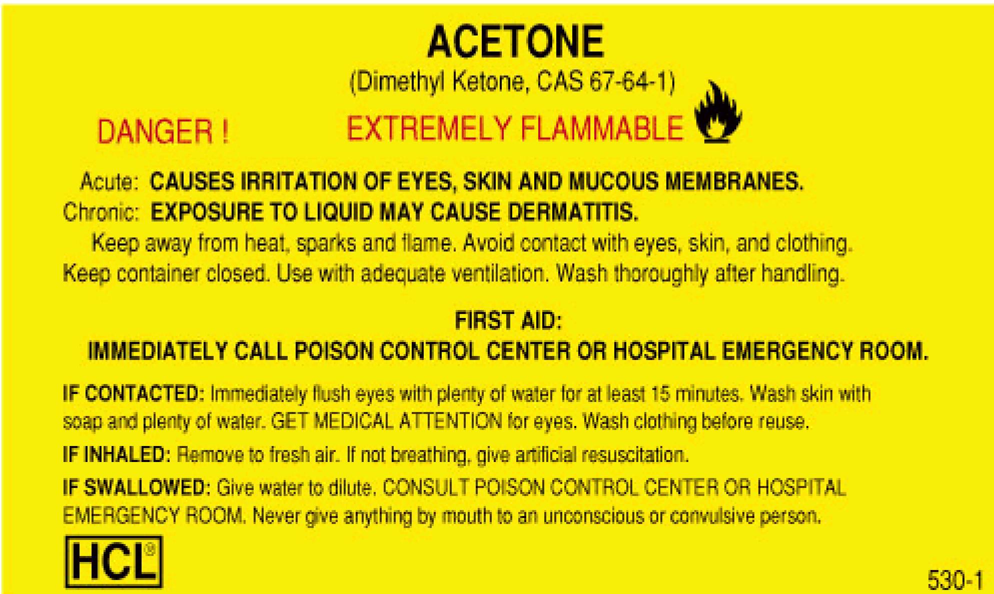
· Nuisance particulates where the chemical manufacturer or importer can establish that they do not pose any physical or health hazard covered under this section;

· Ionizing and non-ionizing radiation.

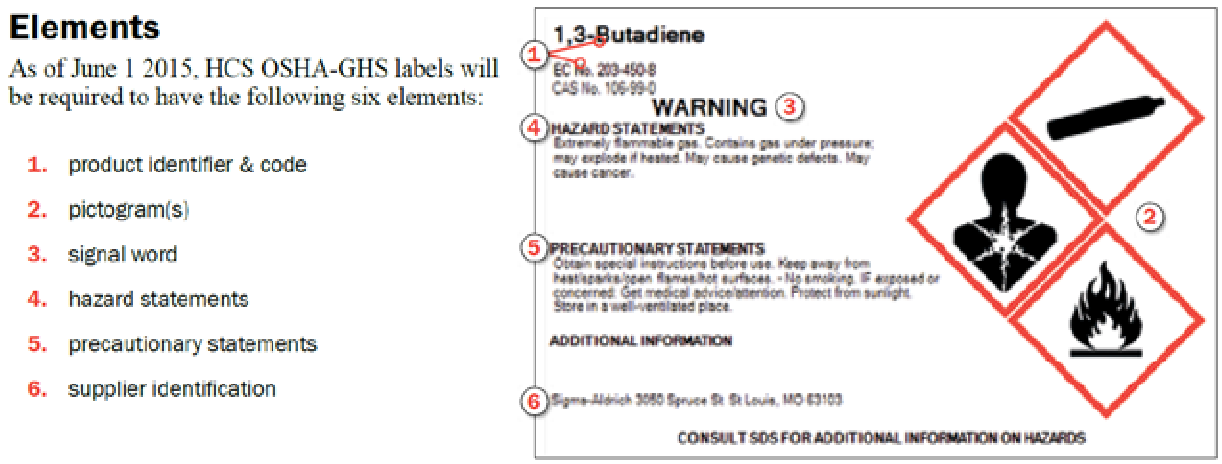
· Biological hazards (e.g. bloodborne pathogens, snake venom, poison ivy/oak, etc.)

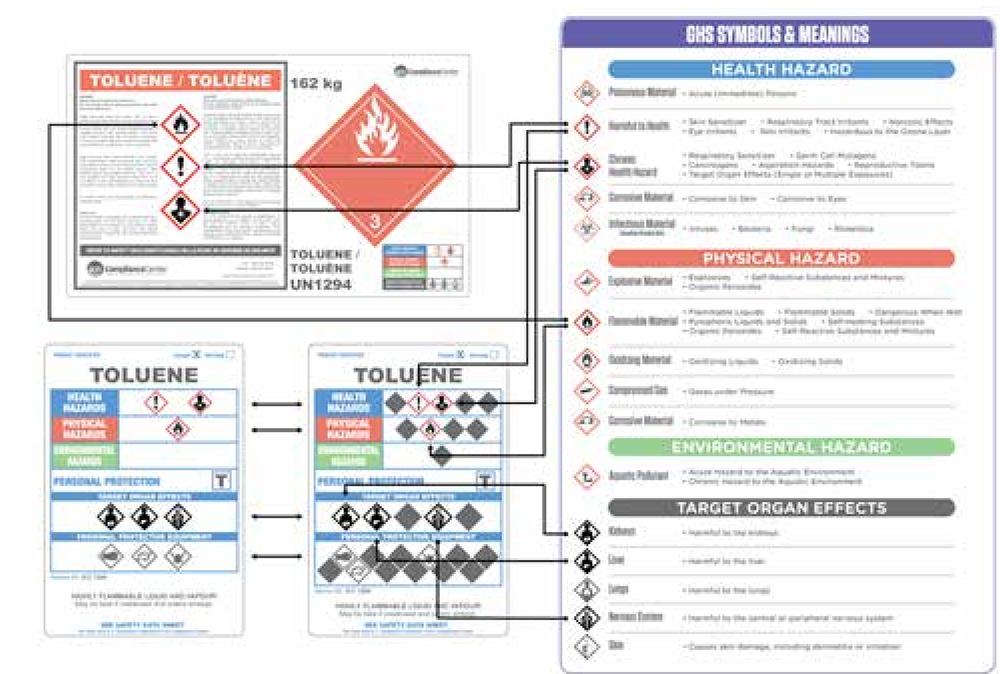
Exhibit 6 – Sample Container Labels

These types of alternative workplace labels can be purchased from various vendors pre-filled in or blank and will need to be phased out and updated by June 1, 2016:



The following are examples of GHS Compliant labels:





EXECUTIVE SUMMARY

Illness related to heat stress can be controlled and minimized through the use of engineering controls, safe work practices, and personal protective equipment (PPE). This Health and Safety Standard (HSS) identifies responsibilities, risk factors for heat illness, signs and symptoms, first aid procedures, and ARCADIS training requirements.

Personal risk factors for heat illness include poor health, age, weight, and pre-existing medical conditions; inadequate acclimation to working in the heat; and experience with previous heat illness. Environmental risk factors include workload severity and duration, high temperature and humidity, direct sun exposure, and air movement.

Heat stroke is a life-threatening condition, and emergency personnel should be contacted immediately.

Preventive safe work practices involve avoidance of working in the heat when possible, taking regularly scheduled shade breaks, acclimatization, rotating personnel, avoiding beverages containing caffeine or sugar, staying appropriately nourished, and providing potable water access at all times.

Engineering controls that should be implemented include monitoring and measuring temperature and heat index factors, designing appropriate work/rest cycles, and choosing clothing that allows for wicking of perspiration.

Training for heat stress prevention shall be provided to all supervisory employees prior to project assignment. Topics will include the importance of acclimatizing, risk factors, signs and symptoms of various heat illnesses, and procedures to follow in the event of an emergency.

Principals-in-charge (PICs), project managers (PMs), and task managers (TMs) are responsible for addressing heat stress in project planning, ensuring that personnel have proper training, and that the site-specific Health and Safety Plan (HASP) and Heat Illness Prevention Plan HASP Supplement has been developed to document and communicate the site-specific heat illness prevention provisions for projects in California and Washington State (Best Management Practice for other locations). The Site Health and Safety Officer (SHSO) is responsible for coordinating and verifying that the provisions for shade and adequate water are available at a job site.

Supervisory Personnel (e.g., SHSOs, PMs, or TMs) who are managing staff on site and are responsible for ensuring that affected personnel, who might reasonably be anticipated to have exposure to the risk of heat illness, have received the proper training on heat illness prevention and ensuring that the requirements in this Standard are followed. Staff working in California, Washington, or other states with specific heat illness standards must receive documented training prior to assignment. Other affected employees not working in these states must be familiar with this Health and Safety Standard and the information detailed in the Field Health & Safety Handbook. Corporate H&S recommends that all staff that might be reasonably be anticipated to have exposure to the risk of heat illness complete the online heat stress training course.

Project personnel are responsible for understanding the conditions, signs, and symptoms that can lead to heat stress and adhere to the prescribed control and mitigation and methods. Personnel will report to the Site Safety Officer (SSO) and/or PM any signs and symptoms of heat stress exhibited by themselves or by other personnel.

1. POLICY

It is ARCADIS policy that employees who are required to work in hot, outdoor places of employment or in other areas at times when the environmental risk factors for heat illness are present, are at risk for developing heat illness if they do not protect themselves from the hazards.

Heat-related illness may be prevented through the use of safe work practices, engineering controls, and/or use of PPE.

2. PURPOSE AND SCOPE

2.1 Purpose

The purpose of this procedure is to provide employee awareness regarding heat illness symptoms, direction on the controls and prevention of heat-related illnesses, and guidance on appropriate response actions if symptoms do occur.

2.2 Scope

This procedure applies to ARCADIS projects which include, but are not limited to: outdoor operations conducted in hot weather such as construction, refining, oil and gas extraction, asbestos removal, and hazardous waste site activities, especially those that require employees to wear semipermeable or impermeable protective clothing that are likely to cause heat stress among the exposed. California and Washington enforce specific occupational heat illness prevention requirements which are addressed in this HSS.

Project sites located in California and Washington must comply with the requirements set forth in this HSS, which has been developed to comply with the California Occupational Safety and health Administration (Cal/OSHA) Title 8 California Code of Regulations (CCR) 3395 Heat Illness Prevention Standard and the Washington State Outdoor Heat Exposure Regulations 296-62-09510 thru 09560. Project sites in California and Washington State must complete the Heat Illness Prevention HASP Supplement and include this HSS as an attachment to the field copy of the HASP, along with the completed HASP Supplement.

3. DEFINITIONS

Definitions relating to Heat Stress Prevention are provided in Exhibit 1.

4. RESPONSIBILITIES

4.1 Project Managers and Task Managers

Are responsible for ensuring that heat stress is considered and addressed in project task hazard analysis, risk assessment, and project planning.

Ensure that the project HASP addresses the need for adequate water, provisions for shade are available at a job site, and that time is available for staff to eat when the environmental risk factors for heat illness are present.

Ensure that the HASP addresses the need for affected employees to receive applicable training on heat illness prevention and that staff are provided time to complete the training prior to starting work.

4.2 Supervisory Personnel

Supervisory personnel (e.g., SHSOs, PMs, and/or TMs who are supervising employees working on site and in the heat) must review this Standard and complete training in the prevention of heat related illnesses prior to supervising employees that work in the heat (risk of heat illness). Supervisory personnel will be trained in heat illness prevention and procedures to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures. Supervisory personnel must ensure personal risk factors that contribute to heat-related illness are considered before assigning a task where there is the possibility of a heat-related illness occurring (See Section 5.2 for risk factors) and plan for and implement preventive measures and controls when heat advisories are issued for those areas in which staff will be working.

Ensure that affected employees working on site have received proper training on heat illness prevention.

Ensure that the requirements in this Standard are documented and followed.

Ensure that staff working in the heat have constant access to potable water and shade.

4.3 Corporate Health and Safety

Corporate H&S is responsible for keeping this Standard up-to-date with regulatory requirements and best work practices.

As requested, provide training to potentially impacted employees and their supervisors on the risks and prevention of heat illness, including how to recognize symptoms and how to respond when they appear.

4.4 Affected Employees

Employees are responsible for understanding the conditions, signs, and symptoms that can lead to heat stress and for using and adhering to the prescribed control and mitigation and methods. Personnel will report to the SHSO and/or PM any signs and symptoms of heat stress exhibited by themselves or by other personnel on the project site.

If site personnel have not received heat stress training prior to conducting work, then site personnel will be educated on heat stress prevention by reviewing this Standard, reading the site HASP (including the site-specific Heat Illness Prevention HASP Supplement as required for California and Washington States), and by attending the daily tailgate meeting.

Employees must review and comply with the provisions of this Standard.

Employees must ensure they have drinking water available at all times and that they eat prior to starting work and during the day when the environmental risk factors for heat illness are present.

Employees will ensure they have constant access to a shaded area to prevent or recover from heat-related symptoms.

5. PROCEDURE

5.1 Safe Work Practices

ARCADIS staff shall follow these general safe work practices when working in the heat:

- Staff will avoid working in the heat when possible. This can be accomplished by avoiding work in the hottest parts of the day or working in cooled enclosures or cooling units provided in the work area. Severe heat conditions can be cause for stopping or not starting work.
- Allow personnel to acclimatize and adapt to the heat; especially those new to the project.
- The SHSO will be particularly watchful of the condition of new employees and stay alert to the presence of heat-related symptoms. New employees will be assigned a "buddy" or experienced co-worker for the purpose of monitoring each other closely for symptoms of heat illness.
- Whenever possible, rotate personnel in/out of working conditions in which heat is a factor.
- Personnel shall have constant access to potable drinking water. Where the supply of water is not plumbed or otherwise continuously supplied, water shall be provided in sufficient quantity at the beginning of the work shift and for the shift duration.

  Note: *Thirst cannot be relied on as a guide for hydration. Employees need to drink cool, fresh water throughout the day (four 8-oz cups per hour) during hot weather. Electrolyte/Sport Drinks are usually not necessary and should never be used as the primary or substitute source of fluid intake or as a substitute for food.*

- Employees will be notified of the location(s) of the closest drinking water supplies.
- Employees should choose non-carbonated water over sodas or other beverages containing caffeine or sugar.
- Employees should eat prior to work and then during the work rotation.
- Employees and SHSO must understand the individual, pre-disposing susceptibilities to heat illness.
- Employees must understand the signs and symptoms of heat illness including: discomfort, excessive sweating, headache, poor concentration, muscle pain, cramping, dizziness, fatigue, irritability, loss of coordination, vomiting, blurry vision, confusion, lack of sweating, fainting, and seizures.
- Employees must understand first aid and emergency response procedures associated with heat illness.

5.2 Risk Factors for Heat-Related Illnesses

The personal and environmental risk factors for heat-related illness must be considered as part of the TRACK process before performing a task.

Personal Risk Factors

- No recent exposure to hot workplaces is a risk factor because the individual is not acclimatized to working in the heat.
- Individual susceptibilities such as age, weight, degree of physical fitness, use of medications, and certain medical conditions such as hypertension and diabetes all affect the potential to experience a heat-related illness.
- A person is at greater risk for heat illness when they are in poor health, are dehydrated, have not eaten, have not been acclimated to working in the heat, and have experienced previous heat illness.
- Working in a hot environment tends to lower the mental alertness and physical performance of an individual. Increased body temperature and physical discomfort promote irritability, anger, and other emotional states which have the potential to cause personnel to overlook safety procedures or to divert attention from hazardous tasks.

Environmental Risk Factors

- High temperature and humidity, direct sun exposure, no breeze or wind
- Radiant heat, air movement
- Workload severity and duration

Heat tends to promote accidents due to the slipperiness of sweaty palms, dizziness, or the fogging of safety glasses. The frequency of accidents, in general, appears to be higher in hot work environments than in more moderate environmental conditions.

5.3 Administrative and Engineering Controls

When feasible, ARCADIS staff shall implement the following administrative and engineering controls:

- Monitor and measure temperature and heat index factors so the magnitude of the heat hazard is understood. This can be accomplished with on-site instrumentation or by monitoring conditions through the internet, radio, or local weather bureaus. See Section 5.3.3.

- Encourage personnel to wear appropriate clothing that allows for the wicking away of perspiration.

- Implement appropriate work/rest cycles to allow for adequate cool-down periods.

- Employees suffering from heat illness or believing that a preventative recovery period is necessary must be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than 5 minutes. Access to shade shall be permitted at all times.

5.3.1 Procedure for Acclimatization

Supervisors, SHSOs, and employees will be trained on the importance of acclimatization, how it is developed, and how to implement an acclimatization process that is consistent with applicable regulations and the guidelines set forth in this Standard. An employee is at risk of heat illness during a sudden rise in temperatures if not given time to adjust to the changing conditions. Acclimatization (the physiological process of becoming accustomed to changing conditions) is necessary, especially in conditions of high heat and physical stress. In addition to acclimatization, other factors can affect employees working at sites where high temperatures are anticipated, such as: poor general health, age, weight, pre-existing medical conditions, and having previously experienced heat illness. Employees are not required to share personal information about some factors such as pre-existing medical conditions. However, including these factors in the Tailgate Safety Meeting discussion of heat illness raises awareness of the risks involved with heat illness. A gradual acclimatization period will be implemented for new employees that have not been exposed to a work environment where high temperatures are present (e.g., employees not accustomed to the conditions of the work site will be given slower paced, less physically demanding tasks during the hot parts of the day and given the heavier tasks during cooler parts of the day). The steps taken to reduce the workload intensity for employees not yet acclimated to high heat will be documented in the field copy of the HASP Supplement.

The SHSO or designee is responsible for implementing the following procedures for acclimatization. These procedures include, but are not limited to, the following:

- Providing effective acclimatization procedures for employees during exposure to a sudden increase in temperature; and
- Weather will be monitored daily by the SHSO, who will be on the lookout for sudden heat wave(s) or increases in temperatures that employees haven't been exposed to for several weeks or longer per Section 5.3.5 Weather Monitoring Procedures, detailed in this Standard.

5.3.2 Provisions for Water at the Site

At the start of work, the importance of drinking water, the signs and symptoms of heat illness, the location(s) of the water/water coolers, and the schedule of water/rest breaks will be communicated to all staff during each Tailgate Safety Meeting. The SHSO or the designated alternate shall provide for distribution of drinking water at the project site. An adequate supply of cool potable water will be maintained on site at all times to allow each employee to consume one quart of water per hour (e.g., 2 gallons per employee for an 8-hour shift). Where unlimited drinking water is not immediately available from a plumbed system or otherwise continuously supplied, water will be provided to staff via coolers containing bottled water, or insulated drinking water dispensers (verify coolers/dispensers are of a sufficient capacity to support the amount of field staff present) accompanied with disposable cups to maintain sanitary conditions for potable water consumption. SHSOs and/or supervisors shall encourage employees to drink water before they "feel" thirsty. Ideally, drinking 8 ounces of water every 15 minutes will allow the body to remain properly hydrated while working in high temperature conditions.

If the decision is made not to provide all site employees the full-shift quantity of drinking water at the start of a work shift (e.g., 2 gallons per employee for an 8-hour shift), then effective procedure(s) must be documented and implemented to ensure drinking water replenishment to allow each employee to drink 1 quart per hour. This means a sufficient quantity of water must always be present and readily accessible to allow every employee to consume at least 1 quart of water per hour until the water supply has been replenished.

- The Heat Illness Prevention Plan HASP Supplement provides a formula to calculate the number of quarts of water required per employee per hours worked per shift.
- Coolers containing bottled water or drinking water coolers should be maintained to provide for a minimum of 3 hours of water per employee (at least 1 quart / 32 ounces of water will be made available per employee per hour) to account for a sufficient quantity of water to always be present.
- Water coolers will be positioned within 50 feet of employee activity or in vehicles used by employees to gain access to individual work areas; however, coolers will be stationary when employees are essentially stationary.
- Coolers will be inspected and replenished with water and ice for cooling periodically (e.g., every 30 minutes, every hour based on site temperature and number of employees present) by the SHSO or designee.
- Ice will be added to the coolers, as necessary, during the required inspections.

  ***Note**: When the temperature exceeds 90 degrees F, inspections will be increased in frequency and ice will be added as need to keep water cool*.

- Ice will be distributed from a separate cooler or service and added to coolers to ensure that the drinking water remains potable and appropriately cool for employee consumption. Ice used to chill the water will be stored separately to remain sanitary. Sanitary ice storage can include storage of ice in bags when bottled water is used or use of separate storage coolers when using drinking water dispensers.
- Coolers will be inspected and cleaned at the conclusion of each work shift or prior to starting work each shift. The SHSO will oversee cooler maintenance and provide appropriate cleaning supplies in support of this effort.
- The SHSO or designee will document the weekly review of the Heat Illness HASP Supplement and make the necessary adjustments each week for weather changes or when new employees are introduced to the project. The reminder may include water ordering information if purchased in bulk from appropriate supplier.

5.3.3 Access to Shade

The project team is responsible for making sure the necessary equipment to provide shade is available at the project site. The temperature threshold for shade to be in place is when site temperatures exceed 85 degrees Fahrenheit. The SHSO or designee is responsible for directing how shade will be coordinated and placed. The term “shade”, for the purposes of complying with applicable regulations shall be defined as “The blockage of sunlight to the extent that no shadow is cast while sitting in the designated area”. Flecks of sunlight are acceptable as long as, overall, the shade provides substantially complete blockage of sunlight. Where trees or other vegetation are used to provide shade, the thickness and shape of the canopy must cast sufficient shadow, given the changing angles of the sun, to protect employees from the sun during the entire shift. At the start of each shift, the importance of taking shade breaks, recognizing the signs and symptoms of heat illness, the schedule of shade breaks (> 5 minutes per break), and the shade location will be addressed during each Tailgate Safety Meeting. Access to shade must be allowed at all times.

Establishing adequate shaded areas for employees involves:

- If the temperature at the site exceeds 85 degrees Fahrenheit, shade structures will be opened and made available to employees.

- Shaded area must allow for at least 25 percent of the employees on the shift at any time access to shade.
- Employees must have enough shaded space to sit comfortably while fully shaded and to allow for sitting without being in physical contact with each other.

***Note**: When establishing shade, it is important to ensure that employees who desire access to shade will not be deprived of it due to lack of space. One such procedure to address this point would be to rotate employees in and out of shaded areas to ensure all have sufficient access for the 5-minute interval required. Another option would be to have additional shade structures on hand to deploy as needed.*

- Shade structures will be relocated to follow along with the crew for moving tasks.
- Shade structures will be placed within 50 feet of the work area, if practical. A key consideration when placing a shade structure is that it is a short walk away (e.g., 2 to 3 minutes) from the work area. This consideration becomes critical as the temperature rises above 85 degrees Fahrenheit.
- In situations where it is not safe or feasible to provide shade, notes will be made to the HASP Supplement of the unsafe or unfeasible conditions. The SHSO will also document the steps taken to provide alternative cooling measures equivalent to providing shade, such as vehicles equipped with air conditioning or air conditioned office trailers.

5.3.4 Monitoring of Weather and Procedures for Heat Waves

The SHSO or designee will be trained in consulting weather forecasting resources and is responsible for checking the extended weather forecast weekly in advance of work. Work schedules will be adjusted in advance, considering whether high temperatures or a heat wave is expected. The SHSO will be responsible for obtaining a thermometer prior to the start of the project and ensuring that it is readily accessible or posted on site so it can easily be monitored throughout the course of the day. The following web pages are considered accurate and reliable sources for checking weather forecasts:

- http://www.noaa.gov/
- http://www.weather.com/

Prior to each work day, and before starting each shift, the SHSO or designee will review the forecasted temperature and humidity for the work site and compare conditions against the National Weather Service Heat Index (See Table 1) to evaluate the risk level for heat illness. A "heat wave," as defined by the National Oceanic and Atmospheric Administration (NOAA), is a period of abnormally and uncomfortably hot and unusually humid weather." Typically, a heat wave lasts 2 or more days.

Table 1

NOAA's National Weather Service

Heat Index

Temperature (^{o}F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution   Extreme Caution   Danger   Extreme Danger

Use the information in Table 1 to determine if employees will be exposed to a combination of temperature and humidity that pose a risk for heat illness. If the site conditions are characterized as falling inside the ranges for "Extreme Caution," "Danger," or "Extreme Danger" for heat illnesses, additional steps must be taken. It is important to note that the temperature at which these warnings occur must be lowered as much as 15 degrees Fahrenheit if the employees under consideration are working in direct sunlight.

5.3.5 Procedures for High Heat and Heat Waves

High Heat Procedures:

- Employees will be reminded throughout the shift to drink plenty of water.
- The "Buddy System" will be implemented, especially for new employees or employees who have yet to acclimate to high heat conditions. Additionally, frequent communication will be maintained with employees working by themselves (via cell phone or two-way radio), to be on the lookout for possible symptoms of heat illness.

- Employees will be observed for alertness and signs and symptoms of heat illness at regular intervals to be documented in the field book or field log.

- When the SHSO is not available, an alternate responsible person must be assigned to look for signs and symptoms of heat illness. Such a designated observer will be trained to know what steps to take if heat illness occurs.

Heat Wave Procedures:

During a heat wave, or if site conditions indicate the potential for “Extreme Caution,” "Danger," or “Extreme Danger” per Table 1, the following steps will be taken:

- The SHSO or designee, in coordination with the project team, will use their Stop Work Authority; evaluate the following actions; and document the action in the daily field log:
  - Modify the work shift or cut the work day short (e.g., 12:00 pm).
  - Reschedule the work (e.g., conduct the remaining work during cooler times of the day) or suspend tasks that are strenuous.
  - Use Stop Work Authority to cease work for the day.
- If schedule modifications are not possible, the Heat Illness Prevention Plan will be reviewed before work resumes. At a minimum, procedures for heat illness prevention, the provisions for high heat procedures, the weather forecast, and emergency response protocols will be reviewed.
- Employees will be provided with additional water and rest breaks and will be observed more frequently. They will also be reminded throughout the shift to drink plenty of water.
- During work activities and rest breaks, employees will be observed for signs and symptoms of heat illness.
- All employees will maintain frequent communication with the SHSO or designee, who will be monitoring employees for possible symptoms of heat illness.

Note: *In the event of large project sites where the SHSO is unable to be near the employees (to directly observe or communicate with them), then communication via a cell phone or radio may be used for this purpose provided that reception in the area is reliable.*

5.4 Heat Exhaustion and Heat Stroke First Aid and Emergency Procedures

5.4.1 Heat Exhaustion and Heat Stroke Symptoms

Signs of Heat Exhaustion:

- Cool, moist, pale, or flushed skin
- Heavy sweating
- Headache
- Nausea, dizziness, and exhaustion
- Normal or below normal body temperature.

Signs of Heat Stroke

- Hot, red skin which can be dry or moist from exercise
- Changes in consciousness
- Rapid, weak pulse
- Rapid, shallow breathing, vomiting
- A person experiencing heat stroke can have a very high body temperature—sometimes as high as 106°F (41° C).

5.4.2 First Aid Procedures for Heat Exhaustion

1. Move the person to a cooler place.
2. Remove or loosen tight clothing and apply cool, wet cloths, such as towels or sheets soaked in water.
3. If the person is conscious, give him or her cool water to drink. Make sure the person drinks slowly. Give a half glass of cool water every 15 minutes.
4. Let the person rest in a comfortable position.
5. Watch carefully for changes in his or her condition.

Do not give liquids that contain alcohol or caffeine because they can cause further dehydration, making conditions worse.

5.4.3 First Aid and Emergency Procedures for Heat Stroke

Heat stroke is a life-threatening situation. If you suspect someone is suffering from heat stroke, call 9-1-1 or the local emergency number immediately.

1. Move the person to a cool place.
2. Loosen tight clothing.
3. Remove perspiration-soaked clothing.
4. Apply cool, wet cloths to the skin.
5. Fan the person.
6. If conscious, give small amounts of cool water to drink.
7. Place the person on his or her side.
8. Continue to cool the person by using ice or cold packs on the wrists, ankles, groin, and neck and in the armpits.
9. Continue to check breathing and circulation.

Do not give liquids that contain alcohol or caffeine because they can cause further dehydration, making conditions worse. Ensure 9-1-1 or the local emergency number is called if the person refuses water, vomits, or starts to lose consciousness.

Emergency contact telephone numbers and hospital directions/map must be included in each site-specific HASP for employee reference.

6. TRAINING

The ARCADIS Heat Illness Prevention online training offered though the ARCADIS training Center is required to be completed before staff working in California or Washington States will be permitted to begin work. Project teams conducting work in locations other than California or

Washington States are expected to complete the training prior to conducting work as defined in the H&S training matrices specific to each Division. Completion of the training once is generally considered sufficient to satisfy the training requirement; however, the training may be required to be completed again as determined by ARCADIS policy or management, or by client or specific state requirements. Refresher training is encouraged for all staff that infrequently conducts or supervises work where heat stress is a hazard.

6.1 Supervisory Personnel

Supervisory personnel supervising staff on a California or Washington State site who might reasonably be anticipated to be exposed to the risk of heat illness shall be provided training in the following topics prior to assignment:

- The environmental and personal risk factors for heat illness
- The importance of frequent consumption of small quantities of water, up to four cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties
- The importance of staying appropriately nourished
- The importance of acclimatizing
- The different types of heat illness and the common signs and symptoms
- The importance for employees to immediately report to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves or in co-workers
- The procedures to follow for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary
- The procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider
- The procedures for ensuring that, in the event of emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders

In addition, these supervisory personnel must review and understand:

- This Heat Stress Prevention Standard and the associated HASP Supplement
- How to implement the emergency response procedures detailed in the site-specific HASP when an employee exhibits symptoms consistent with possible heat illness
- Weather monitoring reports as detailed in the field Health & Safety Handbook
- How to monitor weather reports and how to plan for and respond to hot weather advisories

This training will be documented with details on the subject matter covered and date of training recorded.

6.2 Affected Employees

For those employees who work in California, Washington, and in any other states with state-OSHA-specified heat illness training requirements and might reasonably be anticipated to be exposed to the risk of heat illness, training in the following topics is required prior to assignment:

- The environmental and personal risk factors for heat illness
- The importance of frequent consumption of small quantities of water, up to four cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties
- The importance of acclimatizing
- The different types of heat illness and the common signs and symptoms
- The importance for employees to immediately report to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves or in co-workers
- The procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary
- The procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider
- The procedures for ensuring that, in the event of emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders

This training will be documented within the Training Team database along with details on the subject matter covered and date of training recorded.

Note: For those staff who are not working in California, Washington, or other states that have specified heat illness training requirements, staff that might reasonably be anticipated to be exposed to the risk of heat illness shall at a minimum review the information detailed in the Field Health & Safety Handbook and this Standard. Corporate H&S recommends that all staff that might be reasonably be anticipated to be exposed to the risk of heat illness complete the online heat stress training course.

7. REFERENCES (regulation citation, technical links, publications)

- OSHA Technical Manual – Section III Chapter 4
- National Institute of Occupational Safety and Health (NIOSH) Publication Number 86-112
- American Conference of Governmental Industrial Hygienists (ACGIH) 1992
- American Red Cross 2007

- Cal/OSHA Title 8 CCR 3395 Heat Illness Prevention Standard and Title 8 CCR 3202 Injury and Illness Prevention Program
- Washington State Outdoor Heat Exposure Regulations 296-62-09510 thru 09560
- See Exhibit 2 for links to additional regulatory resources.

8. RECORDS - DATA RECORDING AND MANAGEMENT

This HSS will be reviewed routinely and revised as appropriate. When revised, the revision date/number will be documented under “History of Change” and the prior plan archived per company policy.

Heat illness training records will be maintained by the ARCADIS Training Team.

9. APPROVALS AND HISTORY OF CHANGE

Approved by: Tony Tremblay, CSP – Corporate H&S, Director of Technical Programs

History of Change

Revision Date	Revision Number	Standard Developed/Reviewed by	Reason for change
31 August 2011	01	Tony Tremblay & Mija Coppola	Original document
13 March 2012	02	Tony Tremblay	Detailed Supervisory Personnel requirement to plan/detail preventive measures/controls when heat advisories are issued; clarified training requirements for staff and supervisory personnel; inserted heat advisory and excessive heat warning definitions
19 June 2012	03	Pat Vollertsen	Information added in regard to nourishment
16 June 2014	04	Pat Vollertsen & Alec MacAdam/Tony Tremblay	Revised standard format and History of Change Section. Updated to include specific prescriptive language to address CalOSHA and Washington State requirements. Inclusion of HASP supplement and preparation guidance. Clarification of the use of sports/electrolyte drinks

Exhibit 1 – Definitions

Acclimation – a physiological adaptation to heat exposure that allows the body to continue to function despite higher temperatures.

Excessive Heat Warning - Extreme heat index making it feel very hot, typically above 110 °F (43 °C) for 3 hours or more during the day for two consecutive days or above 110 °F (43 °C) at any time. Specific criteria vary over different county warning areas.

Heat Advisory - Issued when the "heat index" is expected to exceed 105 degrees Fahrenheit or 40 degrees Celsius during the day and 80 degrees Fahrenheit or 27 degrees Celsius during the night for at least two consecutive days.

Heat Cramps – normally caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. Salt tablets should not be taken.

Heat Collapse – (fainting) condition where the brain does not receive enough oxygen because blood pools in the extremities. To prevent heat collapse, the employee should gradually become acclimatized to the hot environment.

Heat Exhaustion – less severe than heat stroke, but the victim must be treated as soon as possible. Symptoms include clammy and moist skin, pale or flushed complexion, sweating along with extreme weakness or fatigue, giddiness, nausea or headache may occur and, in more serious cases, vomiting or loss of consciousness.

Heat Fatigue – The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, mental or vigilance jobs. There is no treatment for heat fatigue except to remove the heat stress before a more serious heat-related condition develops.

Heat Index – an "apparent temperature" that is a measure of how hot it feels when relative humidity is added to the actual air temperature.

Heat Rashes – the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive.

Heat Stress – a physiological condition induced when high temperatures and humidity compromise the body's ability to cool itself, resulting in heat-related illness.

Heat Stroke – the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. **Heat stroke is a medical emergency.** The primary signs and symptoms of heat stroke include confusion, irrational behavior, loss of consciousness, convulsions, a lack of sweating (usually), hot, dry skin and an abnormally high body temperature.

Shade - the blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool.

For example, a car sitting in direct sunlight does not provide acceptable shade to a person inside it, unless the car engine is operating with air conditioning on.

Transient Heat Fatigue – the temporary state of discomfort and mental or psychological strain arising from prolonged heat exposure. Employees unaccustomed to the heat are particularly susceptible and can suffer, to varying degrees, a decline in task performance, coordination, alertness and vigilance.

Exhibit 2 – Heat Stress Links

Heat Illness Symptoms

Heat Illness Thermometer and PPE

OSHA Working Outdoors Fact Sheet

OSHA Worker Protection from Heat Stress

California Heat Illness Prevention Enforcement Q&A

Washington State Outdoor Heat Exposure Enforcement Procedures

Exhibit 3 Heat Illness Prevention HASP Supplement Template

Hyperlink to Heat Illness Prevention HASP Supplement

ARCADIS Heat Illness Prevention Plan Date Completed ____

HASP Supplement

The purpose of this document is to serve as a planning tool and implementation guide to help the Project Team Site, Site Health & Safety Officer (SHSO) or other designated responsible party to comply with the requirements set forth by Cal/OSHA Title 8 CCR 3395 Heat Illness Prevention Standard and the Washington State Outdoor Heat Exposure Regulations 296-62-09510 thru 09560.

This HASP Supplement is required to be used in California and Washington states.

Projects sites in other locations can use this HASP Supplement as a Best Management Practice to prevent heat illness related injury.

The objective of this planning guide is to prevent or reduce the risk of work-related heat illness. This HASP Supplement provides site specific guidance for actions to be completed the project site. The ARCADIS Health and Safety Standards ARC HSIH013 Heat Stress Prevention, and ARC HSGE008 Injury and Illness Prevention Program (IIPP) must accompany this HASP Supplement. To completely address the regulatory requirements for work in CA and WA states these standards are required to be used in association with the project-specific HASP and this supplement.

Project Name ____

Project Manager ____

Authority and Implementation

The following designated individuals have authority and responsibility for implementing the provisions of this program at the work site indicated above.

Site Health &Safety Officer ____ **Designated Alternate** ____

Procedures for Provision of Water

The Site Health & Safety Officer (SHSO) or designee will be responsible for implementing the following when conditions at the site are anticipated to exceed 85 degrees Fahrenheit:

1. Maintaining an adequate supply of potable water on site at all times to allow each employee to consume one quart of water per hour. Entering the requested information into the formula provided below calculates the number of quarts of water required per employee, per hours worked per day.

2. Designate and communicate a water source such as an onsite potable plumbed system, chilled coolers containing bottled water, or drinking water coolers (of a sufficient capacity to support all field staff present) and disposable cups for potable water consumption.

3. Document and communicate the decision to either provide all water for the day at the start of the shift (e.g., 2 gallons per employee for an 8-hour shift), or a replenishment plan. Note: a sufficient quantity of water must always be present and readily accessible to allow every employee to consume at least one quart of water per hour. It is suggested to have a minimum of three hours supply of water per employee on hand.

4. Water supplies must be positioned within 50 feet of the work site. If site conditions prohibit such positioning then an alternative plan must be prepared to address making water readily available to site workers.

5. Inspect the coolers / water dispensers for cleanliness and replenishment of water and cooling ice on a documented routine interval based on temperatures and staff size. Cooling ice will be stored in clean coolers if added directly to water dispensers. If the site temperature exceeds 90 degrees F the frequency of the cooler inspection will increase to maintain cool water and water supply levels.

6. Oversee the daily inspection and maintenance of coolers to ensure they are kept clean and in good condition.

No. of Employees		**No. of Work Hours Per Day**		**Quarts of Water Required**	0

One cooler will be provided for every four workers and will contain 24 16-ounce bottles every 2 hours.

No. of Employees		**Number of Coolers**	0	**Bottles Required**	0

Form Color Key

(yellow)	*Enter requested Information*
(green)	Calculation Completed

Check which situation applies. Must check at least one box, or provide additional detail.

- [ ] Ice will be purchased at the start of each day by the site Health & Safety Officer or designee.
- [ ] Ice will be distributed from on-site machine or service meeting applicable potable water standards.

Checklist of Materials to order and keep on hand.

☐	Anti-microbial hand cleaner.	☐	Food Safe cleaning product for water cooler.
☐	Paper towels.	☐	Sufficient amount of drinking cups for each employee and water dispenser.
☐	Potable water to clean coolers.	☐	Other Item -

Access to Shade

1. The Site Health & Safety Officer or designee is responsible for directing how shade will be coordinated and placed when temperatures exceed 85 degrees Fahrenheit.

2. Before the start of work, the location of the shade areas, the importance of taking shade breaks, recognizing the signs and symptoms of heat illness, and the schedule of shade breaks (> 5 minutes per break), and the location will be addressed during each Tailgate Safety Meeting. Access to shade must be allowed at all times (As temperature increases cool down breaks should increase in frequency.)

3. Adequate shade to comply with the requirements must allow for at least 25% of the employees on the shift at any time access to shade so they can sit in a normal posture fully in the shade with enough space to allow for sitting without being in physical contact with each other. **Employees who desire access to shade must not be deprived of it due to lack of space.**

5. Shade structures will be relocated to follow along with the crew for moving tasks. Shade structures will be placed within 50 feet of the work area, if practical. Shade structures must be no further than a short walk away (e.g. 2-3 minutes) from the work area. This consideration becomes critical as the temperature rises above 85 degrees F.

6. In situations where it is not safe or feasible to provide shade, the SHSO will document in the HASP Supplement the unsafe or unfeasible conditions, and include the steps taken to provide alternative cooling measures equivalent to shade.

Check available option

	Provide air conditioned vehicle(s) with working air conditioner operating. (Available space for at least 25% of the crew.)
	Provide temporary or mobile shade structure(s) that are either ventilated or open to air movement (Secure against wind.)
	Building or permanent structure(s) in close proximity to the work area that provide a cooling environment either through mechanical ventilation or are open to air movement will be

Monitoring of Weather

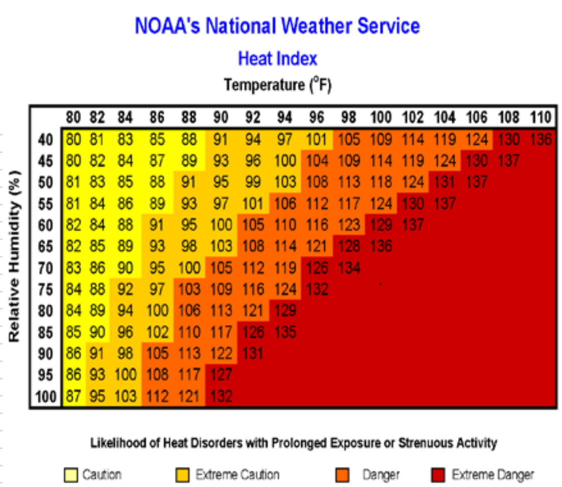
1. The SHSO or designee must check the extended weather forecast in advance of the upcoming work on a weekly basis. Work schedules will be adjusted in advance, taking into consideration whether high temperatures or a heat wave is expected.
Accepted weather forecasting resources include webpages such as: http://www.noaa.gov/ or http://www.weather.com/

2. Before work starts for the day or for the shift, the SHSO will review the forecasted temperature and humidity for the work site and compare conditions against the National Weather Service Heat Index (below) to evaluate the risk level for heat illness. Determination will be made of whether or not workers will be exposed to a combination of temperature and humidity characterized as "Extreme Caution", "Danger" or "Extreme Danger" for heat illnesses. It is important to note that the temperature at which these warnings occur must be lowered as much as 15 degrees if the workers under consideration are in direct sunlight.

3. A thermometer will be used at the job site to monitor for sudden increases in temperature. The SHSO will be responsible for obtaining a thermometer prior to the start of the project and making it readily accessible or mounting it in an area where it can easily be monitored throughout the course of the day.

3a. If the temperature exceeds **85 degrees** Fahrenheit, shade structures will be opened and made available to workers.

3b. If the temperature equals or exceeds **95 degrees** Fahrenheit, additional preventive measures (such as those outlined in the High Heat Procedures) will be implemented.



NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

Procedures for High Heat and Heat Waves

High Heat

These procedures are additional preventative measures to be implemented when the temperature equals or exceeds 95 degrees Fahrenheit.
The SHSO or designee is responsible for implementing the following procedures during periods of high heat. These procedures include, but are not limited to, the following:

The "Buddy System" will be implemented, especially for new employees or employees who have yet to acclimate to high heat conditions. Additionally, frequent communication will be maintained with employees working by themselves (via cell phone or two-way radio), to be on the lookout for possible symptoms of heat illness.

Employees will be observed for alertness and signs and symptoms of heat illness at regular intervals to be documented in the field book or field log.

When the SHSO is not available, an alternate responsible person must be assigned to look for signs and symptoms of heat illness. Such a designated observer will be trained and know what steps to take if heat illness occurs.

Heat Waves

A "heat wave" as defined by the National Oceanic and Atmospheric Administration (NOAA), is a period of abnormally and uncomfortably hot and unusually humid weather."
Typically, a heat wave lasts 2 or more days.
During a heat wave or if site conditions indicate the potential for "Extreme Caution", "Danger" or "Extreme Danger" per the NOAA Heat Index Table the following steps will be taken:

Work schedules will be modified to protect workers from heat illnesses. The SHSO or designee in coordination with the project team, will use their Stop Work Authority and evaluate the following actions and document the action in the daily field log

1 Modify work hours.
2 Reschedule or suspend work or specific tasks that are strenuous.
3 Cease work for the day.

If schedule modifications are not possible, the Heat Illness Prevention Plan will be reviewed before work resumes. At a minimum, procedures for heat illness prevention, the provisions of the high heat procedures, the weather forecast and emergency response protocols will be reviewed.

Employees will be provided with additional water and rest breaks and will be observed more frequently. During work activities and rest breaks, employees will be observed for signs and symptoms of heat illness.

All employees will maintain frequent communication with the SHSO or designee, who will be monitoring workers for possible symptoms of heat illness. In the event of large project sites where the SHSO may be unable to be near the workers (to directly observe or communicate with them), then communication via a cell phone or radio may be used for this purpose provided reception in the area is reliable.

Procedure for Emergency Response

1. The Site Health & Safety Officer or designee is responsible for implementing the following procedures for emergency response. These procedures include, but are not limited to, the following:

2. Prior to assigning staff to a particular work site, during the Tailgate H&S Tailgate Safety Meeting all site workers will review a map of the Site along with clear and precise directions (such as streets or road names, distinguishing features, and distances to major roads), to avoid a delay of emergency medical services.

3. Prior to assigning staff to a particular work site, efforts will be made to ensure that a qualified and appropriately trained and equipped person is available at the site to render first aid, if necessary.

4. Prior to the start of the morning Tailgate Safety Meeting, a determination will be made of whether or not a language barrier is present at the site, and steps will be taken (such as assigning the responsibility to call emergency medical services to the Health & safety Officer or an English speaking worker) to ensure that emergency medical services can be immediately called in the event of an emergency in accordance with the HASP.

5. All Health & Safety Officers and supervisors will carry cell phones or other means of communication to ensure that emergency medical services can be called. Checks will be made to ensure that these electronic devices are allowed on site, have adequate reception across the site, and are functional prior to each shift.

6. When an employee reports symptoms, or is observed displaying symptoms of possible heat illness, steps will be taken immediately to keep the affected employee cool and comfortable until emergency service responders have been called and treatment guidance is provided, or until they arrive at the Site (to reduce the progression to more serious illness).

7. During a heat wave or hot temperatures, workers will be reminded and encouraged to immediately report to the Site Health & Safety Officer any signs or symptoms they are experiencing.

Procedure for Handling a Sick Employee

1. The Site Health & Safety Officer or designee is responsible for implementing the following procedures for handling a sick employee.
These procedures include the following:

2. When an employee displays possible signs or symptoms of heat illness, the Site Health & Safety Officer or designee will check the sick employee and determine whether resting in the shade and drinking cool water will suffice or if emergency service providers will need to be called. A sick worker will not be left alone, and will be monitored closely for the remainder of the day or until emergency support arrives.

3. Signs of the onset of Heat Illness are: excessive fatigue, heavy sweating, headaches, cramps, dizziness, elevated pulse.

4. When an employee displays possible signs or symptoms of heat illness and no trained first aid worker or supervisor is available at the site, emergency service providers will be called.

5. Emergency service providers will be called immediately if an employee displays signs or symptoms of heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face) or does not get better after drinking cool water in intervals of 8 ounces every 15 minutes and resting in the shade. While the ambulance is in route, first aid will be administered (**cool the worker: place the worker in the shade, remove excess layers of clothing, place ice pack in the armpits and groin area and fan the victim**). A worker determined to be suffering heat illness will not be allowed to leave the site.

6. If an employee displays signs or symptoms of severe heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face), and the work site is located more than 20 minutes away from a hospital, call emergency service providers, communicate the signs and symptoms of the victim, and request an Air Ambulance.

Revisions, notes, amendments, and clarifications specific to this plan can be noted in the space below:

1. POLICY

An Incident is defined as "a sudden and unplanned event or chain of events, which has, or could have caused, injury or illness and/or damage to assets".

It is ARCADIS US' policy that:

- All incidents are reported. This includes near losses.
- Reporting of incidents is every employee's responsibility
- Incidents involving injury are reported to WorkCare first to ensure proper medical care and management if they are non-emergency in nature
- All incidents are investigated
- Incident investigation is the supervisor's responsibility to initiate and lead
- The level of investigation is based on the severity of the outcome or the potential outcomes of the incident
- All incident investigations result in learning that is communicated to appropriate staff

2. PURPOSE AND SCOPE

2.1 Purpose

The purpose of reporting and investigating incidents is to prevent similar or more serious incidents from recurring. This is completed by determining the contributing factors to the incident and the root causes of those factors using the Root Cause Analysis standard (ARC HSMS011).

2.2 Scope

The types of incidents reported and investigated under the ARCADIS H&S program include:

- Work-related injuries and illnesses
  - fatality/permanent disability
  - lost time
  - restricted duty
  - medical treatment
  - first aid
- Near losses

- Motor vehicle accidents
- Environmental releases
- Equipment or property damage
- Regulatory violations
- Operational or system inefficiencies or losses

This standard is also followed for any of the above-listed incidents incurred by subcontractors providing services to ARCADIS. The investigation team will include subcontractor workers and a subcontractor supervisor. ARCADIS personnel may also participate on the investigation team to provide knowledge of the project site and to facilitate the proper use of the process.

Additional client-specific and contract requirements may also be required and implemented.

3. DEFINITIONS

See Exhibit A of ARC HSMS000 – ARCADIS US HS Management System.

4. RESPONSIBILITIES

	All Personnel (Field and office employees)	Supervisor	H&S Professional	PM, PIC, Area Manager or Department Manager	Senior Leadership
Incident Occurs	If a non-emergencywork-related injury or illness,call Work Care first for proper medical care Notify supervisor and stop operation until it is determined safe to resume operations. Co-workers are considered authorized to accompany the employee to the medical care facilty as appropriate.	Complete initial verbal reporting of incident to H&S professional; evaluate risk of incident reoccurrence. If Motor Vehicle Accident or damage, notify Corporate H&S and Corporate Insurance coordinator	Ensure that the ARCADIS Workers Compensation manager has been notified of any injury-related incident Complete reporting and notification process	Receive initial notification based on severity of the incident	Receive initial notification as appropriate

	All Personnel (Field and office employees)	Supervisor	H&S Professional	PM, PIC, Area Manager or Department Manager	Senior Leadership
Investigation	Participate as team member in investigation; help to identify root causes and develop solutions.	Initiate investigation process; select personnel for investigation team; participate/lead investigation team.	Participate as necessary.	Participate as appropriate.	Participate as appropriate.
Investigation Report	Participate in completing investigation report form.	Participate in completing investigation report form; assign reviewers.	Review investigation reports and provide feedback as necessary.	Review investigation reports and provide feedback as necessary.	Review investigation reports and provide feedback as necessary. Steward process for quality, timeliness, participation, and provide feedback.
Communication **Safety Alert and Info Sharing Report**	Participate in the development of a Safety Share or other communications as able and as appropriate. Review incident related communications, Safety Shares.	Participate in the development of Safety Shares written by reporting employees. For others, communicate incident related information to personnel, including Safety Alerts and Info Sharing Reports, as appropriate.	Communicate information internally as necessary. Review Safety Shares as appropriate	Communicate information internally as necessary.	Steward Safety Shares
Solution Implementation, Verification & Validation of Effectiveness	Implement as directed. Notify supervisor of effectiveness.	Manage implementation; field verify and validate solutions.	Field verify and validate solutions and provide feedback as appropriate	Field verify and validate solutions and provide feedback	Field verify and validate solutions and provide feedback.

5. PROCEDURE

- The procedures discussed in this section are broken down into several steps as to the completion of the reporting and investigation of incidents including:
- Near losses
- Investigation Team
- Stop Work

- Reporting and Notification
- Case Management and WorkCare Intervention
- Timing of investigation
- Initiating the investigation
- Documentation
- Fact gathering
- Incident descriptions
- Conclusions
- Root Causes
- Solutions
- Review
- Validation and Verification

5.1 Near Losses

Near losses are incidents and are, therefore, an integral part of the incident investigation process. Health and safety research indicates that for every major incident there are hundreds of near losses that could potentially result in a major injury or other type of loss can be avoided. In other words, by managing near losses, incidents involving a loss can be prevented.

Therefore, employees are required to report all near losses without fear of reprimand or peer pressure, and no individual should feel threatened about honest reporting of a near-loss. A near loss is simply an injury, illness or other loss that was avoided because of more favorable circumstances, or “luck.” By managing near losses, we have an opportunity to be proactive in the identification and resolution of hazards before an injury, illness or other loss occurs.

5.2 Reporting and Notification

The employee is responsible for reporting any incident including reporting to the Supervisor/PM and/or the client as outlined in the project H&S Plan. Reporting and notification times vary depending on the incident, but all should be done as soon as possible and no later than as outlined in the Incident Reporting and Investigation Process flowchart in Exhibit A. This reporting will be completed via telephone to the appropriate person or via the Near Loss Hotline.

As necessary, an ARCADIS employee that is present on the site where the injury occurred is authorized to and will accompany the employee to the treating facility.

5.3 Case Management and WorkCare Intervention

Every non-emergency, work-related injury or illness is required to be called into WorkCare via their reporting hotline number to ensure proper medical management of the injury. WorkCare will manage the case along with the ARCADIS Workers Compensation manager to ensure the appropriate and effective care is provided to the employee and so that the interests of the company are also represented. A flowchart of the WorkCare internvention process is shown in Exhibit B

5.4 Investigation Team

Team composition varies depending on the type, location, and severity of the incident. Personal knowledge and experience are key to the success of the investigation. Furthermore, the people who perform the tasks that led to an incident have the knowledge to identify the real root cause(s) and develop the solution(s) that will likely keep the incident from recurring.

The recommended members of the investigation team are listed in the Investigation Flowchart in Exhibit A. Management may designate personnel in addition to the members listed, as appropriate (e.g., legal department, technical specialist).

5.5 Incident Investigation Process

Immediately following an incident, **STOP** operations until it is determined that it is safe to resume! This assessment may be as simple as performing TRACK or as complex as a team assessment of practices and conditions.

5.6 Initiating the Investigation

Information or conditions that may change with time must be captured immediately. This may include taking pictures of damage before it is repaired and of the site before conditions change, and getting names of witnesses before they leave the area. The longer the delay in examining the incident scene and interviewing witnesses the greater the possibility of obtaining erroneous or incomplete information.

The severity or potential severity of the incident will determine when the formal investigation should be initiated. If a person sustains a major injury, or if the incident had the potential for serious or fatal injury, the operation must be stopped and the investigation initiated immediately. Other incidents, including near losses should be initiated as soon as possible.

5.7 Fact Gathering

It is essential that proper information and data gathering take place at all times during the investigation. The accuracy and thoroughness with which the investigators obtain and record information and data largely determines the quality of the final report and the effectiveness of corrective actions.

For minor incidents, the information may be gathered by the supervisor or other personnel immediately following the incident. Based on the complexity of the situation, this information may be all that is necessary to enable the investigation team to analyze the incident, determine the root cause, and develop solutions. More complex situations may require the investigation team to revisit the incident site or re-interview key witnesses to obtain answers to questions that may arise during the investigation process.

Photographs or videotapes of the scene and any damaged equipment or property should be taken from all sides and from various distances. Sketches or drawings could also be pertinent to the investigation. This is especially important when the investigation team is not able to visit the incident scene.

5.8 Starting an Investigation

The supervisor, as it relates the activity being conducted at the time of the incident, is responsible for initiating the investigation process. The incident investigation is initiated once the area is secure, injured people have received appropriate medical attention, and appropriate notifications have been made.

5.9 Investigation Reporting Form

All incident investigations are maintained in the LPS database. Information is documented on the ARCADIS Incident/ Investigation Form and then entered into the database or entered directly in the LPS database. The purpose of the form is fourfold:

- State clearly what happened;
- Conclude why the incident occurred by identifying causal and contributing factors;
- Determine root cause(s); and
- Develop and implement solution(s) to prevent similar events from occurring in the future.

5.10 Description of Incident

It is critical to accurately describe what happened. Do not speculate on causes, state “just the facts.” The description should be clear and concise. For example:

> “Mechanics opened the flange on transfer line Number 2 from Tank 101 and 50 gallons of diesel fuel was released No injuries occurred. Spill was contained in the area drainage system”.

5.11 Conclusion: Determining the Causal and Contributing Factor(s)

The contributing factors section describes WHY the loss or near loss occurred. Avoid repeating what happened and focus instead on causal and contributing factors. It is important to investigate beyond mere symptoms to identify fundamental causes and contributing factors that led to the event. Only then can accurate root causes be identified.

5.12 Determining the Root Cause(s) of the Causal and Contributing Factor(s)

The Root Cause Analysis Flow Chart presented in ARC HSMS011will be used by the investigation team to identify the root cause(s) for all investigations. This chart leads investigators through a range of possibilities for factors that cause or contribute to incidents. This keeps investigators focused on potential root causes, steering them away from symptoms.

Any incident may have one or more root cause. Those that relate to the person involved in the incident, his/her peers, the supervisor, or manager are referred to as "personal factors." Causes that pertain to the system or environment within which the incident occurred are referred to as "job factors."

5.13 Development of Solution(s)

Each root cause must be addressed by a solution, with a responsible person identified and notified for solution implementation. The investigation team cannot identify a root cause and then make no recommendation to address it. Furthermore, there must be a "match" between the root cause and the solution.

There are a few guidelines that should generally be adhered to when deciding what solution to recommend... The solutions are:

Practical: The most effective solutions to most incidents address basic worker activities, require that standards for job procedures are developed and maintained, and confirm that the right tools are provided for and used by workers.

Specific and Verifiable: The solution should be specific to something that can be verified as having been implemented and effective not only by those involved, but by other personnel not involved in the incident. For example, "Always work safely" is neither specific nor verifiable.

Controllable: The most effective solutions are those that focus on personal or job factors that the worker or supervisor can control.

Cost Effective: A $1M solution is not needed for a $100 hazard. Again, the majority of effective solutions are relatively inexpensive and are implemented with resources within one's own organization.

Sustainable: This solution is not merely for the week or month; it must be sustainable. If solutions are made that are even remotely unsustainable, the solutions must be re-evaluated. Otherwise, the road is being paved for "loss of credibility."

5.14 Review Process

The roles and responsibilities of the investigation and review processes are outlined in the Incident Reporting and Investigation Process flowchart presented in Exhibit A. Review and follow-up on incident investigations is important to verify the effectiveness of the process.

Quality reviews of incident investigations begin with the immediate project or department manager and continue up through the executive management levels. At each level, there is an opportunity to provide positive feedback or constructive advice for the continued improvement of LPS tool effectiveness.

5.15 Validation and Verification

Management provides follow-up on incident investigations by verifying that the solutions have been implemented and validating that the solutions have adequately addressed the root cause(s) of the incident. Again, each of these steps provides opportunities for positive management feedback to those involved in the investigation.REFERENCES (regulation citation, technical links, publications, etc.)

6. TRAINING

All employees receive Incident Reporting and Investigation training during LPS training

7. REFERENCES

ARC HSMS011 – Root Cause Analysis and Solution Development

8. RECORDS

All incidents are recorded and stored in the LPS database and maintained per ARCADIS recordkeeping requirements.

9. APPROVALS AND HISTORY OF CHANGE

Approved by:

Patricia A. Vollertsen

Patricia A. Vollertsen, Director, H&S Administration

History of Change

Revision Date	Revision Number	Reason for change
22 October 2007	01	Original document
9 June 2009	02	Revision and update to incude WorkCare intervention which has been implemented since 2006 but documented in separate document. Also update new LPS terminology
26 June 2009	03	Revision to include language that, when necessary, an injured employee will be accompanied to medical care by authorized employee

Revision Date	**Revision Number**	**Reason for change**
6 Ocotober 2010	04	Change name from Procedure to Standard; revision to section 5.2 & App A to clarify client must be notified when required by the HASP

Exhibit A
Incident Reporting and Investigation Process Flow

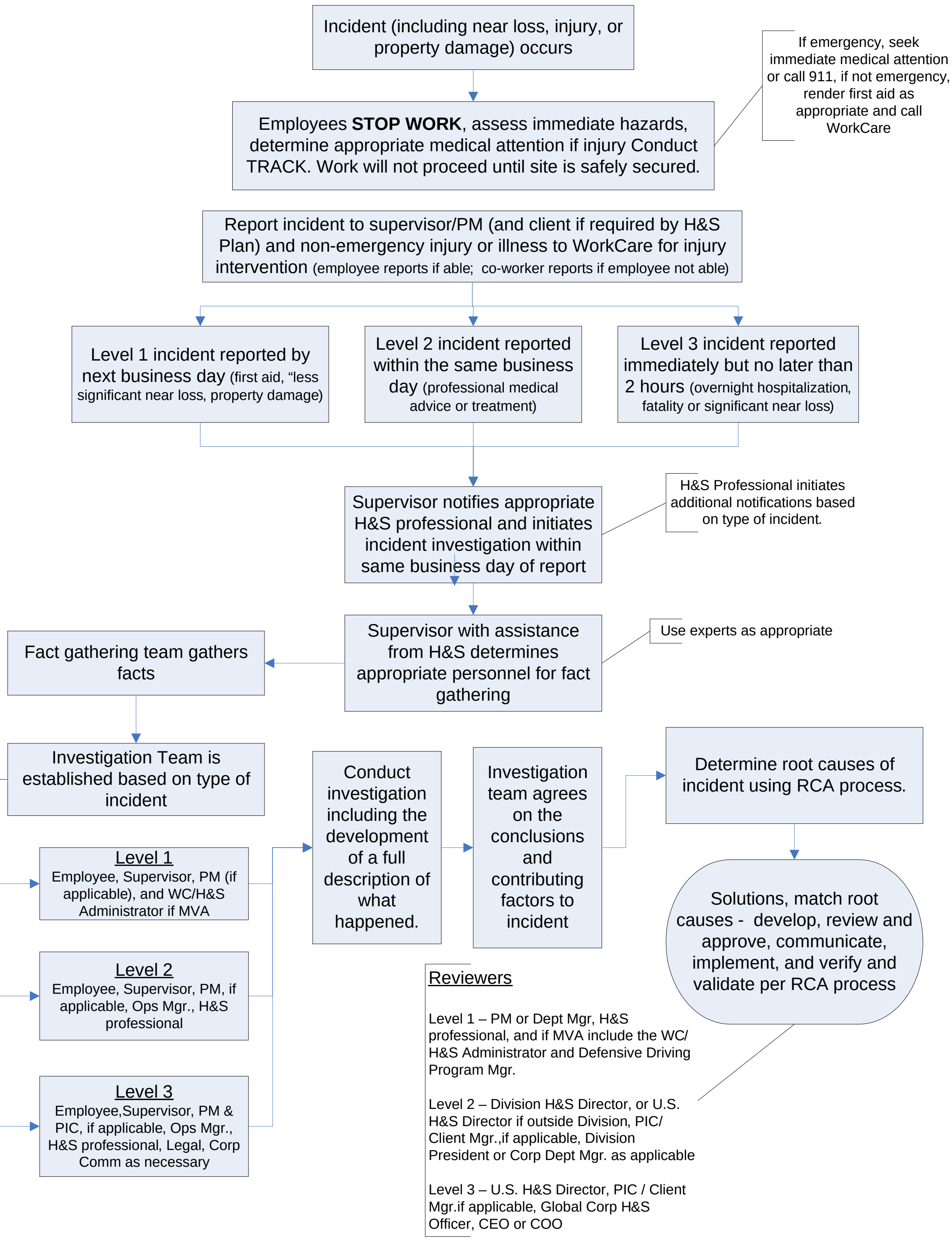
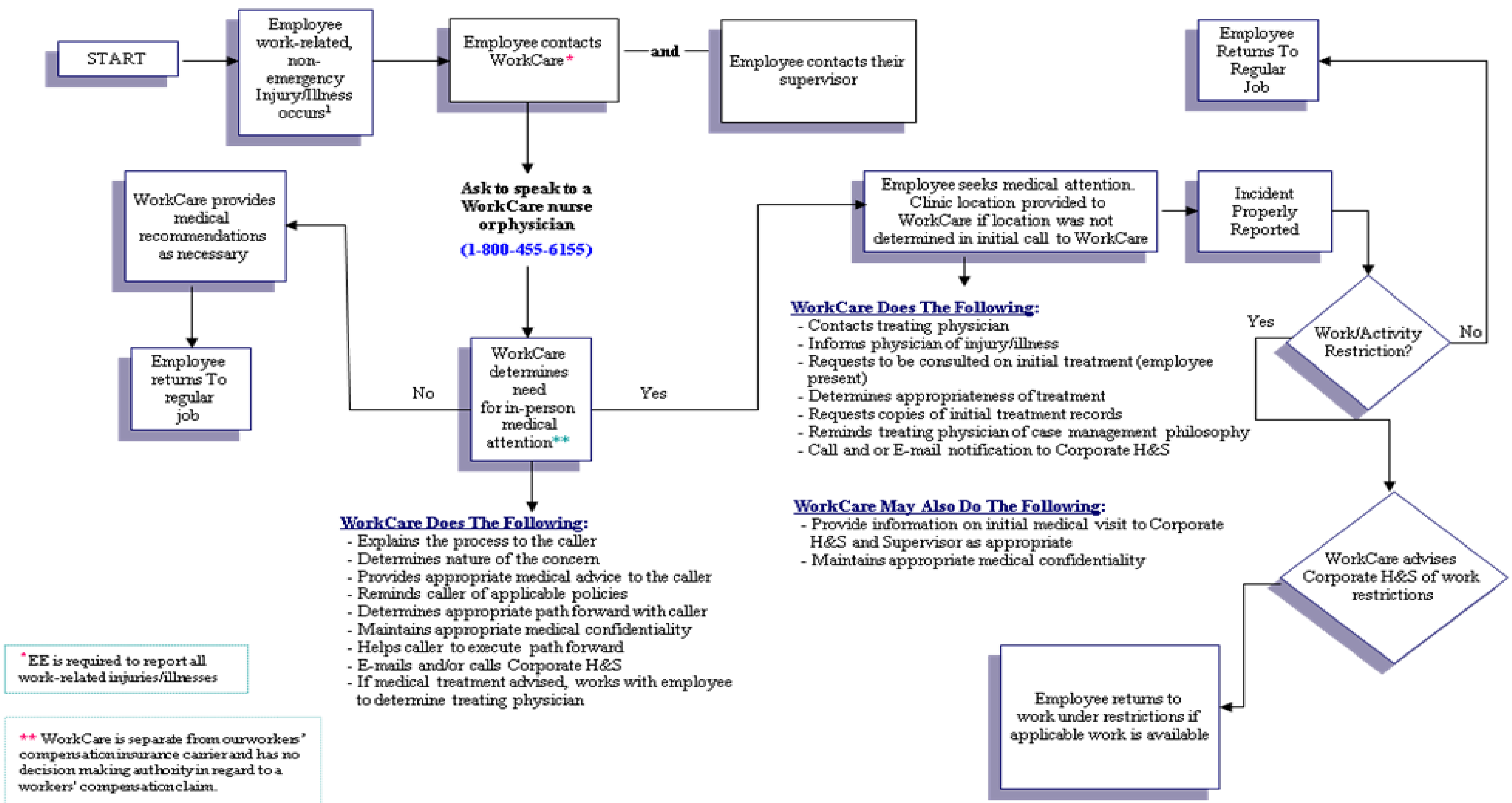


Exhibit B

ARCADIS WorkCare Incident Intervention®

For work-related injuries or illnesses that <u>are not</u> life threatening or emergencies



EXECUTIVE SUMMARY

This Injury and Illness Prevention Program (IIPP) has been developed as part of the overall ARCADIS Health and Safety Program in an effort to provide our employees with a safe and healthful working environment. This program is a supplement to the ARCADIS Health and Safety program with the specific intent of meeting the requirements of the State of California Code of Regulations, Title 8, Section 3203.

This standard serves as the ARCADIS written program for compliance with the requirements of an IIPP as contained in Title 8 of the California Code of Regulations, Section 3203 (8 CCR 3203). While it is <u>required</u> to be maintained by ARCADIS offices and project sites within the State of California, it is recommended that it be maintained in other ARCADIS US offices and project sites as a Best Management Practice (BMP).

The Director of Health and Safety has the authority and responsibility for the overall development and implementation of the ARCADIS IIPP.

The H&S Coordinator is responsible for implementing the IIPP at his/her office and notifying workers of updates or changes in the IIPP.

The Site Health and Safety Officer (SHSO) is responsible for implementing the IIPP at the project site and notifying site employees and subcontractors of updates or changes in the IIPP.

The ARCADIS office Location Leader, manager, and supervisor will be responsible for periodically reviewing the health and safety needs of employees under their direction, and will serve as the initial contact for their employees' health and safety-related questions.

Employees are responsible for immediately reporting unsafe conditions in the workplace to their supervisors so that potentially hazardous situations can be addressed and in a timely fashion.

No specific training is required on this Health & Safety Standard (HSS); however, Section 5.8 defines training and competency requirements for other parts of the ARCADIS H&S program.

Documentation and records required by the IIPP standard will be maintained for a minimum of 1 year in the following locations:

- The written IIPP HSS will be maintained on The Source, which is accessible by all employees of the company.
- H&S Training will be documented in the ARCADIS training system.
- The Source, H&S team sites, and 4-Sight will be used to maintain records of inspections, incident investigations, Task Improvement Process (TIPs), Job Safety Analyses (JSAs), and other documentation.
- Site Health and Safety Plans (HASPs) and tailgate safety meeting documentation will be kept on site and in the project file at the office where the project is managed.

1. POLICY

It is ARCADIS US policy that, prior to the conduct of any task or work-related activity, hazards will be recognized and identified, analyzed, and assessed for the level of risk associated with those hazards, and that appropriate controls are implemented to assist in the prevention of injuries and illnesses to ARCADIS staff.

2. PURPOSE AND SCOPE

2.1 Purpose

This Injury and Illness Prevention Program (IIPP) has been developed as part of the overall ARCADIS Health and Safety Program in an effort to provide our employees with a safe and healthful working environment. This program is a supplement to ARCADIS' program for the purposes of meeting the requirements of State of California Code of Regulations, Title 8, Section 3203. It references other standards and documents within the ARCADIS program to help ensure that we identify, evaluate, and correct occupational hazards or unsafe acts in the workplace that may lead to employee illness or injury.

2.2 Scope

This standard serves as ARCADIS' written program for compliance with the requirements of an IIPP as contained in Title 8 of the California Code of Regulations, Section 3203 (8 CCR 3203). While it is required to be maintained by ARCADIS offices and project sites within the State of California, it is recommended that it be maintained in other ARCADIS US offices as well. All ARCADIS employees working in the State of California are required to be informed of their responsibility under Labor Code 6407.1, which requires them to comply with occupational safety and health standards applicable to their own actions and conduct.

For ARCADIS project sites in California, the project Health and Safety Plan (HASP) – ARC HSFS010 must include the IIPP HASP Supplement. This IIPP supplement shall be prepared to provide staff working at the site or field office with specific details on injury and illness prevention. The IIPP supplement within the HASP meets the requirements of the California CCR regulation (See Exhibit 1).

Preparation of the IIPP supplement shall be a best management practice (BMP; not a requirement) in those states where preparation of a specific IIPP is not required.

3. DEFINITIONS

Definitions of terms used with the ARCADIS H&S program are presented in ARC HSMS000 – ARCADIS H&S Management System.

4. RESPONSIBILITIES

4.1 Director of Health and Safety

The Director of Health and Safety has the authority and responsibility for the overall development and implementation of the ARCADIS IIPP. The Director of Health and

Safety and corporate H&S staff will also assist in resolving health and safety-related issues and questions as they arise.

4.2 Location Leaders, Managers, and Supervisors

In each ARCADIS California office, each Location Leader, manager, and/or supervisor will be responsible for periodically reviewing the health and safety needs of employees under their direction, and will serve as contacts for their employees' health and safety-related questions. If an issue arises that cannot be adequately addressed by the supervisor, he or she will contact the Director of Health and Safety or designate as soon as practical to resolve the issue. The supervisor is also responsible for notifying Corporate H&S within the timeframe designated by the Incident Reporting and Investigation standard (ARC HSMS010) following their being notified by an employee of a work-related injury or illness.

4.3 Office H&S Coordinators

An H&S Coordinator is designated in each office. In ARCADIS California offices, this employee is responsible for implementing the IIPP at his/her office and notifying workers of updates or changes in the IIPP. H&S Coordinators will forward employee suggestions, concerns, complaints, and other contacts regarding Health and Safety to the Corporate Health and Safety group as issues arise.

4.4 Project-Specific Site Health and Safety Officers

Similar to the Office H&S Coordinator role for ARCADIS offices, ARCADIS project sites will have a designated Site Health and Safety Officer (SHSO). The SHSO will be identified by name in the HASP and is responsible for implementing the site-specific HASP and components of this IIPP, as applicable. The SHSO will notify site workers of changes to the HASP, IIPP, and any other site-specific health and safety documents. The SHSO will forward employee, suggestions, concerns, complaints, and site-specific observations regarding site health and safety to the project H&S manager (if applicable) or to the Corporate Health and Safety group.

4.5 ARCADIS Employees

Employees are responsible for immediately reporting unsafe conditions in the workplace to their supervisors so that potentially hazardous situations can be addressed in a timely fashion. Employees must also report incidents per ARC HSMS010 to their supervisors so they can be investigated, root causes determined, and appropriate corrective and preventive actions implemented.

Employees are encouraged to communicate with their supervisors or with the Director of Health and Safety or designate whenever they have a health and safety question, concern, or suggestion.

5. PROCEDURE

5.1 General Requirements

All ARCADIS employees will conduct themselves in accordance with the ARCADIS H&S Vision and Policy as described in ARC HSMS000 – ARCADIS H&S Management System. The ARCADIS Global H&S Vision Policy describes the commitment by

ARCADIS management to align health and safety with the company's core values of integrity, entrepreneurship, and agility. ARCADIS is committed to preventing injuries and illness for the benefit of all employees, clients, partners, and all other stakeholders.

Employees are frequently advised that they are expected to comply with the ARCADIS H&S program, including all rules, policies, and standards concerning health and safety in the workplace. Positive reinforcement and recognition of safety-conscious employees will be an integral part of the strategy to promote compliance. The company will periodically distribute discretionary awards to employees who display exemplary safety attitudes or contribute to ARCADIS' health and safety efforts. This recognition can come from a variety of sources including supervisors, managers, H&S staff, or others.

Health and safety performance will be reviewed as a part of each employee's performance evaluation. Failure to comply with ARCADIS' code of conduct may result in disciplinary action per the ARCADIS discipline program as administered in cooperation with the Human Resources Department.

A definition of health and safety violations includes, but is not limited to the following actions: an employee not following ARCADIS or client-specific verbal or written safety procedures, guidelines or rules, engaging in horseplay on the job, failure to wear required personal protective equipment (PPE) or abuse of selected PPE, or other such activity.

5.2 Communication

Employees will be informed regarding health and safety issues in the following ways:

- During initial orientation of new hires, employees will be informed of the procedures associated with this standard and ARCADIS' Hazard Communication Program (ARC HSGE007).
- New hires will be informed of the location of ARCADIS H&S standards and documents which are housed on The Source.
- H&S communications will be distributed during regular staff meetings at the project, group, or office level.
- H&S communications will be distributed via the conduct of H&S Moments at the beginning of meetings and conference calls.
- H&S communications will be distributed through regular communications via email, weekly announcements, The Source, and other vehicles.
- H&S communications will be distributed through the regular distribution of health and safety shares and lessons learned.
- H&S communications will be distributed through the ARCADIS Field Employee H&S Handbook.
- H&S communications will be distributed through periodic Health and Safety webinars or informational memoranda distributed by Corporate Health and Safety.
- Daily tailgate safety meetings will be conducted during field operations including review of the site HASP and or related Job Safety Analyses (JSAs).

- H&S communications will be distributed during various training courses provided for employees based on their job function.

Employees are encouraged to communicate directly with managers and supervisors in verbal or written form about hazardous health and safety conditions. Internal communication processes include mechanisms to ensure that employees have a way to communicate their H&S concerns, questions, suggestions, comments, or other issues. Once appropriate action is taken, the employee raising the issue is (at a minimum) provided a response within a practical timeframe.

Internal communication may be accomplished through a variety of vehicles, including but not limited to company newsletters, H&S moments, emails, Safety Shares, and Snap Communications. In addition, through the ARCADIS risk management tools, feedback is provided to discuss safe and questionable behaviors when appropriate.

Additionally, communications resulting from regulatory requirements are distributed to ensure employee access to the information.

It is the policy of ARCADIS that employees who report a hazardous situation or make a suggestion for improving health and safety conditions in the workplace will not be subject to any type of retaliation. In addition, anonymous reporting of concerns, complaints, or suggestions is also available through the ARCADIS Employee Assistance Program (EAP).

5.3 Hazard Recognition, Identification, Assessment, Communication, and Control

Hazard recognition, identification, assessment, communication, and control processes are defined by the following ARCADIS HSS:

ARC HSMS000 – ARCADIS H&S Management System

ARC HSMS002 – Hazard Assessment and Risk Control

ARC HSFS010 – Health and Safety Plans

ARC HSMS010 – Incident Reporting and Investigation

ARC HSGE007 – Hazard Communication

All project sites are required to have a HASP prepared in accordance with the above referenced HSS. The HASP will include a detailed hazard assessment identifying hazards and hazard controls for each planned task and scope of work specific to the project.

All employees are empowered, authorized, and expected to use their Stop Work Authority if they feel their health and safety is or is perceived to be compromised.

Unsafe or unhealthy conditions and work practices must be corrected expeditiously, with the most hazardous exposures given correction priority.

5.4 Incident Reporting and Investigation

Per ARC HSMS010, loss and near miss incidents will be reported and investigated. Through the use of the 4-Sight database, these investigations will determine the contributing factors and root causes of incidents, and the identification and implementation of corrective and preventive actions. Contributing factors, root causes, and corrective actions will be communicated to appropriate staff related to lessons learned developed from the incident investigation.

5.5 H&S Procedures

ARCADIS employees will follow the ARCADIS H&S standards and/or the ARCADIS Employee Field H&S handbook as published on the H&S section of The Source. These HSS form the basis for the code of conduct expected by ARCADIS staff including supervisors, managers, and leaders.

5.6 H&S Inspections

Periodic inspections of the workplace (office or project site) will be conducted by performing Task Improvement Process (TIP), evaluations, ARCADIS global/Third Party/Client-led assessments, and H&S site visits per the ARCADIS audit and assessment processes described in ARCADIS H&S Standard ARC HSMS009 – H&S Conformance Assessments. For the purposes of this HSS, the primary criteria for completing H&S inspections include inspections based on hours worked at the project site and/or the risk ranking of hazards present. The frequency of these inspections depends on the operations involved, the magnitude of the hazards, the proficiency of employees, changes in equipment or work processes, and the history of work-place injuries and illnesses. Inspections should be conducted by personnel who, through experience or training, are able to identify actual and potential hazards and understand safe work practices. The project site or office is expected to complete routine H&S inspections. An inspection must be completed when an injury or incident has occurred or where a hazard analysis has not been completed.

5.7 Corrective and Preventive Action

Root causes will be determined for deficiencies identified during inspections, issues identified during incident investigations, and questionable behaviours identified during TIPs. Based on these root causes, the appropriate solutions will be determined and implemented per ARC HSMS011.

5.8 Competency, Training, and Experience

ARCADIS US defines and documents the necessary competence levels that their employees require to work in conformance with the ARCADIS H&S Vision and Policy. A training matrix is provided to assist supervisors and managers in selecting training that employees need to maintain the defined competencies required for their job responsibilities. Competency is achieved through a variety of mechanisms including:

- Training
- Education
- Experience

In addition, ARCADIS defines and implements methods to evaluate the effectiveness of training provided to employees. These methods may include but are not limited to:

- Written or oral testing
- Auditing and review
- Hands-on demonstrations
- Behavioral observations and feedback

ARCADIS ensures that training is completed to meet company, legal, and client requirements within our areas of operation. In addition, ARCADIS US trains its employees and makes them aware of:

- The importance of conforming to the H&S Vision and Policy and any standards provided them to conduct their work in a healthy and safe way
- The H&S consequences of their work and the benefits of completing their work in a safe and healthful fashion
- The employees' roles and responsibilities within the HSMS
- The safe behaviors for completing job tasks and the at-risk or unsafe behaviors that could result in employee injury or illness

Documentation of health and safety training for each employee is maintained for at least 1 year.

5.9 Emergency Planning, Preparedness, and Response

Each location will develop and implement an emergency preparedness and response plan per ARC HSMS008.

6. TRAINING

No specific training is required on this HSS; however, Section 5.8 defines training and competency requirements for other parts of the ARCADIS H&S program.

7. REFERENCES

H&S Page on The Source

ARC HSFS010 – Health and Safety Plans

ARC HSGE007 – Hazard Communication

ARC HSMS000 – ARCADIS H&S Management System

ARC HSMS002 – Hazard Assessment and Risk Control

ARC HSMS008 – Emergency Preparedness and Response

ARC HSMS010 – Incident Reporting and Investigation

ARC HSMS009 – H&S Conformance Assessments

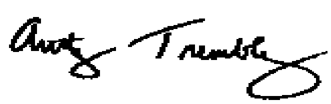
8. RECORDS

Consistent with the ARCADIS Human Resources Records Retention policy HR 2.12, documentation and records required by the IIPP standard will be maintained for a minimum of 1 year in the following locations:

- The written IIPP will be maintained by the Director of Health and Safety on The Source, which is accessible by all employees of the company.
- H&S Training will be documented in the ARCADIS training system.
- The Source, H&S team sites, and 4-Sight will be used to maintain records of inspections, incident investigations, TIPs, Job Safety Analyses (JSAs), and other documentation.
- Site HASPs and tailgate safety meeting documentation will be kept on site and in the project file at the office where the project is managed.

9. APPROVALS AND HISTORY OF CHANGE

Approved By: Tony Tremblay, CSP – Corporate H&S, Director of Technical Programs



History of Change

Revision Date	**Revision Number**	**Standard Developed/Reviewed By or Revised By**	**Reason for change**
11 January 2010	01	Mike Thomas	Original document
16 April 2012	02	Sue Byers	Executive Summary added; terminology changed from JLA to JSA, LPO to TIP
25 June 2014	03	Alec MacAdam/Tony Tremblay	Updated Header/Footer; updated online reference from APEX to The Source; updated for CalOSHA CCR Title 8 3203 compliance; section 5.6 clarifies “project site or office inspections will be conducted based on the operations involved, the magnitude of the hazards, the proficiency of employees, changes in equipment or work processes, and the history of work-place injuries and illnesses”, and inclusion of the IIPP HASP Supplement

EXHIBIT 1 – IIPP HASP Supplement Template

Link to IIPP HASP Supplement

IIPP HASP Supplement for Project Sites and Offices

The purpose of the ARCADIS Illness and Injury Prevention Program (IIPP) is to establish location specific written guidelines to ensure the safety of employees working at ARCADIS offices or project sites located in the state of California (best management practice for other locations). It is the intention of ARCADIS to provide a safe and healthy working environment for all of its employees.
All ARCADIS employees and subcontractors will be offered a copy and are required to implement and following the principles set forth in this IIPP.
The purpose of this HASP Supplement is to communicate the specific details of the IIPP associated with the specific California office or project site for which this supplement has been prepared.
A copy of the ARCADIS H&S Standard ARC HSGE008 (Injury and Illness Prevention Program) must be included as an attachment to all California project site HASPs or office Emergency Response Hazard Communication Plans to meet the requirements of CCR Title 8 3203.
The programmatic details of the ARCADIS H&S Standard ARC HSGE008 are incorporated by reference.

This IIPP HASP supplement has been prepared to be used as a location specific IIPP template to address the required components of the IIPP as mandated by CCR Title 8, Section 3203.

Scope and Application:
This document serves as the written Injury Illness Prevention Plan for ARCADIS activities for the following ARCADIS office and/or project site:

ARCADIS Office or Project Site:____

____

This HASP supplement is supported by the following documents, which are presented as references supporting this supplement:

ARCADIS Office or Project Site Documents: ___________________________
(e.g., HASP or Office Emergency Response & HazCom Plan, Field Sampling Plan, SOPs, etc.)

____

Responsibility §3203(a)(1):
Roles and responsibilities are detailed in the office/site HASP. See the "Emergency Information" and "Tasks, Roles & Training Sections".

ARCADIS California IIPP Program Administrator:__________________________
ARCADIS Office H&S Coordinator / Site Health and Safety Officer:________________

____

Compliance §3203(a)(2):
All employees are responsible for applying the ARCADIS TRACK process in evaluating hazards and assessing risk for all work tasks, using safe work practices, following all directives, policies and procedures, and for assisting in maintaining a safe work environment. See the ARCADIS H&S Standard ARC HSGE008 for the steps detailing compliance with the ARCADIS H&S program.

Communication §3203(a)(3):
ARCADIS recognizes the importance of two-way communication between management and staff to address health and safety issues with the objective of planning for and maintaining an injury-free, productive workplace. A description of the policy and procedures developed to facilitate a continuous flow of health and safety focused communications between management and staff is provided in the ARCADIS H&S Standard ARC HSGE008.

Office/site specific workplace hazard methods of communication include the following:

- ☐ Site Health & Safety Plan
- ☐ Tailgate Safety Meetings
- ☐ Job Safety Analysis (JSA)
- ☐ Safety Data Sheets (SDS)
- ☐ Other: ______________________
- ☐ Task Improvement Process (TIPs)
- ☐ Emergency Response & HazCom plan
- ☐ Safety Committee Meetings
- ☐ Safety bulletins/Client procedures

Workplace Hazard Assessment §3203(a)(4):
Initial workplace hazard analysis is completed during the preparation of the project site HASP or office HazCom plan. Periodic inspections will be performed to identify and evaluate workplace hazards in all areas of the office or project site. Inspections and the associated observations will be conducted in accordance with the ARCADIS H&S Standard ARC HSGE008.
Periodic inspections will consist of identification and evaluation of workplace hazards using the H&S management assessments, H&S compliance assessments, TIPs, site/office inspections or ARCADIS global/Third Party/Client-Led H&S assessments to identify and evaluate workplace hazards.

Note: The primary criteria for conducting inspections are the number of hours worked at the site or office and the risk ranking of the hazards present. See the project specific HASP "Signatures" tab or office Emergency Response and Hazard Communication plan for a detail of proposed TIPs, assessments and inspections.

Accident Investigations §3203(a)(5):
All near misses, calls to WorkCare, and injuries must be reported to ARCADIS Corporate H&S as soon as possible. Procedures for investigating workplace accidents, incidents and injuries are described in the ARCADIS H&S Standard ARC HSGE008 and documents referenced therein. For incidents involving third parties the ARCADIS Legal Counsel must be contacted. Approval from legal counsel is required before a 4-Sight incident investigation entry is prepared.

Hazard Correction and Communication §3203(a)(6):
Unsafe or unhealthy work conditions, practices or procedures shall be corrected in a timely manner based on the severity of the hazard(s). Hazards shall be corrected according to the procedures outlined in the ARCADIS H&S Standard ARC HSGE008.

Note: When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/or property, All ARCADIS employees and subcontractors will Stop Work and leave the area. Employees identified to correct the hazardous condition will do so only when provided with the necessary training and protection to address the hazard safely.

Training and Instruction §3203(a)(7):
All employees, including managers and supervisors, shall have training and instruction on general and job-specific health and safety practices. Project site specific training requirements are communicated in the site specific HASP under the "Tasks, Roles and Training" tab.
A detailed discussion of the competency, training requirements and training process for the IIPP are covered in the ARCADIS H&S Standard ARC HSGE008.

Record Keeping §3203(b)(1) & (2):
Records of workplace hazard assessments and inspections will be maintained in accordance with the ARCADIS Human Resources policy HR 2.12 for record retention.
Project teams or office staff who are responsible for recording of the assessment or inspection will include at a minimum; the person(s) conducting the inspection, any unsafe conditions and work practices that have been identified and the action taken to correct the identified unsafe conditions and work practices.
Also, Documentation of health and safety training for each employee including the employees name, training dates, training program, and training providers are recorded and maintained by the ARCADIS Training Center. All employees receiving training conducted via third party training vendors are required to send a certificate of completion or similar record to the Training Center.

Labor - Management Safety Committee §3203(a)(3):
Establishment of a "Labor - Management Safety Committee" is a recommendation of §3203(c) when working in facilities with unionized employees and as such is not required for an IIPP to be complete. If establishment of a Labor - Managment Safety Committee is not applicable the process and procedures to formalize, document and communicate the health and safety related reporting is described in this IIPP. The components of the ARCADIS H&S Communications program is provided in the ARCADIS H&S Standard ARC HSGE008.

Notes:

EXECUTIVE SUMMARY

This Motor Vehicle Safety Program (MVSP) standard applies to:

- All ARCADIS drivers operating ARCADIS owned, leased, rented, or personal motor vehicles used for business purposes and all ARCADIS owned, leased or rented motor vehicles used for non-business (personal) purposes.
- ARCADIS expects 100 percent compliance with all applicable driving laws and regulations.
- This MVSP must be used in conjunction with Corporate Human Resources Vehicle Use Policy. (Source-US/HR/Policies). If there is conflict between this standard and policies of another corporate department, this standard shall prevail.
- Employees operating ARCADIS owned, leased or rented vehicles for personal use must have written supervisor’s approval.
- All ARCADIS drivers with an assigned driving function for ARCADIS may have their Motor Vehicle Record (MVR) reviewed by approved representatives of Corporate Human Resources, Health and Safety and/or Legal Departments.
- Newly hired drivers with an assigned driving function for ARCADIS and a clean MVR must complete, at a minimum, on-line defensive driving training within 30 days of hire.
- Existing ARCADIS drivers with an assigned driving function for ARCADIS must participate, at a minimum, in on-line defensive driving training at intervals prescribed by Health and Safety.
- Weekly vehicle inspections are required for all ARCADIS owned, leased, or rented vehicles used during the previous 7 days. Inspections will be documented.
- All ARCADIS owned, leased, or rented motor vehicles will be properly maintained in accordance with manufacturer’s recommendations. All defects affecting safe operation of the motor vehicle will be promptly repaired.

1. POLICY

It is the policy of ARCADIS to implement sound defensive driving training and education to employees. It is also ARCADIS policy to provide administrative management that ensures vehicles are well maintained and driven by qualified employees.

2. PURPOSE AND SCOPE

2.1 Purpose

ARCADIS is committed to providing a healthy and safe work environment for our employees, subcontractors, clients and visitors. To this end, ARCADIS embraces this Health and Safety MVSP Standard.

This standard and accompanying requirements provides consistent practices with regards to defensive driving and vehicle administration for ARCADIS vehicles.

2.2 Scope

Generally, this Standard applies to all employees operating motor vehicles for ARCADIS

2.2.1 Business Driving – This MVSP applies to the operation of any motor vehicle during the conduct of ARCADIS business. It applies to every ARCADIS Driver operating an ARCADIS, rental, leased or personal vehicle used for company business.

2.2.2 Area Involved **–** This MVSP applies to the operation of motor vehicles for company business in any country in which ARCADIS employees or temporary agency employees are working.

2.2.3 Exceptions

2.2.3.1 Operation of Commercial Motor Vehicles

Additional requirements apply to operation of commercial motor vehicles (CMVs). Refer to the ARCADIS Transportation Safety Program for Commercial Motor Vehicles (CMV Program) for additional information. When client requirements are more restrictive than this MVSP, the more restrictive requirement will apply for all work activities involving driving for that client.

2.2.3.2 Drivers without an Assigned Driving Function for ARCADIS

Drivers without an assigned driving function for ARCADIS are still subject to the requirements of the ARCADIS Vehicle Use Policy maintained by Human Resources.

3. DEFINITIONS

Definitions relating this Motor Vehicle Safety Program (MVSP) can be found in Exhibit 1.

4. RESPONSIBILITIES

The following have responsibilities under this standard:

4.1 Corporate Health and Safety Department (Health and Safety) – Has the responsibility for: revising and updating this standard, communicating MVSP requirements to employees. They also ensure this MVSP is being implemented effectively. Health and Safety has a primary focus of identifying defensive driving education and training resources. Health and Safety is also responsible for stewarding programs involving vehicle inspections and maintenance requirements. Health and Safety has the authority to request and evaluate motor vehicle reports on ARCADIS drivers at any time.

4.2 Health and Safety MVSP Specialist (MVSP Specialist) – Is the primary contact for all issues related to implementation of this MVSP, including reporting of all accidents and incidents involving a motor vehicle. The MVSP Specialist will coordinate with other Corporate departments, as required, related to MVSP implementation requirements.

Contact the MVSP Specialist for all MVSP related reporting, questions or concerns.

4.3 Corporate Human Resources Department (Human Resources) – Has the responsibility to review applicable portions of this standard for the purposes of ensuring consistency with Human Resource's policies and procedures regarding motor vehicle operation. Human Resources have a primary focus of ensuring administrative procedures concerning vehicle use are followed by employees. This includes, but is not limited to, management of information in the Vehicle Use Policy administered by Human Resources and insurance requirements. Human Resources have the authority to request and evaluate motor vehicle reports on ARCADIS drivers at any time.

4.4 Corporate Legal Department (Legal) – Has the responsibility to provide oversight of the requirements stipulated in this standard to ensure ARCADIS risks are properly managed. Legal has the authority to request and evaluate MVRs on ARCADIS drivers at any time.

4.5 Corporate Purchasing (Purchasing) – Has the responsibility to oversee leasing and maintenance management vendors and facilitate maintenance issues associated with ARCADIS owned or leased vehicles. Purchasing will also work with Health and Safety on safety equipment needs for owned or leased vehicles.

4.6 Health and Safety Managers and Specialists – Are responsible for facilitating and educating staff on MVSP requirements. These individuals may also perform audits or conformance assessment to ensure compliance with the requirements of this standard.

4.7 ARCADIS Managers and Supervisors (including project and task managers) – These managers and supervisors provide stewardship concerning the requirements of this standards to lower tier managers and employees. In addition, they assure that appropriate time is provided to ensure implementation of MVSP requirements and facilitate maintenance request approvals.

4.8 ARCADIS Employees – Each employee has the responsibility to adhere to this MVSP and to communicate Health and Safety concerns, issues and questions to their supervisor or to Health and Safety staff. In addition, all employees have the responsibly to use TRACK prior to any driving activity and will follow all applicable ARCADIS, federal, state, provincial, and local jurisdiction regulatory; and client requirements when driving an ARCADIS owned, leased, rented vehicle.

5. PROCEDURE

5.1 General Procedure and Requirements

Only ARCADIS Drivers as defined in Section 3.0 are permitted to drive ARCADIS vehicles. Exceptions to this policy are limited only to individuals authorized by the ARCADIS Driver or fleet administrator to perform short term driving and parking activities involving ARCADIS vehicles such as maintenance employees and valets. Use of joint venture and temporary agency employees working with or for ARCADIS to operate ARCADIS vehicles requires pre- approval of the Division President and Legal.

Employees must report all moving violations that may affect their driving status for ARCADIS

ARCADIS Drivers who drive ARCADIS vehicles or personal vehicles used for ARCADIS business will maintain a valid driver's license, appropriate for the vehicle they are operating, that is free from any driving restrictions or suspension. An ARCADIS Driver who is asked to drive for business purposes in any type of vehicle, shall notify their supervisor or designated ARCADIS contact by the next business day if:

- Their license is suspended, revoked, or restricted;

- They receive a moving violation while driving for ARCADIS-related business; or
- Receive a moving violation during non-business related driving in any type of motor vehicle that might affect their driving status with ARCADIS.

If one of these issues occurs, the employee's supervisor will contact the MVSP Specialist. The MVSP Specialist (or his/her designate), in cooperation with Human Resources and Legal, as deemed necessary, will evaluate the employee's driving status (especially in instances of license suspension, revocation or restriction) and, as appropriate, corrective action recommendations will be made.

Employees who fail to report a driving violation to their supervisor that might affect their driving status for ARCADIS purposes (a restricted driver) will face disciplinary action which may include termination if the conviction is discovered through routine MVR pulls, criminal background checks or other official documentation transmitted or made available to ARCADIS. ARCADIS will work to the extent practical with employees who report driving violations that might affect their driving status for ARCADIS purposes if ARCADIS operations management can accommodate a driving restriction for the driver or other suitable arrangement is made consistent with HR and Legal policies.

All ARCADIS Drivers driving an ARCADIS motor vehicle or personal vehicle for ARCADIS business will:

ARCADIS expects 100% compliance with local driving laws and regulations

- Wear seat belts at all times in any vehicle with seat belts (this includes taxis and shuttle buses equipped with seat belts);
- Have a valid unrestricted operator's license appropriate for the vehicle being driven;
- Operate and license the vehicle in accordance with applicable laws;
- Operate the vehicle consistent with client driving rules, speed limits, and requirements when operating the vehicle on project sites;
- Drive defensively as learned through training, education, and experience;
- Exercise caution when taking any prescription or over-the-counter medication that may cause drowsiness or an altered mental state;
- Not use controlled substances, illegal drugs, or be under the influence of alcohol while driving on ARCADIS business;

- Not drive in a manner that could be deemed reckless or aggressive by other drivers;
- Not use radar/laser-type detectors;
- Not pick up hitchhikers;
- Not smoke in company vehicles; and
- For drivers with an assigned driving function for ARCADIS, if permanently assigned an ARCADIS motor vehicle will ensure the vehicle is maintained as directed by the ARCADIS maintenance vendor.

Use of headlights at all times, even during daylight hours is recommended.

5.2 MVR Review

5.2.1 New Hire MVR Review

MVSP Guide-005 provides details of the MVR review process

Human Resources will perform a MVR review on potential new hires of positions that have an assigned driving function for ARCADIS. The MVR review process for potential new hires follows an established review process that will result in a Pass, Conditional, or Restricted status. A MVR review resulting in restricted status will prevent hiring of the candidate unless excepted as specified in section 5.2.5. Human Resources will communicate the MVR review results to the hiring manager prior to finalizing the new hire process.

5.2.2 Existing Employee MVR Review

Human Resources may perform a MVR review on existing employees with an assigned driving function for ARCADIS at a frequency stipulated by Corporate. The MVR review process for existing employees follows an established review process that will either result in a Pass, Conditional, or Restricted status. Human Resources or the MVSP Specialist will communicate the MVR review results to the supervisor of any employee having a Conditional or Restricted status resulting from the MVR review.

5.2.3 Post-Accident MVR Review

Any vehicle related accident classed as a preventable Motor Vehicle Accident (MVA) will require a MVR review for the employee involved in the MVA. Preventable VLEs are not generally subject to the MVR review process; however, Corporate reserves the right to perform a MVR review on any employee involved in a vehicle related accident regardless of accident classification. The MVSP Specialist will report the need to run a MVR to HR upon determination of a preventable MVA.

5.2.4 Commercial Motor Vehicle MVR Reviews

Detailed requirements concerning MVR review and evaluation for drivers participating in the ARCADIS CMV Program is not addressed in this standard. MVR reviews related to CMV drivers are performed by ARCADIS Director of Transportation Safety or his/her approved designate.

5.2.5 Appeals

MVR reviews that result in restricted driving status for a potential new hire or existing employee may be appealed through the ARCADIS Accident Review Committee (ARC).

For potential new hires with a planned assigned driving function for ARCADIS, a restricted status will prevent hiring of the individual to work for ARCADIS. This prohibition may only be overturned by the Division President in partnership with Human Resources. Driving restrictions will be maintained for restricted status if the individual is hired and the remaining driving restriction is eligible for ARC appeal.

5.3 Defensive Driving Training, Evaluation, and Education Requirements

The ARCADIS Training Center provides instructions on how to enroll into defensive driving training courses or tutorials

5.3.1 New Hire Defensive Driving Training

All new hires (regardless of driving assignment) with an active driver's license will complete on-line defensive driving training prescribed by Health and Safety within 30 days of employment.

New hires with conditional driving status may be required to complete on-line defensive driving training prior to operating a vehicle for ARCADIS

5.3.2 Existing Employee Defensive Driving Training

On a frequency defined by Corporate Health and Safety, in cooperation with operations senior management, employees who have an assigned driving function for ARCADIS shall complete an on-line defensive driving training course designated by Health and Safety or an equivalent course approved by Health and Safety.

Note: For existing employees hired before the implementation date of this policy, the supervisor will determine if the employee drives on average 5 or more days per month to warrant participation in this training.

In furtherance of ARCADIS' goal of promoting safe driving, employees who do not have an assigned driving function for ARCADIS are also eligible to voluntarily participate in the same on-line defensive driving training concurrent with prescribed timeframes for any assigned ARCADIS driver training.

If a client requires classroom or hands-on defensive driver's training, The ARCADIS Training Center will arrange for the required classroom training. The ARCADIS required on-line training will not be required for those driving employees who attend classroom training (hands-on or subject matter training) consistent with a Health and Safety recognized defensive driving system during the same calendar year.

All ARCADIS drivers are expected to review and be familiar with the contents of the Operator's Manual(s) for the vehicles they will be operating. Additional training may be provided or required at the request of an employee's supervisor, Health and Safety, or as required by a client.

Supervisors should discuss with their direct reports about their abilities to operate large vehicles and address direct report concerns.

5.3.3 Inexperienced Drivers

New hires or existing employees having an assigned driving function for ARCADIS and known to have only possessed a valid driver's license for less one year or experienced drivers that are unfamiliar with driving large vehicles may warrant additional evaluation and training in the operation of the vehicle(s) they are expected to drive while working for ARCADIS. Supervisors are encouraged to review with their direct reports their license and driving history to ensure the driver is comfortable and knowledgeable of expected vehicle operation. If determined by the supervisor that additional evaluation is warranted, a Commentary Drive (see Section 5.4) should be considered. The supervisor may schedule an additional TIP at a later date to ensure safe driving of larger vehicles is being performed.

Supervisors may opt to enroll drivers in additional defensive driving on-line training or hands-on defensive driver training if the driver expresses concerns about their ability to safely drive a vehicle.

5.3.4 Drivers Requiring Training or Evaluation due to Corrective Action from MVR Review

Any driver subject to Corrective Action arising from an MVR review will be trained or evaluated as prescribed in the MVR evaluation process (MVSP Guide-005).

5.3.5 Additional Defensive Driving Training and Education Requirements for Employees Involved in a Vehicle Loss Event

Corrective actions associated with an employee involved in a preventable or non-preventable VLE will be determined by the supervisor based on the severity and circumstances of the incident as determined by the incident Near Loss/Loss (LNL) Investigation in the ARCADIS Behavior Based Safety (BBS) Program.

5.4 Sources for On-Line and Video Based Defensive Driving Training

The on-line defensive driving training or equivalent training will be provided by, or based on, a nationally recognized defensive driving training company such as Smith System or other recognized provider as approved by Health and Safety and arranged through the ARCADIS Training Center. Video based defensive driving training modules will be arranged through the ARCADIS Training Center.

5.5 Commentary Drive Program

The Commentary Drive evaluates driver understanding of safe driving behaviors by having the driver verbalize their observations to the Commentary Drive observer when operating the vehicle. The observer will use a standard Commentary Drive Evaluation Form to document driver understanding of safe driving principles such as the Smith System "5 Keys". The observer will also provide real time feedback on questionable driving behaviors. Commentary Drives are expected to last a minimum of 1 hour behind the wheel driving time.

MVSP Guide-001 provides criteria for observers used in Commentary Drives

Employees performing observer functions for Commentary Drives must be current on Health and Safety defensive driving on-line training obligations as described in Section 5.3 above and meet additional criteria approved by Health and Safety.

5.6 Driving TIPs

The driving TIP may be used to evaluate driver performance and provide solutions related to questionable driving behaviors for routine driving evaluations under the ARCADIS BBS Program. Solutions generated using the TIP process will be consistent with the expectations of the ARCADIS BBS Program.

5.7 Sources of Hands-On Defensive Driving Training

When used, hands-on defensive driving training will be provided by, or based on, a nationally recognized defensive driving training course such as Smith System or other provider approved by Health and Safety. The trainer must be certified in the program upon which they are instructing and can be either internal or external to ARCADIS. Arrangements for hands-on defensive driving courses are handled by the ARCADIS Training Center.

5.8 Additional Training and Education for Other Driving Conditions

Working together, supervisors, managers, and Health and Safety have the responsibility of determining additional training for employees driving under special conditions such as CMVs, towing trailers, riding and operating all-terrain vehicles or other non-routine driving conditions. Training approved by Health and Safety will be arranged through the ARCADIS Training Center.

5.9 Driving Distractions and Cell Phone Use While Operating a Motor Vehicle

ARCADIS strictly prohibits employee use of personal or company-provided cellular phones, either hands-on or hands free, speaker, or similar devices while the employee is operating a motor vehicle on company time or business or in company owned, leased, and rental vehicles, or personal vehicles used for company business. Details concerning this policy are provided in the ARCADIS Vehicle Use Policy managed by Human Resources.

5.10 Additional Defensive Driving Procedures

ARCADIS promotes additional defensive driving techniques to assist in the elimination or minimization of MVAs and VLEs. These techniques include:

- When a second ARCADIS employee is available, and where it is safe to do so, all vehicle backing operations should use a spotter to assist with the backing operation.
- As a best practice, use of the cone program to promote awareness of hazards around parked vehicles.
- To assist drivers in their potential lack of familiarity with the location in which they are driving, one of the following should be utilized by drivers traveling to unfamiliar locations:
  - The use of GPS systems in rental cars such as Hertz® Never Lost
  - Pre-Trip Route Planning through the use of Google® Maps or MapQuest®

MVSP Guide-007 provides best practices for spotting and cone placement

5.11 Vehicle Inspections and Maintenance

All company owned or leased vehicles will be maintained in safe operating condition. To ensure vehicles are properly maintained, a daily pre-trip visual inspection must be informed prior to operating the vehicle. The pre-trip inspection should include, but is not limited to:

- Seat belts;
- Doors and door locks;
- Lights;
- Mirrors;

- Horn;
- Back up alarms, if equipped;
- Parking brake;
- Instrument panel;
- Steering;
- Windows;
- Windshield wipers;
- Tires; and
- Emergency equipment.

A more comprehensive weekly documented inspection (daily if required by the client, manager or supervisor or if vehicle is operated in harsh environments) is also required. Rental vehicles operated by ARCADIS for more than one week also must also use the documented weekly inspection process. Inspections are required to be documented on the Weekly Vehicle Inspection Checklist or equivalent.

Documented vehicle inspections are required weekly and use of approved fuel cards is also required

Deficiencies identified in inspections or at any other time will be managed through the ARCADIS vehicle leasing company vendor or maintenance provider specified by Corporate Purchasing. Routine maintenance (gasoline, oil, etc.) will also be managed through these vendor(s) using approved fuel cards. Use of assigned fuel cards is critical to help ensure maintenance schedules are maintained for the vehicle. Records of vehicle inspections should be maintained at the office or project location where the vehicle is assigned.

Employees operating company owned or leased vehicles (including qualifying rental vehicles) required to be maintained under the CMV program will follow inspection and maintenance requirements specified in the CMV program. **Use of Weekly Vehicle Inspection checklist for CMV operation is <u>not permitted</u>.**

5.12 Safety Equipment for ARCADIS Vehicles

All ARCADIS owned or leased trucks are expected to have, at a minimum, an A,B,C fire extinguisher (permanently mounted), first aid kit and an orange strobe or oscillating light (either may be permanently affixed or removable). Rental trucks and ARCADIS owned, leased, or rented cars

ARCADIS Trucks:
- ✓ Fire Extinguisher
- ✓ First Aid Kit
- ✓ Orange Strobe

may be subject to equivalent requirements, if used for field work. Rental vehicles are not required to have fire extinguishers permanently mounted.

All ARCADIS purchased or leased trucks obtained on or after June 1, 2012 will be required to be equipped with back up alarms. ARCADIS owned or leased trucks obtained prior to June 1, 2012 will be required to have a functioning back up alarm if used for project work with client mandated back up alarm requirement.

Refer to MVSP Guide-010 for additional recommendations for safety and emergency equipment that may be required for specific project needs.

All ARCADIS vehicles managed under the ARCADIS approved vendor maintenance program have Emergency Roadside Assistance. Documentation, including the phone number, for the vendor providing assistance must be maintained in the glove box of the vehicle.

5.13 Securing Loads in Vehicles

All luggage, equipment and supplies loaded into a vehicle operated by ARCADIS will be stowed in a manner that will prevent appreciable movement. Luggage, equipment and supplies placed in the passenger compartment of vehicles will be placed in a manner that will prevent rapid forward movement in the event of a hard stop or frontal collision. Objects will not be placed on the dashboard of vehicles unless they are secured in place by friction mats, suction cups, or similar securing device.

Securing straps, ties downs (all types) and securing nets used to secure loads on trucks must be inspected prior to each use. Damaged, worn or frayed securing straps or tied owns must not be used.

Chemicals transported in ARCADIS vehicles must conform to the requirements of the ARCADIS Transportation Safety Program for HazMat Shipping and Transportation including, but not limited to, securement provisions of DOT Facts-108a, “Materials of Trade”.

ARCADIS CMVs are subject to additional load securement requirements specified by the ARCADIS Transportation Safety Program for CMVs.

5.14 Special Considerations for Rental Vehicles

MVSP Guide-006 provides safety best practices information for rental vehicles

Rental vehicles will be treated and driven in a manner equivalent to an ARCADIS owned or leased vehicle. Additionally, ARCADIS employees renting vehicles will plan and select a vehicle appropriate for the conditions anticipated when driving. Careful planning is required to preferentially use

ARCADIS owned or leased vehicles for off road use instead of using rental vehicles when reasonable, practical and permitted under contract (client or Rental Company) terms. Due to operating unfamiliarity typically encountered when renting vehicles, use of TRACK to identify and mitigate atypical or unfamiliar vehicle functionality or performance is required.

6. TRAINING

See section 5.3 of this standard for training requirements.

7. REFERENCES

ARCADIS Vehicle Use Policy (Human Resources)

ARCADIS Transportation Safety Program for Commercial Motor Vehicles

MVSP Guide-001, Staff Approved for Conducting Commentary Drives

MVSP Guide-002, Guidelines for Conducting Commentary Drives

MVSP Guide-003, Automated Enforcement Conviction Evaluation Criteria

MVSP Guide-004, Criteria for Defining a Motor Vehicle Accident

MVSP Guide-005, Guide for MVR Corrective Actions

MVSP Guide-006, Rental Vehicle Safety Best Practices

MVSP Guide-007, Spotter and Cone Program Best Practices

MVSP Guide-008, Accident Review Committee Appeal Process

MVSP Guide-009, Reserved

MVSP Guide-010, Safety Requirements for ARCADIS Vehicles

MVSP Guide-011, Reporting Requirements for all Vehicle Damage

8. RECORDS

Records will be maintained as follows:

- MVRs pulled as required under this MVSP and associated notifications, approvals, releases, and findings information will be maintained by Human Resources.
- TIP results related to MVSP activities will be maintained in the 4-Sight database.
- Commentary Drive documentation will be provided to the employee unless otherwise specified by the MVSP Specialist.
- Any training certificates or documentation arranged through the ARCADIS Training Center (hands-on defensive driving, defensive driving on-line, defensive driving videos, etc.) will be maintained by the ARCADIS Training Center.

9. APPROVALS AND HISTORY OF CHANGE

Approved By: Tony Tremblay, CSP – Corp H&S, Director of Technical Standards

History of Change

Revision Date	Revision Number	Standard Developed/Reviewed By or Revised By	Reason for change
26 March 2007	01		Original document
18 August 2007	02		Change in required on-line defensive drivers training
22 October 2007	03		Changing over to new template format and addition of the “Comments on My Driving?” program
21 January 2008	04		Change to new template; change to 2008 organization job titles; change to prohibit texting/emailing while driving
13 June 2008	05		Addition of Sections 5.10 and 5.11 on other defensive driving techniques and cone placement.

Revision Date	Revision Number	Standard Developed/Reviewed By or Revised By	Reason for change
6 October 2008	06		Clarified who is required to complete online training in Section 5.3 and modified section on when hands-on defensive driving is required after an accident.
8 April 2009	07		Incorporated references to the CMV program and vehicle inspection requirements. Incorporated Vehicle Use Policy. Added fatigue management requirements. Deleted references to the Commentary Drive which is obsolete.
3 November 2009	08		Incorporated Smith System videos as a corrective action, Commentary Drive Program and revised Exhibit 2 and added new Exhibit 4.
1 November 2010	09		Deleted Comments on my driving section as program was discontinued.
25 May 2011	10		Revised content and restructured selected exhibits and standard sections. Most content duplicated in the Vehicle Use policy removed. Vehicle Use policy incorporated by reference
August 16, 2011	11		Replaced section 5.7, added new definitions and guide references, clarified fatigue management recommendations, modified terminology for BBS program, provided MVR report clarifications.
May 2, 2012	12		Comprehensive restructuring, Revisions to training and MVR processes, expanded rental vehicle safety, inclusion of additional MVSP guidance documents, roles and responsibilities clarification. Inclusion of vehicle safety equipment information. Formalization of the ARC process.

Revision Date	Revision Number	Standard Developed/Reviewed By or Revised By	Reason for change
14 March 2013	13		Clarified MVR review and training for new hires. Clarified standard conflict with other corporate department policies. Restructuring of section 5.2. Removal of assigned driving function. Revision to headlight use. Section 4.2 MVSP Specialist e-mail link address updated
8 December 2013	14		Added definition for assigned driving function, Restructured MVR review requirements, Newly licensed driver requirements, and add references to new MVSP Guides. Title changes and minor editing throughout.
29 January 2014	15	Sam Moyers	Addition of new section 5.13 addressing load securement to harmonize with other H&S standards and guidance. Addition of pre-trip visual inspection information to harmonize with other H&S standards and guidance. Clarification of expectations in the cone and spotter program. Revised header and footer to current standard and modified revision history table.

EXHIBIT 1 - DEFINITIONS

ARCADIS vehicle or ARCADIS motor vehicle: Any motor vehicle owned or leased by ARCADIS employee.

ARCADIS driver or driver: Any ARCADIS US employee or temporary agency employee who drives an ARCADIS vehicle, leased vehicle, rental vehicle, or personal vehicle for business reasons whether the use of the vehicle includes operation from the local office or for travel while away from the local office.

ARCADIS employee: Any full-time, part-time, temporary, as needed employee, and interns employed by ARCADIS US.

Assigned Driving Fuction for ARCADIS: Any ARCADIS driver who drives on average 5 or more days per month in the interest of ARCADIS.

Business use of ARCADIS owned, leased, rented, or personal motor vehicle: For the purposes of this standard, business use of an ARCADIS, rental, leased or personal vehicle including but not limited to: attending meetings; driving to and from a client location; driving to dinner while out of town on business; and driving to an office supply store to pick up office supplies. Use of the vehicle for business would not include personal use as described below.

Corporate: As used in this standard and materials incorporated by reference, the term “Corporate” means Corporate Health and Safety, Corporate Human Resources, and/or Corporate Legal departments unless otherwise specified.

Manager: The employee’s administrative supervisor or an Operations Manager

Motor vehicle accident (MVA): Any incident on a reasonably anticipated route during the course of work where an ARCADIS owned, leased, or rented motor vehicle is:

MVSP Guide-004 provides detailed MVA information and FAQs

- On a public or established private roadway or parking area involving a third party motor vehicle, excluding load securement failures by a third party motor vehicle.
- On a public roadway involving damage to public or private property, excluding road debris damage.
- Involved in any type of pedestrian impact resulting in injury or property damage.
- Involved in an ARCADIS load securement failure or mechanical component failure on a public or established private roadway involving a third party motor vehicle or public property damage.
- On a public roadway involving damage or injury associated with another ARCADIS operated vehicle, including load securement failures.

Personal use of ARCADIS vehicle, leased vehicle or rented motor vehicle: For the purposes of this standard, personal use of an ARCADIS vehicle, leased vehicle or rental vehicle include but are not limited to supervisor approved: driving to dinner with a non-business-related person(s) in the vehicle; driving for the purposes of personal entertainment or personal business; using an ARCADIS vehicle or rental vehicle for staying over period of time not required for business (e.g., staying over a weekend to visit friends, etc.).

Potential New Hire or Candidate– For the purpose of this standard means an individual who has had a written offer made and accepted for employment with ARCADIS.

Preventable MVA – A MVA where the ARCADIS driver was as fault or was determined through the ARCADIS LNL Investigation process failed to exercise reasonable care while driving an ARCADIS vehicle. The classification of Preventable MVA is assigned by Corporate Health and Safety.

Rental vehicle: For the purposes of this policy, any motor vehicle rented from an established rental car company for ARCADIS business whether the use of the vehicle is operated from the local office or for travel while away from the local office.

Supervisor: The employee's administrative supervisor (project supervisor if approved by the administrative supervisor).

Hiring managers should review contracts for driving related issues involving temp agency employees

Temporary agency employee: A temporary agency employee utilized by ARCADIS for temporary work. Temporary Employee Agency agreements shall provide for standard automobile insurance and other terms consistent with this policy.

Vehicle loss event (VLE): Any incident involving a motor vehicle that does not meet the definition of a MVA. VLEs may be preventable or non-preventable based on findings of the ARCADIS LNL Investigation process and is assigned by Corporate Health and Safety.

ARCADIS Infrastructure · Water · Environment · Buildings	ARCADIS HS Standard Name Personal Protective Equipment	Revision Number 06
Implementation Date 20 February 2009	ARCADIS HS Standard No. ARC HSGE015	Revision Date 23 June 2014

EXECUTIVE SUMMARY

Through the use of personal protective equipment (PPE), ARCADIS employees are protected from occupational hazards in the event that engineering and administrative controls are not sufficient or practical. PPE will be provided to ARCADIS full time and permanent part time employees who regularly conduct field work or visit project sites outside of office environments at no cost following training on the proper use and maintenance of PPE.

Project managers are responsible for assessing potential hazards on a worksite and determining the applicable PPE.

Project personnel are responsible for understanding and utilizing “Stop Work Authority” should a hazard present itself that was not previously identified or has been identified in concentrations that are higher than anticipated.

This minimum level of PPE (hard hat; safety glasses; class II high-visibility vest, shirt or coat; and protective footwear with safety toe cap) is expected to be worn on all project sites unless in a field trailer or vehicle, unless a specific exemption has been established within an approved HASP or modification to a task specific JSA or Permit to Work upon completion/review of the hazard analysis.

PPE selection will be based on an evaluation of the performance characteristics of the PPE relative to the following:

- The requirements and limitations of the tasks or work environment
- The task-specific conditions and duration of the work
- The hazards and potential hazards identified at the site

PPE may be categorized into levels A, B, C or D.

- Level A offers the highest skin and respiratory protection
- Level B offers a high degree of respiratory protection with lesser levels of skin protection
- Level C is used when the concentration and type of airborne substance is known, and the criteria for using an air purifying respirator are met
- Level D offers the least skin and respiratory protection

PPE training will include, at minimum:

- When and what PPE is necessary
- How to put on, adjust, wear and take off the PPE
- Limitations of the PPE
- Proper care, maintenance, useful life, and proper disposal of PPE

1. POLICY

It is the policy of ARCADIS to assess the workplace to identify and assess hazards in order to appropriately implement controls for those hazards. In addition, it is ARCADIS policy to supply personal protective equipment (PPE) for employees in a working environment where engineering and administrative controls are not feasible or effective in the control of hazards. ARCADIS will train and supply this PPE at no cost to the employee.

2. PURPOSE AND SCOPE

2.1 Purpose

The purpose of PPE is to shield or isolate individuals from the chemical, physical and biologic hazards that may be encountered in their work environment. A hazard analysis or assessment will be performed before a job task is begun to evaluate if PPE is necessary to protect an employee from identified hazards and determine the type of PPE required. This analysis will include the identification of hazards/suspected hazards and their routes of exposure.

Combinations of protection may be needed to provide the appropriate level of protection for any given work environment. The level of PPE may change during a job, so periodic task evaluation will be conducted to ensure that the most appropriate PPE is being used. Over-protection, as well as under-protection, can create additional hazards and should be avoided where possible.

Subcontractors and other non-ARCADIS employees must supply their own PPE. ARCADIS will not supply PPE to any non-ARCADIS employees unless specific arrangements and agreements are made with the other party.

This Health and Safety Standard (HSS) provides guidance on the proper selection, use, care and maintenance of PPE.

2.2 Scope

Whenever possible, engineering, substitution and administrative controls will be used to reduce or eliminate hazards. When such controls are not feasible, practical or adequate, PPE will be used to protect employees from exposure to hazards during ARCADIS-related work tasks.

3. DEFINITIONS

Definitions related to personal protective equipment can be found in Exhibit 1.

4. RESPONSIBILITIES

4.1 ARCADIS Management

ARCADIS Management is responsible for providing resources for the acquisition of PPE and for the conduct of hazard assessments.

4.2 Project Managers

Project Managers are responsible, as part of the project hazard assessment, for determining PPE necessary to complete the project. In addition, the Project Manager is responsible for determining client requirements with respect to PPE. Project Managers notify health and safety staff of biological, chemical and physical hazards present or potentially present on the site, as well as verifying that any specific state and/or local requirements for PPE have been identified. Project Managers are also responsible for ensuring that project staff has the appropriate and applicable training for PPE use prior to those staff beginning work.

4.3 Corporate Health and Safety

Corporate Health and Safety is responsible for keeping this standard up-to-date with current regulatory requirements and best practices and for assisting in determining the appropriate PPE for a particular task and work environment and for assisting in the identification of appropriate vendors of such PPE.

4.4 Health and Safety Staff

Project Health and Safety Staff including designated Writers and Reviewers of Project Health and Safety Plans (HASPs) are responsible for developing control processes and techniques on specific projects based on the physical, chemical and biological hazards expected to be encountered on project facilities.

It is the responsibility of the Site Safety Officer (SSO) to verify that any employee-owned PPE brought to the job site is adequate for the task, properly fitted to the employee, and has been properly maintained and is cleaned in accordance with this standard.

4.5 ARCADIS Staff

ARCADIS staff is responsible for completing PPE training as required by this policy and standard, and for following all hazard control processes designated by the Project Manager, Project Health and Safety Staff and the project HASP. Employees must choose appropriate, properly fitted PPE where required, and are responsible for inspecting their PPE for wear, damage and effectiveness. Employees that bring their own PPE to the job site must ensure that the equipment is adequate for the task (e.g., meets minimum ANSI requirements, AUS requirements and client requirements), and has been properly maintained in a sanitary and reliable condition in accordance with this standard.

If project personnel believe that a hazard is present that was not previously identified or is at levels that are higher than expected, they should stop work and notify project health and safety staff or the project manager immediately and not proceed until authorized.

Staff are expected to comply with minimum PPE requirements as established by ARCADIS policy and HASP requirements and/or task specific PPE requirements detailed in the task specific Job Safety Analysis (JSA) or Permit to Work.

5. PROCEDURE

5.1 Minimum PPE Requirements

All full time and permanent part time employees that regularly conduct field work or visit project sites outside of office environments will be issued a field bag that contains, at a minimum, the following PPE:

- An ARCADIS branded hardhat
- Two pair of safety glasses, one clear pair and one tinted pair, or one pair of prescription safety glasses with transitional lenses
- Hearing protection
- A minimum, Type 2 reflective vest in either orange, lime green or yellow

Office locations will stock extra bags with the equipment listed above for use by other staff that do not regularly go to field locations. Additional PPE and H&S equipment will be issued to staff based on the hazards they face on specific projects (i.e. respirators, goggles, chaps, etc.).

ARCADIS has established the following minimum PPE requirement for field activities that must be worn unless excepted by the HASP, JSA or Permit to Work:

- Type I Hardhat (Class G rating if there is potential danger of contact exposure to low voltage conductors)
- Safety Glasses (Z87.1)
- Class 2 reflective traffic vest, coat or shirt in either orange, lime green or yellow
- Protective Footwear, e.g. steel toe safety shoes (minimum I/50 Impact resistance for the toe area which is an impact resistance rating of at least 50-foot pounds; C/50 Compression resistance for the toe area which correlates to 1750 pounds of compression resistance).

This minimum level of PPE is expected to be worn on all project sites unless in a field trailer or vehicle, unless a specific exemption has been established within an approved HASP or modification to a task specific JSA or Permit to Work upon completion/review of the hazard analysis.

The goal in this section is to specify PPE for work that is not governed by a JSA or Permit to Work to avoid conflicts in PPE requirements. The PPE specified in a JSA/Permit to Work is automatically the PPE requirement for all work governed by the JSA/Permit to Work. As a result, it is critical to take the time during JSA/Permit development to consider and identify the proper PPE required for the activity. Please note that the template JSA

PPE information may not be the appropriate PPE for your project and should be adjusted accordingly.

Note: Project Teams must check and comply with state, local and/or client requirements for specific minimum PPE requirements and adjust the HASP, JSA or Permit to Work process accordingly.

Temporary full time/part time employees (temp staff) will be provided all of the above PPE; however, standard steel toed safety boots will only be provided to temp staff employees with the approval of the administrative supervisor and Project Manager. If the administrative supervisor or Project Manager elects to not provide protective footwear or other non-specialty required footwear to temp staff, the employee will be informed of the requirement to provide their own footwear meeting project health and safety requirements prior to hire.

No ARCADIS staff should arrive at a field or project site without this minimum PPE.

5.2 The PPE Program

The basic objectives of a PPE program are to protect the wearer from safety and health hazards; and to prevent injury to the wearer from incorrect use and/or malfunction of the PPE. This document serves as the overall ARCADIS PPE program and is used as guidance for the development of a project-specific PPE program which becomes part of a project-specific health and safety plan. A project-specific PPE program in combination with this HSS will address the following:

- PPE selection based upon site hazards (Hazard Identification/Assessment).
  - Identify the hazards/suspected hazards and their potential routes of exposure (e.g., skin, inhalation, ingestion or eye contact).
- The use and limitations of the equipment including limitations during temperature extremes and under certain medical conditions;
- The work mission duration;
- Maintenance, storage, decontamination and disposal of PPE;
- Training including proper fit and how to properly put on and take off PPE;
- PPE inspection procedures prior to, during, and after use; and
- Periodic evaluation of the effectiveness of the PPE program.

5.3 PPE Selection

The use of PPE can itself create significant worker hazards, such as heat stress, physical and psychological stress and impaired vision, mobility and communication. Over-protection, as well as under-protection and poor fit, can be hazardous and should be avoided where possible. Site or project-specific health and safety plans take into consideration engineering, substitution, and administrative controls first as a means to eliminate/reduce the need for PPE. When it is not feasible or practical to eliminate the use of PPE, PPE must be properly fitted to each affected employee, and PPE selection will be based on an evaluation of the performance characteristics of the PPE relative to the following:

- The requirements and limitations of the tasks or work environment;
- The task-specific conditions and duration; and
- The hazards and potential hazards identified at the site.

The level of protection will be increased whenever it is shown that increased protection is necessary to reduce employee exposures to the hazards. It may be decreased when it is shown that this will not result in hazardous exposure to employees.

5.4 Levels of PPE Protection

For work on hazardous sites, a combination of PPE may be categorized into levels A, B, C, or D with level A offering the highest level of protection and D the lowest. Monitoring the effectiveness of PPE will be done throughout a project to ensure that the appropriate level of protection is being worn. These levels of protection are described below.

5.4.1 Level A Protection

Level A PPE offers the highest level of respiratory and skin protection and should be worn when:

- The hazardous substance has been identified and requires the highest level of protection of the skin, eyes, and respiratory system based on either:
  - The measured (or potential) high concentrations of atmospheric gases, vapors, or particulates; or
  - If site operations and work functions involve a high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates which are harmful to skin eyes, or the respiratory system.
- There is a known or suspected high degree of hazard to the skin and skin contact is possible.
- Conducting work in a confined, poorly ventilated area and the other criteria requiring Level A PPE have not been determined.

Level A equipment includes:

- NIOSH approved positive pressure, full-face piece self contained breathing apparatus (SCBA), or positive pressure supplied airline respirator with escape SCBA;
- Totally encapsulating chemical-protective suit (material based on the hazard);

- Chemical resistant outer **and** inner gloves (type and material based on the hazard);
- Chemical resistant boots with steel toe and shank;
- Disposable protective suit, gloves and boots (depending on suit construction, may be worn over the totally encapsulating suit);
- Coveralls (optional, as applicable);
- Long underwear (optional, as applicable); and
- Hard-hat - under suit (optional, as applicable).

5.4.2 Level B Protection

Level B PPE offers a high degree of respiratory protection with lesser levels of skin protection. Level B PPE should be worn when:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection but less skin protection;
- The atmosphere contains less than 19.5 percent oxygen; or
- The presence of incompletely identified vapors or gases is indicated by direct reading organic vapor detection instruments, but the vapors and gases are not suspected of containing high levels of chemical harmful to the skin or capable of being absorbed through the skin. Level B is the minimum level of protection that should be worn when there is insufficient information to determine the hazards or potential hazards of the substance.

Level B PPE equipment includes:

- NIOSH approved positive pressure, full face piece self contained breathing apparatus 1(SCBA), or positive pressure supplied air respirator with escape SCBA;
- Hooded chemical resistant clothing (overalls and long sleeve jacket; coveralls; one or two piece chemical splash suit; disposable chemical resistant overalls) (materials based on the hazards);
- Chemical resistant outer **and** inner gloves (material based on the hazards);
- Chemical resistant boots with steel toe and shank;
- Coveralls (optional, as applicable);
- Outer chemical resistant boot covers (optional, as applicable);
- Hard hat (optional, as applicable); and

- Face shield (optional as applicable).

5.4.3 Level C Protection

Level C PPE is used when the concentration and type of airborne substance is known, and the criteria for using an air purifying respirator are met. It should be worn when:

- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin;
- The types of air contaminants have been identified, concentrations measured, and an air purifying respirator is available that can remove the contaminants; and
- All criteria for the use of an air purifying respirator are met.

Level C PPE equipment includes:

- NIOSH approved full face or half mask air purifying respirator (with appropriate cartridges based on the hazards);
- Hooded chemical resistant clothing (overalls and long sleeve jacket; coveralls; one or two piece chemical splash suit; disposable chemical resistant overalls) (materials based on the hazards);
- Chemical resistant outer **and** inner gloves (select appropriate materials based on the hazards);
- Chemical resistant boots with steel toe and shank;
- Coveralls (optional, as applicable);
- Outer chemical resistant boot covers (optional, as applicable);
- Hard hat (optional, as applicable);
- Escape mask (optional, as applicable); and
- Face shield (optional, as applicable).

5.4.4 Level D Protection

Level D PPE offers the least skin and respiratory protection and should be worn when the atmosphere contains no known hazards, and work functions preclude splashes, immersions or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

Level D PPE equipment may include any or all of the following depending on the hazards of the site:

- Chemical resistant boots with steel toe and shank (optional, as applicable);
- Coveralls (optional, as applicable);
- Gloves (optional, as applicable);
- Outer chemical resistant boots (disposable) (optional, as applicable);
- Safety glasses or chemical splash goggles (optional, as applicable);
- Hard hat (optional, as applicable);
- Escape mask (optional as applicable); and
- Face shield (optional as applicable).

5.5 Combinations of Protection

Combinations of protection are acceptable if the task hazard analysis and the site conditions warrant modification of PPE levels.

5.6 Equipment List

5.6.1 Eye/Face Protection

All employees engaged in or working in or adjacent to areas with eye-hazardous activities or operations, such as but not limited to flying objects and hazardous chemicals shall wear appropriate eye protection.

It is strongly encouraged that eye protection be worn when present on any project site, including construction sites

- Safety glasses with side shields are required for impact protection and shall meet ANSI Standard Z87.1 requirements.
- Chemical goggles (for protection against chemical splash).
- Face shields (for face protection from chemical splash and are not a substitute for primary eye protection).
- Full-face respirators can provide eye and face protection in lieu of safety glasses, goggles or face shields.
- Shaded eye protection meeting the minimum shade requirements established in 29 CFR 1910.133 (for employees exposed to sources of injurious light radiation [e.g., welding, cutting, lasers]).
- For prescription eye protection contact your supervisor to fill out an AOSafety order form available on the ARCADIS Health and Safety website (The Source). For temporary staff, standard prescription safety glasses will be provided with the

approval of the administrative supervisor and Project Manager. If the administrative supervisor or Project Manager elects to not provide standard prescription safety glasses to temp staff, the employee will be informed of the requirement to provide their own prescription safety meeting project health and safety requirements prior to hire.

5.6.2 Respiratory Protection

Respirators will be provided and used in accordance with the ARCADIS Respiratory Protection Policy/Standard ARC HSGE017 and 29 CFR 1910.134.

5.6.3 Hearing Protection

Hearing protection will be provided and used in accordance with the ARCADIS Hearing Conservation Policy/Standard ARC HSIH008 and 29CFR 1910.95.

5.6.4 Foot Protection

Basic foot protection is required for all ARCADIS job sites and industrial locations. Specialized footwear will be provided as required by the nature of the work. Special foot protection may include, but is not limited to, chemically resistant, thermally shielded, metatarsal guards, etc.

One pair of leather safety boots will be provided as necessary by ARCADIS. The employee purchasing the footwear is required to ensure that it meets any of the consensus standards as specified by OSHA 29 CFR 1910.136 which include:

- ASTM F2413-11 Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear

Note: ASTM F2413-11 Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear contains performance requirements for footwear to protect workers' feet from the following hazards by providing:

1. Impact resistance (I) for the toe area of footwear (75 foot-pounds);
2. Compression resistance (C) for the toe area of the footwear (75/ 2,500 pounds);
3. Metatarsal impact protection (Mt) that reduces the chance of injury to the metatarsal bones at the top of the foot (75 foot-pounds);
4. Conductive properties (Cd) which reduce hazards that may result from static electricity buildup; and reduce the possibility of ignition of explosives and volatile chemicals (electrical resistance zero â€“ 500,000 ohms);
5. Electric hazard protection (EH) to protect the wearer when accidental contact is made by stepping on live electrical wire (capable of withstanding the application of 18,000 volts at 60 hertz for one minute

with no current flow or leakage current in excess of one milliampere, under dry conditions);

6. Static dissipative properties (SD) to reduce hazards due to excessively low footwear electrical resistance that may exist where SD footwear is required (must have a lower limit of electrical resistance of 106 ohms and an upper limit of 108 ohms when tested at 50-volts); and
7. Puncture resistance (PR) (when viewed at a 90° angle, the test pin tip must not visually penetrate beyond the face of the material nearest the foot after an applied force of 270 pounds, no signs of de-lamination or cracking after 1.5 million flexes and no sign of corrosion, de-lamination or deterioration after being exposed to a five percent salt solution for 24-hours.)

- ASTM F-2412-2005, "Standard Test Methods for Foot Protection," and ASTM F-2413-2005, "Standard Specification for Performance Requirements for Protective Footwear"
- ANSI Z41-1999, "American National Standard for Personal Protection -- Protective Footwear"

Safety shoes worn by ARCADIS staff during field work must be equipped with protective (safety) toe cap that has a minimum I/50 Impact resistance rating for the toe area which is an impact resistance rating of at least 50-foot pounds and a C/50 Compression resistance rating for the toe area which correlates to 1750 pounds of compression resistance.

Puncture resistant soles or in-soles equipped in the safety boots are project driven based on the Hazard Assessment. Some clients may require puncture resistant soles or in-soles.

The maximum expenditure or reimbursement for approved safety shoe purchases will be $150. Reimbursement requests must be approved by the employee’s supervisor.

It should be noted that some clients may prohibit the use of athletic-style safety shoes (“safety sneakers”) due to the difficulties created by these styles in supervising proper use of protective footwear.

5.6.5 Head Protection

Hard hats meeting ANSI Z89.1 will be provided to protect employees from impact, penetration, falling objects and/or limited electrical shock and burn, as appropriate for work site hazards. A hard hat must be replaced when it becomes damaged, contaminated (and contamination cannot be removed) or it has been struck by an object of sufficient size to potentially compromise its integrity.

Hardhats must resist penetration by objects, be water resistant and slow burning, and have a chin strap if it is worn while working at elevation. It must be worn square on the head and not be pushed back, to the side or forward.

Baseball-style caps will interfere with the ability of a suspension to work properly during an impact; they should not be worn under protective headgear.

There are two types and three classes of head protection described in ANSI standard.

Other hazard situations to consider are:

- In areas of heavy vegetation or in any area where hunters may be present, it is recommended that some type of brightly colored head protection be worn. For example, a bright orange or yellow baseball cap or stocking cap.
- If cold exposure is an issue, hardhat liners are available (made specifically for the particular hardhat) or if a hardhat is not required, some type of insulated head protection such as a stocking cap should be worn.
- Because it can degrade headwear material and reduce the level of protection, insect repellent should not be applied to or inserted into headwear. The headwear manufacturer should be consulted for instructions on the use of insect repellents and other chemicals on its' products.

5.6.6 Hand Protection

Appropriate hand protection will be provided if employee's hands are exposed to hazards while on the job.

Such as:

- pinch points
- sharp/pointed tools or objects
- incorrect or inadequate tool use
- improper use
- rotating/energized/automated parts
- abrasive materials
- inadequate job planning
- lack of/inadequate protection
- changing weather conditions and extreme temperatures
- hazardous material
- Jewelry and loose clothing.

Once these hazards are identified, the appropriate glove or hand protection must be selected. When choosing gloves, keep in mind:

- Hazardous Chemicals/Substances to be Contacted
- Nature of Contact (total immersion, splash, etc.)
- Duration of Contact
- Area of Protection (hand only, forearm, arm)
- Equipment (rotating, sharp edges, etc.)
- Grip (dry, wet, oily)
- Thermal Protection
- Abrasion/Cut/Puncture Resistance
- Tear/Tensile Strength
- Ergonomics (size, heat stress, dexterity)
- Decontamination/Disposal

In selecting chemically protective gloves, the toxic properties of the chemical(s) will be determined. Information provided on the manufacturer's label or by chemical compatibility charts regarding breakthrough time, permeation rate and degradation should be considered during selection.

5.6.7 Body Protection

Protective clothing, gloves, boots, and other protective equipment will be provided as appropriate for the hazards associated with the tasks being performed.

Long pants are required for all field work unless approval is granted by corporate H&S. Additional protection such as cooling vests may be required. In environments with potential biological hazards such as ticks, plants or snakes, gloves and long sleeves should be worn along with head protection of some kind to protect the scalp. In areas of roadway work or other vehicle traffic high visibility Class II safety vests will be worn.

Chemically Protective Clothing (CPC) will be selected by evaluating the performance characteristics of the CPC against the requirements and limitations of the site and task-specific conditions. This selection should be performed by an employee with training and experience taking into consideration:

- Permeation, degradation, penetration of the CPC by the chemical and;
- Durability, flexibility, fit, temperature effects, ease of decontamination, compatibility with other necessary equipment (e.g., hardhats, SCBA, etc.); and duration of use that could affect the employees ability perform the task.

Where required, appropriate Fire Resistant (FR) protective clothing must be used where there is a potential for electrical arc flash hazards (refer to the ARCADIS Electrical Safety

Standard HSFS006 for additional information). Jobs that expose workers to fire dangers require the use of FR protective clothing.

5.6.8 Specialized Equipment

All other specialized safety equipment required for an assignment (e.g., work gloves, specialized protective clothing, hip boots, field rain gear, personal floatation devices) will be provided by ARCADIS as specified in the HASP.

5.6.9 Extreme Cold Environments

Supervisors are responsible for ensuring that staff is properly equipped to protect themselves while working in extreme cold environments. The following is suggested as appropriate PPE for cold conditions:

- Hats/hat liners and gloves
- Thermal clothing
- Hi-Visibility clothing
- Winter footwear

Use of specialized equipment will be charged to projects in accordance with established policy and rental rates.

5.7 Maintenance/Storage/Disposal

5.7.1 PPE Maintenance and Disposal

PPE must be inspected by the user before and after each use for defects, rips, tears and/or damaged parts. Damaged or compromised PPE will not be used and must be repaired before re-use or disposed. PPE must be disposed of according to the HASP and other project plans for the site. If non-disposable, PPE must be decontaminated and sanitized before being reused according to the HASP. Contaminated PPE which cannot be properly decontaminated by normal procedures must be disposed of accordingly.

Employees are responsible for using and maintaining PPE in a sanitary and reliable condition.

5.7.2 PPE Storage

All PPE must be stored to protect against dust, sunlight, extreme heat and cold, excessive moisture and damaging chemicals. Storage must be in accordance with the manufacturer’s specifications and OSHA requirements.

5.7.3 Contaminated Boots

Single-use boots or boot covers which become contaminated on the job will be waste profiled, as necessary, and properly disposed. Work boots will be properly decontaminated upon exiting contaminated work zones (exclusion zones). Work boots that are damaged on the job must be replaced.

6. TRAINING

Training in the proper use of PPE will generally be provided in conjunction with HAZWOPER training or via coursework selected and approved by Corporate H&S. Training will be completed prior to the employee's use of PPE, when changes in the work place alter the use or type of PPE, and when inadequacies in the employee's knowledge or use of PPE are noted.

The training will include at a minimum:

- When and what PPE is necessary;
- How to put on, adjust, wear and take off the PPE;
- Limitations of the PPE; and
- Proper care, maintenance, useful life, and proper disposal of PPE.

Retraining will be conducted when the workplace changes making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding.

7. REFERENCES (regulation citation, technical links, publications, etc.)

29 CFR 1910.120 “Hazardous Waste Operations and Emergency Response”

29 CFR 1910 Subpart I “Personal Protective Equipment”

29 CFR 1910.136 Foot Protection

29 CFR 1910.6 Incorporation by reference

8. RECORDS - DATA RECORDING AND MANAGEMENT

Records of the PPE training are retained by the employee and in the ARCADIS training database. Medical clearance for respirator use is maintained by the employee and ARCADIS' medical vendor.

9. APPROVALS AND HISTORY OF CHANGE

Approved by: Tony Tremblay, CSP – Corporate H&S, Director of Technical Programs

History of Change

Revision Date	Revision Number	Standard Developed/Reviewed By or Revised By	Reason for change
20 February 2009	01	Miriam Koesterich/Mike Thomas	Original document
19 August 2011	02	Sue Byers/Mija Coppola	Updated footwear protection consensus standards, clarified contaminated work boot section and updated document format
2 February 2012	03	Tony Tremblay	Clarified temp staff PPE issues in sections 5.1 and 5.6.1
16 January 2013	04	Pat Vollertsen/Tony Tremblay	Added hand protection to section 5.1, added to employee responsibility in section 4.5, and added information on when eye protection should be worn in section 5.6
12 February 2013	05	Amanda Tine/Tony Tremblay	Added that PPE must be properly fitted. Added requirements for employees that bring their own PPE; Added Retraining information into Section 6
23 June 2014	06	Tony Tremblay	Identified minimum PPE requirements for ARCADIS field work in section 5.1 of HSS; Updated footwear protection consensus standard information in Section 5.6.4; and updated foot protection definition

Exhibit 1 – Definitions

Eye/Face Protection - Equipment designed to provide eye or face protection when exposed to hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

Foot Protection - Footwear designed to provide foot and toe protection when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and/or where an employee's feet are exposed to electrical hazards. These include such measures as safety toe cap and puncture resistant soles.

Hand and Body Protection - Equipment designed to provide protection to the hands and body during exposures to potential hazards such as potential for skin absorption of harmful substances, sharp objects, abrasive surfaces, punctures, temperature extremes and chemical contact.

Hazard Assessment - The process utilized to identify hazards in the workplace and to select the appropriate PPE to guard people against potential hazards.

Head Protection - Equipment designed to provide protection to the head during exposure to potential hazards such as falling objects, striking against objects or electrical hazards.

Hearing Protection - Equipment designed to provide protection to an individual's hearing during exposure to excessive noise levels and any 8hr work day with noise levels consistently 85dB or above.

Personal Protective Equipment (PPE) - Equipment designed to provide protection to the wearer from potential hazards to the eyes, face, hands, head, feet, ears, extremities and respiratory system.

Respiratory Protection - Equipment designed to provide protection to the wearer from potential inhalation hazards such as vapors, mists, particulates and gases.

EXECUTIVE SUMMARY

This standard describes the requirements for implementing an incident- and injury-free workplace by providing guidance on tailgate safety meetings to be performed prior to all projects performed by ARCADIS staff outside of an office-setting or environment.

This standard applies to all non-office related activities performed by ARCADIS or on behalf of ARCADIS. If the site and project is controlled by ARCADIS, tailgate meetings will include the participation of all ARCADIS staff, ARCADIS subcontractors and other involved site personnel as appropriate.

The designated field supervisor will lead or designate an alternative leader to lead the tailgate meeting.

Project and Task Managers are responsible for ensuring that all appropriate hazard assessments have been completed, that all project requirements have been communicated to the field supervisor and other responsible parties.

Employees are responsible for actively participating in the tailgate meetings, acknowledging their presence at the tailgate meetings, and participating in hazard assessments for the activities in which they will be involved.

Tailgate meetings will be held, at a minimum, at the start of each work day, shift or task change.

The *Tailgate H&S Meeting Form* (Exhibit 1) will be used to document the conduct of the tailgate H&S meeting.

Tailgate Meeting forms are to be kept on-site and then in project files per ARCADIS project recordkeeping requirements

1. POLICY

It is ARCADIS US policy that ARCADIS staff will participate in tailgate meetings to be held at least once daily on ARCADIS project sites that occur outside of an office environment to ensure that the health and safety issues of the day's activities are understood by all affected parties and that appropriate controls are in place.

2. PURPOSE AND SCOPE

2.1 Purpose

This standard describes the requirements for implementing an incident- and injury-free workplace by providing guidance on tailgate safety meetings to be performed prior to all projects performed by ARCADIS staff outside of an office-setting or environment.

2.2 Scope

This standard applies to all non-office related activities performed by ARCADIS or on behalf of ARCADIS. If the site and project is controlled by ARCADIS, tailgate meetings will include the participation of all ARCADIS staff, ARCADIS subcontractors and other involved site personnel as appropriate. If the site is controlled by another party (e.g., a construction site on which ARCADIS is providing a resident engineer or owner's representative), then ARCADIS staff should attend the tailgate meeting held by the controlling party, if one is held. If the tailgate meeting does not address ARCADIS activities or is not deemed adequate, then the ARCADIS staff will hold their own tailgate meeting following this standard.

If there is only one ARCADIS staff on the site for the day, then the PM and field staff will conduct the tailgate via phone as deemed appropriate.

It is also ARCADIS US policy that more than one tailgate meeting may be held as appropriate for the activities.

3. DEFINITIONS

Definitions applicable to this standard may be found in ARC HSMS000 – Health and Safety Management System.

4. RESPONSIBILITIES

4.1 Field Supervisor

In the scope of this practice, the designated field supervisor will lead or designate an alternative leader to lead the tailgate meeting. In addition, the field supervisor will verify that in the tailgate meeting, the following are clearly established, communicated and reinforced, and that the workforce understands them:

- A process for the transfer of control of work between work groups as appropriate and applicable

- Specific standards and policies that will be followed (e.g., Health and Safety Plan (HASP), Job Safety Analysis (JSA), H&S Standards, Field H&S Handbook, etc.)

- Assignment of other responsibilities based on the site activities and hazards to competent staff

4.2 Project and Task Managers

Project and Task Managers are responsible for ensuring that all appropriate hazard assessments have been completed, that all project requirements have been communicated to the field supervisor and other responsible parties, that competent personnel, based on the activities and hazards, have been assigned to the project, and that all employees including ARCADIS subcontractors and other site personnel know of their requirement and participation in tailgate meetings conducted for the project.

4.3 Health and Safety Staff and Project Site Safety Officers or Supervisors

Health and Safety Staff and Project Site Safety Officers or Supervisors shall assist with the completion of hazard identification and assessments as appropriate for the project. In addition, these staff will assist with determining the proper controls and provide information for the tailgate meetings that is relevant to the site activities and the hazards to be encountered by employees.

4.4 Employees

Employees are responsible for actively participating in the tailgate meetings, acknowledging their presence at the tailgate meetings, and participating in hazard assessments for the activities in which they will be involved. Employees are responsible for understanding the hazards of their activities, implementing the controls for the hazards and using Stop Work Authority if they don't understand the hazards, their job tasks, or if they do not feel safe.

5. PROCEDURE

5.1 Tailgate Meetings

Tailgate meetings will be held, at a minimum, at the start of each work day, shift or task change. It may be necessary to hold tailgate meetings at other times based on the site, activities, and personnel on the site. Tailgate meetings are usually conducted by the field supervisor, the site safety officer or both. At times, the Project Manager or Task Manager may lead the tailgate meeting.

Tailgate meetings may also be conducted by a subcontractor, other consultant or client.

Work crews that include a lone worker will hold a tailgate meeting by telephone with the Project or Task manager as appropriate. The lone worker or small workgroup will call in at the end of the day to complete the tailgate meeting form per this standard.

Tailgate meetings will review the planned work activities for the work period, discuss and resolve the risks and mitigations, discuss any health, safety, security and environment concerns and raise the consciousness of each worker before they start work. Utilizing the Tailgate Meeting form in Exhibit 1 or the Single Page version on The Source US Intranet site will ensure that relevant topics are addressed.

5.2 Tailgate H&S Meeting Form

The *Tailgate H&S Meeting Form* (Exhibit 1) will be used to document the conduct of the tailgate H&S meeting. Copies of the completed form will be kept in the project files. It will be completed by the designated leader of the meeting during the completion of the meeting and for post day activities review as indicated on the form.

5.3 Participation and Preparation

Effective tailgate meetings require participation. When selecting the location of the meetings, the meeting leader will ensure it is in a place free from distraction and that allows for interaction and participant comfort. This will help encourage participation.

6. TRAINING

No specific training or competence is required related to the conduct of the Tailgate Meeting.

7. REFERENCES

ARCADIS Health and Safety Plan standard – ARC HSFS010

8. RECORDS

Tailgate Meeting forms to be kept on-site and then in project files per ARCADIS project recordkeeping requirements.

9. APPROVALS AND HISTORY OF CHANGE

Approved By: Tony Tremblay, CSP – Corporate H&S, Director of Technical Programs

History of Change

Revision Date	Revision Number	Revised By	Reason for change
14 September 2009	01		Original document
1 Feburary 2010	02		Made minor edits to text. Also, made modifications to Tailgate Meeting form. Changed JSA to JLA.
22 February 2010	03		Added tagline to the Tailgate meeting form
26 April 2013	04	Pat Vollertsen / Tony Tremblay	Added Executive Summary; changed JLA to JSA; updated Tailgate Meeting form to reflect new terminology; Added who else can lead a tailgate to section 5.1; Format Update

Exhibit 1 –Tailgate Meeting form

ARCADIS

Document Control Number: TGM - ______________________

TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name:			**Project Location:**
Date:	**Time:**	**Conducted by:**	**Signature/Title:**
Client:		**Client Contact:**	**Subcontractor companies:**

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 ________ 3 ________ 5 ________

2 ________ 4 ________ 6 ________

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: ________

If yes, describe them here: ________

How will they be controlled? ________

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☐ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

		☐ Topics from Corp H&S to cover?
☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Any Stop Work Interventions yesterday?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ If deviations, notify PM & client
☐ JSAs or procedures are available?	☐ Field teams to "dirty" JSAs, as needed?	☐ All equipment checked & OK?
☐ Staff has appropriate PPE?	☐ Staff knows Emergency Plan (EAP)?	☐ Staff knows gathering points?

Comments: ________

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess** the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☐ Gravity (i.e., ladder, scaffold, trips) (L M H)	☐ Motion (i.e., traffic, moving water) (L M H)	☐ Mechanical (i.e., augers, motors) (L M H)
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☐ Environment (i.e., heat, cold, ice) (L M H)
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☐ Sound (i.e., machinery, generators) (L M H)	☐ Personal (i.e. alone, night, not fit) (L M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

☐ Elimination	☐ Substitution	☐ Isolation
☐ Engineering controls	☐ Administrative controls	☐ Monitoring
☐ General PPE Usage	☐ Hearing Conservation	☐ Respiratory Protection
☐ Personal Hygiene	☐ Exposure Guidelines	☐ Decon Procedures
☐ Emergency Action Plan (EAP)	☐ Fall Protection	☐ Work Zones/Site Control
☐ JSA to be developed/used ***specify***	☐ TIP conducted ***(specify job/JSA)***	☐ Traffic Control
☐	☐	☐ Other ***(specify)***
☐	☐	☐

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

Visitor	In	Out
	In	Out
	In	Out
	In	Out
	In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB,** I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

☐ Lessons learned and best practices learned today: ______

☐ Incidents that occurred today: ______

☐ Any Stop Work interventions today? ______

☐ Corrective/Preventive Actions needed for future work: ______

☐ Any other H&S issues: ______

Keep H&S 1st in all things — **WorkCare** - 1.800.455.6155

EXECUTIVE SUMMARY

Damaging an underground or above ground utility can result in serious injury and loss of life, disrupt essential services, and create significant liability to ARCADIS, clients and subcontractors. Therefore, it is ARCADIS' policy that the presence of all existing utilities will be investigated and cleared (to the extent feasible) by locating, marking, and, where appropriate, visually verifying before the start of any field operation. The following requirements are mandatory under this policy:

- A minimum of three (3) reliable lines of evidence are required for an acceptable utility clearance.
- Additional lines of evidence are required if the primary lines of evidence cannot adequately identify subsurface, submarine or above ground utilities with reasonable certainty.
- The lines of evidence used will be reasonable and appropriate for the conditions expected to be encountered and the type of utilities expected to be encountered (e.g., gas line versus an irrigation line).
- Utility clearance information will be documented on the ARCADIS Utility and Structures Checklist or equivalent client provided checklist or permit presenting equivalent information.
- Employees overseeing utility clearance activities will:
  - Be familiar with the contents of this standard;
  - Have one year field experience in the identification of utilities; and
  - Have training and six months experience in the proper operation and results interpretation of any clearance equipment used by ARCADIS employees, including without limitation, magnetometers and ground penetrating radar.
- All utility strikes must be reported to Corporate Health and Safety and Legal within 24 hours using the Utility Line and Incident Involving a Third Party Incidents Investigation Form. Do not enter the incident into 4-Sight until approved to do so by Corporate Legal.

Report Utility Incident Now

1. POLICY

It is the practice of ARCADIS and its affiliated companies to implement appropriate, reasonable and practical standards within acceptable and customary industry practices to promote the health and safety of its employees, and avoid and mitigate exposure of risk in the performance of their work. In furtherance of this policy, ARCADIS promotes and encourages compliance by all employees with this policy and standards relating to work in the vicinity of subsurface, submarine or aboveground utilities.

2. PURPOSE AND SCOPE

2.1 Purpose

This standard directs general safety standards and best practices associated with the identification and management of subsurface, submarine and aboveground utilities on project sites.

2.2 Scope

This standard assigns responsibilities and expectations for proper utility clearance by both ARCADIS employees and ARCADIS subcontractors at project sites.

3. DEFINITIONS

Refer to ARC HSFS-019 Supplement 1 for definitions of terms used in this standard.

4. RESPONSIBILITIES

4.1 Project Manager Responsibilities

For every project site having the potential to come into contact with utilities, Project Managers must ensure that:

- The requirements of this standard are followed.
- Local regulations governing utility clearance are followed.
- Efforts are made to work with the client, project site representatives and subcontractors to identify the nature of any utilities, and to determine what control processes need to be implemented by ARCADIS and the subcontractors to prevent damage to these utilities and to properly manage the effects in the event there is utility damage.
- Utility clearance activities are only delegated to a Task Manager or other individual meeting the requirements of section 4.2 below, as appropriate. However, even if the Project Manager delegates certain responsibilities, the Project Manager maintains primary responsibility for a complete utility clearance.

4.2 Field Personnel Responsibilities

ARCADIS field personnel conducting work on a project site having the potential to come into contact with utilities have the responsibility to:

- Read, understand, and follow this standard and complete the appropriate checklists during the on-site utility locate process.
- Complete a minimum of 1 year of utility clearance related experience before accepting responsibility for any utility clearance tasks.
- Complete training and have 6 months of experience in operating and interpreting the results of remote sensing technologies, including without limitation, magnetometers and ground penetrating radar, before operating such technologies.
- Use their Stop Work Authority to eliminate any reasonable concern if utilities cannot be reasonably located.
- Ensure that ARCADIS subcontractors conduct their own reasonable independent utility clearance efforts as required by ARCADIS' standard subcontract, and are aware of any ARCADIS clearance standards used onsite.
- Be on site during any active intrusive activities involving contractor under contract to ARCADIS.

4.3 ARCADIS Subcontractor Responsibilities

According to ARCADIS' standard subcontract, subcontractors have agreed to take responsibility for any damages resulting from a utility impact cause by their work. Therefore, ARCADIS subcontractors are expected to take reasonable time and diligence to conduct their own independent utility clearance using reasonable standards and processes. Subcontractors have the responsibility to stop their work if utility concerns are identified and will report those concerns to the ARCADIS employee overseeing their work activities. ARCADIs staff should reinforce these responsibilities with subcontractors during job safety briefings.

5. STANDARD

5.1 General

Protocols to be followed during utility clearance activities are outlined in:

- Best Practices for Project Managers (or Their Delegates) Concerning Utility Clearance (ARC HSFS-019 Supplement 2).
- Best Practices for Field Personnel Concerning Utility Clearance (ARC HSFS-019 Supplement 3).

5.2 Lines of Evidence

A minimum of 3 lines of evidence are required for an appropriate utility clearance as defined in this standard. Generally, the following lines of evidence may be utilized to meet this requirement:

- Contact the State One Call or equivalent service (Nationwide "811" is acceptable) if working within the right-of-way or public areas served by such services. For work on private property or in areas not served by such services, utilize a reputable private utility locating company to locate and mark the utilities. Utilization of a private utility locator is encouraged for all projects with subsurface or submarine utility issues.

- Use detailed scaled site utility plans, preferably in the form of an "as-built" or "record" drawing, to identify and/or confirm utility locations.

- Conduct a detailed visual site inspection to identify and/or confirm utility locations. For underground utilities, conduct an inspection for structures that tend to indicate the presence and general location of such utilities, including, but not limited to manholes, vaults, valve covers, valve markers, telephone pedestals, transform housings, fire hydrants, spigots, sprinkler heads, air relief valves, backflow preventers, meters, downspouts going into the subsurface, power poles with wring going into the subsurface and line markers. Saw cut lines and concrete /asphalt repairs often yield valuable information regarding utility locations. Always discuss the presence of utilities with the site owner, operator or occupant to identify any potential utilities that might not be readily identified by non intrusive clearing methods or may be:
  - At depths > 5 ft below ground surface; or
  - At very shallow depths (< 2ft below ground surface) such as electrical conduits/wiring, irrigation lines, etc.

View the Utilities and Structures Checklist

If one of the above lines of evidence cannot be utilized, or if using the above lines of evidence does not adequately identify utilities with reasonable certainty, one or more additional lines of evidence must be utilized. Commonly used lines of evidence are listed on the Utility and Structures Checklist.

A discussion of use and limitations associated with common utility clearance methods is provided in ARC HSFS-019 Supplement 4.

The lines of evidence will be recorded on the Utility and Structures Checklist or equivalent client provided checklist or permit presenting equivalent information.

5.3 Color Codes Used for Utility Markings

The following colors are used for marking utilities. Some government agencies or large industrial facilities may use additional colors not provided below. ARCADIS policy is to assume any paint marking or pin flag color not provided below is a subsurface utility marking until proven otherwise.

COLOR	Utility Line
WHITE	Proposed Excavation
PINK	Temporary Survey Markings
RED	Electrical Power Lines, Cables, Conduit and Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum or Gaseous Materials
ORANGE	Communication, Alarm or Signal Lines, Cables or Conduit
BLUE	Potable Water
PURPLE	Reclaimed Water, Irrigation and Slurry Lines
GREEN	Sewer and Drain Lines

APWA and ANSI standard Z-53.1

5.4 Working in Close Vicinity of Subsurface Utilities

No work will be conducted within 30 inches of a subsurface utility marking, or as prescribed by the utility owner, unless the utility is exposed through hand clearing. Make sure to factor the diameter of the utility when determining the 30 inch buffer zone as this may increase the distance from the actual marking (if the markings do not indicate diameter of utility).

Manual clearing methods such as shoveling, using pick axes, digging bars and other hand tools should be used with caution. Excessive down force, prying or use in poor/obstructed visibility conditions is prohibited as these tools can damage utilities.

For borings and excavations, if the utility is known to be at depths where hand clearing is not reasonable or creates additional safety concerns, no work will be performed within 30 inches vertically or horizontally of the utility unless manual clearing is performed under the oversight of an Excavation Competent Person as defined in the ARCADIS Excavation and Trenching H&S standard (ARC HSCS005).

For horizontal borings, to avoid potential of utility strike, damage from vibration, damage by pressure of the advancing boring, do not plan the drill boring location within 30 inches vertically of utilities. This requirement applies even if the operating contractor has technology that places the location to within a few inches. Make sure to factor the diameter of the utility when determining the 30 inch buffer zone.

Additional cautions are required when coring/cutting through or removing concrete or asphalt. Utilities may be encased within these materials or in the gravel sub grade under these materials and may be damaged during the utility clearance process. Always work slowly, methodically and frequently stop work to evaluate conditions during these work activities.

Additional cautions for horizontal borings include gravity utilities such as sewers and storm drains as the depth of these utilities will change (sometimes significantly) as they run across the project site. Always obtain the utility depth at the location where the boring will actually cross the line.

5.5 Acceptable Clearance for Working in Vicinity of Overhead Power Lines

No work will be performed by ARCADIS or a subcontractor where any equipment is within the limits specified below, unless the power line has been properly covered or de-energized by the owner or operator of the power line:

Power Line Voltage Phase to phase (kV)	Minimum Safe Clearance (feet)
50 or below	10
Above 50 to 200	15
Above 200 to 350	20
Above 350 to 500	25
Above 500 to 750	35
Above 750 to 1,000	45

ANSI standard B30.5-1994, 5-3.4.5

5.6 Reporting Utility Incidents

ARCADIS field personnel involved with any subsurface, submarine, and above-ground utility strikes should immediately stop work and contact the Project Manager to discuss the incident. The utility strike must be reported to Corporate Health and Safety and Legal Departments within 24 hours. Use the Utility Line and Incidents Involving a Third Party Incident Investigation Form as part of the notification process.

Selected utility strike incidents may also utilize a conference call with operations management to review findings and lessons learned. The Divisional Health and Safety Manager will make the determination concerning the need to have the call, and will arrange the call, if deemed necessary.

5.7 Relationship of this standard to the Project Specific HASP

With the exception of the Utility and Structures Checklist, this standard, including most supplements, are not designed to be printed off and attached to project HASPs. During project health and safety planning, this standard will be reviewed and applicable clearance technologies and methods will be documented on the Utility and Structures Checklist.

Additionally, emergency action standards specific to utility strikes should be addressed. ARC HSFS-019 Supplement 5 provides general guidelines for emergency response to utility strikes. Applicable information may be attached to the Utility and Structures Checklist to facilitate communication of response expectations.

5.8 Required Contract Terms and Conditions

ARCADIS' standard client and subcontractor contracts contain required terms and conditions defining responsibility for utility clearance and the allocation of risk associated with an impacted utility. These terms and conditions have prescribed language concerning subsurface work that is presented in ARCADIS client contracts and ARCADIS subcontractor contracts. If such provisions cannot be agreed upon, the reasons are documented and other risk-management actions should be identified, such as limits of liability, additional physical investigations, additional lines of evidence or utility location, assignment of risk to subcontractors, etc. In addition, any changes to these terms and conditions require approval by Legal Services.

6. TRAINING

Employees responsible for coordinating or conducting utility clearance activities will be familiar with the requirements of this standard.

7. REFERENCES

- Utility and Structures Checklist
- Utility Strike and Incidents Involving Third Parties Investigation Form
- HSFS-019 Supplement 1, Utility Definitions
- HSFS-019 Supplement 2, Best Practices for Project Managers (or Their Delegates) Concerning Utility Clearance
- HSFS-019 Supplement 3, Best Practices for Field Personnel Concerning Utility Clearance
- HSFS-019 Supplement 4, Use and Limitations Associated with Common Utility Clearance Methods
- HSFS-019 Supplement 5, Emergency Action Plan guidelines for Utility Strikes
- ARC HSCS005 Excavation and Trenching
- Required client contract language concerning subsurface work
- Required subcontractor language concerning subsurface work

8. RECORDS

8.1 Utility Clearance Records

All records (maps, checklists and documentation of communications) used to determine the location of utilities should be retained and kept in the project file.

9. APPROVALS AND HISTORY OF CHANGE

Approved By: Tony Tremblay, Environment Division Health and Safety Manager

History of Change

Revision Date	Revision Number	Reason for change
13 December 2006	01	Original document
26 March 2007	02	Put in new company format
15 May 2007	03	Added nation-wide 811 number
6 September 2007	04	Changing over to new template format
22 February 2008	05	Changing over to new template format
13 January 2009	06	Define lines of evidence
4 October 2010	07	Reformatting and addition of utility clearance information

Safety Data Sheets (SDSs)

Material Safety Data Sheet

FRONTIERSMAN

May be used to comply with OSHA's Hazard Communication Standard,
29 CFR 1910. 1200. Standard must be reviewed for specific requirements.

Quick Identifier
1/1/2014

SECTION 1 - CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Manufacturer's Name:	SECURITY EQUIPMENT CORPORATION	*Emergency Phone Number:*	800-325-9568
Address:	747 SUN PARK DRIVE	*Other Calls:*	636-343-0200
City, State, Zip	FENTON, MO 63026	*Fax Number:*	636-343-1318
Chemical Name:	Oleoresin Capsicum (Red Pepper)	*Model #'s:*	FBAD-03, FBAD-04, FBAD-05
Chemical Family:	Deterrent, Irritant Agent		FBAD-06, FBAD-07, FBAD-08
Trade Name:	**FRONTIERSMAN Bear Attack Deterrent**		JFBAD-01, JFBAD-02
Common Name:	Bear Spray, Bear Pepper Spray		
EPA Registration #:	72265-1		

SECTION 2 - HAZARDOUS INGREDIENTS / IDENTITY

Hazardous Component(s) (chemical & common name(s)	Content(s)	OSHA PEL	ACGIH TLV	Carcinigen (Yes / No)
Oleoresin Capsicum	10.00%	N/A	N/A	No
Major Capsaicinoids	2.00%	N/A	N/A	No
Capsaicin CAS #404-86-4	1.1%			
Other Related Capsaicinoids	0.9%			
Solvents	*			
Propellants	*			

Major Capsaicinoids are determined via A.O.A.C. Method 995.03. * Other ingredients are trade secrets as defined in Hazard Communications ACT 29 CFR 1910.1200 Para 1 (1) end Appendix D to CFR 1910.1200.

SECTION 3 - HAZARD IDENTIFICATION

SEVERE SKIN, EYE, RESPIRATORY & DIGESTIVE IRRITANT. CONTENTS UNDER PRESSURE. KEEP OUT OF THE REACH OF CHILDREN. DO NOT PUNCTURE OR INCINERATE CAN. DO NOT EXPOSE TO HEAT OR STORE ABOVE 120° F. DO NOT USE AFTER CANISTER'S EXPIRATION DATE. CONTENTS ARE DANGEROUS, USE WITH CARE.

HMIS Ratings: **Health: 2** **Fire: 3** **Reactivity: 0**

Signs & Symptoms Of Exposure: Ingredients cause irritation through all routes of entry.

EYE: Liquid or vapors may cause redness, burning, tearing, swelling and/or pain.

SKIN: Frequent or repeated contact with skin may cause burning, redness or skin irriation and dermatitis.

INGESTION: Ingestion may cause irritation to the mouth, throat and stomache, as well as nausea, vomiting, and/or diarrhea.

INHALATION: May cause irriation of the respiratory tract as coughing, sneezing, gagging chest tightness and irritation to the throat and lungs.

MEDICAL CONDITIONS AGRAVATED: May cause more severe, temporary, effects on those persons who are asthmatics or suffer from emphysema.

CARCINOGEN DATA: None of the Ingredients in this product are listed with OSHA, IARC or NTP as cacinogenic.

SECTION 4 - FIRST AID MEASURES

Emergency & First Aid Proceedures: Remove victim from contaminated area and remove contaminated clothing. Provide fresh air, irrigate with copious amounts of cool water. Obtain medical advice is symptoms persist.

Routes Of Entry		
	1. Inhalation:	Remove from contaminated area immediate. Provide fresh air. If breathing is difficult, administer oxygen. If the victim is not breathing, administer CPR. Seek immediate medical attention.
	2. Eyes:	Only exposed subject or EMS should remove subject's contact lenses. Irrigate with cool water for at least 15 minutes, or until relieved. Seek medical attention if irritation persists.
	3. Skin:	Flush with cool water for at least 15 minutes. Wash with mild soap and water. Seek medical attention if irritation persists.
	4. Ingestion:	DO NOT INDUCE VOMITING. If victim is conscious and not convulsing, rinse mouth with water. Ingest milk or water. Call 800-535-5053 or obtain medical advice immediately. If victim is convulsing or unconscious, do not give anything by mouth, ensure the victim's airway is open and lay the victim on his/her side with the head lower than the body. IMMEDIATELY transport the victum to a hospital.

SECTION 5 - FIRE-FIGHTING MEASURES

Flammability Classification 16 CFR 1500.45:	FLAMMABLE
Extinguishing Media:	Halon, Carbon Dioxide, Dry Chemical or Water
Special Fire Fighting Procedures:	Wear respirator or self-contained breathing apparatus.
Unusual Fire and Explosion Hazards:	Smoke would be irritating to eyes and mucous membranes. Containers may burst in the heat of a fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Steps to follow if material is spilled or released:	Wipe up small spills with absorbent material. With large spills, use respiratory equipment, to avoid irritation, and collect absorbent materials.
If inside:	Ventilate area and after absorbent process, wash area with soap and cold water
If outside:	Stay upwind
Waste Disposal Method:	Dispose of in accordance with current laws and regulations.

SECTION 7 - HANDLING AND STORAGE

Precautions to be taken in handeling & storage:	Store upright in a cool, dry area. Avoid direct light and heat. DO NOT expose to temperatures over 120º F / 50º C. DO NOT puncture or incinerate container.
Other Precautions:	Assure can is in a secure place to prevent accidental rupture.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection:	Not normally required in well-ventilated areas, however, NIOSH approved respiratory protection may be required when the material is used in confined areas. Avoid overexposure for long periods in enclosed areas.
Ventilation:	Yes
Protective Gloves:	Suggested (not required)
Eye Protection:	Yes. Exposure without protection in training environment is acceptable.
Other Protective Clothing or Equipment:	Not required
Work/Hygienic Practices:	Avoid absorbtion of product on clothing. If absorbed in clothing, remove and wash clothes at once. Do not eat, drink, or smoke while handling product.
Engineering Controls:	Provide ventilation if working in confined areas.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

Appearance & Odor:	Red/Orange in color. Odor is pungent	*Physical State:*	Liquid
Boiling Point:	370° *F*	*Specific Gravity (H20 = 1)*	~0.8144 @ 20° C
Solubility in Water:	Insoluble	*Vapor Pressure:*	110 PSI

SECTION 10 - STABILITY AND REACTIVITY

Stability	Unstable		*Conditions To Avoid*	*Incompatibility (Materials To Avoid)*	N/A
	Stable	X			
Hazardous Polymerization:	May Occur			*Hazardous Decomposition Products:*	N/A
	Will Not Occur	X	*Conditions To Avoid*		

SECTION 11 - TOXICOLOGICAL INFORMATION

Standard Draize Test: Skin, rabbit, 500 mg	**Severity:**	Moderately Irritating
Standard Draize Test: Eye, rabbit, 100 mg	**Severity:**	Moderately Irritating
ACUTE INHALATION LC50 (rat):		> 100.5 mg/L

SECTION 12 - ECOLOGICAL INFORMATION

This product has not been tested for environmental effects.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Consult Federal, State, and Local Regulations

Evacuate contents in a safe area, & dispose of container.

SECTION 14 - TRANSPORT INFORMATION

DOT HM-181 INFORMATION

	GROUND	**AIR**
Proper Shipping Name:	Consumer Commodity	Aerosol, Flammable
Hazzard Class or Division:	ORM-D	2.1
Identification Number:	none	UN1950
Packaging Group:	none	none
Label(s) Required:	none	FLAMMABLE GAS

INTERNATIONAL TRANSPORTATION REGULATIONS

Regulations vary from country to country. Check regulations for your country.

	GROUND	**AIR**	**OCEAN**
Proper Shipping Name:	Aerosol, Flammable	Aerosol, Flammable	Aerosols, Flammable
Hazzard Class or Division:	2.1	2.1	2.1
Identification Number:	UN1950	UN1950	UN1950
Packaging Group:	none	none	none
Label(s) Required:	2.1	FLAMMABLE GAS	2.1

SECTION 15 - REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT:	This product is in compliance with the U.S. Toxic Substances Control Act (TSCA) inventory requirements.
SARA TITLE III, SECTION 313:	Not Listed
CLEAN AIR ACT (CAA):	Not Listed
CLEAN WATER ACT (CWA):	Not Listed
CALIFORNIA PROPOSITION 65:	Not Listed
CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATIONS SYSTEMS (WHMIS):	Not Listed

SECTION 16 - OTHER INFORMATION

Format and Preparation Complies with ANSI Z400.1-1993

DISCLAIMER: The information contained herein is based upon data provided to us by our suppliers, and reflects our best judgement. However, no warranty of merchantability, fitness for any use, or any other warranty is expressed or immplied regarding the accuracy of such data, or the results to be obtained from the use thereof. Since the information contained herein may be applied under conditions beyond our controland with which we may be unfamiliar, we do not assume any responsibility for the results of such application. The information is furnished upon the condition that the persons receiving it shall make their own determination of the suitability of the material for any particular purpose.

Shipping Determination

SHIPPING/TRANSPORTATION DETERMINATION FORM Revision 9c

Regulated Material Shipping Determination

Date:	8/7/2017
Project Name:	Teck American SATES
Project Number:	B0095010.0005
Supplemental Information:	Safety data sheet (attached)

1) Description of the Material to be Transported or Shipped

1a Select a description category ===> Samples

1b *Soil/sludge/sediment with ppb or low ppm concentrations of metals*

1c lead, arsenic

☐ This material is mixed with water, soil or other inert material

☑ This material will be shipped on wet or blue ice

☐ Consignment contains dry ice

☐ Consignment contains containers with acid/base preservatives prepared by an analytical laboratory.

☐ Overnight shipping for next day delivery is required

2) Classification and Identification

2a This material is: Not Restricted/Not Regulated

Do not complete sections 2b or 2c below

Complete for Hazardous Materials ONLY:

2b UN/NA/ID# : NA 2c PG: NA Primary Hazard Class: NA

Subsidiary Hazard Class: NA NA

PSN: NA

☐ See Section 7a

2d This material is a: No additional criteria applies to this material

3) Packaging, Exceptions and Shipping Information

3a Packaging Type: Combination Package - Non-Bulk

3b Inner Container Category: Glass receptacles

3c Number and Quantity:

	Number	Container type		Net Qty. Each Container	
Container type #1	20	4 oz	Glass	4	oz
Container type #2	0	None	None		None
Container type #3	0	None	None		None
Container type #4	0	None	None		None
Container type #5	0	None	None		None
Container type #6	0	None	None		None

<= Select units here

TIP: Do not place units in the white column. Place the largest container in bottle set in row #1.

3d Intermediate Packaging: Plastic bag/liner

3e Outer Packaging: Non-specification box- plastic (sample cooler)

3f Other: None Type: None

Based on your shipping configuration, your best shipping option is: Not available for this shipping configuration.

This material will be shipped (mode of transport and type of shipment):

3g Air as a non-restricted consignment

If using an exception/exemption, list the exception/exemption below

3h None

Carrier/Transporter information:

3i FedEx Express (Air)

Auth. Air Limits for EQ, LQ and Fully Reg. Shipments and Selected Ground LQ and SQE:

Inner Container Limit (NA- Not Applicable; F- Forbidden; mg, g, or kg for solids; ml or L for liquids):

Glass	NA	NA	Plastic Bag	NA	NA
Metal	NA	NA	Paper Bag	NA	NA
Plastic	NA	NA	Fibre	NA	NA

Outer Package Limit

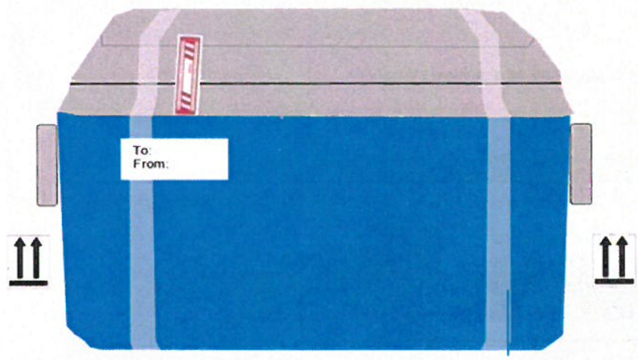
NA	NA
0	L/Kg

Total net volume/mass: 0 L/Kg

☑ Arcadis Shipping Guide US-001 attached
☐ Specific package closure instructions are attached
☐ Arcadis Shipping Guide or HSSP is available for this shipment: NA

4) Marks and Labels for Non-Bulk Packages

Orientation arrows, if shown, may be red or black in color.



Place all marks and labels checked in this section on same side of package (excludes orientation arrows, if shown).

5) Documentation

☑ No special documentation required
☐ Requires a Shipper's Declaration (air) prepared using : None
☐ Requires HazMat ground shipping papers prepared using: None
☐ Requires a Bill of Lading or Manifest (>MOT, Freight,Trucking Co., Waste Hauler, etc.)
☐ Requires Special Permit DOT-Special Permit #: ________
☐ Other: ________

6) Emergency Response

☐ Use ChemTel 24/7 Emergency Phone and Contract Number
or approved equivalent (authorized client or vendor) for this shipment:
1-800-255-3924 (ChemTel #MIS0007883) Register this shipment with ChemTel:
Have carrier tracking number available. http://Arcadis.chemtel.net/

☐ Ensure current edition of North American Emergency Response Guidebook in vehicle (this applies to Arcadis Transport requiring a shipping paper)

7) Special Instructions (Specify any "See Section 7" details in 7a)

7a

8) References and Rationale for the Determination (add additonal sheets, if requried. See cell B178 for guidance):

	NA
ICAO/IATA Special Provisions:	

8a

Due to the low levels of hazardous constituents, non-hazardous sample medium, and small amount of material being transported, it has been determined that this material does not require regulation under DOT-IATA.

212	Rationale must be at least 200 characters (including spaces)
☐	See attached for rationale (IF CHECKED, DETERMINATION IS VOID IF RATIONALE NOT ATTACHED)

9) Signatures

Determination performed by: Alex Reid

Phone (XXX-XXX-XXXX): 906-440-8394

Determination QA/QC performed by: [illegible]

May be signed by any currently trained HazMat #1 employee.