ECF-300FF5-16-0087
Revision 1

DETERMINATION OF VADOSE ZONE URANIUM CONCENTRATION DISTRIBUTION EXTENTS AND DEVELOPMENT OF A THREE-DIMENSIONAL GEOLOGIC FRAMEWORK MODEL FOR THE 300-FF-5 OPERABLE UNIT, HANFORD WASHINGTON

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

P.O. Box 1600
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

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Terms

3D	three-dimensional
CHPRC	CH2M HILL Plateau Remediation Company
CRBG	Columbia River Basalt Group
EAA	enhanced attenuation area
ECF	environmental calculation file
EDA	Environmental Dashboard Application
EMMA	Environmental Model Management Archive
ERDF	Environmental Restoration Disposal Facility
GIS	geographic information system
GFM	geologic framework model
HEIS	Hanford Environmental Information System
Hf	Hanford formation
Hf DVZ	Hanford Detailed Vadose Zone (Geoframework Model)
Hf G	Hanford formation gravel
Hf M	Hanford formation silt
Hf S	Hanford formation sand
Hf sG-msG	Hanford formation sandy gravel to silty sandy gravel
HSGF	Hanford South Geoframework (Model)
LiDAR	light detection and ranging
NPP	North Process Pond (waste site 316-2)
OU	operable unit
PRZ	periodically rewetted zone
PT	Process Trenches (waste site 316-5)
Rlm	Ringold Formation member of Wooded Island lower mud unit
Rwie	Ringold Formation member of Wooded Island unit E
WCH	Washington Closure Hanford

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1 Purpose

The objectives of this environmental calculation file (ECF) are to document development of the three-dimensional (3D) geologic framework model (GFM) and vadose zone uranium contamination distribution model for the Hanford Site 300-FF-5 Groundwater Operable Unit (OU). Leapfrog® Geo (version 3.0.0) was used to develop the geologic framework and uranium distribution models. The uranium distribution model is focused on soil uranium concentrations at depth within the periodically rewetted zone (PRZ). The PRZ is a region within the vadose zone beneath the 300 Area that becomes saturated during times of high river stage. When the PRZ is rewetted, the uranium contamination adsorbed to sediment particles within the PRZ can become mobilized and transported to groundwater.

The following process was used for the modeling efforts described herein:

1. Compilation and conditioning of site soil uranium concentration data
2. Compilation and conditioning of site borehole geologic data
3. 3D modeling of site geology and soil uranium concentration distribution using the Leapfrog Geo (version 3.0.0) software

The GFM and uranium distribution model developed in this ECF are intended for use in fate and transport modeling for the selected remedy at 300-FF-5: enhanced uranium attenuation by polyphosphate injection and infiltration (EPA and DOE, 2013, *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*). Studies have shown that phosphate reduces uranium mobility by forming uranium phosphate precipitates and coating surface phases of uranium with stable mineral phases (PNNL-21733, *Use of Polyphosphate to Decrease Uranium Leaching in Hanford 300 Area Smear Zone Sediment*). CH2M HILL Plateau Remediation Company (CHPRC) completed treatment of the 0.75 acre Stage A Enhanced Attenuation area (EAA) in November 2015, which was thought to contain the highest mobile uranium concentrations (SGW-59614, *300-FF-5 Operable Unit Enhanced Attenuation Stage A Delivery Performance Report)*. The phosphate amendment included a solution of monosodium phosphate and pyrophosphate that was injected directly into the PRZ and upper aquifer through wells and infiltrated through the vadose zone using buried infiltration lines.

Based on an evaluation of Stage A results and subsequent data quality objectives (DQOs) process, refinement of the Stage B EAA implementation process is outlined in DOE/RL-2014-42-ADD1, *300-FF-5 Operable Unit Remedy Implementation Sampling and Analysis Plan Addendum for Stage B Uranium Sequestration*. Stage B EAA implementation began in 2017 with post remedy sampling completed in early 2019. This revision of the ECF (Revision 1) includes:

- Incorporation of uranium soil sampling results for Stage B EAA characterization efforts pre- and post-remedy (Appendix A)
- The addition of Stage B EAA borehole geologic log data pre- and post-remedy and consolidation of the sandy gravel and silty sandy gravel Hanford formation (Hf) subunits in the Hf Detailed Vadose Zone Geoframework Model (Hf DVZ GFM) (Appendix C)
- The development and addition of three excavation and subsequent backfill units (Sites 316-2, 316-3, and 316-5) to the Hf DVZ GFM outlined in Section 3.3.2

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2 Background

This chapter describes the 300 Area geologic setting and geologic framework model.

2.1 Site Geologic Setting and Geologic Framework Model

Beneath the 300 Area, the Hf is comprised of unconsolidated sandy gravels containing variable amounts of silts and clays. Hf sediments are underlain by more consolidated materials of the Ringold Formation member of the Wooded Island unit E (Rwie) (WHC-EP-0500, *Geology and Hydrology of the 300 Area and Vicinity, Hanford Site, South-Central Washington*). Underlying Rwie is the Ringold Formation member of Wooded Island lower mud (Rlm) unit, consisting of predominantly silts and clays, and underlying the Rlm is the Columbia River Basalt Group (CRBG) bedrock.

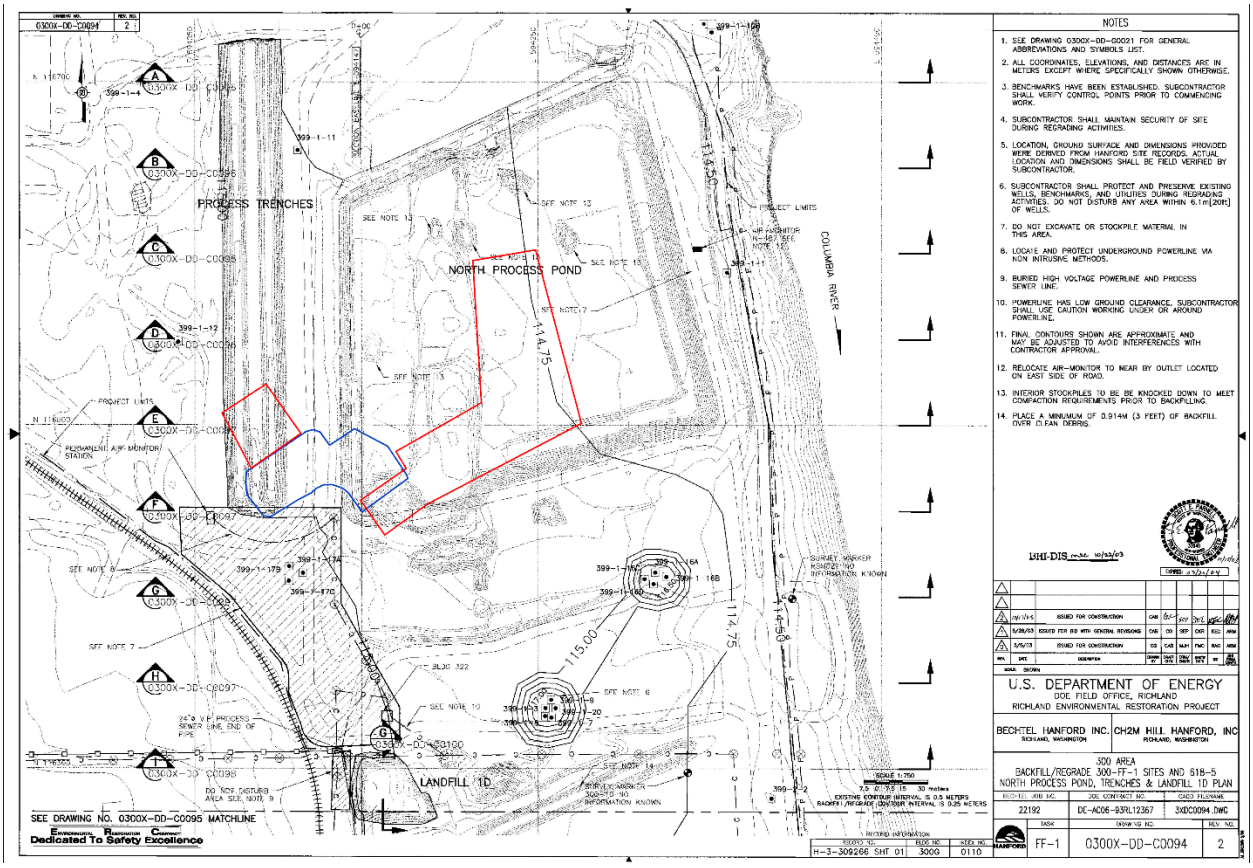
For the purposes of this ECF, the primary geologic unit of concern is the Hf. In the study area, the lower vadose zone and PRZ are located in the Hf; in these zones, uranium is periodically leached from sediment particles during water table fluctuations. In the Hanford South GFM (HSGF) (ECF-HANFORD-13-0029, Rev. 5, *Development of the Hanford South Geologic Framework Model, Hanford Site, Washington*), the Hf is undifferentiated; however, fine-grained materials in the vadose zone could affect uranium distribution, as uranium has an affinity for particles <2mm (Shang et al., 2011, "Effect of Grain Size on Uranium(VI) Surface Complexation Kinetics and Adsorption Additivity"). In order to honor the effect that the geology has on uranium distribution, it was necessary to construct a GFM specific to the 300 Area with differentiated Hf lithofacies subunits. The subunits were developed through observation of grain size distribution from borehole geologic logs. Borehole logs are a record of on-site geologists observations of cuttings returned to surface during drilling. The 300-FF-5 borehole logs were obtained from the Hanford Site Well Environmental Dashboard Application (EDA) website and from CHPRC for newly drilled boreholes (Table C-2). Sediment classifications and descriptions were included for each borehole. The following are the broad Hf geologic sediment classes described in the borehole logs:

- Hf sand (Hf S)—fine to coarse sand of mixed basaltic and felsic composition (may have some silt)
- Hf sandy gravel to silty sandy gravel (Hf sG-msG)—unconsolidated mostly pebble to cobble gravels with sand to unconsolidated mostly basalt pebble to cobble gravel with silt and sand
- Hf silt (Hf M)— silt unit identified in several wells drilled as part of the Stage A and Stage B EAAs uranium sequestration by polyphosphate remedy
- Hf gravel (Hf G)—unconsolidated predominantly basaltic pebble to cobble gravel with some sand and/or silt

The above sediment classes are defined as five primary Hf subunits modeled in this GFM, based on the following observation criteria:

- Hf S —≥90 percent sand
- Hf sG-msG—between 50 and 70 percent gravel with sand fraction ranging 10 to 50 percent and up to 20 percent silt
- Hf M—≥90 percent silt
- Hf G—≥80 percent gravels with 20 to 10 percent sand and/or silt fractions (gravels are at least 50 percent basaltic)

Excavation and clean fill of waste sites 316-2 (North Process Pond [NPP]) and 316-5 (Process Trenches [PT]) resulted in a significant portion of surficial sediments in the Stage A and B EAA study areas being reworked as shown in Figure 1 (BHI-01298, *300-FF-1 Operable Unit North Process Pond/Scraping Disposal Area Verification Package;* BHI-01164, *300 Area Process Trenches Verification Package*).



Notes: Stage A EAA is outlined in blue. Stage B EAA is outlined in red.

Figure 1. Stage A EAA and Stage B EAA Locations with Respect to North Process Pond and Process Trenches Excavation (H-3-309266)

The lower suprabasalt units of the 300 Area GFM were constructed using Rwie and Rlm surfaces extracted from the Hanford South GFM (ECF-HANFORD-13-0029, Rev. 5).

3 Methodology

This chapter discusses the data and methods used for the 3D modeling of:

- Hf DVZ GFM including the Hf lithofacies and waste site excavation extents
- 300 Area Geoframework Model clipped from the HSGF
- U-238 vadose zone plume extent

3.1 Compilation and Conditioning of Site Soil Uranium Concentration Data

Input data consists of spatially referenced soil concentrations with sample dates ranging from 1991 through 2019. Soil concentrations of uranium-238 in pCi/g and uranium in µg/g were compiled from the

Hanford Environmental Information System (HEIS) and Peterson, 2010, "Uranium in Sediment from FS-2 Test Pit, 618-1 Burial Ground Excavation," which was based on the following primary reports for the 300 Area:

- DOE/RL-92-32, *Expedited Response Action Assessment for 316-5 Process Trenches* (Appendix A label: Washington Closure Hanford [WCH]).
- BHI-01164 (Appendix A label: WCH)
- PNNL-17793, *Uranium Contamination in the 300 Area: Emergent Data and Their Impact on the Source Term Conceptual Model* (Appendix A label: PNNL-17793 Tables 5.11, 5.22, and 5.47)
- PNNL-16435, *Limited Field Investigation Report for Uranium Contamination in the 300-FF-5 Operable Unit at the 300 Area, Hanford Site, Washington* (Appendix A label: PNNL-16435 Table D.2)
- PNNL-22032, *Uranium in Hanford Site 300 Area: Extraction Data on Borehole Sediments* (Appendix A label: PNNL-22032)
- Data from Peterson, 2010, in the form of a letter report (Appendix A label: 618-1_BurialGroundExcavation)
- Additional data that were retrieved from HEIS based upon the proximity to the modeling area (may be documented in reports but for the purposes of this ECF, they are labeled according to the originator of the data; originators (WCH and CHPRC) have been labeled accordingly in Appendix A, and all data points pulled from HEIS that are not associated with the listed reports, WCH, or CHPRC have been labeled as HEIS)

The compiled data can be found in Table A-1 (Appendix A) of this document. Data from the Peterson, 2010, letter report can be found in Appendix B.

The following process is used for compilation and conditioning of site soil uranium concentration data:

- Data downloaded from HEIS were selectively filtered by removing samples marked as duplicates (retaining the higher measured concentrations) and overburden/staging pile area measurements.
- HEIS data associated with excavation sampling (BHI-01164) that did not come with discrete depths were assigned depths of 5 and 7.5 m for measurements and classified as shallow and deep, respectively. The Leapfrog Geo modeling requires an assigned depth and the following assignments are a good estimate based on the report. Sampling performed at ground surface prior to excavation was given a depth of 0.3 m. Depths of 5 and 7.5 m were sampled post-excavation within the trenches themselves (BHI-01164). Where a sampling depth range was provided, the midpoint of the range was used. These depth assignments were done to estimate sampling depths more accurately during the cleanup excavation (BHI-01164).
- Soil sample results based on one laboratory analytical method (described in HEIS as UISO_Plate_AEA) were used for consistency and comparability of data. This method detects the isotopes of uranium using alpha spectroscopy.
- All data for soil that were below the detectable limit were set to zero.
- The newest data from boreholes were received as total uranium soil concentration (µg/kg). 99.3 percent of existing uranium is composed of uranium-238 (IUPAC, 1998, "Isotopic Compositions of

the Elements"); therefore, the total uranium data were assumed to be a proxy for uranium-238 concentrations.

- Well 399-1-73 opportunistically sampled a slightly silty gravel layer ~18.5 ft (5.64 m) below ground surface (bgs) after high alpha and beta emissions were identified (SGW-59465, *Borehole Summary Report for the Installation of Nine Injection Wells, Twenty-One Monitoring Wells, and Three Boreholes in the 300-FF-5 Operable Unit*). Uranium analysis showed 367,000 µg/kg contaminant concentration. No additional samples were collected within this borehole. Adjacent aquifer well 399-1-72, 1.5 meters away, had identified a similar layer at ~18.5 ft bgs, with no detectable alpha or beta emissions. As this sample is a single localized occurrence, it has been ignored when modeling uranium extents as it will unnecessarily increase the uranium mass in Leapfrog Geo model, though included in Table A-1 for completeness.
- All data were converted to µg/g if not received in those units using the U-238 specific activity of 0.366 pCi/µg (2.97 µg/pCi).
- The data were then compiled into the worksheet U238_300Area_soil.csv for use in Leapfrog Geo.

3.2 Compilation and Conditioning of Site Borehole Geologic Data

Before entering the uranium concentration data into Leapfrog Geo for plume interpolation, a detailed geologic model of the Hf sediments in the vadose zone was constructed heretofore named the Hf DVZ GFM. This model was then inset into a larger model area of undifferentiated Hf sediments along with existing lower suprabasalt sediments (Rwie and Rlm) defined by the HSGF model named the 300 Area Geoframework Model for the purposes of this ECF **(**Figure 2). Data interpolation by Leapfrog Geo is carried out using radial basin functions (Buhmann, 2000, "Radial basis functions"). The Hf DVZ GFM was developed using three sets of data:

- Current data sets from the existing HSGF representing the entire Hanford site south of Gable Mountain and Gable Butte (ECF-HANFORD-13-0029, Rev. 5)
- Interpretations of recent borehole geologic logs from the area (PNNL-22032 and CHPRC geologic field logs from Stage A and Stage B EAAs)
- Excavation contours as defined by H-3-309266 (Figure 1), and refined by Stage B EAA geologic logs

The following steps were involved in GFM data compilation and conditioning:

1. Identify a model domain within the 300 Area section of the HSGF and create a list of boreholes from the domain.
2. Obtain available borehole geologic logs from EDA for the GFM borehole list.
3. Interpret borehole geologic logs for Hf subunits. The Hf S subunit occurs at various depths within the detailed Hf DVZ model domain and likely does not represent a single continuous subunit. To create realistic Hf subunit intrusions, subunit designations were further divided (e.g., Hf S1, Hf S2, etc.) for ease of modeling. All Hf S groupings retain the same characteristics for Hf S as outlined in Section 2.1.

4. Format borehole location and geologic data into Microsoft Excel® comma separated value files for import into Leapfrog Geo. Details and examples of these formats can be found in ECF-HANFORD-13-0029, Rev. 5.

Compiled borehole data are outlined in Appendix C. Not all wells or borings within the model domain were used in the GFM data set because the well logs lacked sufficient detail for an accurate interpretation of the geologic units. A list of omitted wells and boreholes is in Table C-4 (Appendix C).

Rwie and Rlm surfaces generated in the HSGF interpolation (ECF_HANFORD-13-0029, Rev. 5) were imported into the 300 Area GFM to assign lithologies to the geologic unit volumes.

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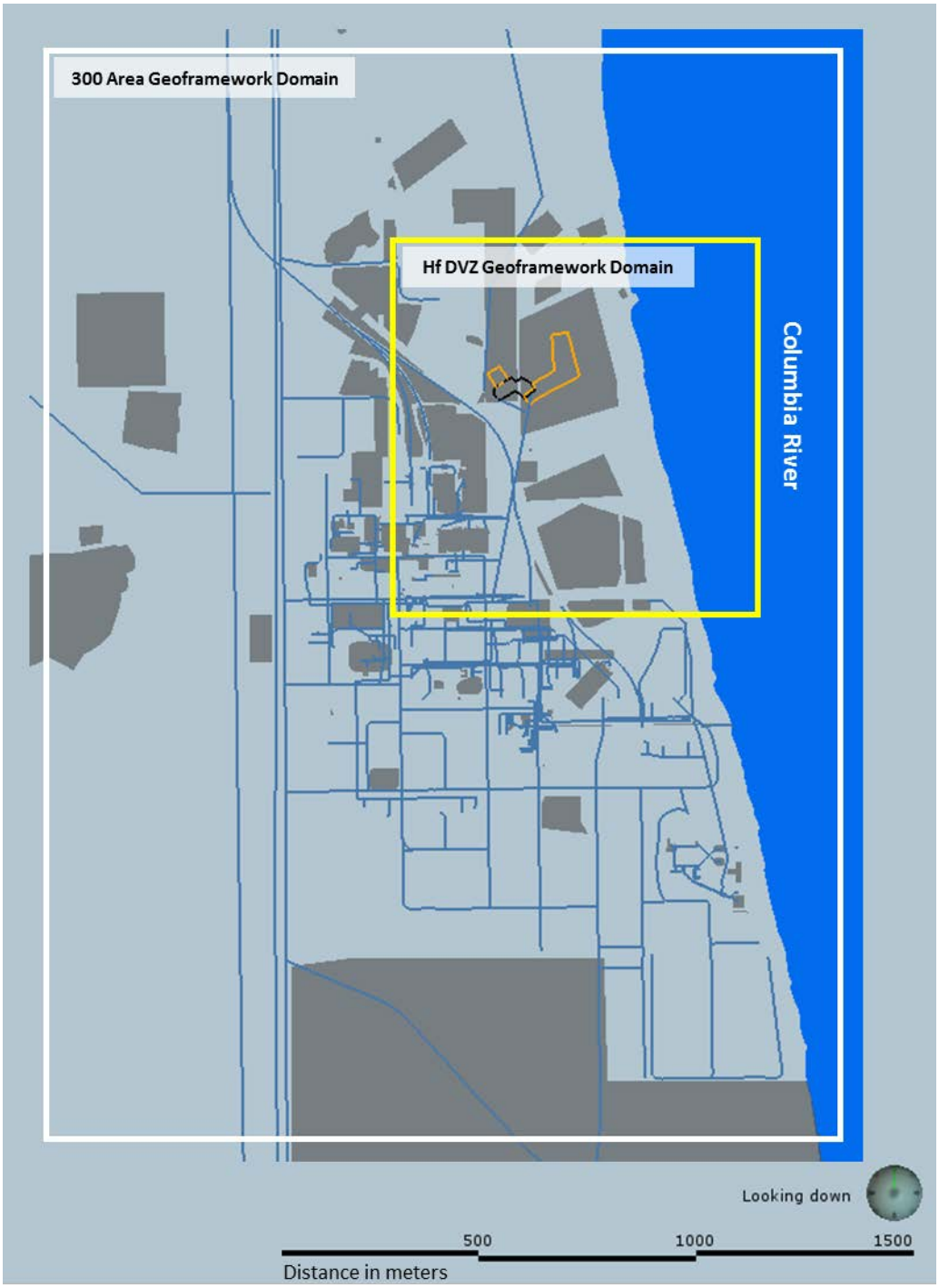


Figure 2. Outline of the Hanford Detailed Vadose Zone (Hf DVZ) Geoframework Model Domain and the 300 Area Geoframework Model Domain

3.3 Three-Dimensional Modeling of Site Geology and Soil Uranium Concentration Distribution

Construction of the 300 Area GFM and soil uranium distribution models first involved development of the site geology and then interpolation of the conditioned soil uranium concentration data using the Leapfrog Geo 3D modeling software.

The 300 Area GFM construction used interpreted borehole data and pre-existing geologic unit surface grids to define geologic unit contacts as subsurface elevations. These data inputs are interpolated within the Leapfrog Geo framework to define geologic unit surfaces that form the upper (i.e., top of the geologic unit surface) and lower bounding model surfaces of the geologic unit intervals that, when combined together, represent the solid model.

Soil uranium concentration distribution modeling involved interpolating the data in Appendix A (including control points) within the boundary of the GFM, resulting in volumes correlating to the defined contamination concentration ranges of >30, >90, and >157 µg/g. The concentration ranges represent values of 10 times background, 30 times background, and preliminary remediation goal values, respectively (ECF-300FF5-11-0151, *Groundwater Flow and Uranium Transport Modeling in Support of the 300 Area FF-5 RI/FS*).

3.3.1 North Process Pond and Process Trenches Excavation Construction

This subsection provides the sequence of steps to construct the NPP (waste site 316-2) and PT (waste site 316-5). Appendix C contains control point input data used to construct the Leapfrog Geo excavation surfaces.

1) Make a local copy and open the ECF-300FF5-16-0087, Rev. 0, Leapfrog Geo model files “300_Area_Leapfrog_Model.aproj.”

2) The Fill subunit is being included in this document revision. This subunit is defined by both post excavation contour mapping (Figure 1 [H-3-309266]) for the NPP (waste site 316-2) and PT (waste site 316-5), in addition to Stage B EAA geologic log data. The process used in creating the Fill surface is described below.

    a) First, Figure 1 (H-3-309266) image is imported by right clicking on the geographic information system (GIS) Data, Maps and Photos folder located in the Project Tree then selecting Import Map. Browse to the H-3-309266.jpg file and click OK. Georeference three locations on the image by placing markers on the image. When finished, click Save. Bring the map into the scene for the remaining steps. Set an arbitrary elevation of 110m by right clicking on the newly imported map, located in the GIS Data, Maps and Photos folder, and selecting “Set Elevation….” Enter 100 and click enter.

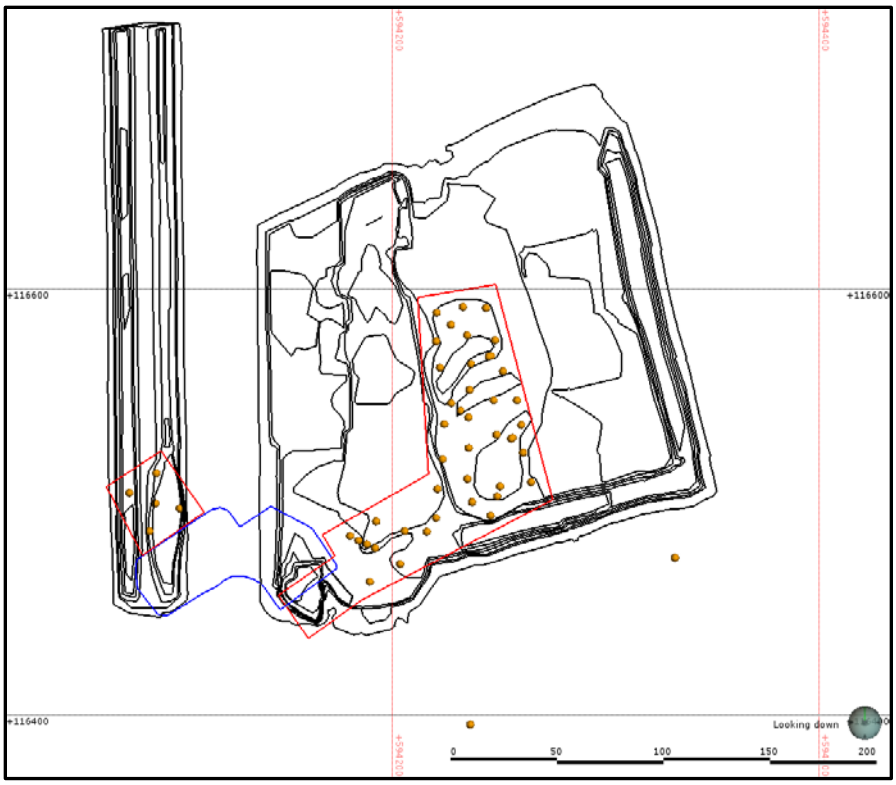
    b) Polyline contours were generated by right clicking on the Polyline folder in the Project Tree then tracing the excavation contour map. After the polyline is completed, the elevation needs to be set to the correct value. This is done by right clicking on the newly generated polyline, then selecting Extract GIS Line. The line will appear in the GIS Data, Maps and Photos folder in the Project Tree. Right click on the new GIS line and select Set Elevation. Enter the desired elevation in meters, then click OK. Finally, rename the GIS line to not override the original polyline then right click on the GIS line, then select Extract Polyline. The final polylines used to create the excavation outlines are listed in Table 1 and included in the Environmental Model Management Archive (EMMA) (Figure 3).

Table 1. Polylines for the North Process Pond and Process Trenches Excavation Fill Geometry

Polyline	Excavation Site	Elevation [a]
NPP_110.0m_B	North Process Pond	110
NPP_110.0m_C	North Process Pond	110
NPP_112.5m_B	North Process Pond	112.5
NPP_w_top_110m	North Process Pond	110
NPP_w_top_111.5m	North Process Pond	111.5
NPP_w_top_112.5m_A	North Process Pond	112.5
NPP_w_top_115.0m_A	North Process Pond	115
RE_NPP_contour_110.5m_A_rp	North Process Pond	110.5
RE_NPP_contour_111.5m_A_rp	North Process Pond	111.5
RE_NPP_w_top_108.5m	North Process Pond	108.5
RE_NPP_w_top_109m_a	North Process Pond	109
RE_NPP_w_top_110.5m	North Process Pond	110.5
RE_NPP_w_top_110.5m_b_rp	North Process Pond	110.5
RE_NPP_w_top_111m	North Process Pond	111
RE_NPP_w_top_112m_rp	North Process Pond	112
NPP_control_line_110m[b]	North Process Pond	110
RE_PT_contour_111.5_w_rp	Process Trenches	111.5
RE_PT_Contour_111m_w_rp	Process Trenches	111
RE_PT_contour_112.5m_w_rp	Process Trenches	112.5
RE_PT_w_top_110.5m_rp	Process Trenches	110.5
RE_PT_w_top_111m_E	Process Trenches	111
RE_PT_w_top_112.5m_E_rp	Process Trenches	112.5
RE_PT_w_top_113m	Process Trenches	113
RE_PT_w_top_115m	Process Trenches	115

a. Vertical datum is from NAVD88, *North American Vertical Datum of 1988*.

b. Polyline is a control line to flatten the base of the excavation shape.



Note: The Stage A EAA is outlined in blue, Stage B EAA in red, and contours used in black. The orange dots identify contact locations used in editing the polylines.

Figure 3. Contour Lines and Contact Locations used for Creating the North Process Pond and Process Trenches Excavation Surfaces

c) Stage B EAA pre-treatment characterization borehole logs included Fill-Hanford contacts data (300Area_tops_102717.csv). Table C-5 outlines which contacts were used, and which were excluded due to inconsistency with surrounding data. Contacts are assigned a unitless value of 1 in order to generate the interpolant as describe in the subsequent steps. Import the contact points file 300Area_tops_102717.csv by right clicking the Points folder in the Project Tree then selecting Import Points. Select the Backfill_Hanford_contact_elev_m as the “Elev (Z)” and import the value column as numeric.

d) Additional control points are needed to generate the NPP and PT excavation interpolants (Table C-6). Import the NPP control points file NPP_RE_CP.csv and PT control points file PT_RE_CP.csv by right clicking the Points folder in the Project Tree then selecting Import Points. Import the excavation column as numeric. The 0 and 1 values indicate control points outside and inside the excavation shape, respectively.

e) The NPP excavation mesh is first generated as an interpolant. Right click the Interpolants folder in the Project Tree and select New Interpolant. Select the excavation points for NPP_RE_CP as the Numeric values. For the NPP interpolant the boundary is defined by X(East) minimum and maximum values of 594,107.63 and 594,375.07, respectively; Y(North) minimum and maximum values of 116,359.97 and 116,739.28, respectively; and Z(Elev) minimum and maximum values of 94.47 and 124.90, respectively. Change the surface resolution to 0.5 then click OK.

f) Additional values are needed to create each interpolant. Right click on the values drop down and select Add Values. Browse to Area_tops_102717 values and click OK.

g) The polylines created earlier need to be included in the values of each interpolant. Refer to Table 1 for which polylines need to be included for a given excavation site. Polylines are added to the interpolant by right clicking on the values drop down and selecting New Contour Polyline. Select Existing Polyline, browse to the desired polyline, and designate the Value on Contour as 1. Click OK.

h) Certain control points will need to be excluded after the initial interpolant is generated. Refer to Table C-6 for which control points to ignore. In order to ignore (or exclude) a control point, double click on NPP_RE_CP. A new window will open. Check the box in the Ignored column to exclude a specific point.

i) Repeat steps 2)e) through g) for generating the PT interpolant. When creating the PT interpolant, select the excavation points for PT_RE_CP as the Numeric values. The boundary is defined by X(East) minimum and maximum values of 594,041.93 and 594,123.08, respectively; Y(North) minimum and maximum values of 116,411.22 and 116,774.8, respectively; and Z(Elev) minimum and maximum values of 108.15 and 119.3, respectively. Designate the resolution as 0.5 then click OK.

j) Certain control points will need to be excluded after the initial interpolant is generated. Refer to Table C-6 for which control points to ignore. In order to ignore (or exclude) a control point, double click on PT_RE_CP. A new window will open. Check the box in the Ignored column to exclude a specific point.

k) Update the interpolant parameters by double clicking on the interpolant header and changing the parameters outlined in Table 2 for the NPP interpolant and Table 3 for the PT interpolant.

l) Once interpolants are processed for each excavation site, the two geometries need to be combined. This is done by first extracting the mesh parts for each interpolant (right click on the 1.0 isosurface, then select Extract Mesh Parts). Vertices must be extracted from the generated mesh parts (right click on the newly generated meshes, then select Extract Vertices) then exporting each set of vertices by right clicking on the vertices under Points in the Project Tree then selecting Export. After the files are exported, the data is combined in Excel by copying each dataset into one file. The final combined excavation vertices are compiled in Excavation_combined_vertices.csv.

Table 2. Parameters Used for North Process Pond Interpolation in Leapfrog® Geo

Directions			**Ellipsoid Ratio**	
Trend				
Dip	Degree	0	Maximum	1
Dip Azimuth	Degree	0	Intermediate	1
Pitch	Degree	0	Minimum	0.3
Interpolant				
Sill	Meters	0.1	Drift	Constant
Range	Meters	90	Nugget	0
Accuracy	Meters	0.005	Interpolant	Linear

Table 2. Parameters Used for North Process Pond Interpolation in Leapfrog® Geo

Directions			Ellipsoid Ratio	
Outputs				
Higher Values	--	>0, >1	--	--
Resolution	Meter	0.5	--	--

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Table 3. Parameters Used for Process Trenches Interpolation in Leapfrog® Geo

Directions			Ellipsoid Ratio	
Trend				
Dip	Degree	0	Maximum	1
Dip Azimuth	Degree	0	Intermediate	1
Pitch	Degree	0	Minimum	1
Interpolant				
Sill	Meters	0.1	Drift	Constant
Range	Meters	900	Nugget	0
Accuracy	Meters	0.005	Interpolant	Linear
Outputs				
Higher Values	--	>0, >1	--	--
Resolution	Meter	0.5	--	--

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3.3.2 Geologic Framework Model Construction

This subsection provides the sequence of steps (and the input files required in each step) to construct or recreate the 300 Area GFM and Hf DVZ GFM. A detailed explanation of the input file types, formatting, and general model boundary determination is outlined in ECF-HANFORD-13-0029. Appendix C contains GFM input data formatted for import into Leapfrog Geo.

1) Open Leapfrog Geo software and create a new project.

2) Import borehole data by right clicking on the folder titled Drillhole Data. For the Input Files, browse and select the file “300Area_Collar_Post.csv” for both the Collar and Survey section; choose both “DVZ_300FF5_lithology_postremedy_boreholes.csv” and “HS_062614_lithology.csv” files for the Interval Tables section; and “300Area_screens.csv” for the Screens section. The collars file contains the location information for both lithology files. The lithology file “DVZ_300FF5_lithology_postremedy_boreholes.csv” will be used in the construction of the Hf Detailed Vadose Zone GFM (see Step 7), and “HS_062614_lithology.csv” will be used to assign

lithology to the volumes created in the construction of the lower suprabasalt sediment model, but not used in any interpolation.

3) Follow the prompts in the Leapfrog Borehole Data dialogue box entering the well name column from the .csv file as Hole Id, the X coordinates column from the table as X data, the Y coordinates as Y data, the elevation as Z, borehole dip and azimuth information as the dip and azimuth, and the constructed depth as MAX DEPTH in the Leapfrog dialogue boxes. Follow prompts to import the screen top and bottom depths.

4) To add the upper surface of the model right click on the folder entitled Topographies, then New Topography, then Import Elevation Grid. Browse to the light detection and ranging (LiDAR) "hanford_south_gfm_topo_bath_1m.asc" file (Aero-Metric LiDAR, 2008, *RCCC-Hanford Battelle/PNNL/DOE, Digital Orthophotography & LiDAR Surveys Photogrammetric Report*), and import it at a 5m resolution. In the import pop-up window, import the file so it is clipped to the model clipping boundary to import only the necessary extents of the raster. The model clipping boundary is as follows: X minimum and maximum of 593002 and 595092, respectively, and Y minimum and maximum of 114208 and 118098 (Washington State Plane [NAD83, *North American Datum of 1983*]), respectively.

5) To add the lower surface of the model, right click on the Meshes folder and import elevation grid, navigate to Sitewide_tob_ThompsenC.asc (top of basalt surface [SGW-48478, *Interpretation and Integration of Seismic Data in the Gable Gap*]), and import the file. In the import pop-up window, import the file so is clipped to the model clipping boundary.

6) To add the Rwie and Rlm surfaces of the model, right click on the Meshes folder and import elevation grid, then navigate to Rwie_el_100m_rev5.asc and Rlm_el_100m_rev5.asc (ECF-HANFORD-13-0029, Rev. 5). Retain the 100m surface resolution and check "Clip data to bounding box" and select the clipping boundary option when importing each surface.

7) Create Hf DVZ GFM:

   a) To create a new geological model, define a region that encompasses the boundary coordinates of the model. Right click on the folder entitled Geological Model and click New Geological Model. In the Base Lithology dropdown, navigate to the DVZ_300FF5_lithology_postremedy_boreholes (which should appear by default). Set the X minimum and maximum to 593846.00 and 594683.19, respectively; and set the Y minimum and maximum to 115954.03 and 116815.54, respectively. Leave the present Z as additional boundaries will be designated. Set the surface resolution to 1 and click OK. These are the predefined model coordinates. Be sure to check the box to use the topography for the upper model extent.

   b) Four lithology intervals were ignored in the creating of the Hf DVZ GFM data due to isolation of data and/or inconsistency with surrounding data. Table C-2 outlines which data were excluded.

   c) For the eastern model boundary, right click on the folder entitled Meshes, click Import Elevation Grid. Navigate to "hanlidar_navd88_v2_clipped.asc." Use this feature as a new boundary lateral extent.

   d) To set the model base, expand the new geological model in the project tree then right click on Boundary. Select New Base from surface and designate the Rwie_el_100m_rev5 surface mesh.

e) Right click on Surface Chronology then drop down to New Vein and select From Base Lithology. In the dropdown menu next to Vein lithology, select Hf M. Uncheck the “Include points at the ends of boreholes.” Click OK.

   i) After surface is created, right click Hf M in the Project Tree and select Open. Under the Surfacing tab, check the Pinch Out option then OK.

   ii) In the Project Tree, expand the Hf M Surface contact and right click on Hf M Reference Surface. Click the radio button for Planar reference surface and the remaining options with auto populate. Click OK.

f) Repeat bullet 7)e) for the Hf G subunit.

g) The Hf S subunit is not continuous throughout the model domain; therefore, this unit had to be modeled in several separate volumes representing the same lithology. Separate, localized pockets of Hf S were labeled in the input file “DVZ_300FF5_lithology_postremedy_boreholes.csv” as Hf S2 through S5. Interpolation of the additional Hf S, as described for deposits listed, was unrealistic; therefore, an alternative approach was taken:

   i) Hf S uppermost subunit was added by right clicking Surface Chronology, hovering over New Deposit, then selecting From Base Lithology. In the dropdown menu beneath Select primary lithology, select Hf S. Click the radio button Use contacts below, and the Contacting/Avoided lithologies box will automatically populate. Name this contact “Hf S Contact” then click OK. Figure 4 shows a screenshot clipping an example New Deposit Surface Chronology settings outline.

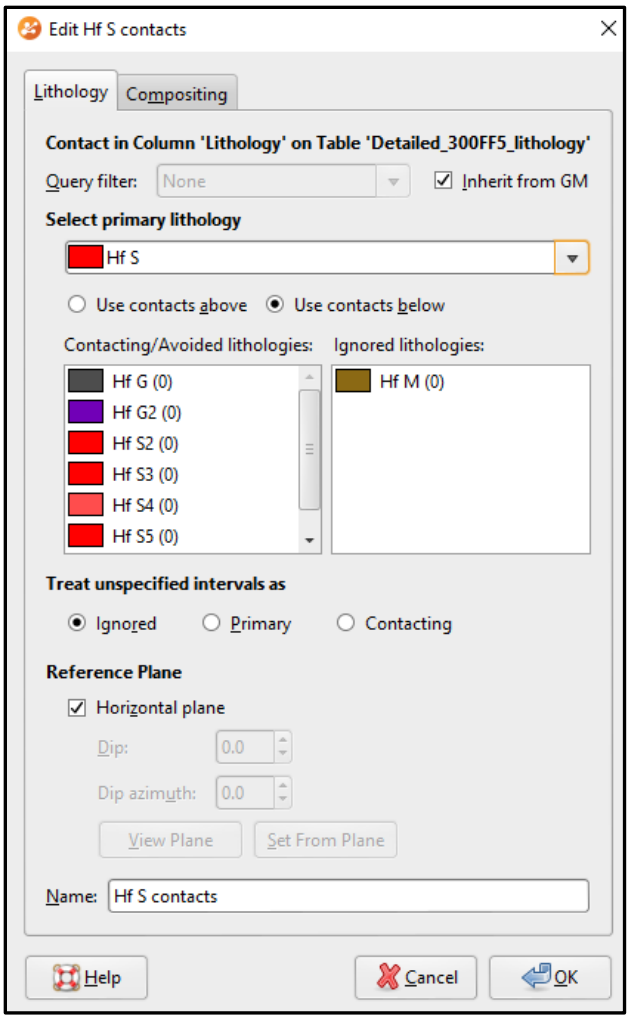


Figure 4. Screenshot of New Deposit from Base Lithology Surface Chronology for Hf S Subunit

ii) Repeat bullet 7)e) for the remaining Hf S subunits (Hf S2 through Hf S5) as Vein contacts.

h) To include the Fill subunit in the Geological Model, right click on Points in the Project Tree then Import Points. Browse to Excavation_combined_vertices.csv then click Finish.

i) The Fill lithology needs to be added to the model lithologies. In the Hf DVZ GFM, right click on Lithologies then click Open. Select Add then enter Fill. Click ok.

j) In order to add the geologic contact, right click on Surface Chronology, hover over New Erosion, then select From Points. Select the parameters listed in Figure 5 indicating that the Fill unit is younger than any other unit.

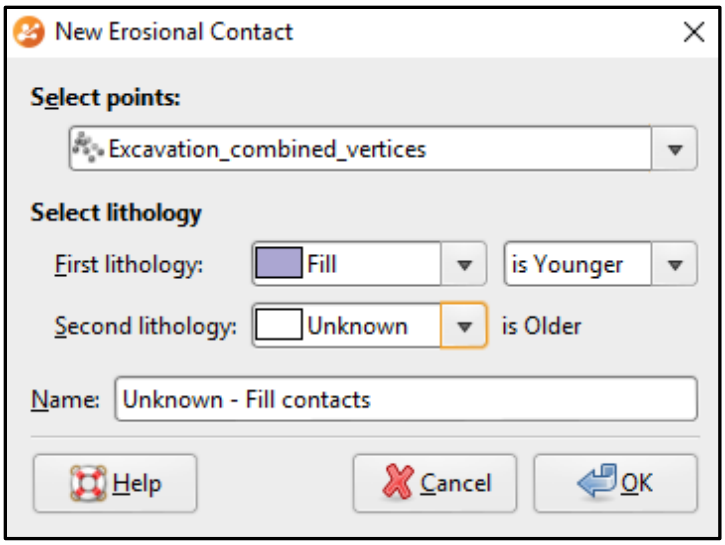


Figure 5. Screenshot of New Erosional Contact Window in Leapfrog

k) Finally, to create the output volumes for each geologic subunit, right click on Surface Chronology and Open. Check all the Contact surfaces created above and set the Background lithology to Hf sG-msG. Click OK.

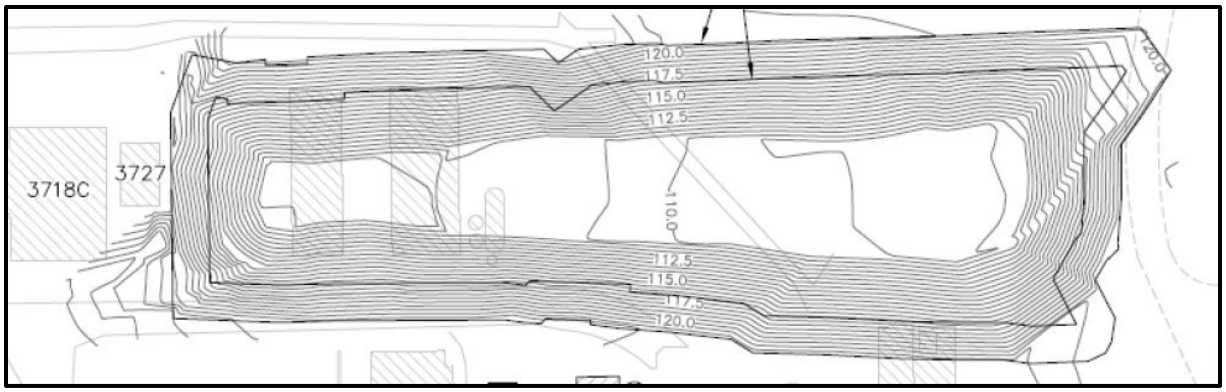
8) Create 300 Area GFM:

a) Right click on the Geological Models folder in the project tree then click New Geological Model. In the Base Lithology dropdown, navigate to the lithology (HS_062614_lithology.csv). Set the X(East) minimum and maximum to 593,052.6 and 594,871.9, respectively, the Y(North) minimum and maximum to 114,752.7 and 117,249.2, respectively, and the Z(Elev) minimum and maximum to 51 and 143, respectively. Name the model and set the surface resolution to 1. Click OK.

b) Once the model is generated, expand the lower suprabasalt sediment model then right click on Boundary. Hover over New Lateral Extent and choose From Surface. Add the hanlidar_navd88_v2_clipped mesh. An error will pop up stating the boundary surface is too small. Select the "Use 'X' vertices" option to include the surface boundary. Repeat a similar process for assigning hanford_south_gfm_topo_bath_1m as an additional lateral extent and the Sitewide_tob_ThompsenC mesh as the model Base.

c) 316-3 excavation geometry is generated using the following steps:

i) Figure 6 shows the excavation contours for waste site 316-3 from CVP-2015-00015, *Cleanup Verification Package for the 300-263, 324 Building Diversion Tank, and 316-3, 307 Disposal Trenches, Process Water Trenches Waste Sites*. The contour image is clipped and imported into the Leapfrog Geo Project by right clicking GIS Data, Maps and Photos in the Project Tree, then selecting Import Map. Browse to 316-3_excavation.jpg file and click OK. Georeference three locations on the image by placing markers on the image. When finished, click Save. Bring the map into the scene for the remaining steps.



Source: Figure 5 of CVP-2015-00015, *Cleanup Verification Package for the 300-263, 324 Building Diversion Tank, and 316-3, 307 Disposal Trenches, Process Water Trenches Waste Sites*

Figure 6. Excavation Contours for Waste Site 316-3

ii) Five polylines were generated for elevations 110, 112.5, 115, 117.5, and 120 m by creating a horizontal slice at a desired elevation (e.g., 110 m) then right clicking on Polylines in the Project Tree and selecting New Polyline. Select “Draw Lines” at the top of the screen and trace a desired contour on the map then double click when completed.

iii) Points are needed to generate the excavation geometry using an interpolant. Bring in the 316-3 uranium data subset by right clicking on the Points folder and selecting “Import Points.” Navigate to the “uranium_316_3.csv” file and Open. Select Import All Columns and click Finish.

iv) To create the excavation geometry, create a new interpolant by right clicking Interpolants in the Project Tree then selecting New Interpolant. For the Numeric values, navigate to “uranium_316_3” Adj_Value. Set the X (East) minimum and maximum to 594,188.6 and 594,395.2, respectively, the Y (North) minimum and maximum to 115,736.3 and 116,024.5, respectively, and the Z (Elev) minimum and maximum to 104.4 and 126.5, respectively. Name the interpolant, set the surface resolution to 1. Click OK.

v) When completed, right click on the newly made interpolant and select Open. In the Boundary tab, check the Use Topography option. Update the remaining tabs following information included in Table 4.

Table 4. Parameters Used for Waste Site 316-3 Interpolation in Leapfrog® Geo

Directions			**Ellipsoid Ratio**	
Trend				
Dip	Degree	0	Maximum	1
Dip Azimuth	Degree	0	Intermediate	1
Pitch	Degree	0	Minimum	0.3
Interpolant				
Sill	Meters	0.1	Drift	None
Range	Meters	90	Nugget	0

Table 4. Parameters Used for Waste Site 316-3 Interpolation in Leapfrog® Geo

Directions			Ellipsoid Ratio	
Accuracy	Meters	0.1	Interpolant	Spheroidal
			Alpha	3
Outputs				
Higher Values	--	>1	--	--
Resolution	Meter	1	--	--

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vi) Add the five polylines relevant to 316-3 by expanding the newly made interpolant values section. Right click on the values section and select New Contour Polyline. Select Existing Polyline and browse to the 316-3 polylines. Assign a value of 1 and click OK. Repeat to include all five polylines.

vii) Extract the excavation geometry by expanding Output Volumes section in the Project Tree and right clicking >1.0. Select Extract Vertices and rename to “excavation_316_3_vertices” and click OK. The newly made vertices will appear in the Points folder of the Project Tree.

d) In the Project Tree, right click Surface Chronology, then drop down to New Deposit from Surface. Navigate to Rwie_el_100m_rev5 mesh and select it. Select the lithology as shown in Figure 7 indicating the Hanford formation is stratigraphically younger than the Ringold E. Click OK to add the Ringold E solids model geometry to the existing model.

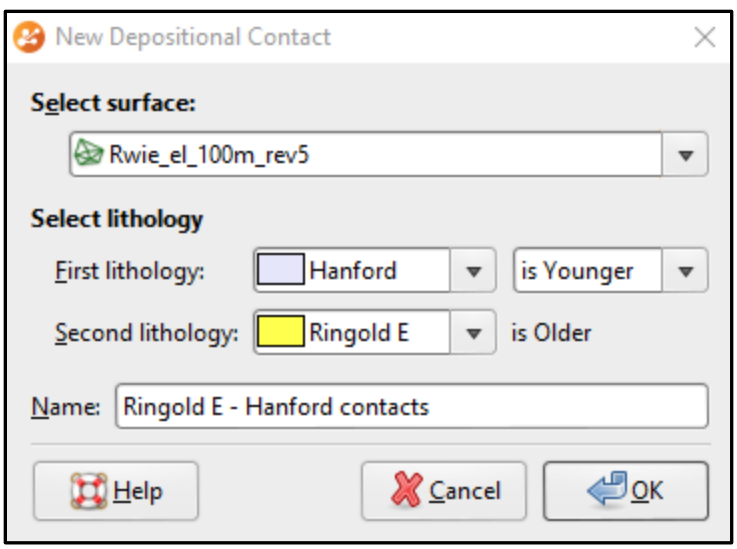

Figure 7. Screenshot of New Depositional Contact Window in Leapfrog Geo

e) Continue constructing the Geologic Model by right clicking Surface Chronology, then drop down to New Deposit and select From Surface. Navigate to Rlm_el_100m_rev5 and select it. Select the Ringold E lithology as younger than the Ringold LM similar to bullet 8)d. Click OK to add Rlm solids model geometry to the existing model.

f) Include the excavation fills by adding two new lithologies to the geological model. To do so, right click on the lithologies folder and click Open. Add “Fill” and “Fill2” lithologies to the list and click OK. Follow step 7)j) above to include the 316-2 and 316-5 Fill excavation. Add the 316-3 excavation by right clicking on Surface Chronology, then drop to New Erosion and select From Points. Browse to the excavation_316_3_vertices then click OK. Indicate the Fill2 lithology is younger than Unknown.

g) All surfaces must be activated to include the three stratigraphic units making up the lower suprabasalt sediment model. To do so, double click on Surface Chronology, check both Contact surfaces then click OK. The Fill, Fill2, Hanford, Ringold E, and Ringold LM geologic volumes will now appear in the Output Volumes folder.

3.3.3 Soil Uranium Concentration Distribution Modeling

This subsection provides the sequence of steps for the user to construct or recreate the 300 Area uranium vadose plume. A detailed explanation of the input file types, formatting, and general model boundary determination is provided in ECF-200UP1-14-0019, *Initial Groundwater Plume Development (Uranium, Technetium-99, Nitrate, and Iodine-129) to Support Fate and Transport Modeling for Remedial Design in the 200-UP-1 Groundwater Operable Unit*. Interpolation was carried out using the inbuilt interpolation utility in Leapfrog Geo. Leapfrog Geo carries out 3D interpolation using the ALGLIB® Fast RBF algorithm (Carr et al., 2001, “Reconstruction and Representation of 3D Objects with Radial Basis Functions”). The following steps are taken to construct or recreate the 300 Area uranium vadose zone plume:

1) In the same Leapfrog project containing the GFMs created in Section 3.3.2, import the soil uranium contamination data in Table A-1 by right clicking the Points folder and then clicking Import Points. Navigate to the .csv file “U238_300Area_soil -PostStageB” (Section 3.1) and import the Valueb column as Numeric then click Finish.

2) Some data were not identified as duplicates in HEIS and provide multiple uranium soil measurements for a single location. Leapfrog Geo will automatically ignore all points where multiple values are assigned. To fix this, double click on the newly imported “U238_300Area_soil_PostStageB” points and check the “Ignored” box for all data identified in Table 2.

3) Begin the plume construction process by right clicking the Interpolants folder and then clicking New Interpolant. Set the X(East) minimum and maximum to 593,087.25 and 594,844.8, respectively; set the Y(North) minimum and maximum to 114,887.8 and 117,830.2, respectively. Set the surface resolution to 1.0 m and select Finish.

4) Add boundary surfaces to the uranium interpolation by right clicking on Boundary, hovering over New Lateral Extent, then selecting From Surface. Include the hanlidar_navd88_v2_clipped, hanford_south_gfm_topo_bath_1m, and Rwie_el_100m_rev5 meshes.

5) An additional river stage to vadose boundary is needed by importing the River_vds_bdry polyline to the project. This is done by right clicking on Polylines in the Project Tree then selecting Import Polyline. Select River_vds_bdry then click OK. Add this boundary to the uranium interpolation by right clicking on Boundary, hovering over New Lateral Extent, then selecting From Polyline. Choose the Existing Polyline and select River_vds_bdry polyline then click OK.

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6) Default values for trends, sill and range were used. The plumes were not found to be sensitive to sill and range. Update model parameters by double clicking on uranium plume interpolant and populating each tab with information from Table 5.

7) Volume control is added to the model with control points included in the "U238_300Area_soil_PostStageB" data set when it is imported. No additional control other than points imported with the uranium concentration data set we used in the current interpolation.

Table 5. Parameters Used for Uranium Plume Interpolation in Leapfrog® Geo

Directions			**Ellipsoid Ratio**	
Trend				
Dip	Degree	0	Maximum	1
Dip Azimuth	Degree	0	Intermediate	1
Pitch	Degree	0	Minimum	1
Interpolant				
Sill	Meters	600	Drift	None
Range	Meters	50	Nugget	0
Accuracy	Meters	0.1	Interpolant	Spheroidal
			Alpha	3
Outputs				
Intervals	µg/g	1.5; 3.0; 10; 30; 90; 157	--	--
Resolution	Meter	1.0	--	--

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4 Assumptions and Inputs

The following assumptions apply to the 3D vadose zone uranium distribution interpolations:

1. All data used in interpolation are correct and accurate.
2. Uranium-238 is the assumed concentration for all uranium concentrations because of its overwhelming abundance in proportion to other uranium isotopes in nature.
3. Post Stage A EAA and Stage B EAA uranium sample data are considered to not be significantly impacted by flushing during remedy implementation.
4. Isotropy is assumed for the soil uranium contamination distribution model.

4.1 Geologic Framework Model Uncertainty

The principal source of uncertainty for identification of geologic units and their contacts is the quality of the descriptions and records of the drilling, sampling, and logging techniques used during borehole drilling, as well as the methods and materials used in well construction. The variable quality or lack of

availability of borehole geophysical logs and laboratory data from borehole samples also contribute to this uncertainty. Many boreholes installed prior to the 1980s were drilled without a well site geologist present to describe the drill cuttings and samples. For these boreholes, only drillers' logs are available, and their quality varies greatly. Furthermore, varying quality of descriptions of subtle differences and gradational changes among geologic facies and across stratigraphic units can hamper reliable spatial correlation of sediment packages and individual facies.

As a result of the variability of data and the experience and professional judgment of the different investigators, many of the same geologic contacts have been picked at slightly different locations by different investigators. Different investigators may use different criteria for choosing contacts, depending on the objectives of the specific project (e.g., geologic or hydrologic in nature). Therefore, contact selection can be subjective and inconsistent. In some cases, the difference in contact elevation may be attributable to differences in the ground-surface elevations used by the different investigators.

4.2 Soil Uranium Concentration Distribution Uncertainty

Interpolation parameters are considered to be the greatest source of uncertainty in the modeling of vadose zone uranium contamination distribution modeling. In changing the anisotropy, or interpolant trend in Leapfrog Geo, the uranium model distribution output varies. Without extensive data throughout the 300 Area, it is difficult to assume any other alternative. Further uncertainty is present in the heterogeneity in soil sampling for uranium analysis, as evident with similar sampling depths and locations providing a range of uranium soil concentrations.

4.3 Inputs

Input data (U238_300Area_soil_PostStageB.csv) for vadose uranium distribution interpolation are included in Appendices A and B. Input data (DVZ_300FF5_lithology_postremedy_boreholes.csv, HS_062614_lithology.csv, 300Area_Collar_Post.csv, 300Area_tops_102717, and 300Area_Screens.csv) for the GFM are included in Appendix C. Table 6 lists specific uranium data omitted from the 300 Area uranium interpolation. Uranium in soil can be measured by multiple methodologies using soil from the same location/depth. Therefore multiple uranium values can be available for a location that are not listed as duplicate measurements. Leapfrog Geo requires only one value at a specified location, thus requiring duplicate data to be omitted (the highest value was retained as explained in Section 3.1). One anomalously high value data point (316-5-TP4) was omitted because the duplicate point in its location, as well as several data points from different sampling depths within the same borehole, had much lower uranium concentrations.

Table 6. Data from U238_300Area_soil_PostStageB.csv Ignored from Interpolation

Data Point	X Coordinate [a,b]	Y Coordinate [a,b]	Z Coordinate [a,c]	HEIS Number	Constituent	Value (µg/g)
C9729	594203.5	116471.9	105.41	B3P2N1	Uranium	20
C9730	594230.6	116485.3	105.37	B3P2R1	Uranium	16.9
C9731	594206.9	116498.6	105.23	B3P2V1	Uranium	22.1
C9733	594180.9	116484.8	105.26	B3P455	Uranium	6.13
C9736	594228.6	116543.6	105.24	B3P361	Uranium	2.11
C9728	594164	116446.2	105.56	B3P425	Uranium	62.1

Table 6. Data from U238_300Area_soil_PostStageB.csv Ignored from Interpolation

Data Point	X Coordinate [a,b]	Y Coordinate [a,b]	Z Coordinate [a,c]	HEIS Number	Constituent	Value (µg/g)
C9732	594088.9	116512.8	105.11	B3P449	Uranium	4.19
C9735	594185.1	116479.4	105.3	B3P341	Uranium	13.5
C9734	594189.2	116489.5	105.33	B3P321	Uranium	23.9
399-1-55	594152.3	116487.3	97.74	B27DL7	U-238	1.307931
399-1-56	594090.9	116725.3	104.361	B27K66	Uranium-238	1.605188
399-1-56	594090.9	116725.3	97.169	B27K69	Uranium-238	1.842994
399-1-57	594382	116353.7	104.31	B261D6	U-238	0.951223
399-1-57	594382	116353.7	104.307	B261D6	Uranium-238	0.95
399-1-57	594382	116353.7	99.587	B261D7	Uranium-238	1.07
399-1-57	594382	116353.7	93.547	B261D8	Uranium-238	1.694365
399-1-57	594382	116353.7	79.0075	B276T9	Uranium-238	0.921497
399-1-57	594382	116353.7	93.55	B261D8	U-238	1.694365
399-1-57	594382	116353.7	79.01	B276T9	U-238	0.921497
399-1-58	593910.8	116352.6	97.831	B27M31	Uranium-238	2.26
399-1-58	593910.8	116352.6	93.261	B27JT2	Uranium-238	0.39
399-1-58	593910.8	116352.6	97.83	B27M31	U-238	2.26
399-1-58	593910.8	116352.6	93.26	B27JT2	U-238	0.39
399-1-67	594162.4	116481.6	107.3825	B30534	Total U	16.9
399-1-68	594166.8	116527	111.4475	B30557	Total U	6.52
399-2-32	594284.6	116195.1	102.122	B27JV3	Uranium-238	1.13
399-2-32	594284.6	116195.1	98.312	B28PN2	Uranium-238	4.46
399-2-32	594284.6	116195.1	77.5855	B27JV4	Uranium-238	1.69
399-3-33	594500.7	115966.5	103.66	B282Y1	Uranium-238	3.567085
399-3-33	594500.7	115966.5	100.765	B28PY0	Uranium-238	0.802594
399-3-33	594500.7	115966.5	107.662	N/A	Uranium-243	1.2
618-7	593212.6	116509.2	116.61	J17R55	Uranium-238	0
618-7	593208	116518	116.78	J17R59	Uranium-238	0
618-8	593821.1	116477.9	115.43	J11274	Uranium-238	0
399-3-33	594500.7	115966.5	100.77	B28PY0	U-238	0.802594

Table 6. Data from U238_300Area_soil_PostStageB.csv Ignored from Interpolation

Data Point	X Coordinate [a,b]	Y Coordinate [a,b]	Z Coordinate [a,c]	HEIS Number	Constituent	Value (µg/g)
399-3-33	594500.7	115966.5	103.66	B282Y1	U-238	3.567085
C8933	594113.2	116439.9	110.2302	B304W5	Total U	0.51
399-1-76	594117.8	116460.6	NA	B31MY9	Uranium	0.14
399-1-76	594117.8	116460.6	108.4765	B31N15	Uranium	2.14
399-1-80	594089.5	116454.8	109.7755	B31N76	Uranium	1.03
399-1-80	594089.7	116454.9	NA	B31N92	Uranium	0.25
399-2-32	594284.6	116195.1	102.12	B27JV3	U-238	1.13
399-2-32	594284.6	116195.1	98.31	B28PN2	U-238	4.46
399-2-32	594284.6	116195.1	77.59	B27JV4	U-238	1.69
399-1-136	594076.5	116504.3	109.36	B39JV2	Uranium	27.3
399-1-21B	594157.2	116176.8	92.9	B014W3	Uranium-238	0
316-5-TP1	594090	116862	111.5	B01045	Uranium-238	12.75
316-5-TP2	594090	116557	111.5	B01041	Uranium-238	25.68
316-5-TP3	594090	116475	111.5	B01035	Uranium-238	148.12
316-5-TP4	594090	116455	111.5	B01033	Uranium-238	1059.72
399-1-56	594090.9	116725.3	104.36	B27K66	U-238	1.64

a. All coordinates are in meters.

b. Horizontal datum is from Washington State Plane (NAD83, *North American Datum of 1983*).

c. Vertical datum is from NAVD88, *North American Vertical Datum of 1988.*

HEIS = Hanford Environmental Information System

5 Software Applications

Leapfrog Geo and Microsoft Excel and Microsoft Access® software programs were used for this calculation. These are CHPRC approved software, managed and used in compliance with CHPRC's controlled software use procedure. Microsoft Excel and Access programs were used as spreadsheet software for this calculation.

5.1 Approved Software

For approved software used in this calculation, the required descriptions are provided in the following subsections.

® Access is a registered trademark of Microsoft Corporation in the United States and other countries.

5.1.1 Description

The following information has been identified for the software package used in the calculation:

- Software Title: Leapfrog Geo
- Software Version: 3.0.0
- Hanford Information System Inventory Identification Number: 2874 (Safety Software, Level C)
- Workstation type and property number: ThinkPad® Laptop INTERA-00873

5.1.2 Software Installation and Checkout

Copies of the Software Installation and Checkout Forms for the authorized users and authorized workstations for software used that requires this documentation are provided in Appendix D to this ECF.

5.2 Statement of Valid Software Application

The preparers of this calculation attest that the software identified and used for this calculation is appropriate for the application and has been within the range of intended uses for which it was tested and accepted by CHPRC.

6 Calculation

Excavation geometries were created using 3D interpolation. The overall approach was kept consistent with the steps defined in Chapter 3. Interpolation parameters were selected to interpolate the data to provide the best correlation to existing information (e.g., Fill/Hanford formation contact depths). Tables 2, 3, and 4 outline the interpolation parameters used for the NPP, PT and 316-3 excavations, respectively.

3D interpolation was carried out for soil uranium data contained in Appendices A and B. The overall approach was kept consistent with the steps defined in Chapter 3. Interpolation parameters were selected to interpolate the data to provide the best correlation to existing information (i.e., location of high depth discrete data values, nondetects, and uranium groundwater plume contours). Table 5 shows the interpolation parameters used for soil uranium.

7 Results/Conclusions

7.1 300 Area Uranium Distribution

Figure 8 shows the resulting vadose zone uranium plume for the 300 Area based on sampling data in the region. Figure 9 outlines the area of potential overestimation associated with the spoils area at the northern portion of the Process Trenches (BHI-01164). Sampling was conducted for the spoils pile and included in HEIS with subsequent inclusion in the uranium data compilation. Soil from the spoils pile was removed down to the area's original topography and disposed in the Environmental Restoration Disposal Facility (ERDF) (BHI-01164). This revision retains these data, though advises caution in using these specific values in transport modeling efforts.

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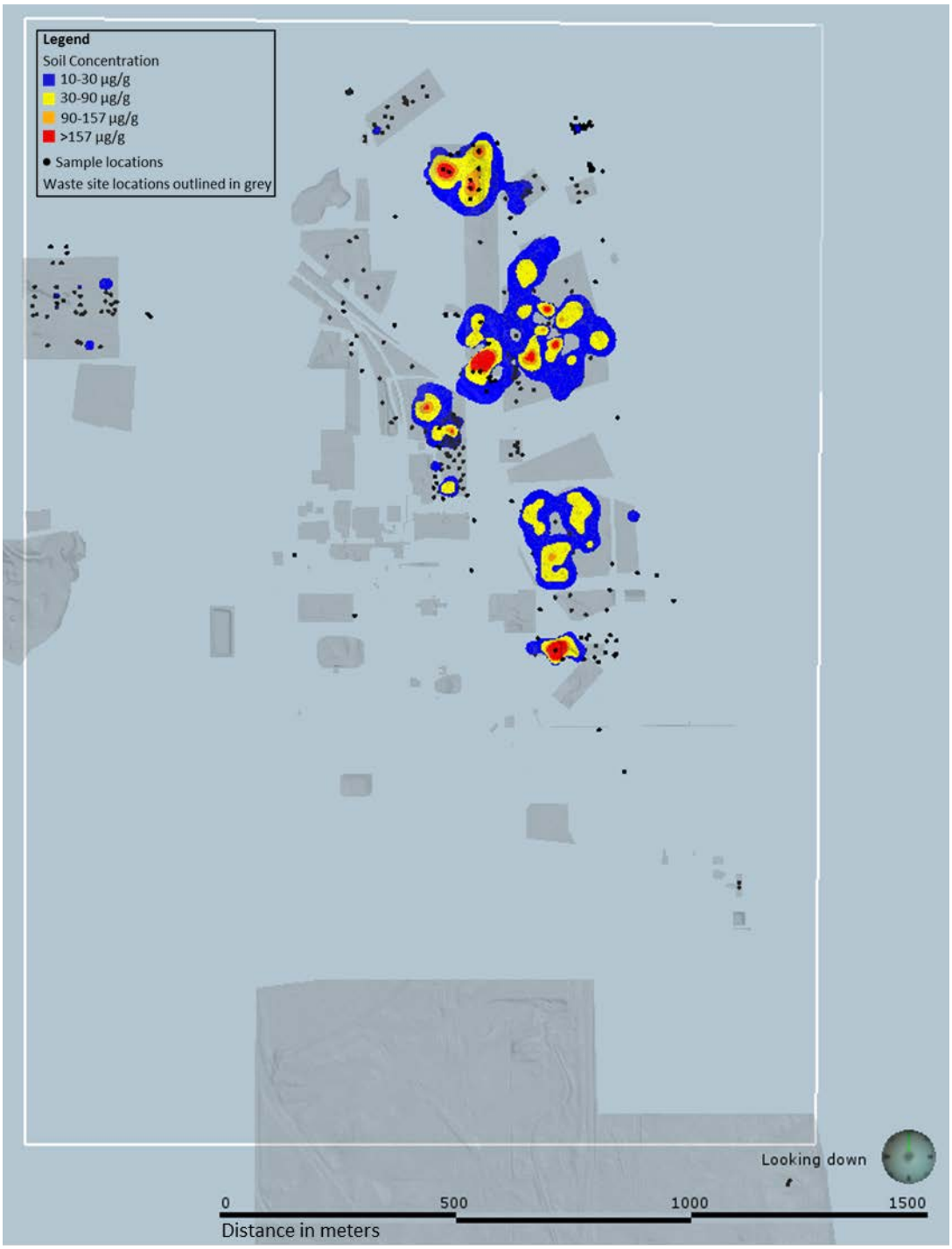

Figure 8. Plan View Map of Uranium Contaminant Plume Extent

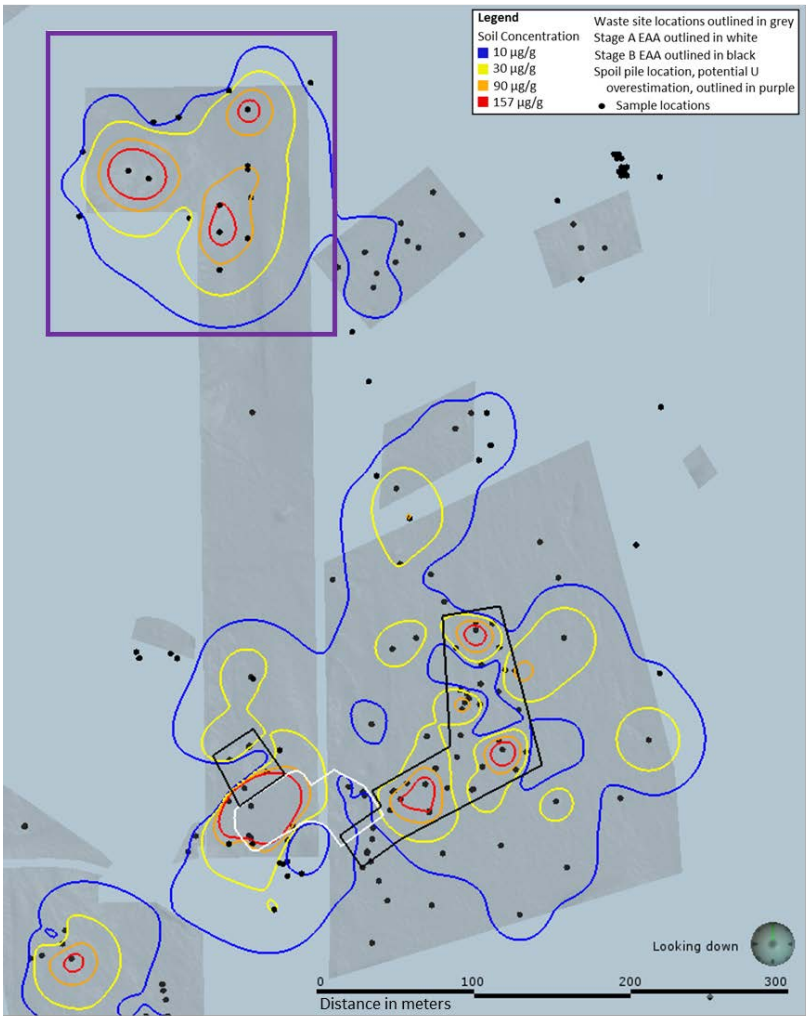

Figure 9. Location of Suspected Uranium Soil Contamination Uncertainty of the North Process Pond

7.2 Hanford Detailed Vadose Zone Geoframework Model

Figure 10 provides an orthogonal view of the Hf Detailed Vadose Zone Geoframework Model. Figure 11 shows the results of the 3D vadose zone uranium plumes in the Hf DVZ GFM domain. The interpolated soil uranium concentrations along with other details are presented in a plan view. Figure 12 and Figure 13 show the interpolated model geology and 3D uranium plumes to provide additional information. Figure 14 and Figure 15 illustrate the location of the Hf silt unit. It is important to note that since uranium contamination has an adsorption affinity for particles sized <2 mm (Shang et al., 2011), the location of silt beneath the highest concentrations (157 and 90 µg/g) of the uranium vadose zone contamination distribution is significant.

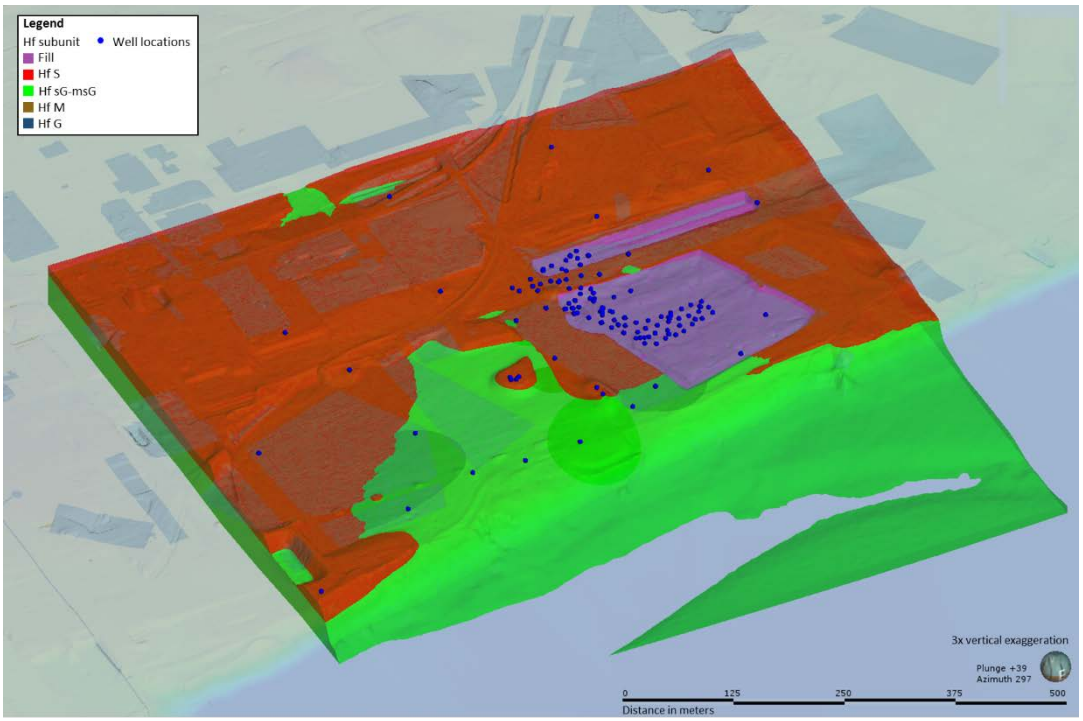

Figure 10. Hf Detailed Vadose Zone Geoframework Model

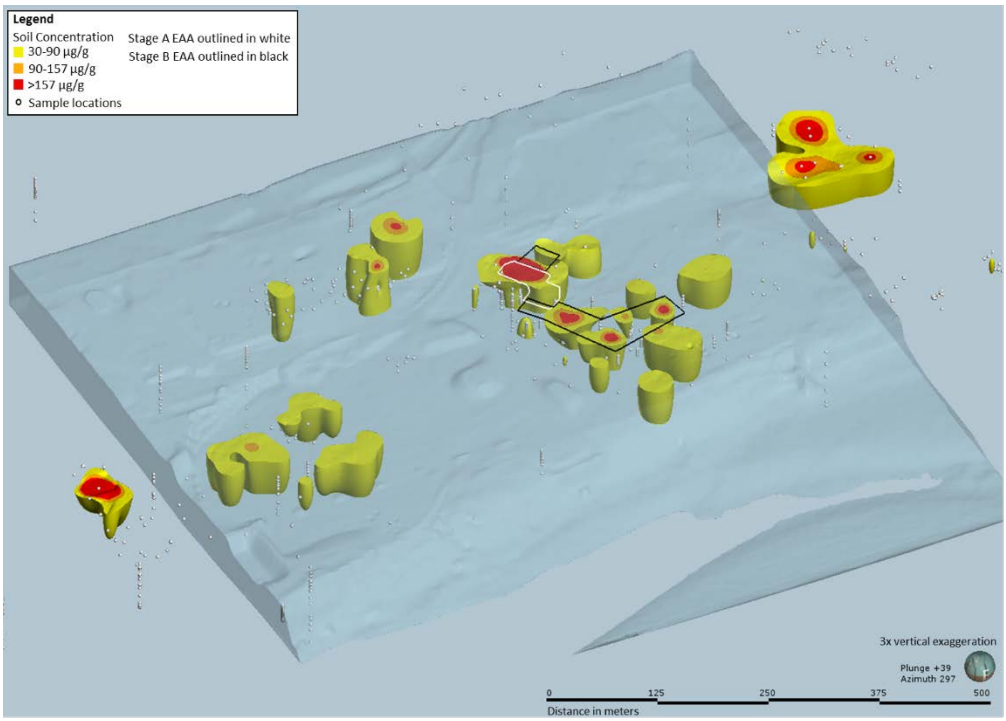

Figure 11. Uranium Concentration Distribution Plume Model within the Hanford Detailed Vadose Zone GFM

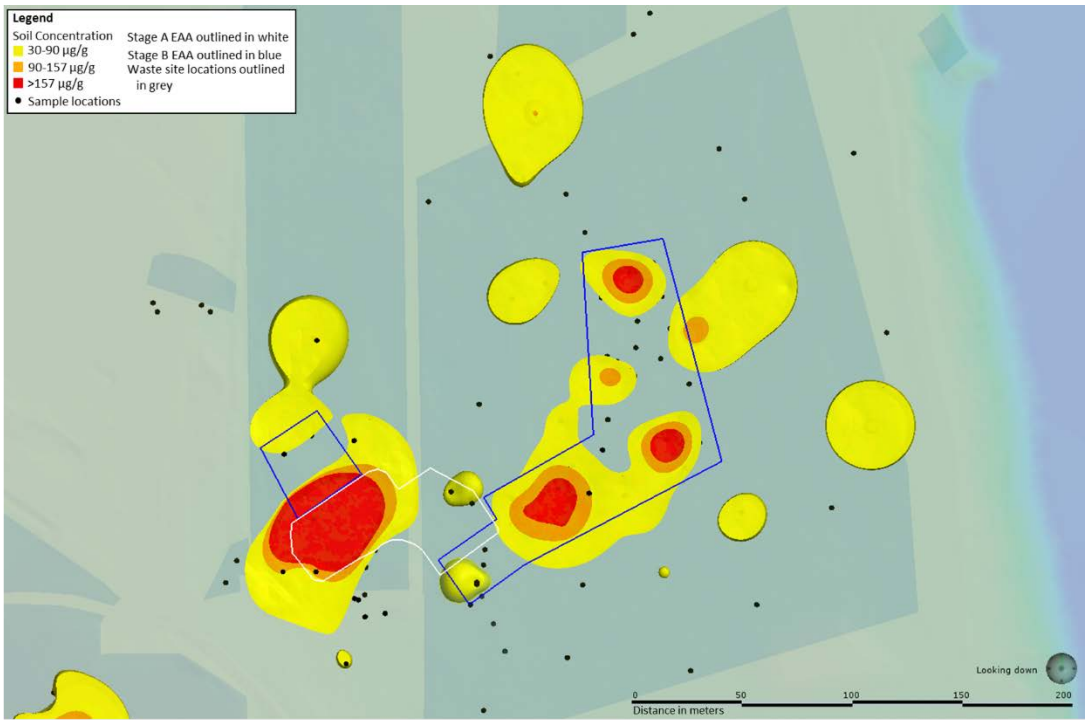

Figure 12. Uranium Concentration Distribution Plume Model Surrounding the EAAs

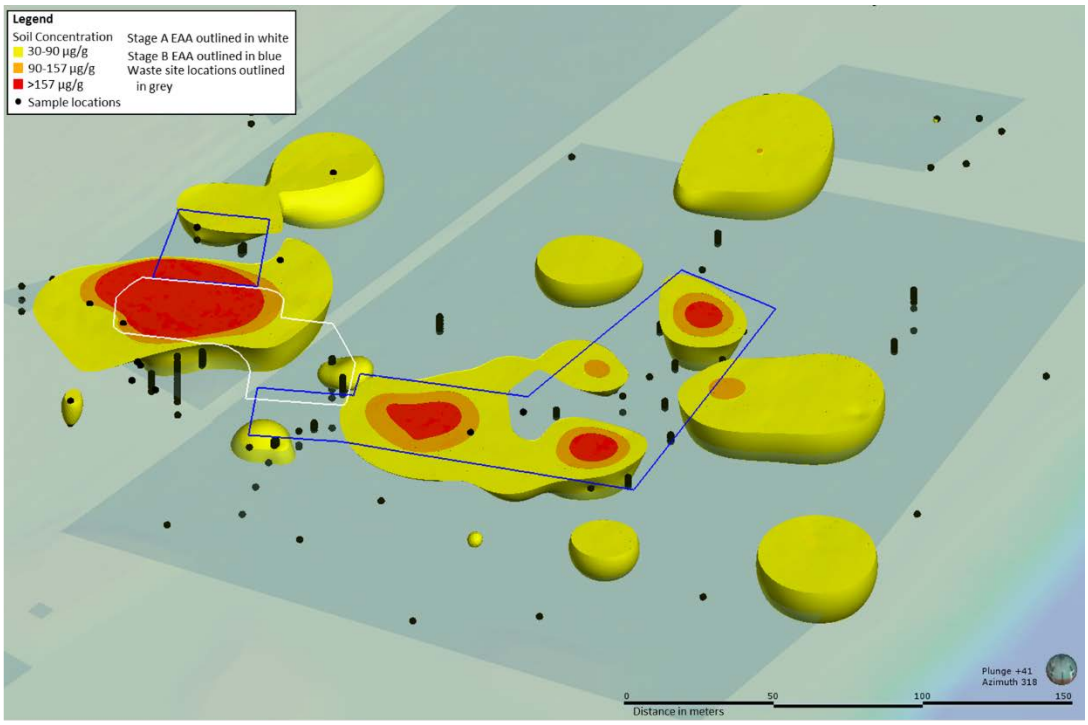

Figure 13. Uranium Concentration Distribution Plume Model Surrounding the EAAs Orthogonal View

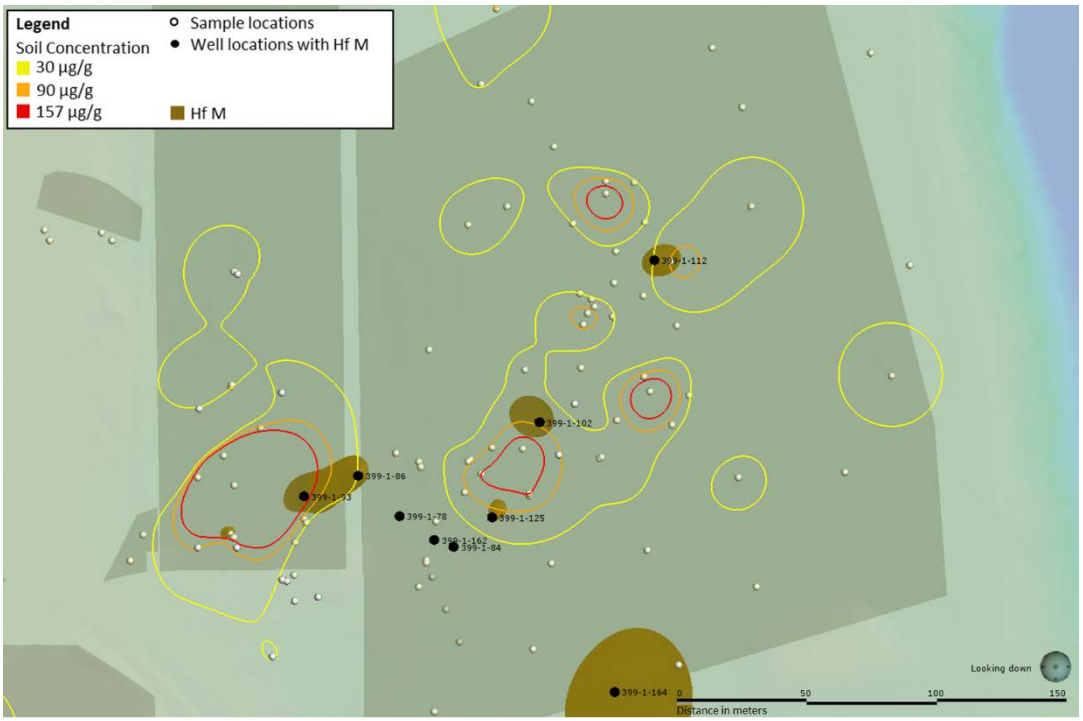

Figure 14. Hf Silt Location Plan View

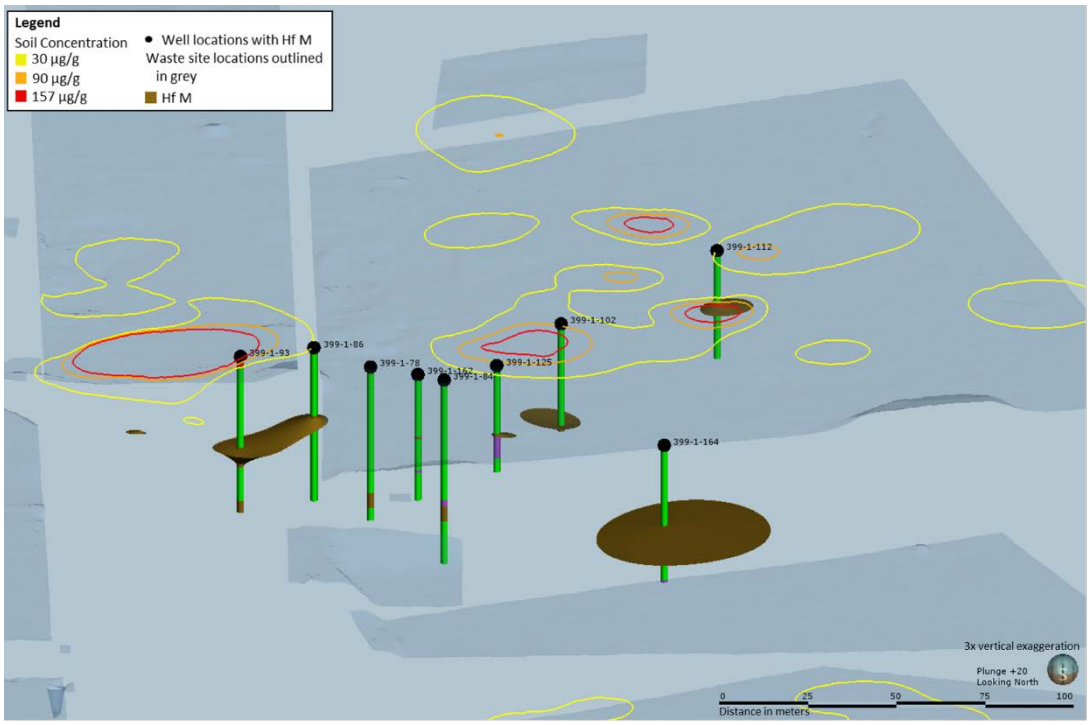

Figure 15. Hf Silt Location Looking North

7.3 300 Area Geoframework Model

Figure 16 and Figure 17 provide plan and orthogonal views of the 300 Area GFM.

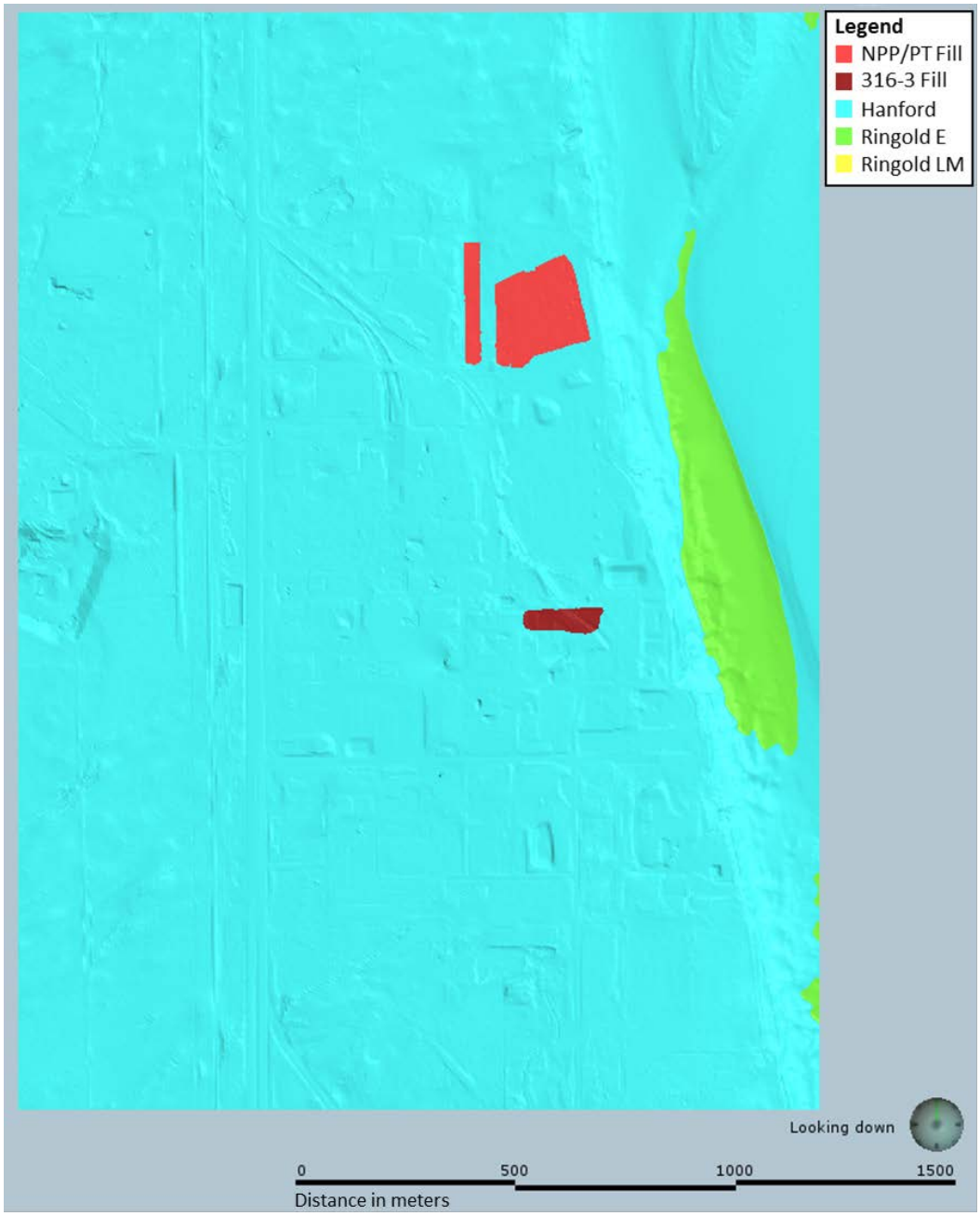

Figure 16. Plan View of 300 Area GFM

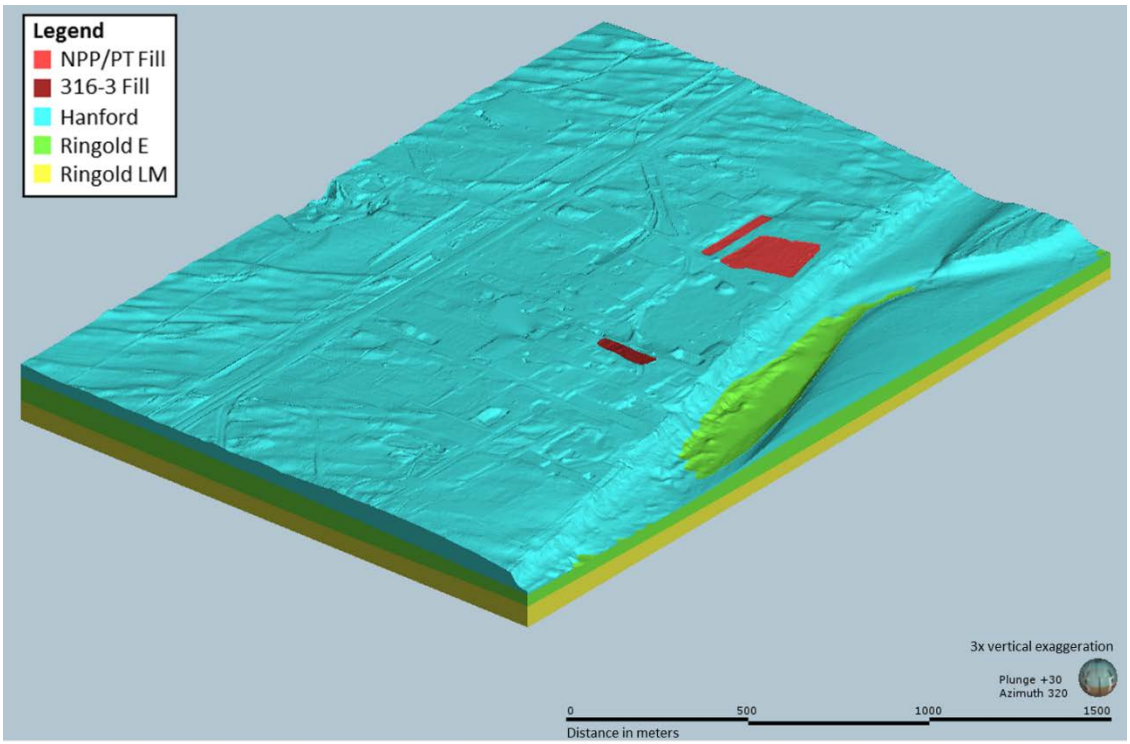

Figure 17. Orthogonal View of 300 Area GFM

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Appendix A

Compiled Data for Uranium Soil Concentration Distribution Modeling

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A1 Introduction

Table A-1 lists only the uranium concentration values that were used directly in the interpolation of the vadose zone uranium concentration distribution. Some values originally imported into Leapfrog Geo (described in Section 4.2 of the main text) may have been omitted from the interpolation because they were duplicate locations or caused unrealistic features within the interpolant. Therefore, these omitted values are not included in Table A-1. For example, multiple values imported for the exact same location result in an error in Leapfrog Geo so in these cases, only the highest values among the duplicates were retained. In the Data Source column of Table A-1, all data (except from Peterson, 2010, "Uranium in Sediment from FS-2 Test Pit, 618-1 Burial Ground Excavation") can be found in the Hanford Environmental Information System (HEIS). This column is intended to point out the particular entity (Washington Closure Hanford [WCH] or CH2M HILL Plateau Remediation Company [CHPRC]) or report from which the data can be referenced.

Soil concentrations of uranium-238 in pCi/g or µg/g were compiled from HEIS (accessed 02/15/2015), with the exception of the data from Peterson, 2010, which are based on the following primary reports for the 300 Area:

- DOE/RL-92-32, *Expedited Response Action Assessment for 316-5 Process Trenches* (Table A-1 label: WCH).
- BHI-01164, *300 Area Process Trenches Verification Package* (Table A-1 label: WCH).
- PNNL-17793, *Uranium Contamination in the 300 Area: Emergent Data and their Impact on the Source Term Conceptual Model* (Table A-1 label: PNNL-17793 Tables 5.11, 5.22 and 5.47).
- PNNL-16435, *Limited Field Investigation Report for Uranium Contamination in the 300-FF-5 Operable Unit at the 300 Area, Hanford Site, Washington* (Table A-1 label: PNNL-16435 Table D.2).
- PNNL-22032, *Uranium in Hanford Site 300 Area: Extraction Data on Borehole Sediments* (Table A-1 label: PNNL-22032).
- Unpublished post-record of decision field investigation sample data from borings C8933, 399-1-67, and 399-1-68 (Table A-1 label: Borehole Data Tracking Spreadsheet.xlsx).
- Data from Peterson, 2010, in the form of a letter report (Table A-1 label: 618-1_BurialGroundExcavation).
- Unpublished data at the time of modeling (now available in HEIS) obtained from characterization sampling at wells 399-1-76 and 399-1-80 during drilling activities for the Stage A Enhanced Attenuation Area (Table A-1 label: Borehole_Data_Tracking_Spreadsheet_399-1-76_&_80.xlsx and HEIS).
- Additional data were retrieved from HEIS based upon the proximity to the modeling area. These data may be documented in reports but for the purposes of this calculation, they are labeled according to the originator of the data. The originators are WCH and CHPRC, as labeled in Table A-1. All data points pulled from HEIS that are not associated with the reports listed in this appendix, WCH, or CHPRC have been labeled as HEIS.

A2 References

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Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
300 ASH PITS	B0L704	594366	115989	110.72	Uranium-238	0.45	pCi/g	8/13/1997	WCH	5	1.34	µg/g
300 ASH PITS	B0L705	594359	115947	112.8	Uranium-238	0.77	pCi/g	8/14/1997	WCH	5	2.29	µg/g
300 ASH PITS	B0L706	594315	115936	112.5	Uranium-238	0.73	pCi/g	8/14/1997	WCH	5	2.17	µg/g
300 ASH PITS	B0L707	594284	115946	110.54	Uranium-238	0.78	pCi/g	8/14/1997	WCH	5	2.32	µg/g
300 ASH PITS	B0L708	594250	115973	111.82	Uranium-238	0.82	pCi/g	8/14/1997	WCH	5	2.44	µg/g
300 ASH PITS	B0L709	594281	115978	110.06	Uranium-238	0.77	pCi/g	8/14/1997	WCH	5	2.29	µg/g
300-10	B0L944	594043	116569	111.02	Uranium-238	0.82	pCi/g	8/26/1997	WCH	5	2.44	µg/g
300-10	B0L945	594019	116569	112.62	Uranium-238	1.37	pCi/g	8/26/1997	WCH	5	4.07	µg/g
300-10	B0L959	594039	116572	112.12	Uranium-238	1.26	pCi/g	10/3/1997	WCH	5	3.75	µg/g
300-10	B0L961	594017	116573	112.67	Uranium-238	1.13	pCi/g	10/3/1997	WCH	5	3.36	µg/g
300-18	J036W6	593808.3	117042.1	112.85	Uranium-238	0	pCi/g	5/25/2005	WCH	5	0	µg/g
300-18	J036W7	593811.5	117039.9	112.45	Uranium-238	0.34	pCi/g	5/25/2005	WCH	5	1.01	µg/g
300-18	J036W8	593814.7	117046.3	112.66	Uranium-238	0.31	pCi/g	5/25/2005	WCH	5	0.92	µg/g
300-18	J036W9	593818.3	117042.8	112.6	Uranium-238	0.34	pCi/g	5/25/2005	WCH	5	1.01	µg/g
300-259	J19C15	594062.8	116189.4	115.01	Uranium-238	1.31	pCi/g	10/19/2009	WCH	5	3.89	µg/g
300-259	J19C16	594054.4	116203.8	115.03	Uranium-238	1.37	pCi/g	10/19/2009	WCH	5	4.07	µg/g
300-259	J19C17	594054.4	116232.7	114.91	Uranium-238	0.57	pCi/g	10/19/2009	WCH	5	1.69	µg/g
300-259	J19C18	594046.1	116247.1	114.95	Uranium-238	1.19	pCi/g	10/19/2009	WCH	5	3.54	µg/g
300-259	J19C19	594054.4	116261.5	114.71	Uranium-238	0.78	pCi/g	10/19/2009	WCH	5	2.32	µg/g
300-259	J19C20	594046.1	116275.9	114.58	Uranium-238	1.04	pCi/g	10/19/2009	WCH	5	3.09	µg/g
300-259	J19C21	594004.5	116290.3	115.27	Uranium-238	0.79	pCi/g	10/19/2009	WCH	5	2.35	µg/g
300-259	J19C22	594037.8	116290.3	114.52	Uranium-238	1.2	pCi/g	10/19/2009	WCH	5	3.57	µg/g
300-259	J19C23	594054.4	116290.3	114.36	Uranium-238	1.35	pCi/g	10/19/2009	WCH	5	4.01	µg/g
300-259	J19C24	594012.8	116304.7	114.09	Uranium-238	2.1	pCi/g	10/19/2009	WCH	5	6.24	µg/g
300-259	J19C25	594029.5	116304.7	114.08	Uranium-238	1.17	pCi/g	10/19/2009	WCH	5	3.48	µg/g
300-259	J19C26	594046.1	116304.7	114.06	Uranium-238	0.83	pCi/g	10/19/2009	WCH	5	2.47	µg/g
300-275	J17XW5	594293	116987.6	106.65	Uranium-238	0.4	pCi/g	11/19/2008	WCH	5	1.19	µg/g
300-275	J17XW6	594284.1	116972.9	107.42	Uranium-238	0.83	pCi/g	11/19/2008	WCH	5	2.47	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
300-275	J17XW7	594288.2	116965.4	107.05	Uranium-238	1.71	pCi/g	11/19/2008	WCH	5	5.08	µg/g
300-275	J17XW8	594301.3	116972.5	105.68	Uranium-238	1.33	pCi/g	11/19/2008	WCH	5	3.95	µg/g
300-275	J17XX0	594296.8	116965.2	105.27	Uranium-238	15.5	pCi/g	11/19/2008	WCH	5	46.07	µg/g
300-275	J17XX1	594292.3	116957.8	108.02	Uranium-238	0.96	pCi/g	11/19/2008	WCH	5	2.85	µg/g
300-275	J17XX2	594309.9	116972.3	104.24	Uranium-238	0.49	pCi/g	11/19/2008	WCH	5	1.46	µg/g
300-275	J17XX3	594305.4	116964.9	105.14	Uranium-238	0.39	pCi/g	11/19/2008	WCH	5	1.16	µg/g
300-275	J17XX4	594323	116979.4	105.75	Uranium-238	0.47	pCi/g	11/19/2008	WCH	5	1.4	µg/g
300-275	J17XX5	594318.5	116972.1	104.32	Uranium-238	0.63	pCi/g	11/19/2008	WCH	5	1.87	µg/g
300-275	J17XX6	594314	116964.7	107.19	Uranium-238	0.47	pCi/g	11/19/2008	WCH	5	1.4	µg/g
300-275	J17XX7	594327.1	116971.8	105.61	Uranium-238	1	pCi/g	11/19/2008	WCH	5	2.97	µg/g
300-275	J17XX8	594325.7	116875.9	107.32	Uranium-238	0.47	pCi/g	11/20/2008	WCH	5	1.4	µg/g
300-275	J17XX9	594328.9	116875.9	107.56	Uranium-238	0.76	pCi/g	11/20/2008	WCH	5	2.26	µg/g
300-275	J17XY0	594324.1	116878.6	107.24	Uranium-238	0.54	pCi/g	11/20/2008	WCH	5	1.61	µg/g
300-275	J17XY1	594327.3	116878.6	107.04	Uranium-238	0.63	pCi/g	11/20/2008	WCH	5	1.87	µg/g
300-275	J17XY2	594325.7	116881.3	107.65	Uranium-238	1.59	pCi/g	11/20/2008	WCH	5	4.73	µg/g
300-275	J17XY3	594328.9	116881.3	107.94	Uranium-238	1.79	pCi/g	11/20/2008	WCH	5	5.32	µg/g
300-275	J17XY4	594322.6	116886.8	107.32	Uranium-238	0.66	pCi/g	11/20/2008	WCH	5	1.96	µg/g
300-275	J17XY5	594325.7	116886.8	107.62	Uranium-238	1.35	pCi/g	11/20/2008	WCH	5	4.01	µg/g
300-275	J17XY6	594321	116889.6	107.61	Uranium-238	1.09	pCi/g	11/20/2008	WCH	5	3.24	µg/g
300-275	J17XY7	594324.1	116889.6	106.64	Uranium-238	0.89	pCi/g	11/20/2008	WCH	5	2.65	µg/g
300-44	B0M1V6	593847	116939	112.64	Uranium-238	0.24	pCi/g	9/25/1997	WCH	5	0.71	µg/g
300-44	B0M1V9	593847	116949	112.36	Uranium-238	0.29	pCi/g	9/25/1997	WCH	5	0.86	µg/g
300-45	B0L946	594050	116446	111.06	Uranium-238	1.18	pCi/g	9/22/1997	WCH	5	3.51	µg/g
300-45	B0L947	594055	116456	110.58	Uranium-238	1.2	pCi/g	9/22/1997	WCH	5	3.57	µg/g
300-49	B0Y6M6	594300	116810	109.96	Uranium-238	0.44	pCi/g	6/28/2000	WCH	5	1.31	µg/g
300-49	B0Y6M7	594300	116830	109.34	Uranium-238	0.64	pCi/g	6/28/2000	WCH	5	1.9	µg/g
300-49	B0Y6M8	594315	116830	108.69	Uranium-238	0.99	pCi/g	6/28/2000	WCH	5	2.94	µg/g
300-49	B0Y6M9	594295	116845	108.76	Uranium-238	1.32	pCi/g	6/28/2000	WCH	5	3.92	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
300-49	B0Y6P0	594285	116860	108.75	Uranium-238	0.36	pCi/g	6/28/2000	WCH	5	1.07	µg/g
300-49	B0Y6P1	594350	116875	107.76	Uranium-238	0.86	pCi/g	6/28/2000	WCH	5	2.56	µg/g
300-50	B0Y756	594230	116725	109.36	Uranium-238	4.76	pCi/g	7/5/2000	WCH	5	14.15	µg/g
300-50	B0Y758	594240	116725	109.38	Uranium-238	7.2	pCi/g	7/5/2000	WCH	5	21.4	µg/g
300-50	B0Y759	594170	116685	110.02	Uranium-238	6	pCi/g	7/5/2000	WCH	5	17.84	µg/g
300-50	B0Y770	594235	116695	109.81	Uranium-238	5.45	pCi/g	7/5/2000	WCH	5	16.2	µg/g
300-50	B0Y771	594220	116715	109.8	Uranium-238	10.5	pCi/g	7/5/2000	WCH	5	31.21	µg/g
300-50	B0Y772	594165	116745	110.65	Uranium-238	0.58	pCi/g	7/5/2000	WCH	5	1.72	µg/g
300-8	J03VD4	593875	116628.6	112.32	Uranium-238	0.77	pCi/g	7/27/2005	WCH	5	2.29	µg/g
300-8	J03VD5	593848.9	116609.4	112.51	Uranium-238	0.53	pCi/g	7/27/2005	WCH	5	1.58	µg/g
300-8	J03VD6	593807.2	116644.2	113.36	Uranium-238	0.38	pCi/g	7/27/2005	WCH	5	1.13	µg/g
300-8	J03VD7	593843.3	116666.1	113.26	Uranium-238	0.53	pCi/g	7/27/2005	WCH	5	1.58	µg/g
300-8	J03VD8	593827.9	116736	112.07	Uranium-238	0.65	pCi/g	7/27/2005	WCH	5	1.93	µg/g
300-8	J03VD9	593813.7	116727.2	113.6	Uranium-238	0.6	pCi/g	7/27/2005	WCH	5	1.78	µg/g
300-8	J03VF0	593765.8	116694.3	112.85	Uranium-238	0.62	pCi/g	7/27/2005	WCH	5	1.84	µg/g
300-8	J03VF1	593799.4	116597	112.8	Uranium-238	0.69	pCi/g	7/27/2005	WCH	5	2.05	µg/g
300-8	J03VF2	593801.7	116578.9	113.94	Uranium-238	0.42	pCi/g	7/28/2005	WCH	5	1.25	µg/g
300-8	J03VF3	593771.8	116565.7	112.97	Uranium-238	0.62	pCi/g	7/28/2005	WCH	5	1.84	µg/g
300-8	J03VF4	593828.6	116526.1	114.18	Uranium-238	0.31	pCi/g	7/28/2005	WCH	5	0.92	µg/g
300-8	J03VF5	593877.5	116437	114.79	Uranium-238	1.19	pCi/g	7/28/2005	WCH	5	3.54	µg/g
300-8	J03VF6	593883.7	116385	112.21	Uranium-238	0.99	pCi/g	7/28/2005	WCH	5	2.94	µg/g
300-8	J03VF7	593902.4	116342.7	113.89	Uranium-238	1.47	pCi/g	7/28/2005	WCH	5	4.37	µg/g
300-8	J03VF8	593885.5	116513.6	112.72	Uranium-238	0.84	pCi/g	7/28/2005	WCH	5	2.5	µg/g
300-8	J03VF9	593946.3	116462.5	112.29	Uranium-238	0.29	pCi/g	7/28/2005	WCH	5	0.86	µg/g
C9735	B3P4K2	594185.1	116479.4	110.25	Uranium	175000	µg/kg	3/26/2019	HEIS	4.57	175	µg/g
C9729	B3P4F6	594203.5	116471.9	111.88	Uranium	158000	µg/kg	3/25/2019	HEIS	3.05	158	µg/g
C9731	B3P2R5	594206.9	116498.6	107.89	Uranium	33000	µg/kg	3/21/2019	HEIS	6.86	33	µg/g
316-1	B0R3R1	594243	116057	109.98	Uranium-238	48	pCi/g	12/17/1998	WCH	5	142.68	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
316-1	B0R3R4	594242	116031	110	Uranium-238	16	pCi/g	12/17/1998	WCH	5	47.56	µg/g
316-1	B0R3R5	594235	116027	109.93	Uranium-238	31	pCi/g	12/17/1998	WCH	5	92.15	µg/g
316-1	B0R3R6	594264	116021	109.84	Uranium-238	23	pCi/g	12/17/1998	WCH	5	68.37	µg/g
316-1	B0R3R7	594303	116116	109.95	Uranium-238	15	pCi/g	12/17/1998	WCH	5	44.59	µg/g
316-1	B0R3R8	594288	116133	109.87	Uranium-238	16	pCi/g	12/17/1998	WCH	5	47.56	µg/g
316-1	B0R3R9	594299	116156	109.91	Uranium-238	20	pCi/g	12/17/1998	WCH	5	59.45	µg/g
316-1	B0R3T0	594315	116162	109.79	Uranium-238	22	pCi/g	12/17/1998	WCH	5	65.4	µg/g
316-1	B0R3T1	594290	116173	109.83	Uranium-238	12	pCi/g	12/17/1998	WCH	5	35.67	µg/g
316-1	B0YNM1	594266	116077	109.92	Uranium-238	21.7	pCi/g	7/13/2000	WCH	5	64.5	µg/g
316-1	B0YNM2	594288	116186	109.76	Uranium-238	31.1	pCi/g	7/13/2000	WCH	5	92.45	µg/g
316-1	B0YNM3	594251	116133	109.85	Uranium-238	1.04	pCi/g	7/13/2000	WCH	5	3.09	µg/g
316-1	B0YNM4	594213	116033	110.03	Uranium-238	2.25	pCi/g	7/13/2000	WCH	5	6.69	µg/g
316-1	B0YNM5	594330	116075	109.66	Uranium-238	3.17	pCi/g	7/13/2000	WCH	5	9.42	µg/g
316-1	B0YNM6	594326	116081	109.72	Uranium-238	15.5	pCi/g	7/13/2000	WCH	5	46.07	µg/g
316-1	B0YNM7	594371	116044	109.59	Uranium-238	2.11	pCi/g	7/13/2000	WCH	5	6.27	µg/g
316-1	B0YNM8	594424	116025	109.6	Uranium-238	2.57	pCi/g	7/13/2000	WCH	5	7.64	µg/g
316-1	B0YNM9	594280	116076	109.91	Uranium-238	14.5	pCi/g	7/13/2000	WCH	5	43.1	µg/g
316-1	B0YNN0	594416	116145	109.49	Uranium-238	6.49	pCi/g	7/13/2000	WCH	5	19.29	µg/g
316-1	B0YNN1	594203	116066	109.99	Uranium-238	3.12	pCi/g	7/14/2000	WCH	5	9.27	µg/g
316-1	B0YNN2	594203	116132	109.97	Uranium-238	11.9	pCi/g	7/14/2000	WCH	5	35.37	µg/g
316-1	B0YNN3	594235	116109	109.89	Uranium-238	2.21	pCi/g	7/14/2000	WCH	5	6.57	µg/g
316-1	B0YNN4	594218	116142	109.88	Uranium-238	4.94	pCi/g	7/14/2000	WCH	5	14.68	µg/g
316-1	B0YNN5	594219	116175	109.8	Uranium-238	15.5	pCi/g	7/14/2000	WCH	5	46.07	µg/g
316-1	B0YNN6	594190	116152	109.96	Uranium-238	28.9	pCi/g	7/14/2000	WCH	5	85.91	µg/g
316-1	B0YNN7	594179	116155	109.9	Uranium-238	1.72	pCi/g	7/14/2000	WCH	5	5.11	µg/g
316-1	B0YNN8	594206	116102	110.07	Uranium-238	9.33	pCi/g	7/14/2000	WCH	5	27.73	µg/g
316-1	B0YNN9	594220	116087	110.07	Uranium-238	8.85	pCi/g	7/14/2000	WCH	5	26.31	µg/g
316-1	B0YNP0	594214	116111	110.15	Uranium-238	8.72	pCi/g	7/14/2000	WCH	5	25.92	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
C9728	B3P2J5	594164	116446.2	108.6	Uranium	5420	µg/kg	3/25/2019	HEIS	6.48	5.42	µg/g
C9728	B3P2J9	594164	116446.2	107.84	Uranium	1620	µg/kg	3/25/2019	HEIS	7.24	1.62	µg/g
C9728	B3P2K3	594164	116446.2	107.08	Uranium	1310	µg/kg	3/25/2019	HEIS	8	1.31	µg/g
C9729	B3P2L5	594203.5	116471.9	108.45	Uranium	13100	µg/kg	3/25/2019	HEIS	6.48	13.1	µg/g
C9729	B3P2L9	594203.5	116471.9	107.69	Uranium	113000	µg/kg	3/25/2019	HEIS	7.24	113	µg/g
C9729	B3P2M3	594203.5	116471.9	106.93	Uranium	56400	µg/kg	3/25/2019	HEIS	8	56.4	µg/g
C9729	B3P2M7	594203.5	116471.9	106.17	Uranium	9130	µg/kg	3/25/2019	HEIS	8.76	9.13	µg/g
C9729	B3P2N1	594203.5	116471.9	105.41	Uranium	20000	µg/kg	3/25/2019	HEIS	9.53	20	µg/g
C9729	B3P431	594203.5	116471.9	105.41	Uranium	23300	µg/kg	3/25/2019	HEIS	9.53	23.3	µg/g
C9730	B3P2N5	594230.6	116485.3	108.41	Uranium	10900	µg/kg	3/25/2019	HEIS	6.48	10.9	µg/g
C9730	B3P2N9	594230.6	116485.3	107.65	Uranium	24400	µg/kg	3/25/2019	HEIS	7.24	24.4	µg/g
C9730	B3P2P3	594230.6	116485.3	106.89	Uranium	11500	µg/kg	3/25/2019	HEIS	8	11.5	µg/g
C9730	B3P2P7	594230.6	116485.3	106.13	Uranium	12300	µg/kg	3/25/2019	HEIS	8.76	12.3	µg/g
C9730	B3P2R1	594230.6	116485.3	105.37	Uranium	16900	µg/kg	3/25/2019	HEIS	9.53	16.9	µg/g
316-2	B0L633	594182.5	116677	109.9	Uranium-238	23.8	pCi/g	6/26/1997	WCH	5	70.75	µg/g
316-2	B0L635	594191	116658	109.72	Uranium-238	36.8	pCi/g	6/26/1997	WCH	5	109.39	µg/g
316-2	B0L636	594242.5	116704.5	109.64	Uranium-238	7.21	pCi/g	7/2/1997	WCH	5	21.43	µg/g
316-2	B0L649	594335	116641	109.54	Uranium-238	0.92	pCi/g	7/30/1997	WCH	5	2.73	µg/g
316-2	B0L650	594350	116559.5	109.54	Uranium-238	4.24	pCi/g	7/31/1997	WCH	5	12.6	µg/g
316-2	B0L648	594325	116480	109.59	Uranium-238	1.52	pCi/g	8/8/1997	WCH	5	4.52	µg/g
316-2	B0V024	594195	116582	109.66	Uranium-238	15	pCi/g	3/12/1999	WCH	5	44.59	µg/g
316-2	B0V025	594180	116575	109.77	Uranium-238	17.8	pCi/g	3/12/1999	WCH	5	52.91	µg/g
316-2	B0V026	594213	116605	109.68	Uranium-238	4.09	pCi/g	3/12/1999	WCH	5	12.16	µg/g
316-2	B0V027	594201	116489	109.76	Uranium-238	79	pCi/g	3/12/1999	WCH	5	234.83	µg/g
316-2	B0V028	594142	116619	109.9	Uranium-238	2.98	pCi/g	3/12/1999	WCH	5	8.86	µg/g
316-2	B0V029	594185	116629	109.83	Uranium-238	11.9	pCi/g	3/12/1999	WCH	5	35.37	µg/g
316-2	B0V030	594233	116587	109.66	Uranium-238	101	pCi/g	3/12/1999	WCH	5	300.23	µg/g
316-2	B0V031	594258	116561	109.69	Uranium-238	43.7	pCi/g	3/12/1999	WCH	5	129.9	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
316-2	B0V032	594289	116582	109.71	Uranium-238	34.9	pCi/g	3/12/1999	WCH	5	103.74	µg/g
316-2	B0V033	594343	116517	109.54	Uranium-238	35.2	pCi/g	3/12/1999	WCH	5	104.63	µg/g
316-2	B0V034	594250	116511	109.7	Uranium-238	119	pCi/g	3/12/1999	WCH	5	353.74	µg/g
316-2	B0V035	594226	116541	109.74	Uranium-238	66.1	pCi/g	3/12/1999	WCH	5	196.49	µg/g
C9730	B3P437	594230.6	116485.3	105.37	Uranium	22100	µg/kg	3/25/2019	HEIS	9.53	22.1	µg/g
C9731	B3P2T3	594206.9	116498.6	106.75	Uranium	45800	µg/kg	3/21/2019	HEIS	8	45.8	µg/g
C9731	B3P2T7	594206.9	116498.6	105.99	Uranium	9310	µg/kg	3/21/2019	HEIS	8.76	9.31	µg/g
C9731	B3P2V1	594206.9	116498.6	105.23	Uranium	22100	µg/kg	3/21/2019	HEIS	9.53	22.1	µg/g
C9731	B3P443	594206.9	116498.6	105.23	Uranium	24000	µg/kg	3/21/2019	HEIS	9.53	24	µg/g
C9733	B3P2X5	594180.9	116484.8	108.3	Uranium	12600	µg/kg	3/20/2019	HEIS	6.48	12.6	µg/g
C9733	B3P2X9	594180.9	116484.8	107.54	Uranium	7680	µg/kg	3/20/2019	HEIS	7.24	7.68	µg/g
C9733	B3P2Y3	594180.9	116484.8	106.78	Uranium	22300	µg/kg	3/20/2019	HEIS	8	22.3	µg/g
316-5	B0M4N1	594091	116451	114.8	Uranium-238	45.2	pCi/g	10/7/1997	WCH	0.3	134.36	µg/g
316-5	B0M4N4	594076	116451	114.93	Uranium-238	32.3	pCi/g	10/7/1997	WCH	0.3	96.01	µg/g
316-5	B0L950	594076	116930	113.56	Uranium-238	5.38	pCi/g	11/12/1997	WCH	0.3	15.99	µg/g
316-5	B0L952	594044	116913	112.57	Uranium-238	3.28	pCi/g	11/12/1997	WCH	0.3	9.75	µg/g
316-5	B0L953	594028	116910	112.96	Uranium-238	0.71	pCi/g	11/12/1997	WCH	0.3	2.11	µg/g
316-5	B0L954	594012	116879	113.06	Uranium-238	119	pCi/g	11/12/1997	WCH	0.3	353.74	µg/g
316-5	B0L955	594025	116874	113.05	Uranium-238	103	pCi/g	11/12/1997	WCH	0.3	306.17	µg/g
316-5	B0L956	594088	116880	112.78	Uranium-238	41.2	pCi/g	11/12/1997	WCH	0.3	122.47	µg/g
316-5	B0L963	594070	116816	113.52	Uranium-238	27.2	pCi/g	11/13/1997	WCH	0.3	80.85	µg/g
316-5	B0MD75	594088	116918	112.68	Uranium-238	74.7	pCi/g	11/13/1997	WCH	0.3	222.05	µg/g
316-5	B0MD78	594070	116840	113.52	Uranium-238	74.7	pCi/g	11/13/1997	WCH	0.3	222.05	µg/g
316-5	B0MDK0	594088	116836	112.85	Uranium-238	34.8	pCi/g	11/13/1997	WCH	0.3	103.45	µg/g
316-5	B0MDK3	594088	116882	112.79	Uranium-238	22	pCi/g	11/13/1997	WCH	0.3	65.4	µg/g
316-5	B0N1R4	594070	116857	113.09	Uranium-238	55.6	pCi/g	2/3/1998	WCH	0.3	165.27	µg/g
C9733	B3P2Y7	594180.9	116484.8	106.02	Uranium	15400	µg/kg	3/20/2019	HEIS	8.76	15.4	µg/g
C9733	B3P301	594180.9	116484.8	105.26	Uranium	7350	µg/kg	3/20/2019	HEIS	9.53	7.35	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
C9733	B3P455	594180.9	116484.8	105.26	Uranium	6130	µg/kg	3/20/2019	HEIS	9.53	6.13	µg/g
C9734	B3P305	594189.2	116489.5	108.39	Uranium	34900	µg/kg	3/20/2019	HEIS	6.48	34.9	µg/g
C9734	B3P309	594189.2	116489.5	107.63	Uranium	15100	µg/kg	3/20/2019	HEIS	7.24	15.1	µg/g
C9734	B3P313	594189.2	116489.5	106.87	Uranium	24400	µg/kg	3/20/2019	HEIS	8	24.4	µg/g
C9736	B3P345	594228.6	116543.6	108.28	Uranium	2260	µg/kg	3/21/2019	HEIS	6.48	2.26	µg/g
C9736	B3P349	594228.6	116543.6	107.52	Uranium	9540	µg/kg	3/21/2019	HEIS	7.24	9.54	µg/g
C9736	B3P353	594228.6	116543.6	106.76	Uranium	10700	µg/kg	3/21/2019	HEIS	8	10.7	µg/g
331 LSLDF	J134V6	594640	115369	110.65	Uranium-238	0.46	pCi/g	4/18/2007	WCH	5	1.37	µg/g
331 LSLDF	J134V8	594640	115359	110.83	Uranium-238	0.47	pCi/g	4/19/2007	WCH	5	1.4	µg/g
C9736	B3P357	594228.6	116543.6	106	Uranium	1700	µg/kg	3/21/2019	HEIS	8.76	1.7	µg/g
C9736	B3P361	594228.6	116543.6	105.24	Uranium	2110	µg/kg	3/21/2019	HEIS	9.53	2.11	µg/g
C9736	B3P473	594228.6	116543.6	105.24	Uranium	2390	µg/kg	3/21/2019	HEIS	9.53	2.39	µg/g
C9728	B3P2K7	594164	116446.2	106.32	Uranium	62800	µg/kg	3/25/2019	HEIS	8.76	62.8	µg/g
C9728	B3P2L1	594164	116446.2	105.56	Uranium	114000	µg/kg	3/25/2019	HEIS	9.53	114	µg/g
C9728	B3P425	594164	116446.2	105.56	Uranium	62100	µg/kg	3/25/2019	HEIS	9.53	62.1	µg/g
C9732	B3P2V5	594088.9	116512.8	108.15	Uranium	13600	µg/kg	3/26/2019	HEIS	6.48	13.6	µg/g
C9732	B3P2V9	594088.9	116512.8	107.39	Uranium	5110	µg/kg	3/26/2019	HEIS	7.24	5.11	µg/g
C9732	B3P2W3	594088.9	116512.8	106.63	Uranium	6100	µg/kg	3/26/2019	HEIS	8	6.1	µg/g
C9732	B3P2W7	594088.9	116512.8	105.87	Uranium	11200	µg/kg	3/26/2019	HEIS	8.76	11.2	µg/g
C9732	B3P2X1	594088.9	116512.8	105.11	Uranium	4820	µg/kg	3/26/2019	HEIS	9.53	4.82	µg/g
C9732	B3P449	594088.9	116512.8	105.11	Uranium	4190	µg/kg	3/26/2019	HEIS	9.53	4.19	µg/g
C9735	B3P325	594185.1	116479.4	108.34	Uranium	26800	µg/kg	3/26/2019	HEIS	6.48	26.8	µg/g
C9735	B3P329	594185.1	116479.4	107.58	Uranium	70600	µg/kg	3/26/2019	HEIS	7.24	70.6	µg/g
C9735	B3P333	594185.1	116479.4	106.82	Uranium	54200	µg/kg	3/26/2019	HEIS	8	54.2	µg/g
C9735	B3P337	594185.1	116479.4	106.06	Uranium	7680	µg/kg	3/26/2019	HEIS	8.76	7.68	µg/g
C9735	B3P341	594185.1	116479.4	105.3	Uranium	13500	µg/kg	3/26/2019	HEIS	9.53	13.5	µg/g
C9735	B3P467	594185.1	116479.4	105.3	Uranium	31200	µg/kg	3/26/2019	HEIS	9.53	31.2	µg/g
C9734	B3P321	594189.2	116489.5	105.33	Uranium	23900	µg/kg	3/20/2019	HEIS	9.54	23.9	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
C9734	B3P461	594189.2	116489.5	105.33	Uranium	25400	µg/kg	3/20/2019	HEIS	9.54	25.4	µg/g
C9734	B3P317	594189.2	116489.5	106.09	Uranium	14000	µg/kg	3/20/2019	HEIS	8.78	14	µg/g
C9731	B3P2R9	594206.9	116498.6	107.13	Uranium	63100	µg/kg	3/21/2019	HEIS	7.62	63.1	µg/g
399-1-55	B27DL7	594152.3	116487.3	97.74	U-238	0.44	pCi/g	N/A	HEIS	17.15	1.307931	µg/g
399-1-55	B27DL5	594152.3	116487.3	94.03	U-238	0.29	pCi/g	N/A	HEIS	20.86	0.862046	µg/g
399-1-55	B27DL6	594152.3	116487.3	80.83	U-238	0.43	pCi/g	N/A	HEIS	34.06	1.278206	µg/g
399-1-23	C5000-36A	594113.5	116453	112.12	N/A	0.64	pCi/g	N/A	pnnl16435_TableD2	3.35	1.902445	µg/g
399-1-23	C5000-36E	594113.5	116453	111.81	N/A	0.7	pCi/g	N/A	pnnl16435_TableD2	3.66	2.0808	µg/g
399-1-23	C5000-37A	594113.5	116453	111.51	N/A	0.63	pCi/g	N/A	pnnl16435_TableD2	3.96	1.87272	µg/g
399-1-23	C5000-38B	594113.5	116453	109.37	N/A	1.12	pCi/g	N/A	pnnl16435_TableD2	6.1	3.33	µg/g
399-1-23	C5000-38C	594113.5	116453	109.07	N/A	2.24	pCi/g	N/A	pnnl16435_TableD2	6.4	6.66	µg/g
399-1-23	C5000-39B	594113.5	116453	108.46	N/A	5.03	pCi/g	N/A	pnnl16435_TableD2	7.01	14.95	µg/g
399-1-23	C5000-39D	594113.5	116453	107.85	N/A	1.48	pCi/g	N/A	pnnl16435_TableD2	7.62	4.4	µg/g
399-1-23	C5000-40A	594113.5	116453	106.33	N/A	2.31	pCi/g	N/A	pnnl16435_TableD2	9.14	6.87	µg/g
399-1-23	C5000-40B	594113.5	116453	106.02	N/A	0.83	pCi/g	N/A	pnnl16435_TableD2	9.45	2.47	µg/g
399-1-23	C5000-40C	594113.5	116453	105.72	N/A	1.19	pCi/g	N/A	pnnl16435_TableD2	9.75	3.53736	µg/g
399-1-23	C5000-40E	594113.5	116453	105.11	N/A	0.38	pCi/g	N/A	pnnl16435_TableD2	10.36	1.129577	µg/g
399-1-23	C5000-41B	594113.5	116453	104.8	N/A	1	pCi/g	N/A	pnnl16435_TableD2	10.67	2.972571	µg/g
399-1-23	C5000-41C	594113.5	116453	104.5	N/A	1.05	pCi/g	N/A	pnnl16435_TableD2	10.97	3.1212	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-23	C5000-41E	594113.5	116453	103.89	N/A	1.18	pCi/g	N/A	pnnl16435_TableD2	11.58	3.507634	µg/g
399-1-23	C5000-43A	594113.5	116453	102.06	N/A	0.89	pCi/g	N/A	pnnl16435_TableD2	13.41	2.645588	µg/g
399-1-23	C5000-44E	594113.5	116453	100.23	N/A	1.19	pCi/g	N/A	pnnl16435_TableD2	15.24	3.53736	µg/g
399-1-23	C5000-45B	594113.5	116453	99.32	N/A	1.15	pCi/g	N/A	pnnl16435_TableD2	16.15	3.418457	µg/g
399-1-23	C5000-45C	594113.5	116453	99.01	N/A	1.47	pCi/g	N/A	pnnl16435_TableD2	16.46	4.369679	µg/g
399-1-23	C5000-45D	594113.5	116453	98.71	N/A	1.23	pCi/g	N/A	pnnl16435_TableD2	16.76	3.656262	µg/g
399-1-23	C5000-46D	594113.5	116453	97.49	N/A	0.46	pCi/g	N/A	pnnl16435_TableD2	17.98	1.367383	µg/g
399-1-23	C5000-47C	594113.5	116453	96.72	N/A	0.59	pCi/g	N/A	pnnl16435_TableD2	18.75	1.753817	µg/g
399-1-23	C5000-48E	594113.5	116453	95.35	N/A	0.7	pCi/g	N/A	pnnl16435_TableD2	20.12	2.0808	µg/g
399-1-23	C5000-50B	594113.5	116453	93.83	N/A	0.88	pCi/g	N/A	pnnl16435_TableD2	21.64	2.615863	µg/g
399-1-23	C5000-51E	594113.5	116453	92	N/A	0.5	pCi/g	N/A	pnnl16435_TableD2	23.47	1.486286	µg/g
399-1-106	B38T63	594243.8	116591.3	109.05	Uranium	952	µg/kg	2/17/2017	HEIS	5.79	0.95	µg/g
399-1-111	B38BM6	594236.8	116564.8	108.35	Uranium	1820	µg/kg	2/28/2017	HEIS	6.48	1.82	µg/g
399-1-111	B38BM9	594236.8	116564.8	107.59	Uranium	2860	µg/kg	2/28/2017	HEIS	7.24	2.86	µg/g
399-1-111	B38BN8	594236.8	116564.8	106.07	Uranium	1440	µg/kg	2/28/2017	HEIS	8.76	1.44	µg/g
399-1-111	B38BP1	594236.8	116564.8	105.31	Uranium	1280	µg/kg	2/28/2017	HEIS	9.53	1.28	µg/g
399-1-111	B38BN5	594236.8	116564.8	106.83	Uranium	3020	µg/kg	2/28/2017	HEIS	8	3.02	µg/g
399-1-98	B389W5	594247.4	116547.8	108.25	Uranium	3600	µg/kg	3/17/2017	HEIS	6.48	3.6	µg/g
399-1-54	B25C44	594273.9	116643	111.3835	Uranium-238	2.65	pCi/g	9/21/2010	WCH	3.26	7.877313	µg/g
399-1-54	B25C45	594273.9	116643	110.683	Uranium-238	3.91	pCi/g	9/21/2010	WCH	3.96	11.62275	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-54	B25C46	594273.9	116643	109.8595	Uranium-238	2.04	pCi/g	9/21/2010	WCH	4.79	6.064045	µg/g
399-1-54	B25C47	594273.9	116643	109.1735	Uranium-238	2.51	pCi/g	9/21/2010	WCH	5.47	7.5	µg/g
399-1-54	B25C48	594273.9	116643	108.366	Uranium-238	1.5	pCi/g	9/21/2010	WCH	6.28	4.458857	µg/g
399-1-54	B25C49	594273.9	116643	107.7415	Uranium-238	1.72	pCi/g	9/22/2010	WCH	6.9	5.112822	µg/g
399-1-54	B25C51	594273.9	116643	106.0195	Uranium-238	0.809	pCi/g	11/10/2010	WCH	8.63	2.40481	µg/g
399-1-54	B28302	594273.9	116643	103.295	Uranium-238	0.95	pCi/g	11/10/2010	CHPRC	11.35	2.823942	µg/g
399-1-54	B28305	594273.9	116643	93.475	Uranium-238	0.14	pCi/g	11/12/2010	CHPRC	21.17	0.41616	µg/g
399-1-98	B389X4	594247.4	116547.8	106.72	Uranium	2800	µg/kg	3/17/2017	HEIS	8	2.8	µg/g
399-1-98	B389W8	594247.4	116547.8	107.48	Uranium	3720	µg/kg	3/17/2017	HEIS	7.24	3.72	µg/g
399-1-54	N/A	594273.9	116643	111.1462	Uranium-238	N/A	µg/g	N/A	PNNL-22032	3.41	7.88	µg/g
399-1-54	N/A	594273.9	116643	110.5366	Uranium-238	N/A	µg/g	N/A	PNNL-22032	4.02	11.63	µg/g
399-1-54	N/A	594273.9	116643	109.6832	Uranium-238	N/A	µg/g	N/A	PNNL-22032	4.88	6.07	µg/g
399-1-54	N/A	594273.9	116643	109.226	Uranium-238	N/A	µg/g	N/A	PNNL-22032	5.33	1.43	µg/g
399-1-54	N/A	594273.9	116643	108.9212	Uranium-238	N/A	µg/g	N/A	PNNL-22032	5.64	7.47	µg/g
399-1-54	N/A	594273.9	116643	108.0982	Uranium-238	N/A	µg/g	N/A	PNNL-22032	6.46	4.46	µg/g
399-1-54	N/A	594273.9	116643	106.0256	Uranium-238	N/A	µg/g	N/A	PNNL-22032	8.53	1.11	µg/g
399-1-55	B27F39	594152.3	116487.3	111.4405	Uranium-238	0.605	pCi/g	8/20/2010	WCH	3.44	1.798405	µg/g
399-1-55	B27F40	594152.3	116487.3	110.724	Uranium-238	5.45	pCi/g	8/20/2010	WCH	4.16	16.20051	µg/g
399-1-55	B27F41	594152.3	116487.3	109.8405	Uranium-238	7.15	pCi/g	8/20/2010	WCH	5.04	21.25388	µg/g
399-1-55	B27F42	594152.3	116487.3	109.14	Uranium-238	9.26	pCi/g	8/20/2010	WCH	5.75	27.52601	µg/g
399-1-55	B27F43	594152.3	116487.3	108.469	Uranium-238	9.2	pCi/g	8/20/2010	WCH	6.42	27.34765	µg/g
399-1-55	B27F44	594152.3	116487.3	107.676	Uranium-238	38.6	pCi/g	8/20/2010	WCH	7.21	114.7412	µg/g
399-1-55	B27F46	594152.3	116487.3	106.823	Uranium-238	33.2	pCi/g	8/20/2010	WCH	8.06	98.68936	µg/g
399-1-55	B27F47	594152.3	116487.3	106.061	Uranium-238	21	pCi/g	8/23/2010	WCH	8.82	62.42399	µg/g
399-1-55	B27F48	594152.3	116487.3	105.3445	Uranium-238	13.5	pCi/g	8/23/2010	WCH	9.54	40.12971	µg/g
399-1-55	B27F45	594152.3	116487.3	104.627	Uranium-238	16.7	pCi/g	8/23/2010	WCH	10.26	49.64194	µg/g
399-1-55	B27F50	594152.3	116487.3	103.865	Uranium-238	9.25	pCi/g	8/23/2010	WCH	11.02	27.49628	µg/g
399-1-55	B27DL7	594152.3	116487.3	97.74	Uranium-238	0.44	pCi/g	8/24/2010	CHPRC	17.15	1.307931	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-55	B27DL5	594152.3	116487.3	94.025	Uranium-238	0.29	pCi/g	8/24/2010	CHPRC	20.86	0.862046	µg/g
399-1-55	B27DL6	594152.3	116487.3	80.825	Uranium-238	0.43	pCi/g	8/26/2010	CHPRC	34.06	1.278206	µg/g
399-1-98	B389Y0	594247.4	116547.8	105.96	Uranium	1870	µg/kg	3/17/2017	HEIS	8.76	1.87	µg/g
399-1-98	B389Y3	594247.4	116547.8	105.2	Uranium	2050	µg/kg	3/17/2017	HEIS	9.53	2.05	µg/g
399-1-114	B38T81	594223.1	116548.7	109.18	Uranium	2260	µg/kg	3/29/2017	HEIS	5.64	2.26	µg/g
399-1-55	N/A	594152.1	116487.4	106.959	Uranium-238	N/A	µg/g	N/A	PNNL-22032	7.68	74.8	µg/g
399-1-55	N/A	594152.1	116487.4	105.496	Uranium-239	N/A	µg/g	N/A	PNNL-22032	9.14	38.1	µg/g
399-1-55	N/A	594152.1	116487.4	103.972	Uranium-240	N/A	µg/g	N/A	PNNL-22032	10.67	28	µg/g
399-1-55	N/A	594152.1	116487.4	102.7528	Uranium-241	N/A	µg/g	N/A	PNNL-22032	11.89	13.3	µg/g
399-1-56	B27KN6	594090.9	116725.3	111.3565	Uranium-238	1.1	pCi/g	9/13/2010	WCH	3.32	3.269828	µg/g
399-1-56	B27KN7	594090.9	116725.3	110.6095	Uranium-238	0.741	pCi/g	9/13/2010	WCH	4.07	2.202675	µg/g
399-1-56	B27KN8	594090.9	116725.3	109.9245	Uranium-238	0.822	pCi/g	9/13/2010	WCH	4.75	2.443453	µg/g
399-1-56	B27KN9	594090.9	116725.3	109.025	Uranium-238	4.58	pCi/g	9/13/2010	WCH	5.65	13.61438	µg/g
399-1-56	B27KP1	594090.9	116725.3	108.141	Uranium-238	4.51	pCi/g	9/13/2010	WCH	6.54	13.4063	µg/g
399-1-56	B27KP3	594090.9	116725.3	107.4245	Uranium-238	3.7	pCi/g	9/13/2010	WCH	7.25	10.99851	µg/g
399-1-56	B27KP4	594090.9	116725.3	106.754	Uranium-238	3.52	pCi/g	9/13/2010	WCH	7.93	10.46345	µg/g
399-1-56	B27K66	594090.9	116725.3	104.361	Uranium-238	0.54	pCi/g	9/14/2010	CHPRC	10.32	1.605188	µg/g
399-1-56	B27K69	594090.9	116725.3	97.169	Uranium-238	0.62	pCi/g	9/17/2010	CHPRC	17.51	1.842994	µg/g
399-1-57	B261D6	594382	116353.7	104.31	U-238	0.32	pCi/g	N/A	HEIS	10.44	0.951223	µg/g
399-1-57	B261D7	594382	116353.7	99.59	U-238	0.36	pCi/g	N/A	HEIS	15.16	1.070126	µg/g
399-1-56	N/A	594090.9	116725.3	104.1115	Uranium-238	N/A	µg/g	N/A	PNNL-22032	10.7	1.8	µg/g
399-1-56	N/A	594090.9	116725.3	109.6284	Uranium-239	N/A	µg/g	N/A	PNNL-22032	5.18	3.9	µg/g
399-1-56	N/A	594090.9	116725.3	108.775	Uranium-240	N/A	µg/g	N/A	PNNL-22032	6.04	12.48	µg/g
399-1-56	N/A	594090.9	116725.3	107.7996	Uranium-241	N/A	µg/g	N/A	PNNL-22032	7.01	4.74	µg/g
399-1-56	N/A	594090.9	116725.3	105.666	Uranium-242	N/A	µg/g	N/A	PNNL-22032	9.14	3.57	µg/g
399-1-57	B25DM5	594382	116353.7	111.013	Uranium-238	0.377	pCi/g	8/9/2010	WCH	3.73	1.120659	µg/g
399-1-57	B25DM6	594382	116353.7	110.251	Uranium-238	0.423	pCi/g	8/9/2010	WCH	4.5	1.257398	µg/g
399-1-57	B25DM7	594382	116353.7	109.489	Uranium-238	0.239	pCi/g	8/9/2010	WCH	5.26	0.710444	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-57	B25DM8	594382	116353.7	108.727	Uranium-238	0.546	pCi/g	8/9/2010	WCH	6.02	1.623024	µg/g
399-1-57	B25DM9	594382	116353.7	107.965	Uranium-238	0.37	pCi/g	8/9/2010	WCH	6.78	1.099851	µg/g
399-1-57	B25DN0	594382	116353.7	107.203	Uranium-238	0.678	pCi/g	8/10/2010	WCH	7.54	2.015403	µg/g
399-1-57	B25DN1	594382	116353.7	106.441	Uranium-238	0.564	pCi/g	8/10/2010	WCH	8.31	1.68	µg/g
399-1-57	B25DN2	594382	116353.7	105.8315	Uranium-238	0.823	pCi/g	8/10/2010	WCH	8.92	2.45	µg/g
399-1-57	B25DN3	594382	116353.7	105.1455	Uranium-238	0.638	pCi/g	8/10/2010	WCH	9.6	1.9	µg/g
399-1-57	B261D6	594382	116353.7	104.307	Uranium-238	0.32	pCi/g	8/10/2010	CHPRC	10.44	0.95	µg/g
399-1-57	B261D7	594382	116353.7	99.587	Uranium-238	0.36	pCi/g	8/11/2010	CHPRC	15.16	1.07	µg/g
399-1-57	B261D8	594382	116353.7	93.547	Uranium-238	0.57	pCi/g	8/12/2010	CHPRC	21.2	1.694365	µg/g
399-1-57	B276T9	594382	116353.7	79.0075	Uranium-238	0.31	pCi/g	8/18/2010	CHPRC	35.74	0.921497	µg/g
399-1-57	B261D8	594382	116353.7	93.55	U-238	0.57	pCi/g	N/A	HEIS	21.2	1.694365	µg/g
399-1-57	B276T9	594382	116353.7	79.01	U-238	0.31	pCi/g	N/A	HEIS	35.74	0.921497	µg/g
399-1-115	B38T75	594224.2	116536.6	110.54	Uranium	5760	µg/kg	4/4/2017	HEIS	4.27	5.76	µg/g
399-1-115	B38T72	594224.2	116536.6	110.84	Uranium	85500	µg/kg	4/6/2017	HEIS	3.96	85.5	µg/g
399-1-57	N/A	594382	116353.7	110.82	Uranium-238	N/A	µg/g	N/A	PNNL-22032	3.81	1.18	µg/g
399-1-57	N/A	594382	116353.7	109.7532	Uranium-238	N/A	µg/g	N/A	PNNL-22032	4.88	1.26	µg/g
399-1-57	N/A	594382	116353.7	108.2292	Uranium-238	N/A	µg/g	N/A	PNNL-22032	6.4	1.62	µg/g
399-1-57	N/A	594382	116353.7	106.7052	Uranium-238	N/A	µg/g	N/A	PNNL-22032	7.92	2.02	µg/g
399-1-57	N/A	594382	116353.7	105.486	Uranium-238	N/A	µg/g	N/A	PNNL-22032	9.14	2.45	µg/g
399-1-57	N/A	594382	116353.7	104.8764	Uranium-238	N/A	µg/g	N/A	PNNL-22032	9.75	1.9	µg/g
399-1-57	N/A	594382	116353.7	103.962	Uranium-238	N/A	µg/g	N/A	PNNL-22032	10.67	1.44	µg/g
399-1-58	B27K77	593910.8	116352.6	113.5265	Uranium-238	0.694	pCi/g	8/27/2010	WCH	6.32	2.06	µg/g
399-1-58	B27K78	593910.8	116352.6	112.551	Uranium-238	0.81	pCi/g	8/30/2010	WCH	7.3	2.41	µg/g
399-1-58	B27K79	593910.8	116352.6	111.941	Uranium-238	0.552	pCi/g	8/30/2010	WCH	7.91	1.64	µg/g
399-1-58	B27K80	593910.8	116352.6	110.9505	Uranium-238	0.392	pCi/g	8/30/2010	WCH	8.9	1.17	µg/g
399-1-58	B27K81	593910.8	116352.6	109.9615	Uranium-238	0.444	pCi/g	8/30/2010	WCH	9.89	1.32	µg/g
399-1-58	B27K82	593910.8	116352.6	109.931	Uranium-238	0.336	pCi/g	8/30/2010	WCH	9.92	1	µg/g
399-1-58	B27K83	593910.8	116352.6	109.171	Uranium-238	0.512	pCi/g	8/30/2010	WCH	10.68	1.52	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-58	B27K84	593910.8	116352.6	108.436	Uranium-238	0.331	pCi/g	8/30/2010	WCH	11.42	0.98	µg/g
399-1-58	B27K86	593910.8	116352.6	107.671	Uranium-238	0.293	pCi/g	8/30/2010	WCH	12.18	0.87	µg/g
399-1-58	B27K87	593910.8	116352.6	106.911	Uranium-238	0.345	pCi/g	8/30/2010	WCH	12.94	1.03	µg/g
399-1-58	B27K88	593910.8	116352.6	106.151	Uranium-238	0.37	pCi/g	8/30/2010	WCH	13.7	1.1	µg/g
399-1-58	B27K89	593910.8	116352.6	105.451	Uranium-238	0.434	pCi/g	8/31/2010	WCH	14.4	1.29	µg/g
399-1-58	B27M31	593910.8	116352.6	97.831	Uranium-238	0.76	pCi/g	8/31/2010	CHPRC	22.02	2.26	µg/g
399-1-58	B27JT2	593910.8	116352.6	93.261	Uranium-238	0.13	pCi/g	9/1/2010	CHPRC	26.59	0.39	µg/g
399-1-115	B38T84	594224.2	116536.6	108.71	Uranium	3580	µg/kg	4/4/2017	HEIS	6.1	3.58	µg/g
399-1-58	B27M31	593910.8	116352.6	97.83	U-238	0.76	pCi/g	N/A	HEIS	22.02	2.26	µg/g
399-1-58	N/A	593910.8	116352.6	106.6436	N/A	N/A	N/A	N/A	PNNL-22032	13.11	0.34	µg/g
399-1-59	B27PY2	594077.4	116135.9	114.298	Uranium-238	0.649	pCi/g	12/9/2010	WCH	6.48	1.93	µg/g
399-1-59	B27PY3	594077.4	116135.9	113.445	Uranium-238	0.501	pCi/g	12/9/2010	WCH	7.33	1.49	µg/g
399-1-59	B27PY4	594077.4	116135.9	112.683	Uranium-238	0.757	pCi/g	12/9/2010	WCH	8.09	2.25	µg/g
399-1-59	B27PY5	594077.4	116135.9	111.951	Uranium-238	0.552	pCi/g	12/9/2010	WCH	8.82	1.64	µg/g
399-1-59	B27R02	594077.4	116135.9	111.189	Uranium-238	0.674	pCi/g	12/9/2010	WCH	9.59	2	µg/g
399-1-59	B27R06	594077.4	116135.9	110.457	Uranium-238	0.399	pCi/g	12/9/2010	WCH	10.32	1.19	µg/g
399-1-59	B27R07	594077.4	116135.9	109.695	Uranium-238	0.698	pCi/g	12/9/2010	WCH	11.08	2.07	µg/g
399-1-59	B27R08	594077.4	116135.9	108.905	Uranium-238	0.79	pCi/g	12/10/2010	WCH	11.87	2.35	µg/g
399-1-59	B27R09	594077.4	116135.9	108.205	Uranium-238	0.628	pCi/g	12/10/2010	WCH	12.57	1.87	µg/g
399-1-59	B27R10	594077.4	116135.9	107.38	Uranium-238	5.47	pCi/g	12/10/2010	WCH	13.4	16.26	µg/g
399-1-59	B27R11	594077.4	116135.9	106.615	Uranium-238	0.531	pCi/g	12/10/2010	WCH	14.16	1.58	µg/g
399-1-59	B27R12	594077.4	116135.9	105.975	Uranium-238	0.515	pCi/g	12/10/2010	WCH	14.8	1.53	µg/g
399-1-59	B2B1K0	594077.4	116135.9	104.335	Uranium-238	0.625	pCi/g	12/13/2010	WCH	16.44	1.86	µg/g
399-1-59	B27JW6	594077.4	116135.9	95.585	Uranium-238	0.78	pCi/g	12/13/2010	CHPRC	25.19	2.32	µg/g
399-1-59	B27JW2	594077.4	116135.9	94.09	Uranium-238	0.68	pCi/g	12/14/2010	CHPRC	26.69	2.02	µg/g
399-1-59	B27JW3	594077.4	116135.9	84.793	Uranium-238	0.22	pCi/g	12/15/2010	CHPRC	35.98	0.65	µg/g
399-1-59	B27JW5	594077.4	116135.9	75.832	Uranium-238	0.35	pCi/g	12/15/2010	CHPRC	44.94	1.04	µg/g
399-1-58	B27JT2	593910.8	116352.6	93.26	U-238	0.13	pCi/g	N/A	HEIS	26.59	0.39	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-150	B389V6	594227.5	116546.4	111.36	Uranium	1270	µg/kg	3/29/2017	HEIS	3.43	1.27	µg/g
399-1-150	B389R5	594227.5	116546.4	108.31	Uranium	3870	µg/kg	3/29/2017	HEIS	6.48	3.87	µg/g
399-1-150	B389V0	594227.5	116546.4	105.26	Uranium	2680	µg/kg	3/29/2017	HEIS	9.53	2.68	µg/g
399-1-59	N/A	594077.4	116135.9	108.8136	Uranium-238	N/A	µg/g	N/A	PNNL-22032	12.8	0.722	µg/g
399-1-59	N/A	594077.4	116135.9	107.2896	Uranium-238	N/A	µg/g	N/A	PNNL-22032	14.33	0.69	µg/g
399-1-67	B30508	594162.4	116481.6	111.406	Total U	434	µg/Kg	1/13/2015	HEIS	3.43	0.434	µg/g
399-1-67	B30513	594162.4	116481.6	110.644	Total U	14700	µg/Kg	1/13/2015	HEIS	4.19	14.7	µg/g
399-1-67	B30519	594162.4	116481.6	109.882	Total U	16800	µg/Kg	1/13/2015	HEIS	4.95	16.8	µg/g
399-1-67	B30524	594162.4	116481.6	109.12	Total U	34800	µg/Kg	1/14/2015	HEIS	5.72	34.8	µg/g
399-1-67	B30529	594162.4	116481.6	108.175	Total U	26100	µg/Kg	1/14/2015	HEIS	6.66	26.1	µg/g
399-1-67	B30534	594162.4	116481.6	107.3825	Total U	16900	µg/Kg	1/14/2015	HEIS	7.45	16.9	µg/g
399-1-67	B30535	594162.4	116481.6	107.3825	Total U	20600	µg/Kg	1/14/2015	HEIS	7.45	20.6	µg/g
399-1-67	B30540	594162.4	116481.6	106.468	Total U	41400	µg/Kg	1/14/2015	HEIS	8.37	41.4	µg/g
399-1-67	B30545	594162.4	116481.6	105.706	Total U	20800	µg/Kg	1/14/2015	HEIS	9.13	20.8	µg/g
399-1-67	B30550	594162.4	116481.6	104.7	Total U	25800	µg/Kg	1/14/2015	HEIS	10.14	25.8	µg/g
399-1-67	B309C9	594162.4	116481.6	104.03	Total U	12300	µg/Kg	1/14/2015	HEIS	10.81	12.3	µg/g
399-1-67	B30552	594162.4	116481.6	104.165	Total U	19900	µg/Kg	1/14/2015	HEIS	10.67	19.9	µg/g
399-1-68	B30556	594166.8	116527	111.4475	Total U	6590	µg/Kg	1/8/2015	HEIS	3.15	6.59	µg/g
399-1-68	B30557	594166.8	116527	111.4475	Total U	6520	µg/Kg	1/8/2015	HEIS	3.15	6.52	µg/g
399-1-68	B30562	594166.8	116527	110.472	Total U	3120	µg/Kg	1/8/2015	HEIS	4.13	3.12	µg/g
399-1-68	B30567	594166.8	116527	110.106	Total U	3390	µg/Kg	1/8/2015	HEIS	4.5	3.39	µg/g
399-1-68	B30572	594166.8	116527	109.253	Total U	4210	µg/Kg	1/8/2015	HEIS	5.35	4.21	µg/g
399-1-68	B30577	594166.8	116527	108.521	Total U	4420	µg/Kg	1/8/2015	HEIS	6.08	4.42	µg/g
399-1-68	B30583	594166.8	116527	107.82	Total U	2010	µg/Kg	1/12/2015	HEIS	6.78	2.01	µg/g
399-1-68	B30588	594166.8	116527	106.906	Total U	4390	µg/Kg	1/12/2015	HEIS	7.7	4.39	µg/g
399-1-68	B30593	594166.8	116527	106.022	Total U	3090	µg/Kg	1/12/2015	HEIS	8.58	3.09	µg/g
399-1-68	B30598	594166.8	116527	105.6255	Total U	3200	µg/Kg	1/12/2015	HEIS	8.98	3.2	µg/g
399-1-68	B305B0	594166.8	116527	104.572	Total U	2030	µg/Kg	1/12/2015	HEIS	10.03	2.03	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-2-32	B27PB4	594284.6	116195.1	110.504	Uranium-238	8.06	pCi/g	11/2/2010	WCH	4.34	23.96	µg/g
399-2-32	B27PB5	594284.6	116195.1	109.742	Uranium-238	9.09	pCi/g	11/2/2010	WCH	5.11	27.02067	µg/g
399-2-32	B27PB6	594284.6	116195.1	108.98	Uranium-238	2.16	pCi/g	11/2/2010	WCH	5.87	6.42	µg/g
399-2-32	B27PB7	594284.6	116195.1	108.218	Uranium-238	1.72	pCi/g	11/2/2010	WCH	6.63	5.11	µg/g
399-2-32	B27PB9	594284.6	116195.1	107.456	Uranium-238	2.56	pCi/g	11/2/2010	WCH	7.39	7.609782	µg/g
399-2-32	B27PC0	594284.6	116195.1	106.694	Uranium-238	1.15	pCi/g	11/2/2010	WCH	8.15	3.42	µg/g
399-2-32	B27PC1	594284.6	116195.1	105.932	Uranium-238	1.08	pCi/g	11/3/2010	WCH	8.92	3.210377	µg/g
399-2-32	B27PC5	594284.6	116195.1	105.169	Uranium-238	1.04	pCi/g	11/3/2010	WCH	9.68	3.09	µg/g
399-2-32	B27PC2	594284.6	116195.1	104.407	Uranium-238	1.41	pCi/g	11/3/2010	WCH	10.44	4.19	µg/g
399-2-32	B27JV3	594284.6	116195.1	102.122	Uranium-238	0.38	pCi/g	11/4/2010	CHPRC	12.73	1.13	µg/g
399-2-32	B28PN2	594284.6	116195.1	98.312	Uranium-238	1.5	pCi/g	11/5/2010	CHPRC	16.54	4.46	µg/g
399-2-32	B27JV4	594284.6	116195.1	77.5855	Uranium-238	0.57	pCi/g	11/9/2010	CHPRC	37.26	1.69	µg/g
399-1-150	B389T4	594227.5	116546.4	106.79	Uranium	5080	µg/kg	3/29/2017	HEIS	8	5.08	µg/g
399-1-150	B389T7	594227.5	116546.4	106.03	Uranium	3530	µg/kg	3/29/2017	HEIS	8.76	3.53	µg/g
399-1-150	B389R8	594227.5	116546.4	107.55	Uranium	3750	µg/kg	3/29/2017	HEIS	7.24	3.75	µg/g
399-2-32	N/A	594284.6	116195.1	110.0956	Uranium-238	N/A	µg/g	N/A	PNNL-22032	4.72	22.44	µg/g
399-2-32	N/A	594284.6	116195.1	109.3336	Uranium-238	N/A	µg/g	N/A	PNNL-22032	5.49	27.04	µg/g
399-2-32	N/A	594284.6	116195.1	108.724	Uranium-238	N/A	µg/g	N/A	PNNL-22032	6.1	5.59	µg/g
399-2-32	N/A	594284.6	116195.1	108.5716	Uranium-238	N/A	µg/g	N/A	PNNL-22032	6.25	6.43	µg/g
399-2-32	N/A	594284.6	116195.1	107.8096	Uranium-238	N/A	µg/g	N/A	PNNL-22032	7.01	5.14	µg/g
399-2-32	N/A	594284.6	116195.1	107.2	Uranium-238	N/A	µg/g	N/A	PNNL-22032	7.62	3.13	µg/g
399-2-32	N/A	594284.6	116195.1	107.0476	Uranium-238	N/A	µg/g	N/A	PNNL-22032	7.77	7.62	µg/g
399-2-32	N/A	594284.6	116195.1	106.2856	Uranium-238	N/A	µg/g	N/A	PNNL-22032	8.53	3.42	µg/g
399-2-32	N/A	594284.6	116195.1	105.9808	Uranium-238	N/A	µg/g	N/A	PNNL-22032	8.84	2.19	µg/g
399-2-32	N/A	594284.6	116195.1	105.5236	Uranium-238	N/A	µg/g	N/A	PNNL-22032	9.3	5.3	µg/g
399-2-32	N/A	594284.6	116195.1	105.2188	Uranium-238	N/A	µg/g	N/A	PNNL-22032	9.6	2.27	µg/g
399-2-32	N/A	594284.6	116195.1	104.4568	Uranium-238	N/A	µg/g	N/A	PNNL-22032	10.36	1.81	µg/g
399-2-32	N/A	594284.6	116195.1	103.9996	Uranium-238	N/A	µg/g	N/A	PNNL-22032	10.82	4.2	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-2-32	N/A	594284.6	116195.1	103.2376	Uranium-238	N/A	µg/g	N/A	PNNL-22032	11.58	4.2	µg/g
399-1-54	B28302	594273.9	116643	103.3	U-238	0.95	pCi/g	N/A	HEIS	11.35	2.823942	µg/g
399-1-54	B28305	594273.9	116643	93.48	U-238	0.14	pCi/g	N/A	HEIS	21.17	0.41616	µg/g
399-8-5B	B010K1	593392	116567.3	114.3	Uranium-238	0.08	pCi/g	8/6/1991	HEIS	7.93	0.24	µg/g
399-1-37	B1PD76	594110.2	116438.2	115.81	Uranium-238	0.51	pCi/g	8/20/2007	HEIS	0	1.516011	µg/g
399-2-5	B1PL46-1	594287.8	116068.8	109.88	Uranium-238	0.65	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	5.12	1.93	µg/g
399-2-5	B1PL47-1	594287.8	116068.8	108.26	Uranium-238	0.75	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	6.74	2.23	µg/g
399-2-5	B1PL48-1	594287.8	116068.8	106.89	Uranium-238	1.35	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	8.11	4.012971	µg/g
399-2-5	B1PL49-1	594287.8	116068.8	105.79	Uranium-238	1.82	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	9.21	5.41	µg/g
399-2-5	B1PL50-2	594287.8	116068.8	104.24	Uranium-238	0.67	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	10.76	1.99	µg/g
399-2-5	B1PL51-1	594287.8	116068.8	101.8	Uranium-238	0.55	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	13.2	1.634914	µg/g
399-2-5	C5708-56.5	594287.8	116068.8	97.78	Uranium-238	0.85	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	17.22	2.53	µg/g
399-2-5	C5708-67	594287.8	116068.8	94.58	Uranium-238	0.4	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	20.42	1.19	µg/g
399-2-5	B1PL54-1	594287.8	116068.8	92.2	Uranium-238	0.61	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.11	22.8	1.813268	µg/g
399-8-5B	B010J8	593392	116567.3	116.13	Uranium-238	0.1	pCi/g	8/6/1991	HEIS	6.1	0.3	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-3-18	C4999-3B	594465	116020	114.94	N/A	0.96	pCi/g	N/A	pnnl16435_TableD2	2.74	2.853668	µg/g
399-3-18	C4999-5D	594465	116020	112.19	N/A	0.54	pCi/g	N/A	pnnl16435_TableD2	5.49	1.61	µg/g
399-3-18	C4999-6D	594465	116020	110.67	N/A	0.71	pCi/g	N/A	pnnl16435_TableD2	7.01	2.11	µg/g
399-3-18	C4999-9B	594465	116020	108.38	N/A	0.84	pCi/g	N/A	pnnl16435_TableD2	9.3	2.49696	µg/g
399-3-18	C4999-9C	594465	116020	108.08	N/A	1.23	pCi/g	N/A	pnnl16435_TableD2	9.6	3.66	µg/g
399-3-18	C4999-10C	594465	116020	106.86	N/A	1.04	pCi/g	N/A	pnnl16435_TableD2	10.82	3.09	µg/g
399-3-18	C4999-10D	594465	116020	106.55	N/A	1.2	pCi/g	N/A	pnnl16435_TableD2	11.13	3.57	µg/g
399-3-18	C4999-11B	594465	116020	105.64	N/A	0.82	pCi/g	N/A	pnnl16435_TableD2	12.04	2.44	µg/g
399-3-18	C4999-11D	594465	116020	105.03	N/A	3.54	pCi/g	N/A	pnnl16435_TableD2	12.65	10.52	µg/g
399-3-18	C4999-12C	594465	116020	103.66	N/A	2.18	pCi/g	N/A	pnnl16435_TableD2	14.02	6.48	µg/g
399-3-18	C4999-12D	594465	116020	103.35	N/A	0.91	pCi/g	N/A	pnnl16435_TableD2	14.33	2.71	µg/g
399-3-18	C4999-15A	594465	116020	100	N/A	1.19	pCi/g	N/A	pnnl16435_TableD2	17.68	3.54	µg/g
399-3-18	C4999-17B	594465	116020	97.26	N/A	3.06	pCi/g	N/A	pnnl16435_TableD2	20.42	9.1	µg/g
399-3-18	C4999-21C	594465	116020	91.47	N/A	0.68	pCi/g	N/A	pnnl16435_TableD2	26.21	2.02	µg/g
399-3-18	C4999-22E	594465	116020	90.1	N/A	0.91	pCi/g	N/A	pnnl16435_TableD2	27.58	2.71	µg/g
399-3-18	C4999-25B	594465	116020	87.35	N/A	0.64	pCi/g	N/A	pnnl16435_TableD2	30.33	1.9	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-3-18	C4999-27B	594465	116020	84.76	N/A	0.53	pCi/g	N/A	pnnl16435_TableD2	32.92	1.58	µg/g
399-3-18	C4999-31E	594465	116020	78.97	N/A	1.19	pCi/g	N/A	pnnl16435_TableD2	38.71	3.54	µg/g
399-8-5B	B010K3	593392	116567.3	113.15	Uranium-238	0.01	pCi/g	8/7/1991	HEIS	9.07	0.03	µg/g
399-3-19	C5001-64E	594072	116030	116.08	N/A	0.44	pCi/g	N/A	pnnl16435_TableD2	4.57	1.31	µg/g
399-3-19	C5001-66A	594072	116030	114.25	N/A	0.4	pCi/g	N/A	pnnl16435_TableD2	6.4	1.189028	µg/g
399-3-19	C5001-68B	594072	116030	111.81	N/A	0.43	pCi/g	N/A	pnnl16435_TableD2	8.84	1.28	µg/g
399-3-19	C5001-69C	594072	116030	110.59	N/A	0.48	pCi/g	N/A	pnnl16435_TableD2	10.06	1.43	µg/g
399-3-19	C5001-69D	594072	116030	110.29	N/A	0.48	pCi/g	N/A	pnnl16435_TableD2	10.36	1.43	µg/g
399-3-19	C5001-70C	594072	116030	108.92	N/A	0.49	pCi/g	N/A	pnnl16435_TableD2	11.73	1.46	µg/g
399-3-19	C5001-70D	594072	116030	108.61	N/A	0.57	pCi/g	N/A	pnnl16435_TableD2	12.04	1.69	µg/g
399-3-19	C5001-70E	594072	116030	108.31	N/A	0.44	pCi/g	N/A	pnnl16435_TableD2	12.34	1.31	µg/g
399-3-19	C5001-71E	594072	116030	108	N/A	0.5	pCi/g	N/A	pnnl16435_TableD2	12.65	1.49	µg/g
399-3-19	C5001-73B	594072	116030	105.47	N/A	0.5	pCi/g	N/A	pnnl16435_TableD2	15.18	1.49	µg/g
399-3-19	C5001-74B	594072	116030	104.34	N/A	0.46	pCi/g	N/A	pnnl16435_TableD2	16.31	1.37	µg/g
399-3-19	C5001-76C	594072	116030	100.99	N/A	0.49	pCi/g	N/A	pnnl16435_TableD2	19.66	1.46	µg/g
399-3-19	C5001-76D	594072	116030	100.69	N/A	0.54	pCi/g	N/A	pnnl16435_TableD2	19.96	1.61	µg/g
399-3-19	C5001-78A	594072	116030	97.94	N/A	0.52	pCi/g	N/A	pnnl16435_TableD2	22.71	1.55	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-3-19	C5001-79A	594072	116030	95.81	N/A	0.86	pCi/g	N/A	pnnl16435_TableD2	24.84	2.56	µg/g
399-3-19	C5001-80A	594072	116030	94.59	N/A	0.92	pCi/g	N/A	pnnl16435_TableD2	26.06	2.73	µg/g
399-8-5B	B010K7	593392	116567.3	111.25	Uranium-238	0.1	pCi/g	8/7/1991	HEIS	10.98	0.3	µg/g
399-3-20	C5002-84C	594375	115850	115.57	N/A	0.37	pCi/g	N/A	pnnl16435_TableD2	4.88	1.099851	µg/g
399-3-20	C5002-86E	594375	115850	113.9	N/A	0.55	pCi/g	N/A	pnnl16435_TableD2	6.55	1.63	µg/g
399-3-20	C5002-87D	594375	115850	112.98	N/A	0.5	pCi/g	N/A	pnnl16435_TableD2	7.47	1.49	µg/g
399-3-20	C5002-90A	594375	115850	110.54	N/A	0.59	pCi/g	N/A	pnnl16435_TableD2	9.91	1.753817	µg/g
399-3-20	C5002-90C	594375	115850	109.93	N/A	0.58	pCi/g	N/A	pnnl16435_TableD2	10.52	1.72	µg/g
399-3-20	C5002-91C	594375	115850	108.41	N/A	0.47	pCi/g	N/A	pnnl16435_TableD2	12.04	1.4	µg/g
399-3-20	C5002-91D	594375	115850	108.11	N/A	0.49	pCi/g	N/A	pnnl16435_TableD2	12.34	1.46	µg/g
399-3-20	C5002-92D	594375	115850	105.67	N/A	0.47	pCi/g	N/A	pnnl16435_TableD2	14.78	1.4	µg/g
399-3-20	C5002-93E	594375	115850	103.99	N/A	0.65	pCi/g	N/A	pnnl16435_TableD2	16.46	1.93	µg/g
399-3-20	C5002-94D	594375	115850	100.49	N/A	0.57	pCi/g	N/A	pnnl16435_TableD2	19.96	1.69	µg/g
399-3-20	C5002-98E	594375	115850	95.73	N/A	0.4	pCi/g	N/A	pnnl16435_TableD2	24.72	1.19	µg/g
399-3-20	C5002-99D	594375	115850	95.46	N/A	0.8	pCi/g	N/A	pnnl16435_TableD2	24.99	2.38	µg/g
399-3-20	C5002-100A	594375	115850	94.85	N/A	0.71	pCi/g	N/A	pnnl16435_TableD2	25.6	2.11	µg/g
399-8-5B	B010L0	593392	116567.3	110.03	Uranium-238	0.1	pCi/g	8/7/1991	HEIS	12.2	0.3	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-3-22	B1PL37	594217.7	115947.5	109.33	Uranium-238	0.38	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	9.14	1.129577	µg/g
399-3-22	B1PL38	594217.7	115947.5	107.8	Uranium-238	0.38	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	10.67	1.129577	µg/g
399-3-22	B1PL56-2	594217.7	115947.5	105.91	Uranium-238	0.49	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	12.56	1.45656	µg/g
399-3-22	B1PL57-2	594217.7	115947.5	105.18	Uranium-238	1.2	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	13.29	3.567085	µg/g
399-3-22	B1PL58-2	594217.7	115947.5	99.88	Uranium-238	0.41	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	18.59	1.218754	µg/g
399-3-22	B1PL59-3	594217.7	115947.5	99.15	Uranium-238	0.56	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	19.32	1.66464	µg/g
399-3-22	B1PL60-1	594217.7	115947.5	97.9	Uranium-238	0.93	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	20.57	2.764491	µg/g
399-3-22	B1PL61-1	594217.7	115947.5	92.96	Uranium-238	0.91	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.22	25.51	2.70504	µg/g
399-3-33	B25F13	594500.7	115966.5	111.893	Uranium-238	0.746	pCi/g	11/18/2010	WCH	6.48	2.217538	µg/g
399-3-33	B25F14	594500.7	115966.5	111.131	Uranium-238	0.325	pCi/g	11/18/2010	WCH	7.24	0.966086	µg/g
399-3-33	B25F15	594500.7	115966.5	110.369	Uranium-238	0.988	pCi/g	11/18/2010	WCH	8	2.9369	µg/g
399-3-33	B25F16	594500.7	115966.5	109.607	Uranium-238	0.651	pCi/g	11/18/2010	WCH	8.76	1.935144	µg/g
399-3-33	B25F17	594500.7	115966.5	108.845	Uranium-238	1.04	pCi/g	11/19/2010	WCH	9.53	3.091474	µg/g
399-3-33	B25F18	594500.7	115966.5	108.082	Uranium-238	0.571	pCi/g	11/19/2010	WCH	10.29	1.697338	µg/g
399-3-33	B25F19	594500.7	115966.5	107.32	Uranium-238	2.81	pCi/g	11/19/2010	WCH	11.05	8.352925	µg/g
399-3-33	B25F20	594500.7	115966.5	106.56	Uranium-238	2.14	pCi/g	11/19/2010	WCH	11.81	6.361302	µg/g
399-3-33	B25F21	594500.7	115966.5	105.19	Uranium-238	4.06	pCi/g	11/19/2010	WCH	13.18	12.06864	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-3-33	B28J86	594500.7	115966.5	104.425	Uranium-238	2.94	pCi/g	12/1/2010	WCH	13.95	8.739359	µg/g
399-3-33	B282Y1	594500.7	115966.5	103.66	Uranium-238	1.2	pCi/g	12/1/2010	CHPRC	14.71	3.567085	µg/g
399-3-33	B28PY0	594500.7	115966.5	100.765	Uranium-238	0.27	pCi/g	12/3/2010	CHPRC	17.61	0.802594	µg/g
399-8-5B	B010L2	593392	116567.3	108.35	Uranium-238	0.16	pCi/g	8/8/1991	HEIS	13.87	0.48	µg/g
399-8-5B	B010L4	593392	116567.3	106.28	Uranium-238	0.1	pCi/g	8/8/1991	HEIS	15.94	0.3	µg/g
399-3-33	N/A	594500.7	115966.5	111.472	Uranium-238	N/A	µg/g	N/A	PNNL-22032	6.86	2.22	µg/g
399-3-33	N/A	594500.7	115966.5	110.71	Uranium-239	N/A	µg/g	N/A	PNNL-22032	7.62	0.97	µg/g
399-3-33	N/A	594500.7	115966.5	109.948	Uranium-240	N/A	µg/g	N/A	PNNL-22032	8.38	2.94	µg/g
399-3-33	N/A	594500.7	115966.5	109.186	Uranium-241	N/A	µg/g	N/A	PNNL-22032	9.14	1.94	µg/g
399-3-33	N/A	594500.7	115966.5	108.424	Uranium-242	N/A	µg/g	N/A	PNNL-22032	9.91	3.09	µg/g
399-3-33	N/A	594500.7	115966.5	107.662	Uranium-243	N/A	µg/g	N/A	PNNL-22032	10.67	1.2	µg/g
399-3-33	N/A	594500.7	115966.5	106.9	Uranium-244	N/A	µg/g	N/A	PNNL-22032	11.43	8.36	µg/g
399-3-33	N/A	594500.7	115966.5	106.138	Uranium-245	N/A	µg/g	N/A	PNNL-22032	12.19	6.37	µg/g
399-3-33	N/A	594500.7	115966.5	104.7664	Uranium-246	N/A	µg/g	N/A	PNNL-22032	13.56	12.08	µg/g
399-3-33	N/A	594500.7	115966.5	109.7956	Uranium-247	N/A	µg/g	N/A	PNNL-22032	8.53	0.617	µg/g
399-3-33	N/A	594500.7	115966.5	107.662	Uranium-248	N/A	µg/g	N/A	PNNL-22032	10.67	1.7	µg/g
399-3-33	N/A	594500.7	115966.5	106.4428	Uranium-249	N/A	µg/g	N/A	PNNL-22032	11.89	8.76	µg/g
399-3-33	N/A	594500.7	115966.5	105.5284	Uranium-250	N/A	µg/g	N/A	PNNL-22032	12.8	0.722	µg/g
399-4-14	B1PL64-2	594396.2	115604.7	106.86	Uranium-238	1	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.47	11.13	2.972571	µg/g
399-4-14	B1PL65-2	594396.2	115604.7	105.34	Uranium-238	0.51	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.47	12.65	1.516011	µg/g
399-4-14	C5707-43	594396.2	115604.7	104.88	Uranium-238	0.65	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.47	13.11	1.932171	µg/g
399-4-14	B1PL66-1	594396.2	115604.7	93.51	Uranium-238	0.28	pCi/g	N/A	PNNL-17793: Emergent Data Table 5.47	24.48	0.83232	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-4-15	B2B8N6	594343	115692.9	112.015	Uranium-238	0.653	pCi/g	1/26/2011	WCH	6.33	1.941089	µg/g
399-4-15	B2B8N7	594343	115692.9	111.2075	Uranium-238	0.438	pCi/g	1/26/2011	WCH	7.13	1.301986	µg/g
399-4-15	B2B8N8	594343	115692.9	110.491	Uranium-238	0.579	pCi/g	1/26/2011	WCH	7.85	1.721119	µg/g
399-4-15	B2B8N9	594343	115692.9	109.897	Uranium-238	0.359	pCi/g	1/26/2011	WCH	8.44	1.067153	µg/g
399-4-15	B2B8P0	594343	115692.9	108.692	Uranium-238	0.366	pCi/g	1/26/2011	WCH	9.65	1.087961	µg/g
399-4-15	B2B8P1	594343	115692.9	108.2225	Uranium-238	0.402	pCi/g	1/27/2011	WCH	10.12	1.194974	µg/g
399-4-15	B2B8P2	594343	115692.9	107.29	Uranium-238	0.216	pCi/g	1/27/2011	WCH	11.05	0.642075	µg/g
399-4-15	B2B8P3	594343	115692.9	106.44	Uranium-238	0.396	pCi/g	1/27/2011	WCH	11.9	1.177138	µg/g
399-4-15	B2B8P6	594343	115692.9	105.83	Uranium-238	0.47	pCi/g	1/27/2011	WCH	12.51	1.397108	µg/g
399-4-15	B2B8P7	594343	115692.9	105.08	Uranium-238	0.404	pCi/g	1/28/2011	WCH	13.26	1.200919	µg/g
399-4-15	B2B8P8	594343	115692.9	104.06	Uranium-238	0.516	pCi/g	1/28/2011	WCH	14.28	1.533847	µg/g
399-4-15	B2B919	594343	115692.9	103.39	Uranium-238	0.18	pCi/g	1/28/2011	CHPRC	14.95	0.535063	µg/g
399-4-15	B2B920	594343	115692.9	96.32	Uranium-238	0.19	pCi/g	2/1/2011	CHPRC	22.02	0.564788	µg/g
399-4-15	B2B922	594343	115692.9	91.59	Uranium-238	0.7	pCi/g	2/1/2011	CHPRC	26.75	2.0808	µg/g
399-4-15	B2B921	594343	115692.9	86.8235	Uranium-238	0.38	pCi/g	2/3/2011	CHPRC	31.52	1.129577	µg/g
399-6-3	B29FV7	593697.4	116062.8	113.217	Uranium-238	0.469	pCi/g	12/17/2010	WCH	5.56	1.39	µg/g
399-6-3	B29FT3	593697.4	116062.8	112.379	Uranium-238	0.446	pCi/g	12/20/2010	WCH	6.4	1.325767	µg/g
399-6-3	B29FT4	593697.4	116062.8	111.617	Uranium-238	0.544	pCi/g	12/20/2010	WCH	7.16	1.62	µg/g
399-6-3	B29FT5	593697.4	116062.8	110.855	Uranium-238	0.379	pCi/g	12/20/2010	WCH	7.93	1.126604	µg/g
399-6-3	B29FT6	593697.4	116062.8	110.1695	Uranium-238	0.363	pCi/g	12/20/2010	WCH	8.61	1.08	µg/g
399-6-3	B29FT7	593697.4	116062.8	109.255	Uranium-238	0.53	pCi/g	12/20/2010	WCH	9.53	1.575463	µg/g
399-6-3	B29FT8	593697.4	116062.8	108.492	Uranium-238	0.632	pCi/g	12/20/2010	WCH	10.29	1.878665	µg/g
399-6-3	B29FT9	593697.4	116062.8	107.73	Uranium-238	0.484	pCi/g	12/20/2010	WCH	11.05	1.44	µg/g
399-6-3	B29FV0	593697.4	116062.8	106.97	Uranium-238	0.528	pCi/g	12/20/2010	WCH	11.81	1.569518	µg/g
399-6-3	B29FV2	593697.4	116062.8	106.285	Uranium-238	0.557	pCi/g	12/21/2010	WCH	12.5	1.66	µg/g
399-6-3	B29FV4	593697.4	116062.8	105.445	Uranium-238	0.594	pCi/g	12/21/2010	WCH	13.34	1.765707	µg/g
399-6-3	B29FV5	593697.4	116062.8	104.68	Uranium-238	0.685	pCi/g	12/21/2010	WCH	14.1	2.036211	µg/g
399-6-3	B29FJ0	593697.4	116062.8	103.845	Uranium-238	0.11	pCi/g	12/21/2010	CHPRC	14.94	0.33	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-6-3	B29FJ3	593697.4	116062.8	97.06	Uranium-238	0.28	pCi/g	12/27/2010	CHPRC	21.72	0.83232	µg/g
399-6-3	B29FJ2	593697.4	116062.8	92.705	Uranium-238	0.39	pCi/g	12/28/2010	CHPRC	26.08	1.159303	µg/g
399-8-5B	B010L6	593392	116567.3	104.97	Uranium-238	0.18	pCi/g	8/8/1991	HEIS	17.26	0.54	µg/g
399-8-5C	B00YM6	593386.1	116573.6	104.54	Uranium-238	0.08	pCi/g	7/8/1991	HEIS	17.68	0.24	µg/g
399-8-5C	B00YM7	593386.1	116573.6	97.83	Uranium-238	0.38	pCi/g	7/10/1991	HEIS	24.39	1.13	µg/g
399-6-4	B29DX1	593824.6	115934.2	112.364	Uranium-238	0.382	pCi/g	12/30/2010	WCH	6.42	1.14	µg/g
399-6-4	B29DX2	593824.6	115934.2	111.571	Uranium-238	0.523	pCi/g	12/30/2010	WCH	7.21	1.554655	µg/g
399-6-4	B29DX3	593824.6	115934.2	110.962	Uranium-238	0.546	pCi/g	12/30/2010	WCH	7.82	1.62	µg/g
399-6-4	B29DX4	593824.6	115934.2	110.0935	Uranium-238	0.316	pCi/g	12/30/2010	WCH	8.69	0.939332	µg/g
399-6-4	B29DX5	593824.6	115934.2	109.132	Uranium-238	0.525	pCi/g	12/30/2010	WCH	9.65	1.5606	µg/g
399-6-4	B29DX6	593824.6	115934.2	108.4465	Uranium-238	0.67	pCi/g	12/30/2010	WCH	10.33	1.99	µg/g
399-6-4	B29DX7	593824.6	115934.2	107.84	Uranium-238	0.329	pCi/g	1/3/2011	WCH	10.94	0.98	µg/g
399-6-4	B29DX8	593824.6	115934.2	106.88	Uranium-238	0.421	pCi/g	1/3/2011	WCH	11.9	1.25	µg/g
399-6-5	B29DY1	593824.6	115935	106.677	Uranium-238	0.435	pCi/g	1/5/2011	WCH	12.67	1.29	µg/g
399-6-5	B29DY2	593824.6	115935	105.977	Uranium-238	0.307	pCi/g	1/5/2011	WCH	13.37	0.91	µg/g
399-6-5	B29DY4	593824.6	115935	105.212	Uranium-238	0.642	pCi/g	1/5/2011	WCH	14.13	1.91	µg/g
399-6-5	B29DY5	593824.6	115935	104.392	Uranium-238	0.442	pCi/g	1/6/2011	WCH	14.95	1.31	µg/g
399-6-5	B29DR4	593824.6	115935	103.022	Uranium-238	0.084	pCi/g	1/6/2011	CHPRC	16.32	0.25	µg/g
399-6-5	B29DR5	593824.6	115935	101.042	Uranium-238	0.086	pCi/g	1/7/2011	CHPRC	18.3	0.26	µg/g
399-6-5	B29DR7	593824.6	115935	89.582	Uranium-238	0.4	pCi/g	1/10/2011	CHPRC	29.76	1.19	µg/g
399-6-5	B29DR6	593824.6	115935	86.5015	Uranium-238	0.3	pCi/g	1/10/2011	CHPRC	32.84	0.89	µg/g
399-8-5C	B00YM9	593386.1	116573.6	92.49	Uranium-238	0.4	pCi/g	7/12/1991	HEIS	29.72	1.19	µg/g
399-8-5C	B00YN2	593386.1	116573.6	79.85	Uranium-238	0.13	pCi/g	7/26/1991	HEIS	42.37	0.39	µg/g
399-8-5C	B00YN6	593386.1	116573.6	68.57	Uranium-238	1	pCi/g	8/8/1991	HEIS	53.65	2.97	µg/g
399-8-5C	B00YN5	593386.1	116573.6	74.21	Uranium-238	0.17	pCi/g	7/31/1991	HEIS	48.01	0.51	µg/g
399-1-105	B38BC1	594233	116591.7	104.95	Uranium	1280	µg/kg	2/10/2017	HEIS	9.83	1.28	µg/g
399-1-105	B38B96	594233	116591.7	108.15	Uranium	896	µg/kg	2/10/2017	HEIS	6.63	0.9	µg/g
399-1-105	B38B99	594233	116591.7	107.39	Uranium	1770	µg/kg	2/10/2017	HEIS	7.39	1.77	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-105	B38BB5	594233	116591.7	106.62	Uranium	1470	µg/kg	2/10/2017	HEIS	8.15	1.47	µg/g
399-1-105	B38BB8	594233	116591.7	105.86	Uranium	1740	µg/kg	2/10/2017	HEIS	8.92	1.74	µg/g
399-1-107	B38BH7	594248	116576	108.83	Uranium	4630	µg/kg	2/24/2017	HEIS	5.94	4.63	µg/g
399-1-107	B38BD6	594248	116576	108.3	Uranium	2550	µg/kg	2/24/2017	HEIS	6.48	2.55	µg/g
399-1-107	B38BF5	594248	116576	106.77	Uranium	3930	µg/kg	2/24/2017	HEIS	8	3.93	µg/g
399-1-107	B38BH1	594248	116576	106.01	Uranium	2470	µg/kg	2/24/2017	HEIS	8.76	2.47	µg/g
399-1-107	B38BH4	594248	116576	105.25	Uranium	786	µg/kg	2/24/2017	HEIS	9.53	0.79	µg/g
600-47	J036X2	594137.2	117635.5	111.06	Uranium-238	0.67	pCi/g	5/25/2005	WCH	5	1.99	µg/g
600-47	J036X3	594237.3	117620.3	110.92	Uranium-238	0.75	pCi/g	5/25/2005	WCH	5	2.23	µg/g
600-47	J036X4	594266.8	117603.5	110.3	Uranium-238	1.29	pCi/g	5/25/2005	WCH	5	3.83	µg/g
600-47	J036X5	594224.3	117418.8	108.24	Uranium-238	1.58	pCi/g	5/25/2005	WCH	5	4.7	µg/g
618-1	J19HP6	594022	116273.1	115.23	Uranium-238	1.47	pCi/g	1/26/2010	WCH	5	4.37	µg/g
618-1	J19HP7	594019.7	116278	115.2	Uranium-238	1.27	pCi/g	1/26/2010	WCH	5	3.78	µg/g
618-1	J19HP8	594023.2	116248.6	115.18	Uranium-238	1.5	pCi/g	1/26/2010	WCH	5	4.46	µg/g
618-1	J19HP9	594048.7	116221.6	114.91	Uranium-238	0.75	pCi/g	1/26/2010	WCH	5	2.23	µg/g
618-1	J19HR0	594012.1	116182.1	115.27	Uranium-238	2.17	pCi/g	1/26/2010	WCH	5	6.45	µg/g
618-1	J19J25	593991.4	116204.9	115.15	Uranium-238	0.99	pCi/g	1/26/2010	WCH	5	2.94	µg/g
618-1	J19J28	594003.7	116250.4	115.19	Uranium-238	8.23	pCi/g	1/26/2010	WCH	5	24.46	µg/g
618-1	J19J29	594008.4	116244.2	115.31	Uranium-238	0.97	pCi/g	1/26/2010	WCH	5	2.88	µg/g
618-1	J19J30	593995	116228.7	115.23	Uranium-238	0.88	pCi/g	1/26/2010	WCH	5	2.62	µg/g
618-1	J19J31	593998.8	116215.1	115.23	Uranium-238	1.46	pCi/g	1/26/2010	WCH	5	4.34	µg/g
618-1	J19J32	593992.6	116185	115.18	Uranium-238	0.81	pCi/g	1/26/2010	WCH	5	2.41	µg/g
618-1	J19J34	594036	116263	115.17	Uranium-238	0.93	pCi/g	1/26/2010	WCH	5	2.76	µg/g
618-1	J19HP2	594013	116210	112.76	Uranium-238	3.75	pCi/g	1/26/2010	WCH	7.5	11.15	µg/g
618-1	J19HP3	594017	116204.5	112.82	Uranium-238	65.2	pCi/g	1/26/2010	WCH	7.5	193.81	µg/g
618-1	J19HP4	594021	116199	112.77	Uranium-238	9	pCi/g	1/26/2010	WCH	7.5	26.75	µg/g
618-1	J19HP5	594025.7	116191.4	112.68	Uranium-238	3.11	pCi/g	1/26/2010	WCH	7.5	9.24	µg/g
618-1	J19HR1	594021.9	116205.6	112.76	Uranium-238	26.2	pCi/g	1/26/2010	WCH	7.5	77.88	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
618-1	J19HR2	594010.7	116204.9	112.87	Uranium-238	11.8	pCi/g	1/26/2010	WCH	7.5	35.08	µg/g
618-1	J19J26	594023.4	116190.2	112.77	Uranium-238	2.31	pCi/g	1/26/2010	WCH	7.5	6.87	µg/g
618-1	J19J27	594035.7	116191.6	112.73	Uranium-238	5.37	pCi/g	1/26/2010	WCH	7.5	15.96	µg/g
618-1	J19J33	594013	116194	112.81	Uranium-238	3.68	pCi/g	1/26/2010	WCH	7.5	10.94	µg/g
618-1	J19HH7	594007.8	116255.3	115.34	Uranium-238	1.19	pCi/g	1/27/2010	WCH	5	3.54	µg/g
618-1	J19HH8	594004.9	116197.2	115.44	Uranium-238	0.9	pCi/g	1/27/2010	WCH	5	2.68	µg/g
618-1	J19HH9	594027.1	116271.6	114.97	Uranium-238	1.45	pCi/g	1/27/2010	WCH	5	4.31	µg/g
618-1	J19HJ0	594043.2	116204.7	115.06	Uranium-238	0.81	pCi/g	1/27/2010	WCH	5	2.41	µg/g
618-1	J19HN3	594012.7	116203.7	112.88	Uranium-238	29.1	pCi/g	1/27/2010	WCH	7.5	86.5	µg/g
618-1	J19HN4	594015	116193.2	112.85	Uranium-238	2.98	pCi/g	1/27/2010	WCH	7.5	8.86	µg/g
618-1	J19HN5	594029.3	116203.9	112.64	Uranium-238	32	pCi/g	1/27/2010	WCH	7.5	95.12	µg/g
618-1	J19HN6	594031.4	116189.2	112.73	Uranium-238	2.84	pCi/g	1/27/2010	WCH	7.5	8.44	µg/g
618-1	J19XD1	594017	116204.5	113.5	Uranium-238	43.3	pCi/g	N/A	618-1_BurialGroundExcavation	0.61	128.71	µg/g
618-1	J19XD2	594017	116204.5	113	Uranium-238	25.3	pCi/g	N/A	618-1_BurialGroundExcavation	1.22	75.21	µg/g
618-1	J19XD3	594017	116204.5	112	Uranium-238	20.3	pCi/g	N/A	618-1_BurialGroundExcavation	1.83	60.34	µg/g
618-1	J19XD4	594017	116204.5	111.5	Uranium-238	5.79	pCi/g	N/A	618-1_BurialGroundExcavation	2.44	17.21	µg/g
618-1	J19XD5	594017	116204.5	111	Uranium-238	21.7	pCi/g	N/A	618-1_BurialGroundExcavation	3.05	64.5	µg/g
618-1	J19XD6	594017	116204.5	110	Uranium-238	17.6	pCi/g	N/A	618-1_BurialGroundExcavation	3.66	52.32	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
618-1	J19XD7	594017	116204.5	109.5	Uranium-238	9.84	pCi/g	N/A	618-1_BurialGroundExcavation	4.27	29.25	µg/g
618-1	J19XD8	594017	116204.5	109	Uranium-238	8.49	pCi/g	N/A	618-1_BurialGroundExcavation	4.88	25.24	µg/g
618-1	J19XD9	594017	116204.5	108	Uranium-238	6.17	pCi/g	N/A	618-1_BurialGroundExcavation	5.49	18.34	µg/g
618-1	J19FX0	594017	116204.5	107.5	Uranium-238	5.46	pCi/g	N/A	618-1_BurialGroundExcavation	6.1	16.23	µg/g
618-1	J19FX1	594017	116204.5	107	Uranium-238	7.4	pCi/g	N/A	618-1_BurialGroundExcavation	6.71	22	µg/g
618-1	J19FX2	594017	116204.5	106	Uranium-238	8.68	pCi/g	N/A	618-1_BurialGroundExcavation	7.32	25.8	µg/g
618-1	J19FX3	594017	116204.5	105.5	Uranium-238	20.7	pCi/g	N/A	618-1_BurialGroundExcavation	7.92	61.53	µg/g
618-1	J19FX4	594017	116204.5	105	Uranium-238	22	pCi/g	N/A	618-1_BurialGroundExcavation	8.23	65.4	µg/g
618-12	B0L651	594291	116436	109.77	Uranium-238	8.59	pCi/g	8/11/1997	WCH	5	25.53	µg/g
618-12	B0L653	594249	116450	109.66	Uranium-238	10.8	pCi/g	8/11/1997	WCH	5	32.1	µg/g
618-12	B0L654	594212	116445	109.77	Uranium-238	4.84	pCi/g	8/12/1997	WCH	5	14.39	µg/g
618-12	B0L655	594205	116412	109.85	Uranium-238	1.83	pCi/g	8/12/1997	WCH	5	5.44	µg/g
618-12	B0L656	594161	116436	109.95	Uranium-238	3.73	pCi/g	8/12/1997	WCH	5	11.09	µg/g
618-12	B0L657	594167	116388	109.91	Uranium-238	2.32	pCi/g	8/12/1997	WCH	5	6.9	µg/g
618-12	B0L658	594261	116406	109.77	Uranium-238	8.01	pCi/g	8/13/1997	WCH	5	23.81	µg/g
618-12	B0L659	594284	116478	109.74	Uranium-238	17.5	pCi/g	8/13/1997	WCH	5	52.01999	µg/g
618-13	J18PX0	592856.7	116243.9	115.79	Uranium-238	0.63	pCi/g	4/28/2009	WCH	5	1.87	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
618-13	J18PX1	592878.9	116248	120.13	Uranium-238	1.7	pCi/g	4/28/2009	WCH	5	5.053371	µg/g
618-13	J18PX2	592856	116236	116.14	Uranium-238	0.65	pCi/g	4/28/2009	WCH	5	1.93	µg/g
618-13	J18PX3	592877.9	116222.5	118.95	Uranium-238	0.73	pCi/g	4/28/2009	WCH	5	2.169977	µg/g
618-13	J18R00	592861	116248	115.11	Uranium-238	0.68	pCi/g	4/28/2009	WCH	5	2.021348	µg/g
618-13	J18R01	592880	116240	120.33	Uranium-238	0.96	pCi/g	4/28/2009	WCH	5	2.85	µg/g
618-2	J13DJ6	594033.6	116361.8	113.39	Uranium-238	1.9	pCi/g	9/7/2006	WCH	5	5.647885	µg/g
618-2	J13DJ7	594035.9	116351.8	113.37	Uranium-238	1.77	pCi/g	9/7/2006	WCH	5	5.26	µg/g
618-2	J13DJ9	594004.7	116331.3	120.73	Uranium-238	2.2	pCi/g	9/7/2006	WCH	5	6.539656	µg/g
618-2	J13DK0	594027	116315.6	113.96	Uranium-238	2.14	pCi/g	9/7/2006	WCH	5	6.36	µg/g
618-2	J13DJ0	594023.2	116341.4	111.12	Uranium-238	14.8	pCi/g	9/7/2006	WCH	7.5	43.99405	µg/g
618-2	J13DJ2	594037.2	116341.5	110.95	Uranium-238	5.22	pCi/g	9/7/2006	WCH	7.5	15.51682	µg/g
618-2	J13DJ3	594032.4	116321.2	111.24	Uranium-238	165	pCi/g	9/7/2006	WCH	7.5	490.47	µg/g
618-2	J13DJ4	594034.3	116357.7	110.88	Uranium-238	2.87	pCi/g	9/7/2006	WCH	7.5	8.531279	µg/g
618-2	J13DH9	594043.4	116319.6	111.18	Uranium-238	10.7	pCi/g	9/7/2006	WCH	7.5	31.81	µg/g
618-2	J13DJ5	594038.7	116321.8	111.16	Uranium-238	3.52	pCi/g	9/7/2006	WCH	7.5	10.46345	µg/g
618-2	J13DN0	594010	116319	111.58	Uranium-238	50.1	pCi/g	9/26/2006	WCH	7.5	148.9258	µg/g
618-2	J13DN1	594018	116318	111.46	Uranium-238	10.3	pCi/g	9/26/2006	WCH	7.5	30.61748	µg/g
618-2	J13DN2	594039	116320	111.2	Uranium-238	13.4	pCi/g	9/26/2006	WCH	7.5	39.83	µg/g
618-2	J13DN3	594015	116339	111.37	Uranium-238	0.49	pCi/g	9/26/2006	WCH	7.5	1.45656	µg/g
618-2	J13DN4	594032	116339	111.11	Uranium-238	0.5	pCi/g	9/26/2006	WCH	7.5	1.49	µg/g
618-2	J13H86	594041	116335	110.89	Uranium-238	6.28	pCi/g	9/28/2006	WCH	7.5	18.67	µg/g
618-2	J13H87	594044	116334.4	110.79	Uranium-238	6.71	pCi/g	9/28/2006	WCH	7.5	19.95	µg/g
618-3	J10TX0	593976	116378	114.2	Uranium-238	79.4	pCi/g	11/30/2005	WCH	5	236.02	µg/g
618-3	J10TX1	593957	116380	114.53	Uranium-238	25.4	pCi/g	11/30/2005	WCH	5	75.5	µg/g
618-3	J10TX2	593972	116396	114.14	Uranium-238	11.9	pCi/g	11/30/2005	WCH	5	35.37	µg/g
618-3	J11264	593949.7	116378.2	114.67	Uranium-238	0.75	pCi/g	1/31/2006	WCH	5	2.23	µg/g
618-3	J11266	593970	116387.4	114.19	Uranium-238	0.75	pCi/g	1/31/2006	WCH	5	2.23	µg/g
618-3	J11267	593946.2	116333.1	114.43	Uranium-238	0.55	pCi/g	1/31/2006	WCH	5	1.63	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
618-3	J11268	593974.4	116324.4	114.55	Uranium-238	0.45	pCi/g	1/31/2006	WCH	5	1.34	µg/g
618-4	J00H62	593930.9	117019.6	108.63	Uranium-238	1.08	pCi/g	2/12/2003	WCH	7.5	3.21	µg/g
618-4	J00WT8	593889.3	116991.8	108.97	Uranium-238	2.14	pCi/g	8/25/2003	WCH	7.5	6.36	µg/g
618-4	J00WT9	593903.2	116988.7	108.78	Uranium-238	1.54	pCi/g	8/25/2003	WCH	7.5	4.58	µg/g
618-4	J00WV0	593928.7	117030.9	108.61	Uranium-238	0.51	pCi/g	8/25/2003	WCH	7.5	1.52	µg/g
618-4	J00WV1	593948	117022.6	108.52	Uranium-238	2.05	pCi/g	8/25/2003	WCH	7.5	6.09	µg/g
618-4	J00WX2	593866.4	116974.7	109	Uranium-238	1.18	pCi/g	8/25/2003	WCH	7.5	3.51	µg/g
618-4	J00WX3	593870.2	116968.9	109	Uranium-238	3.38	pCi/g	8/25/2003	WCH	7.5	10.05	µg/g
618-4	J00WX4	593874	116961.4	109.28	Uranium-238	6.9	pCi/g	8/25/2003	WCH	7.5	20.51	µg/g
618-4	J00WX5	593883.6	116957	109.51	Uranium-238	0.43	pCi/g	8/25/2003	WCH	7.5	1.28	µg/g
618-4	J00WX8	593933.8	117025	108.51	Uranium-238	1.15	pCi/g	8/25/2003	WCH	7.5	3.42	µg/g
618-4	J00WX9	593935.6	117017.3	108.56	Uranium-238	0.51	pCi/g	8/25/2003	WCH	7.5	1.52	µg/g
618-4	J00WV3	593893.9	117011.4	111.85	Uranium-238	0.68	pCi/g	8/26/2003	WCH	5	2.02	µg/g
618-4	J00WV4	593895.6	116969.2	111.71	Uranium-238	1.23	pCi/g	8/26/2003	WCH	5	3.66	µg/g
618-4	J00WV5	593978.1	117033.6	110.88	Uranium-238	3.07	pCi/g	8/26/2003	WCH	5	9.13	µg/g
618-4	J00WV6	593968.7	117055.1	111.08	Uranium-238	1.91	pCi/g	8/26/2003	WCH	5	5.68	µg/g
618-5	J00HM5	594167.9	116804.8	105.97	Uranium-238	12.2	pCi/g	2/26/2003	WCH	7.5	36.27	µg/g
618-5	J00HM8	594182.1	116820.9	105.63	Uranium-238	3.06	pCi/g	2/26/2003	WCH	7.5	9.1	µg/g
618-5	J00YK3	594205.9	116865.4	108.05	Uranium-238	0.56	pCi/g	9/24/2003	WCH	5	1.66	µg/g
618-5	J00YK4	594145.3	116817.6	108.33	Uranium-238	0.85	pCi/g	9/24/2003	WCH	5	2.53	µg/g
618-5	J00YK5	594154.5	116776.5	109.3	Uranium-238	0.75	pCi/g	9/24/2003	WCH	5	2.23	µg/g
618-5	J00YK6	594224.3	116838.4	108.24	Uranium-238	1.05	pCi/g	9/24/2003	WCH	5	3.12	µg/g
618-5	J00YJ8	594185.5	116845.7	105.68	Uranium-238	5.86	pCi/g	9/24/2003	WCH	7.5	17.42	µg/g
618-5	J00YJ9	594162.6	116827.3	105.67	Uranium-238	8.87	pCi/g	9/24/2003	WCH	7.5	26.37	µg/g
618-5	J00YK0	594169.9	116813.9	105.79	Uranium-238	6.28	pCi/g	9/24/2003	WCH	7.5	18.67	µg/g
618-5	J00YK1	594196.7	116830.2	105.48	Uranium-238	1.74	pCi/g	9/24/2003	WCH	7.5	5.17	µg/g
399-1-107	B38BF2	594248	116576	107.54	Uranium	2960	µg/kg	2/24/2017	HEIS	7.24	2.96	µg/g
399-1-119	B38BW6	594247.7	116516.7	108.39	Uranium	8640	µg/kg	4/13/2017	HEIS	6.48	8.64	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
618-7	J17J15	593288	116578	116.85	Uranium-238	0.85	pCi/g	9/10/2008	WCH	5	2.53	µg/g
618-7	J17J17	593298	116618	116.68	Uranium-238	1.03	pCi/g	9/10/2008	WCH	5	3.06	µg/g
618-7	J17J18	593243	116611	116.25	Uranium-238	1.7	pCi/g	9/10/2008	WCH	5	5.05	µg/g
618-7	J17J19	593146	116631	117.23	Uranium-238	0.99	pCi/g	10/6/2008	WCH	5	2.94	µg/g
618-7	J17J21	593192	116630	116.81	Uranium-238	0.54	pCi/g	10/6/2008	WCH	5	1.61	µg/g
618-7	J17J22	593246	116572	116.54	Uranium-238	0.73	pCi/g	10/6/2008	WCH	5	2.17	µg/g
618-7	J17J27	593296	116600	116.66	Uranium-238	0.44	pCi/g	10/6/2008	WCH	5	1.31	µg/g
618-7	J17J28	593241	116630	116.4	Uranium-238	4.24	pCi/g	10/6/2008	WCH	5	12.6	µg/g
618-7	J17J29	593194	116596	116.14	Uranium-238	0.77	pCi/g	10/6/2008	WCH	5	2.29	µg/g
618-7	J17J23	593193	116589	116.33	Uranium-238	4.26	pCi/g	10/13/2008	WCH	5	12.66	µg/g
618-7	J17J24	593193	116610	114.22	Uranium-238	5.05	pCi/g	10/13/2008	WCH	5	15.01	µg/g
618-7	J17J25	593146	116609	116.33	Uranium-238	1.23	pCi/g	10/13/2008	WCH	5	3.66	µg/g
618-7	J17J26	593243	116592	116.23	Uranium-238	2.03	pCi/g	10/13/2008	WCH	5	6.03	µg/g
618-7	J17J31	593142	116590	116.3	Uranium-238	0.59	pCi/g	10/15/2008	WCH	5	1.75	µg/g
618-7	J17J32	593143	116570	116.55	Uranium-238	0.31	pCi/g	10/15/2008	WCH	5	0.92	µg/g
618-7	J17R51	593298	116635	116.83	Uranium-238	7.9	pCi/g	10/15/2008	WCH	5	23.48	µg/g
618-7	J17R29	593172.1	116568	116.77	Uranium-238	0.36	pCi/g	10/15/2008	WCH	5	1.07	µg/g
618-7	J17R30	593207.4	116602.1	116.17	Uranium-238	0.68	pCi/g	10/15/2008	WCH	5	2.02	µg/g
618-7	J17R31	593262	116507	116.71	Uranium-238	6.42	pCi/g	10/15/2008	WCH	5	19.08	µg/g
618-7	J17R32	593308	116614	116.81	Uranium-238	0.32	pCi/g	10/15/2008	WCH	5	0.95	µg/g
618-7	J17R33	593231	116619	116.19	Uranium-238	1.25	pCi/g	10/15/2008	WCH	5	3.72	µg/g
618-7	J17R34	593150.6	116571.9	116.44	Uranium-238	1.23	pCi/g	10/15/2008	WCH	5	3.66	µg/g
618-7	J17R35	593234.2	116577	116.62	Uranium-238	1.47	pCi/g	10/15/2008	WCH	5	4.37	µg/g
618-7	J17R36	593253.8	116577	116.64	Uranium-238	2.89	pCi/g	10/15/2008	WCH	5	8.59	µg/g
618-7	J17R55	593212.6	116509.2	116.61	Uranium-238	0	pCi/g	10/16/2008	WCH	5	0	µg/g
618-7	J17R54	593174.2	116506.4	116.23	Uranium-238	0.4	pCi/g	10/16/2008	WCH	5	1.19	µg/g
618-7	J17R56	593244.7	116511.2	116.75	Uranium-238	0.53	pCi/g	10/16/2008	WCH	5	1.58	µg/g
618-7	J17R57	593286	116503.5	116.36	Uranium-238	0.39	pCi/g	10/16/2008	WCH	5	1.16	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
618-7	J17R59	593208	116518	116.78	Uranium-238	0	pCi/g	10/16/2008	WCH	5	0	µg/g
618-7	J17R60	593237.2	116514.1	116.75	Uranium-238	0.21	pCi/g	10/16/2008	WCH	5	0.62	µg/g
618-7	J17RK1	593180	116715	117.88	Uranium-238	0.53	pCi/g	10/21/2008	WCH	5	1.58	µg/g
618-7	J17RK3	593203	116681	117.97	Uranium-238	0.54	pCi/g	10/21/2008	WCH	5	1.61	µg/g
618-7	J17RK4	593185	116681	118.19	Uranium-238	0.54	pCi/g	10/21/2008	WCH	5	1.61	µg/g
618-7	J17WL0	593214	116715	117.61	Uranium-238	0.18	pCi/g	11/14/2008	WCH	5	0.54	µg/g
618-7	J17WL1	593215	116702	117.72	Uranium-238	0.45	pCi/g	11/14/2008	WCH	5	1.34	µg/g
618-7	J17XN3	593320	116599	117.05	Uranium-238	0.93	pCi/g	11/15/2008	WCH	5	2.76	µg/g
618-7	J17XN4	593317	116582	117.16	Uranium-238	0.89	pCi/g	11/15/2008	WCH	5	2.65	µg/g
618-7	J17XV9	593309	116594	116.87	Uranium-238	0.24	pCi/g	11/18/2008	WCH	5	0.71	µg/g
618-7	J17XW0	593318	116599	117	Uranium-238	0.87	pCi/g	11/18/2008	WCH	5	2.59	µg/g
618-7	J17XW1	593303	116579	116.92	Uranium-238	0.95	pCi/g	11/18/2008	WCH	5	2.82	µg/g
618-7	J17XW3	593312	116573	117.21	Uranium-238	0.39	pCi/g	11/18/2008	WCH	5	1.16	µg/g
618-8	J11274	593821.1	116477.9	115.43	Uranium-238	0	pCi/g	1/31/2006	WCH	5	0	µg/g
618-8	J11271	593818.2	116509.1	114.22	Uranium-238	0.44	pCi/g	1/31/2006	WCH	5	1.31	µg/g
618-8	J11273	593816.6	116488.3	115.41	Uranium-238	0.73	pCi/g	1/31/2006	WCH	5	2.17	µg/g
618-8	J11275	593839.5	116453.3	115.08	Uranium-238	0.52	pCi/g	1/31/2006	WCH	5	1.55	µg/g
628-4	B0Y9W1	594155	116275	110.05	Uranium-238	0.82	pCi/g	7/13/2000	WCH	5	2.44	µg/g
628-4	B0Y9W2	594170	116290	110.12	Uranium-238	0.72	pCi/g	7/13/2000	WCH	5	2.14	µg/g
628-4	B0Y9W3	594165	116295	110.67	Uranium-238	0.63	pCi/g	7/13/2000	WCH	5	1.87	µg/g
628-4	B0Y9W4	594170	116300	110.83	Uranium-238	0.89	pCi/g	7/13/2000	WCH	5	2.65	µg/g
628-4	B0Y9W5	594170	116280	109.97	Uranium-238	1.24	pCi/g	7/13/2000	WCH	5	3.69	µg/g
628-4	B0Y9W6	594180	116275	110.02	Uranium-238	0.94	pCi/g	7/13/2000	WCH	5	2.79	µg/g
399-1-119	B38BW9	594247.7	116516.7	107.63	Uranium	3670	µg/kg	4/11/2017	HEIS	7.24	3.67	µg/g
399-1-119	B38BX5	594247.7	116516.7	106.87	Uranium	2110	µg/kg	4/11/2017	HEIS	8	2.11	µg/g
399-1-119	B38BX8	594247.7	116516.7	106.11	Uranium	2530	µg/kg	4/11/2017	HEIS	8.76	2.53	µg/g
399-1-119	B38BY4	594247.7	116516.7	105.34	Uranium	2490	µg/kg	4/11/2017	HEIS	9.53	2.49	µg/g
399-1-141	B38TB5	594258.5	116498.2	108.01	Uranium	25000	µg/kg	4/18/2017	HEIS	6.86	25	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
699-S27-E9B	B00YP6	592727.3	115328.7	112.86	Uranium-238	0.1	pCi/g	7/24/1991	HEIS	6.4	0.3	µg/g
699-S27-E9B	B00YP8	592727.3	115328.7	111.03	Uranium-238	0.16	pCi/g	7/25/1991	HEIS	8.23	0.48	µg/g
699-S27-E9B	B00YQ0	592727.3	115328.7	109.81	Uranium-238	0.1	pCi/g	7/25/1991	HEIS	9.45	0.3	µg/g
699-S27-E9B	B00YQ4	592727.3	115328.7	108.29	Uranium-238	0.08	pCi/g	7/26/1991	HEIS	10.98	0.24	µg/g
699-S27-E9B	B00YQ7	592727.3	115328.7	106.77	Uranium-238	0.1	pCi/g	7/26/1991	HEIS	12.5	0.3	µg/g
399-1-116	B38T90	594235.6	116539.8	108.82	Uranium	5920	µg/kg	4/4/2017	HEIS	5.94	5.92	µg/g
399-1-116	B38T87	594235.6	116539.8	101.66	Uranium	4390	µg/kg	4/4/2017	HEIS	13.11	4.39	µg/g
399-1-99	B38B11	594260.3	116536.2	107.42	Uranium	4110	µg/kg	4/4/2017	HEIS	7.24	4.11	µg/g
399-1-99	B38B14	594260.3	116536.2	106.66	Uranium	5490	µg/kg	4/4/2017	HEIS	8	5.49	µg/g
399-1-99	B38B08	594260.3	116536.2	108.18	Uranium	3570	µg/kg	4/4/2017	HEIS	6.48	3.57	µg/g
399-1-99	B38B17	594260.3	116536.2	105.9	Uranium	9580	µg/kg	4/4/2017	HEIS	8.76	9.58	µg/g
399-1-99	B38B23	594260.3	116536.2	105.14	Uranium	1710	µg/kg	4/4/2017	HEIS	9.53	1.71	µg/g
399-1-109	B38BL7	594220.4	116575.5	108.92	Uranium	884	µg/kg	2/24/2017	HEIS	5.94	0.88	µg/g
399-1-109	B38BK2	594220.4	116575.5	107.62	Uranium	1310	µg/kg	2/17/2017	HEIS	7.24	1.31	µg/g
399-1-109	B38BK5	594220.4	116575.5	106.86	Uranium	2130	µg/kg	2/17/2017	HEIS	8	2.13	µg/g
399-1-109	B38BK8	594220.4	116575.5	106.1	Uranium	1930	µg/kg	2/17/2017	HEIS	8.76	1.93	µg/g
399-1-109	B38BL4	594220.4	116575.5	105.34	Uranium	1020	µg/kg	2/17/2017	HEIS	9.53	1.02	µg/g
399-1-109	B38BJ6	594220.4	116575.5	108.38	Uranium	1300	µg/kg	2/17/2017	HEIS	6.48	1.3	µg/g
399-1-103	B38B66	594180.1	116484.1	108.38	Uranium	26500	µg/kg	5/25/2017	HEIS	6.48	26.5	µg/g
399-1-103	B38B72	594180.1	116484.1	107.62	Uranium	85400	µg/kg	5/25/2017	HEIS	7.24	85.4	µg/g
399-1-103	B38B75	594180.1	116484.1	106.86	Uranium	7350	µg/kg	5/25/2017	HEIS	8	7.35	µg/g
399-1-103	B38B84	594180.1	116484.1	105.33	Uranium	7090	µg/kg	5/25/2017	HEIS	9.53	7.09	µg/g
399-1-103	B38B81	594180.1	116484.1	106.09	Uranium	13700	µg/kg	5/25/2017	HEIS	8.76	13.7	µg/g
399-1-113	B38T78	594236.1	116552.7	109.27	Uranium	4980	µg/kg	3/29/2017	HEIS	5.49	4.98	µg/g
399-1-120	B39W86	594221	116506.3	108.9	Uranium-238	5.04	pCi/g	5/17/2017	HEIS	5.94	14.98	µg/g
699-S22-E9B	B010H5	592696.1	116756.4	107.78	Uranium-238	0.09	pCi/g	7/26/1991	HEIS	6.37	0.27	µg/g
699-S22-E9B	B010H8	592696.1	116756.4	106.15	Uranium-238	0.09	pCi/g	7/29/1991	HEIS	8	0.27	µg/g
399-1-112	B38T66	594251.8	116561.5	108.34	Uranium	2510	µg/kg	3/17/2017	HEIS	6.4	2.51	µg/g

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Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-112	B38T69	594251.8	116561.5	109.56	Uranium	3830	µg/kg	3/17/2017	HEIS	5.18	3.83	µg/g
399-3-33	B28PY0	594500.7	115966.5	100.77	U-238	0.27	pCi/g	N/A	HEIS	17.61	0.802594	µg/g
399-3-33	B282Y1	594500.7	115966.5	103.66	U-238	1.2	pCi/g	N/A	HEIS	14.71	3.567085	µg/g
C8933	B304V0	594113.2	116439.9	112.2112	Total U	460	µg/Kg	12/31/2014	HEIS	3.43	0.46	µg/g
C8933	B304V5	594113.2	116439.9	111.6017	Total U	688	µg/Kg	12/31/2014	HEIS	4.04	0.69	µg/g
C8933	B304W0	594113.2	116439.9	110.9617	Total U	540	µg/Kg	12/31/2014	HEIS	4.68	0.54	µg/g
C8933	B304W5	594113.2	116439.9	110.2302	Total U	508	µg/Kg	12/31/2014	HEIS	5.41	0.51	µg/g
C8933	B304W6	594113.2	116439.9	110.2302	Total U	622	µg/Kg	12/31/2014	HEIS	5.41	0.62	µg/g
C8933	B304X1	594113.2	116439.9	109.4682	Total U	726	µg/Kg	12/31/2014	HEIS	6.17	0.73	µg/g
C8933	B304X6	594113.2	116439.9	109.0107	Total U	739	µg/Kg	12/31/2014	HEIS	6.63	0.74	µg/g
C8933	B304Y1	594113.2	116439.9	107.5172	Total U	8180	µg/Kg	1/6/2015	HEIS	8.12	8.18	µg/g
C8933	B304Y7	594113.2	116439.9	106.4202	Total U	7130	µg/Kg	1/6/2015	HEIS	9.22	7.13	µg/g
C8933	B30504	594113.2	116439.9	104.1802	Total U	2030	µg/Kg	1/7/2015	HEIS	11.46	2.03	µg/g
N/A	N/A	594108.3	116510.5	114.5657	N/A	N/A	N/A	N/A	control	0	31	µg/g
N/A	N/A	594108.3	116510.5	104.9647	N/A	N/A	N/A	N/A	control	1	31	µg/g
N/A	N/A	594104.7	116409.2	115.2667	Ur	N/A	N/A	N/A	control	0	31	µg/g
N/A	N/A	594104.7	116409.2	105.4905	N/A	N/A	N/A	N/A	control	1	31	µg/g
N/A	N/A	594091.4	116556	114.2829	N/A	N/A	N/A	N/A	control	0	31	µg/g
N/A	N/A	593981	116850	111	N/A	1	N/A	N/A	control	0	3.03	µg/g
N/A	N/A	593983	116891	111	N/A	1	N/A	N/A	control	0	3.03	µg/g
N/A	N/A	594051	116849	110	N/A	1	N/A	N/A	control	0	3.03	µg/g
N/A	N/A	594128	116935	109	N/A	1	N/A	N/A	control	0	3.03	µg/g
N/A	N/A	594128	116935	106.5	N/A	1	N/A	N/A	control	2.5	3.03	µg/g
N/A	N/A	593981	116850	108.5	N/A	1	N/A	N/A	control	2.5	3.03	µg/g
N/A	N/A	593983	116891	108.5	N/A	1	N/A	N/A	control	2.5	3.03	µg/g
N/A	N/A	594051	116849	107.5	N/A	1	N/A	N/A	control	2.5	3.03	µg/g
N/A	N/A	593981	116850	106	N/A	1	N/A	N/A	control	5	3.03	µg/g
N/A	N/A	593983	116891	106	N/A	1	N/A	N/A	control	5	3.03	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
N/A	N/A	594051	116849	105	N/A	1	N/A	N/A	control	5	3.03	µg/g
N/A	N/A	594128	116935	104	N/A	1	N/A	N/A	control	5	3.03	µg/g
N/A	N/A	594055	116456	105	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	594050	116446	105	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	594043	116569	105	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	593946	116462	105	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	593909	116549	105	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	594055	116456	100	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	594050	116446	100	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	594043	116569	100	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	593946	116462	100	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
N/A	N/A	593909	116549	100	N/A	1	N/A	N/A	control	N/A	3.03	µg/g
399-1-76	B31MY3	594117.8	116460.6	111.5245	Uranium	987	µg/Kg	7/13/2015	HEIS	3.58	0.99	µg/g
399-1-76	B31MY8	594117.8	116460.6	110.7625	Uranium	1300	µg/Kg	7/13/2015	HEIS	4.34	1.3	µg/g
399-1-76	B31MY9	594117.8	116460.6	NA	Uranium	141	µg/Kg	7/13/2015	HEIS	NA	0.14	µg/g
399-1-76	B31N04	594117.8	116460.6	110.0005	Uranium	1180	µg/Kg	7/13/2015	HEIS	5.11	1.18	µg/g
399-1-76	B31N14	594117.8	116460.6	108.4005	Uranium	2540	µg/Kg	7/13/2015	HEIS	6.71	2.54	µg/g
399-1-76	B31N15	594117.8	116460.6	108.4765	Uranium	2140	µg/Kg	7/13/2015	HEIS	6.63	2.14	µg/g
399-1-76	B31N20	594117.8	116460.6	107.6385	Uranium	2500	µg/Kg	7/13/2015	HEIS	7.47	2.5	µg/g
399-1-76	B31N25	594117.8	116460.6	106.9525	Uranium	5900	µg/Kg	7/13/2015	HEIS	8.15	5.9	µg/g
399-1-76	B31N30	594117.8	116460.6	106.1905	Uranium	11500	µg/Kg	7/13/2015	HEIS	8.92	11.5	µg/g
399-1-76	B31N35	594117.8	116460.6	105.4285	Uranium	4490	µg/Kg	7/13/2015	HEIS	9.68	4.49	µg/g
399-1-80	B31N65	594089.5	116454.8	111.2995	Uranium	1440	µg/Kg	7/14/2015	HEIS	3.58	1.44	µg/g
399-1-80	B31N70	594089.5	116454.8	110.553	Uranium	1180	µg/Kg	7/14/2015	HEIS	4.33	1.18	µg/g
399-1-80	B31N75	594089.5	116454.8	109.7755	Uranium	1270	µg/Kg	7/14/2015	HEIS	5.11	1.27	µg/g
399-1-80	B31N76	594089.5	116454.8	109.7755	Uranium	1030	µg/Kg	7/14/2015	HEIS	5.11	1.03	µg/g
399-1-80	B31N81	594089.5	116454.8	109.0135	Uranium	1100	µg/Kg	7/14/2015	HEIS	5.87	1.1	µg/g
399-1-80	B31N86	594089.5	116454.8	108.404	Uranium	12000	µg/Kg	7/14/2015	HEIS	6.48	12	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-80	B31N91	594089.5	116454.8	107.4135	Uranium	5440	µg/Kg	7/14/2015	HEIS	7.47	5.44	µg/g
399-1-80	B31N92	594089.7	116454.9	NA	Uranium	248	µg/Kg	7/14/2015	HEIS	NA	0.25	µg/g
399-1-80	B31N97	594089.5	116454.8	106.6515	Uranium	10600	µg/Kg	7/14/2015	HEIS	8.23	10.6	µg/g
399-1-80	B31NB2	594089.5	116454.8	106.118	Uranium	9290	µg/Kg	7/14/2015	HEIS	8.76	9.29	µg/g
399-1-80	B31NB7	594089.5	116454.8	105.1275	Uranium	6500	µg/Kg	7/14/2015	HEIS	9.75	6.5	µg/g
699-S19-E14	B010R0	594249.9	117716.2	107.76	Uranium-238	0.12	pCi/g	8/19/1991	HEIS	6.34	0.36	µg/g
699-S19-E14	B010R3	594249.9	117716.2	106.33	Uranium-238	0.11	pCi/g	8/19/1991	HEIS	7.77	0.33	µg/g
699-S19-E14	B010R5	594249.9	117716.2	104.9	Uranium-238	0.13	pCi/g	8/20/1991	HEIS	9.21	0.39	µg/g
699-S29-E16B	B010P6	594746.9	114738.8	108.27	Uranium-238	0.13	pCi/g	8/15/1991	HEIS	7.71	0.39	µg/g
699-S27-E9C	B00VS1	592720.9	115324.8	106.45	Uranium-238	0.14	pCi/g	6/3/1991	HEIS	12.84	0.42	µg/g
699-S27-E9C	B00YJ1	592720.9	115324.8	100.79	Uranium-238	0.04	pCi/g	6/11/1991	HEIS	18.49	0.12	µg/g
699-S27-E9C	B00YJ2	592720.9	115324.8	94.58	Uranium-238	0.23	pCi/g	6/14/1991	HEIS	24.7	0.68	µg/g
699-S27-E9C	B00YJ6	592720.9	115324.8	83.77	Uranium-238	0.14	pCi/g	6/28/1991	HEIS	35.51	0.42	µg/g
699-S27-E9C	B00YJ7	592720.9	115324.8	77.62	Uranium-238	0.01	pCi/g	7/16/1991	HEIS	41.67	0.03	µg/g
699-S27-E9C	B00YJ9	592720.9	115324.8	69.52	Uranium-238	0.15	pCi/g	8/7/1991	HEIS	49.76	0.45	µg/g
699-S27-E9C	B010M2	592720.9	115324.8	64.34	Uranium-238	0.93	pCi/g	8/12/1991	HEIS	54.94	2.76	µg/g
699-S29-E16B	B010P3	594746.9	114738.8	109.72	Uranium-238	0.17	pCi/g	8/14/1991	HEIS	6.26	0.51	µg/g
699-S29-E16B	B010P9	594746.9	114738.8	104.93	Uranium-238	0.19	pCi/g	8/15/1991	HEIS	11.05	0.56	µg/g
699-S27-E9C	B00YJ4	592720.9	115324.8	88.68	Uranium-238	0.32	pCi/g	6/20/1991	HEIS	30.6	0.95	µg/g
399-1-118	B38BV7	594265.1	116509.5	109.19	Uranium	4540	µg/kg	4/7/2017	HEIS	5.64	4.54	µg/g
399-1-118	B38BR6	594265.1	116509.5	108.35	Uranium	4330	µg/kg	4/7/2017	HEIS	6.48	4.33	µg/g
399-1-118	B38BT2	594265.1	116509.5	107.59	Uranium	3030	µg/kg	4/7/2017	HEIS	7.24	3.03	µg/g
399-1-118	B38BT5	594265.1	116509.5	106.83	Uranium	3210	µg/kg	4/7/2017	HEIS	8	3.21	µg/g
399-1-118	B38BV4	594265.1	116509.5	105.3	Uranium	3460	µg/kg	4/7/2017	HEIS	9.53	3.46	µg/g
399-1-118	B38BV1	594265.1	116509.5	106.06	Uranium	2420	µg/kg	4/7/2017	HEIS	8.76	2.42	µg/g
399-2-32	B27JV3	594284.6	116195.1	102.12	U-238	0.38	pCi/g	N/A	HEIS	12.73	1.13	µg/g
399-2-32	B28PN2	594284.6	116195.1	98.31	U-238	1.5	pCi/g	N/A	HEIS	16.54	4.46	µg/g
399-2-32	B27JV4	594284.6	116195.1	77.59	U-238	0.57	pCi/g	N/A	HEIS	37.26	1.69	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-3-21	B1PD84	594379.8	115854.3	120.39	Uranium-238	0.25	pCi/g	8/20/2007	HEIS	0	0.74	µg/g
399-1-36	B1PD72	594108.5	116438.8	115.83	Uranium-238	0.15	pCi/g	8/20/2007	HEIS	0	0.445886	µg/g
699-S29-E16C	B00YM3	594742.4	114730.5	74.48	Uranium-238	0.78	pCi/g	7/31/1991	HEIS	41.46	2.32	µg/g
699-S29-E16C	B00YL5	594742.4	114730.5	103.89	Uranium-238	0.09	pCi/g	6/26/1991	HEIS	12.04	0.27	µg/g
699-S29-E16C	B00YL7	594742.4	114730.5	98.71	Uranium-238	0.08	pCi/g	7/2/1991	HEIS	17.23	0.24	µg/g
699-S29-E16C	B00YL8	594742.4	114730.5	92.69	Uranium-238	0.06	pCi/g	7/9/1991	HEIS	23.24	0.18	µg/g
699-S29-E16C	B00YM0	594742.4	114730.5	86.78	Uranium-238	0.19	pCi/g	7/12/1991	HEIS	29.16	0.56	µg/g
699-S29-E16C	B00YM1	594742.4	114730.5	80.62	Uranium-238	1.5	pCi/g	7/26/1991	HEIS	35.31	4.46	µg/g
699-S29-E16C	B00YM4	594742.4	114730.5	68.61	Uranium-238	0.93	pCi/g	8/5/1991	HEIS	47.32	2.76	µg/g
699-S29-E16C	B010M0	594742.4	114730.5	62.59	Uranium-238	0.13	pCi/g	8/12/1991	HEIS	53.34	0.39	µg/g
399-1-123	B388M2	594203.5	116471	108.58	Uranium	16200	µg/kg	4/18/2017	HEIS	6.4	16.2	µg/g
399-1-123	B388M5	594203.5	116471	107.81	Uranium	65400	µg/kg	4/18/2017	HEIS	7.16	65.4	µg/g
399-1-123	B388N1	594203.5	116471	106.98	Uranium	63200	µg/kg	4/19/2017	HEIS	8	63.2	µg/g
399-1-123	B388N7	594203.5	116471	106.21	Uranium	36500	µg/kg	4/19/2017	HEIS	8.76	36.5	µg/g
399-1-123	B388P0	594203.5	116471	105.45	Uranium	14100	µg/kg	4/19/2017	HEIS	9.53	14.1	µg/g
399-1-129	B388W2	594163.9	116445.2	108.64	Uranium	6540	µg/kg	4/4/2017	HEIS	6.48	6.54	µg/g
399-1-129	B388W5	594163.9	116445.2	107.88	Uranium	3850	µg/kg	4/4/2017	HEIS	7.24	3.85	µg/g
399-1-129	B388X4	594163.9	116445.2	106.35	Uranium	24400	µg/kg	4/6/2017	HEIS	8.76	24.4	µg/g
399-1-129	B388X7	594163.9	116445.2	105.59	Uranium	51600	µg/kg	4/6/2017	HEIS	9.53	51.6	µg/g
399-1-129	B388W8	594163.9	116445.2	107.12	Uranium	16300	µg/kg	4/4/2017	HEIS	8	16.3	µg/g
399-1-138	B38998	594100.1	116497.1	107.56	Uranium	6030	µg/kg	5/23/2017	HEIS	7.24	6.03	µg/g
399-1-138	B389B1	594100.1	116497.1	106.79	Uranium	3950	µg/kg	5/23/2017	HEIS	8	3.95	µg/g
399-1-138	B389B4	594100.1	116497.1	106.03	Uranium	3220	µg/kg	5/23/2017	HEIS	8.76	3.22	µg/g
399-1-138	B389C0	594100.1	116497.1	105.27	Uranium	1900	µg/kg	5/23/2017	HEIS	9.53	1.9	µg/g
399-1-138	B38992	594100.1	116497.1	108.32	Uranium	2390	µg/kg	5/23/2017	HEIS	6.48	2.39	µg/g
399-1-162	B38T93	594167	116454	108.98	Uranium	5810	µg/kg	4/4/2017	HEIS	6.1	5.81	µg/g
399-1-162	B38T96	594167	116454	102.88	Uranium	9230	µg/kg	4/4/2017	HEIS	12.19	9.23	µg/g
399-1-162	B38T99	594167	116454	101.96	Uranium	6530	µg/kg	4/4/2017	HEIS	13.11	6.53	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-137	B38962	594085.9	116486.4	108.4	Uranium	438	µg/kg	5/23/2017	HEIS	6.48	0.44	µg/g
399-1-137	B38971	594085.9	116486.4	106.88	Uranium	6900	µg/kg	5/23/2017	HEIS	8	6.9	µg/g
399-1-137	B38977	594085.9	116486.4	106.12	Uranium	30100	µg/kg	5/23/2017	HEIS	8.76	30.1	µg/g
399-1-137	B38980	594085.9	116486.4	105.36	Uranium	3740	µg/kg	5/23/2017	HEIS	9.53	3.74	µg/g
399-1-137	B38965	594085.9	116486.4	107.64	Uranium	914	µg/kg	5/23/2017	HEIS	7.24	0.914	µg/g
399-1-128	B388R8	594167.6	116461	107.77	Uranium	15200	µg/kg	4/8/2017	HEIS	7.24	15.2	µg/g
399-1-128	B388T1	594167.6	116461	107.01	Uranium	10800	µg/kg	4/8/2017	HEIS	8	10.8	µg/g
399-1-128	B388T4	594167.6	116461	106.25	Uranium	15300	µg/kg	4/8/2017	HEIS	8.76	15.3	µg/g
399-1-128	B388V0	594167.6	116461	105.49	Uranium	10400	µg/kg	4/8/2017	HEIS	9.53	10.4	µg/g
399-1-128	B388R5	594167.6	116461	108.54	Uranium	8220	µg/kg	4/8/2017	HEIS	6.48	8.22	µg/g
399-1-133	B38902	594231.4	116485.8	108.43	Uranium	78900	µg/kg	4/29/2017	HEIS	6.48	78.9	µg/g
399-1-133	B38908	594231.4	116485.8	107.67	Uranium	39100	µg/kg	4/29/2017	HEIS	7.24	39.1	µg/g
399-1-133	B38911	594231.4	116485.8	106.91	Uranium	69100	µg/kg	4/29/2017	HEIS	8	69.1	µg/g
399-1-133	B38920	594231.4	116485.8	105.38	Uranium	1050	µg/kg	4/29/2017	HEIS	9.53	1.05	µg/g
399-1-133	B38917	594231.4	116485.8	106.15	Uranium	25000	µg/kg	4/29/2017	HEIS	8.76	25	µg/g
399-1-136	B39W88	594076.5	116504.3	109.36	Uranium-238	16.2	pCi/g	5/24/2017	HEIS	5.49	NA	µg/g
399-1-136	B39JV2	594076.5	116504.3	109.36	Uranium	27300	µg/kg	5/23/2017	HEIS	5.49	27.3	µg/g
399-1-139	B389J5	594089.1	116513.5	108.19	Uranium	23300	µg/kg	5/23/2017	HEIS	6.48	23.3	µg/g
399-1-139	B389J8	594089.1	116513.5	107.43	Uranium	9880	µg/kg	5/23/2017	HEIS	7.24	9.88	µg/g
399-1-139	B389K7	594089.1	116513.5	105.9	Uranium	7470	µg/kg	5/23/2017	HEIS	8.76	7.47	µg/g
399-1-139	B389L0	594089.1	116513.5	105.14	Uranium	4120	µg/kg	5/23/2017	HEIS	9.53	4.12	µg/g
399-1-139	B389K1	594089.1	116513.5	106.67	Uranium	11100	µg/kg	5/23/2017	HEIS	8	11.1	µg/g
399-1-161	B39W84	594214.9	116486.6	109.9	Uranium-238	5.98	pCi/g	4/28/2017	HEIS	5.03	17.77597	µg/g
399-1-135	B38932	594237.2	116500	108.44	Uranium	3170	µg/kg	4/19/2017	HEIS	6.48	3.17	µg/g
399-1-135	B38935	594237.2	116500	107.68	Uranium	5580	µg/kg	4/19/2017	HEIS	7.24	5.58	µg/g
399-1-135	B38941	594237.2	116500	106.92	Uranium	5230	µg/kg	4/19/2017	HEIS	8	5.23	µg/g
399-1-135	B38944	594237.2	116500	106.16	Uranium	4990	µg/kg	4/19/2017	HEIS	8.76	4.99	µg/g
399-1-135	B38950	594237.2	116500	105.4	Uranium	4400	µg/kg	4/19/2017	HEIS	9.53	4.4	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-33	B1PD60	594113.3	116430.5	115.73	Uranium-238	0.72	pCi/g	8/20/2007	HEIS	0	2.140251	µg/g
399-1-21B	B014W0	594157.2	116176.8	105.03	Uranium-238	0.42	pCi/g	10/30/1991	HEIS	11.95	1.24848	µg/g
399-1-21B	B014W1	594157.2	116176.8	98.99	Uranium-238	0.37	pCi/g	11/1/1991	HEIS	17.99	1.099851	µg/g
399-1-21B	B014W3	594157.2	116176.8	92.9	Uranium-238	0	pCi/g	11/5/1991	HEIS	24.08	0	µg/g
399-1-21B	B014W5	594157.2	116176.8	86.37	Uranium-238	0.8	pCi/g	11/8/1991	HEIS	30.6	2.378057	µg/g
C9580	B347C7	594088.7	116456.4	108.21	Uranium	2600	µg/kg	1/5/2016	HEIS	6.63	2.6	µg/g
C9580	B347D3	594088.7	116456.4	107.44	Uranium	2000	µg/kg	1/5/2016	HEIS	7.39	2	µg/g
C9580	B347D9	594088.7	116456.4	106.68	Uranium	3200	µg/kg	1/5/2016	HEIS	8.15	3.2	µg/g
C9580	B347F4	594088.7	116456.4	105.77	Uranium	7600	µg/kg	1/5/2016	HEIS	9.07	7.6	µg/g
C9580	B347F9	594088.7	116456.4	105.46	Uranium	1400	µg/kg	1/5/2016	HEIS	9.37	1.4	µg/g
C9580	B347H4	594088.7	116456.4	104.55	Uranium	2600	µg/kg	1/5/2016	HEIS	10.29	2.6	µg/g
C9581	B347J9	594116.8	116462.1	108.82	Uranium	1200	µg/kg	1/7/2016	HEIS	6.32	1.2	µg/g
C9581	B347K5	594116.8	116462.1	108.06	Uranium	1600	µg/kg	1/7/2016	HEIS	7.09	1.6	µg/g
C9581	B347L0	594116.8	116462.1	107.3	Uranium	5300	µg/kg	1/7/2016	HEIS	7.85	5.3	µg/g
C9581	B347L6	594116.8	116462.1	106.53	Uranium	4400	µg/kg	1/7/2016	HEIS	8.61	4.4	µg/g
C9581	B347M1	594116.8	116462.1	105.32	Uranium	2900	µg/kg	1/7/2016	HEIS	9.83	2.9	µg/g
300-FF-1 RI|B00H44	B00H44	594211	116130	105.5	Uranium-238	2.9	pCi/g	12/6/1991	HEIS	9.45	8.62	µg/g
300-FF-1 RI|B00H44	B00H46	594211	116130	104.28	Uranium-238	1.6	pCi/g	12/6/1991	HEIS	10.67	4.76	µg/g
300-FF-1 RI|B00H44	B00H48	594211	116130	102.76	Uranium-238	1.1	pCi/g	12/6/1991	HEIS	12.19	3.27	µg/g
316-1-TP1	B00H52	594280.8	116110.2	109.99	Uranium-238	1	pCi/g	11/21/1991	HEIS	4.88	2.97	µg/g
316-1-TP1	B00H53	594280.8	116110.2	108.47	Uranium-238	2.7	pCi/g	11/21/1991	HEIS	6.4	8.03	µg/g
316-1-TP1	B00H54	594280.8	116110.2	106.94	Uranium-238	1.4	pCi/g	11/21/1991	HEIS	7.93	4.16	µg/g
316-1-TP1	B00H55	594280.8	116110.2	105.73	Uranium-238	1.9	pCi/g	11/21/1991	HEIS	9.14	5.65	µg/g
316-1-TP1	B00H56	594280.8	116110.2	104.2	Uranium-238	3.1	pCi/g	11/21/1991	HEIS	10.67	9.21	µg/g
316-1-TP2	B00H68	594243.4	116032.2	110.14	Uranium-238	1.5	pCi/g	12/3/1991	HEIS	4.88	4.46	µg/g
316-1-TP2	B00H69	594243.4	116032.2	108.62	Uranium-238	1.2	pCi/g	12/3/1991	HEIS	6.4	3.57	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
316-1-TP2	B00H70	594243.4	116032.2	107.09	Uranium-238	1.6	pCi/g	12/3/1991	HEIS	7.93	4.76	µg/g
316-1-TP2	B00H71	594243.4	116032.2	105.57	Uranium-238	0.9	pCi/g	12/3/1991	HEIS	9.45	2.68	µg/g
316-1-TP2	B00H72	594243.4	116032.2	104.05	Uranium-238	2.9	pCi/g	12/3/1991	HEIS	10.97	8.62	µg/g
316-1-TP2	B00H73	594243.4	116032.2	102.52	Uranium-238	1	pCi/g	12/3/1991	HEIS	12.5	2.97	µg/g
316-1-TP3	B00H84	594215.2	116119.4	110.15	Uranium-238	26.2	pCi/g	12/6/1991	HEIS	4.88	77.88	µg/g
316-1-TP3	B00H86	594215.2	116119.4	108.63	Uranium-238	1.9	pCi/g	12/6/1991	HEIS	6.4	5.65	µg/g
316-1-TP3	B00H88	594215.2	116119.4	107.1	Uranium-238	6.8	pCi/g	12/6/1991	HEIS	7.93	20.21	µg/g
316-2-TP2	B01GG2	594204.4	116622.4	109.81	Uranium-238	0.9	pCi/g	12/14/1991	HEIS	4.88	2.68	µg/g
316-2-TP2	B01GG3	594204.4	116622.4	108.29	Uranium-238	1	pCi/g	12/14/1991	HEIS	6.4	2.97	µg/g
316-2-TP2	B01GG4	594204.4	116622.4	106.76	Uranium-238	1.4	pCi/g	12/14/1991	HEIS	7.93	4.16	µg/g
316-2-TP2	B01GG5	594204.4	116622.4	105.24	Uranium-238	1.2	pCi/g	12/14/1991	HEIS	9.45	3.57	µg/g
316-2-TP3	B01GJ7	594285.5	116620.2	109.87	Uranium-238	2.1	pCi/g	12/16/1991	HEIS	4.88	6.24	µg/g
316-2-TP3	B01GJ8	594285.5	116620.2	108.35	Uranium-238	2.2	pCi/g	12/16/1991	HEIS	6.4	6.54	µg/g
316-2-TP3	B01GJ9	594285.5	116620.2	106.82	Uranium-238	2.7	pCi/g	12/16/1991	HEIS	7.93	8.03	µg/g
316-2-TP3	B01GK0	594285.5	116620.2	105.3	Uranium-238	1.6	pCi/g	12/16/1991	HEIS	9.45	4.76	µg/g
316-5-TP1	B01045	594090	116862	111.5	Uranium-238	4.29	pCi/g	7/30/1991	HEIS	3.5	12.75	µg/g
316-5-TP1	B01044	594090	116862	111.5	Uranium-238	30.14	pCi/g	7/30/1991	HEIS	3.5	89.59	µg/g
316-5-TP10	B014Q8	594076	116478	110.06	Uranium-238	18.62	pCi/g	9/20/1991	HEIS	5.03	55.35	µg/g
316-5-TP2	B01042	594090	116557	111.5	Uranium-238	32.88	pCi/g	7/30/1991	HEIS	3.5	97.74	µg/g
316-5-TP2	B01041	594090	116557	111.5	Uranium-238	8.64	pCi/g	7/30/1991	HEIS	3.5	25.68	µg/g
316-5-TP3	B01036	594090	116475	111.5	Uranium-238	1072	pCi/g	7/31/1991	HEIS	3.5	3186.6	µg/g
316-5-TP3	B01035	594090	116475	111.5	Uranium-238	49.83	pCi/g	7/31/1991	HEIS	3.5	148.12	µg/g
316-5-TP4	B01033	594090	116455	111.5	Uranium-238	356.5	pCi/g	7/31/1991	HEIS	3.5	1059.72	µg/g
316-5-TP4	B01032	594090	116455	111.5	Uranium-238	9.19	pCi/g	7/31/1991	HEIS	3.5	27.32	µg/g
399-1-22	B014N1	594201.9	116519.3	109.35	Uranium-238	10.84	pCi/g	10/9/1991	HEIS	5.49	32.22267	µg/g
399-1-22	B014N2	594201.9	116519.3	107.52	Uranium-238	7.81	pCi/g	10/11/1991	HEIS	7.32	23.21578	µg/g
399-1-22	B014N7	594201.9	116519.3	106	Uranium-238	2.4	pCi/g	10/11/1991	HEIS	8.84	7.13417	µg/g
399-1-22	B014N3	594201.9	116519.3	105.39	Uranium-238	1.5	pCi/g	10/11/1991	HEIS	9.45	4.458857	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-41	B207H4	594166.2	116439.9	103.71	Uranium-238	3.1	pCi/g	4/15/2009	HEIS	11.28	9.21497	µg/g
399-1-46	B207H8	594171.5	116427.4	103.92	Uranium-238	0.92	pCi/g	4/22/2009	HEIS	11.05	2.734765	µg/g
399-1-51	B207J2	594176.7	116414.9	102.89	Uranium-238	0.66	pCi/g	4/28/2009	HEIS	12.04	1.961897	µg/g
399-2-4	B014M1	594207.2	116120.4	108.54	Uranium-238	2.7	pCi/g	9/26/1991	HEIS	6.4	8.03	µg/g
399-2-4	B014M2	594207.2	116120.4	107.01	Uranium-238	1.1	pCi/g	9/26/1991	HEIS	7.93	3.269828	µg/g
399-2-4	B014M3	594207.2	116120.4	105.49	Uranium-238	0.8	pCi/g	9/27/1991	HEIS	9.45	2.38	µg/g
399-2-4	B014M4	594207.2	116120.4	104.57	Uranium-238	0.8	pCi/g	9/27/1991	HEIS	10.37	2.378057	µg/g
399-3-18	B1JXM3	594464.7	116020	106.71	Uranium-238	0.41	pCi/g	7/26/2006	HEIS	10.98	1.22	µg/g
399-6-3	B29FJ0	593697.4	116062.8	103.87	U-238	0.11	pCi/g	N/A	HEIS	14.94	0.33	µg/g
399-6-3	B29FJ3	593697.4	116062.8	97.08	U-238	0.28	pCi/g	N/A	HEIS	21.72	0.83232	µg/g
399-6-3	B29FJ2	593697.4	116062.8	92.73	U-238	0.39	pCi/g	N/A	HEIS	26.08	1.159303	µg/g
618-5-TP2	B01GK8	594189.4	116834.4	106.79	Uranium-238	3	pCi/g	1/27/1992	HEIS	6.1	8.92	µg/g
618-5-TP2	B01GN3	594189.4	116834.4	105.27	Uranium-238	11.66	pCi/g	1/27/1992	HEIS	7.62	34.66	µg/g
316-3	J1V1D1	594254.5	115863.5	117.12	Uranium	789000	µg/kg	10/30/2014	HEIS	16	789	µg/g
316-3	J1V1D0	594259	115866.1	116.82	Uranium	826000	µg/kg	10/30/2014	HEIS	17	826	µg/g
316-3	J1V1D3	594251.2	115861	121.09	Uranium	299000	µg/kg	10/30/2014	HEIS	3	299	µg/g
316-3	J1V1D4	594251.6	115860.4	117.73	Uranium-238	824.665	pCi/g	10/30/2014	HEIS	14	2449	µg/g
316-3	J1V1D5	594254.8	115859.9	115.9	Uranium	328000	µg/kg	10/30/2014	HEIS	20	328	µg/g
316-3	J1V1D2	594249.9	115862.7	119.26	Uranium	986000	µg/kg	10/30/2014	HEIS	9	986	µg/g
316-3	J1V1D6	594201.8	115866	119.26	Uranium-238	7.726	pCi/g	10/30/2014	HEIS	9	23	µg/g
316-3	J1V1D7	594201.8	115867.1	119.26	Uranium-238	7.083	pCi/g	10/30/2014	HEIS	9	21	µg/g
316-3	J1V773	594379.9	115882	119.5	Uranium-238	1.87	pCi/g	5/14/2015	HEIS	--	6	µg/g
316-3	J1V774	594236.3	115847.3	118.5	Uranium	1910	µg/kg	5/14/2015	HEIS	--	2	µg/g
316-3	J1V775	594366.7	115893.3	119	Uranium-238	950	pCi/g	5/14/2015	HEIS	--	1	µg/g
316-3	J1V776	594206.9	115852.7	118	Uranium-238	1.87	pCi/g	5/14/2015	HEIS	--	6	µg/g
316-3	J1V780	594213.3	115886.7	119	Uranium	2700	µg/kg	5/14/2015	HEIS	--	3	µg/g
316-3	J1V782	594311.5	115842	117.5	Uranium-238	1.87	pCi/g	5/14/2015	HEIS	--	6	µg/g
316-3	J1V783	594359.2	115880.7	111.5	Uranium-238	3800	pCi/g	5/14/2015	HEIS	--	4	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
316-3	J1V784	594356	115856.1	110	Uranium	950	µg/kg	5/14/2015	HEIS	--	1	µg/g
316-3	J1V790	594290.5	115851.9	113.5	Uranium	47100	µg/kg	5/14/2015	HEIS	--	47	µg/g
316-3	J1V791	594270.8	115866.9	110.5	Uranium-238	18	pCi/g	5/14/2015	HEIS	--	53	µg/g
316-3	J1V792	594251	115881.9	115.5	Uranium-238	3.079	pCi/g	5/14/2015	HEIS	--	9	µg/g
316-3	J1V793	594247.9	115857.3	111.5	Uranium-238	7.31	pCi/g	5/14/2015	HEIS	--	22	µg/g
316-3	J1V786	594316.5	115886.1	116	Uranium-238	1.87	pCi/g	5/14/2015	HEIS	--	6	µg/g
316-3	J1V787	594333.2	115846.5	110.5	Uranium-238	2700	pCi/g	5/14/2015	HEIS	--	3	µg/g
316-3	J1V795	594313.4	115861.5	110	Uranium-238	7302	pCi/g	5/14/2015	HEIS	--	7	µg/g
316-3	J1V794	594228.1	115872.3	110.5	Uranium-238	3.079	pCi/g	5/14/2015	HEIS	--	9	µg/g
316-3	J1V789	594293.7	115876.5	110.5	Uranium	7920	µg/kg	5/14/2015	HEIS	--	8	µg/g
316-3	J1V785	594336.3	115871.1	109.5	Uranium	7302	µg/kg	5/14/2015	HEIS	--	7	µg/g
316-3	J1V777	594304.7	115887.3	116.5	Uranium-238	950	pCi/g	5/14/2015	HEIS	--	1	µg/g
316-3	J1V778	594321	115893	119.5	Uranium-238	3800	pCi/g	5/14/2015	HEIS	--	4	µg/g
316-3	J1V779	594259	115887	118	Uranium-238	3.61	pCi/g	5/14/2015	HEIS	--	11	µg/g
316-3	J1V769	594340.9	115836.5	120.5	Uranium-238	4930	pCi/g	5/14/2015	HEIS	--	5	µg/g
316-3	J1V771	594265.8	115841.8	122	Uranium	950	µg/kg	5/14/2015	HEIS	--	1	µg/g
316-3	J1V772	594282.1	115847.5	117.5	Uranium	3800	µg/kg	5/14/2015	HEIS	--	4	µg/g
C9582	B347P1	594161.1	116484	108.27	Uranium	71000	µg/kg	1/11/2016	HEIS	6.32	71	µg/g
C9582	B347P6	594161.1	116484	107.51	Uranium	100000	µg/kg	1/11/2016	HEIS	7.09	100	µg/g
C9582	B347R2	594161.1	116484	106.75	Uranium	32000	µg/kg	1/11/2016	HEIS	7.85	32	µg/g
C9582	B347R3	594161.1	116484	106.9	Uranium	31000	µg/kg	1/11/2016	HEIS	7.7	31	µg/g
C9582	B347R8	594161.1	116484	105.53	Uranium	39000	µg/kg	1/11/2016	HEIS	9.07	39	µg/g
C9582	B347T8	594161.1	116484	104.46	Uranium	19000	µg/kg	1/11/2016	HEIS	10.14	19	µg/g
399-1-10B	B010S4	594350.9	116728.8	104.94	Uranium-238	1.1	pCi/g	9/10/1991	HEIS	9.6	3.269828	µg/g
399-1-10B	B010T4	594350.9	116728.8	99.11	Uranium-238	0.28	pCi/g	9/12/1991	HEIS	15.43	0.83232	µg/g
399-1-10B	B014V1	594350.9	116728.8	93.14	Uranium-238	0.31	pCi/g	9/25/1991	HEIS	21.4	0.921497	µg/g
399-1-10B	B014V5	594350.9	116728.8	86.41	Uranium-238	0.25	pCi/g	9/28/1991	HEIS	28.13	0.743143	µg/g
399-1-10B	B014V6	594350.9	116728.8	80.92	Uranium-238	0.33	pCi/g	9/30/1991	HEIS	33.62	0.980948	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
399-1-10B	B014V7	594350.9	116728.8	79.18	Uranium-238	0.51	pCi/g	10/1/1991	HEIS	35.36	1.516011	µg/g
399-3-19	B1JXN1	594071.9	116030.2	95.5	Uranium-238	0.35	pCi/g	7/26/2006	HEIS	25.15	1.04	µg/g
399-1-142	B389M5	594223.4	116520	108.32	Uranium	2430	µg/kg	4/7/2017	HEIS	6.48	2.43	µg/g
399-1-142	B389N1	594223.4	116520	107.56	Uranium	3120	µg/kg	4/7/2017	HEIS	7.24	3.12	µg/g
399-1-142	B389N4	594223.4	116520	106.8	Uranium	3240	µg/kg	4/7/2017	HEIS	8	3.24	µg/g
399-1-142	B389P3	594223.4	116520	105.27	Uranium	1640	µg/kg	4/7/2017	HEIS	9.53	1.64	µg/g
399-1-142	B389P0	594223.4	116520	106.03	Uranium	3450	µg/kg	4/7/2017	HEIS	8.76	3.45	µg/g
399-1-23	B1JXM7	594113.5	116453.2	86.06	Uranium-238	0.26	pCi/g	7/26/2006	HEIS	29.41	0.772868	µg/g
399-1-35	B1PD68	594122.3	116432.1	115.61	Uranium-238	0.93	pCi/g	8/20/2007	HEIS	0	2.764491	µg/g
399-1-13B	B010S2	593909.6	116549.2	105.09	Uranium-238	0.22	pCi/g	9/5/1991	HEIS	13.52	0.653966	µg/g
399-1-13B	B010S8	593909.6	116549.2	99.1	Uranium-238	0.51	pCi/g	9/11/1991	HEIS	19.51	1.516011	µg/g
399-1-13B	B014T7	593909.6	116549.2	93.92	Uranium-238	0.62	pCi/g	9/13/1991	HEIS	24.69	1.842994	µg/g
399-1-13B	B014T9	593909.6	116549.2	87.82	Uranium-238	0.54	pCi/g	9/17/1991	HEIS	30.79	1.605188	µg/g
399-1-13B	B014V0	593909.6	116549.2	82.64	Uranium-238	0.24	pCi/g	9/20/1991	HEIS	35.97	0.713417	µg/g
399-1-14B	B010R9	593910.9	116779.1	100.38	Uranium-238	0.33	pCi/g	9/5/1991	HEIS	16.46	0.980948	µg/g
399-1-14B	B010T3	593910.9	116779.1	87.85	Uranium-238	0.61	pCi/g	9/12/1991	HEIS	28.99	1.813268	µg/g
399-1-14B	B010R8	593910.9	116779.1	105.48	Uranium-238	0.23	pCi/g	9/3/1991	HEIS	11.36	0.683691	µg/g
399-1-14B	B010S3	593910.9	116779.1	93.83	Uranium-238	0.47	pCi/g	9/10/1991	HEIS	23.01	1.397108	µg/g
399-1-14B	B014V9	593910.9	116779.1	82.26	Uranium-238	0.25	pCi/g	9/18/1991	HEIS	34.58	0.743143	µg/g
399-1-102	B38B36	594207.6	116499.2	108.32	Uranium	48900	µg/kg	4/29/2017	HEIS	6.48	48.9	µg/g
399-1-102	B38B39	594207.6	116499.2	107.55	Uranium	70300	µg/kg	4/29/2017	HEIS	7.24	70.3	µg/g
399-1-102	B38B48	594207.6	116499.2	106.03	Uranium	32500	µg/kg	4/29/2017	HEIS	8.76	32.5	µg/g
399-1-102	B38B51	594207.6	116499.2	105.27	Uranium	6830	µg/kg	4/29/2017	HEIS	9.53	6.83	µg/g
399-1-102	B38B45	594207.6	116499.2	106.79	Uranium	39900	µg/kg	4/29/2017	HEIS	8	39.9	µg/g
399-3-20	B1JXN5	594375.4	115849.7	97.05	Uranium-238	0.38	pCi/g	7/26/2006	HEIS	23.4	1.13	µg/g
699-S22-E9C	B00YK0	592689	116752.6	105.57	Uranium-238	0.06	pCi/g	6/10/1991	HEIS	8.53	0.18	µg/g
699-S22-E9C	B00YK2	592689	116752.6	99.47	Uranium-238	0.38	pCi/g	6/19/1991	HEIS	14.64	1.13	µg/g
699-S22-E9C	B00YK4	592689	116752.6	93.38	Uranium-238	0.31	pCi/g	6/21/1991	HEIS	20.73	0.92	µg/g

Table A-1. 300 Area Uranium Soil Concentration Data

Sampling Location Name [a]	HEIS Number	X Coordinate (m)[b]	Y Coordinate (m)[b]	Z Coordinate (m)[b]	Constituent [c]	Value [d]	Units	Sample Date	Data Source [e]	Sample Depth (m)	Value [f]	Units
699-S22-E9C	B00YK6	592689	116752.6	87.28	Uranium-238	0.33	pCi/g	6/26/1991	HEIS	26.83	0.98	µg/g
699-S22-E9C	B00YK8	592689	116752.6	81.83	Uranium-238	0.14	pCi/g	7/2/1991	HEIS	32.28	0.42	µg/g
699-S22-E9C	B00YK9	592689	116752.6	76.01	Uranium-238	0.18	pCi/g	7/11/1991	HEIS	38.1	0.54	µg/g
699-S22-E9C	B00YL1	592689	116752.6	63.92	Uranium-238	1	pCi/g	8/1/1991	HEIS	50.19	2.97	µg/g
399-1-126	B38TC4	594178.7	116472.3	104.19	Uranium	7820	µg/kg	4/21/2017	HEIS	10.67	7.82	µg/g
399-1-126	B38TC7	594178.7	116472.3	102.67	Uranium	9350	µg/kg	4/21/2017	HEIS	12.19	9.35	µg/g
399-1-126	B38TB8	594178.7	116472.3	106.48	Uranium	17100	µg/kg	4/21/2017	HEIS	8.38	17.1	µg/g
399-1-126	B38TC1	594178.7	116472.3	105.72	Uranium	8700	µg/kg	4/21/2017	HEIS	9.14	8.7	µg/g
399-1-56	B27K66	594090.9	116725.3	104.36	U-238	0.54	pCi/g	N/A	HEIS	10.32	1.64	µg/g
399-1-56	B27K69	594090.9	116725.3	97.17	U-238	0.62	pCi/g	N/A	HEIS	17.51	1.88	µg/g
399-1-59	B27JW6	594077.4	116135.9	95.59	U-238	0.78	pCi/g	N/A	HEIS	25.19	2.32	µg/g
399-1-59	B27JW2	594077.4	116135.9	94.09	U-238	0.68	pCi/g	N/A	HEIS	26.69	2.02	µg/g
399-1-59	B27JW3	594077.4	116135.9	84.79	U-238	0.22	pCi/g	N/A	HEIS	35.98	0.65	µg/g
399-1-59	B27JW5	594077.4	116135.9	75.83	U-238	0.35	pCi/g	N/A	HEIS	44.94	1.04	µg/g

Note: Complete references provided in Section A2. Well 399-1-73 value ignored during modeling (see Section 3.1).

a. See Figure 1 for sampling locations.

b. All coordinates are in meters. Horizontal coordinates (X and Y) use Washington State Plane (NAD83, *North American Datum of 1983*), and vertical coordinates (Z) use NAVD88, *North American Vertical Datum of 198*8.

c. Constituent name or indicator, as listed in the corresponding Data Source column.

d. Value is unaltered straight from its source.

e. Data Sources defined in Section A1.

f. Value converted from source units (pCi/L) to model units (µg/g).

CHPRC = CH2M HILL Plateau Remediation Company

HEIS = Hanford Environmental Information System

N/A = not applicable

WCH = Washington Closure Hanford

Appendix B

Uranium Soil Concentration Data

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Table B-1. Uranium Soil Concentration Data

Sample No.	Sample Depth (ft below ground surface)	Field Record: Estimated Elevation in m (NAVD88)	Adjusted Elevation in m (NAVD88)	pH	Total Uranium (µg/g)	U-233/234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	Total Uranium Calculated from Isotopes (µg/g)
J19XD1	2	111.5	113.5	4.39	143.0	46.2	3.4	43.3	130.3
J19XD2	4	111.0	113.0	3.84	77.7	23.5	1.9	25.3	76.1
J19XD3	6	110.0	112.0	4.42	71.0	21.3	1.2	20.3	60.9
J19XD4	8	109.5	111.5	3.99	16.2	5.2	0.4	5.8	17.4
J19XD5	10	109.0	111.0	4.51	72.0	21.8	1.2	21.7	65.0
J19XD6	12	108.0	110.0	4.57	58.4	18.1	1.2	17.6	52.9
J19XD7	14	107.5	109.5	4.07	32.6	10.7	0.6	9.8	29.5
J19XD8	16	107.0	109.0	4.08	30.2	9.1	0.6	8.5	25.5
J19XD9	18	106.0	108.0	3.91	18.2	6.1	0.6	6.2	18.6
J19FX0	20	105.5	107.5	4.12	16.7	5.3	0.3	5.5	16.4
J19FX1	22	105.0	107.0	3.99	22.4	6.9	0.4	7.4	22.2
J19FX2	24	104.0	106.0	4.00	31.6	9.8	0.3	8.7	25.9
J19FX3	26	103.5	105.5	4.04	76.5	22.1	1.7	20.7	62.3
J19FX4	27	103.0	105.0	3.97	73.7	22.2	1.9	22.0	66.3

Reference: NAVD88, *North America Vertical Datum of 1988*, as revised, National Geodetic Survey, Federal Geodetic Control Committee, Silver Spring, Maryland. Available at: http://www.ngs.noaa.gov/.

Notes: Table data are from Peterson, R.E., 2010, "Uranium in Sediment from FS-2 Test Pit, 618-1 Burial Ground Excavation," Pacific Northwest National Laboratory, Richland, Washington.

Total uranium in solids was measured by method UTOT_KPA; isotopic uranium was measured by method UISO_PLATE_AEA and included uranium-233/234, uranium-235, and uranium-238; pH was measured using method 9045, SW-846, 2015, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update V*, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C. Available at: https://www.epa.gov/hw-sw846.

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Appendix C

Well Information and Geologic Contacts Data Tables

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Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
399-1-1	594360	116588.8	115.065	23.4696	90	1
399-1-10A	594346.5	116734	114.377	13.716	90	1
399-1-10B	594350.8	116728.8	114.539	36.2712	90	1
399-1-11	594109.8	116660.2	115.676	14.41704	90	1
399-1-12	594040.2	116548.5	117.466	19.812	90	1
399-1-13A	593910.4	116557.3	118.622	17.0688	90	1
399-1-13B	593909.6	116549.2	118.605	37.73424	90	1
399-1-14A	593901.1	116778.2	116.965	15.24	90	1
399-1-14B	593910.9	116779.1	116.835	36.4236	90	1
399-1-16A	594318.1	116414.2	116.906	14.478	90	1
399-1-16B	594324.7	116411.6	116.853	35.9664	90	1
399-1-16C	594312	116410.4	117.066	54.2544	90	1
399-1-16D	594315.5	116404.6	117.079	55.4736	90	1
399-1-17A	594112.9	116413.8	115.36	12.5	90	1
399-1-17B	594104.8	116417.7	115.466	35.052	90	1
399-1-17C	594104.7	116409.2	115.501	52.7304	90	1
399-1-2	594082.4	116329.5	118.201	30.7848	90	1
399-1-20	594257.3	116339.6	117.803	56.9976	90	1
399-1-21B	594157.2	116176.8	116.971	35.052	90	1
399-1-23	594113.5	116453.2	115.466	35.3568	90	1
399-1-26	594108.3	116456.2	115.459	15.3924	90	1
399-1-3	594254.2	116334.9	117.751	31.242	90	1
399-1-33	594113.3	116430.5	115.732	14.0208	90	1
399-1-34	594101.2	116433.8	115.868	15.3924	90	1
399-1-35	594122.3	116432.1	115.606	14.9352	90	1
399-1-38	594117.4	116435.4	115.75	14.84376	90	1
399-1-4	594020.6	116699.6	116.6163*	30.7848	90	1
399-1-5	594111.7	116552.1	116.011	13.716	90	1
399-1-7	594260.1	116335.1	117.7757*	22.86	90	1

Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
399-1-8	594257.8	116329.6	117.832	32.6136	90	1
399-1-9	594254	116330.4	117.823	55.1688	90	1
399-2-1	594467.2	116121.2	114.666	23.4696	90	1
399-2-10	594234.6	116094.5	114.958	20.574	90	1
399-2-11	594236.3	116074.5	114.963	19.23288	90	1
399-2-12	594252.5	116086	114.855	19.812	90	1
399-2-13	594237.2	116064.6	114.958	19.08048	90	1
399-2-14	594245.3	116070.2	114.834	18.288	90	1
399-2-15	594253.3	116076	114.88	18.7452	90	1
399-2-16	594261.6	116081.9	114.797	18.8976	90	1
399-2-17	594245.1	116060.3	114.87	19.2024	90	1
399-2-18	594254.2	116066.1	114.862	19.812	90	1
399-2-19	594262.7	116071.8	114.866	18.53184	90	1
399-2-2	594385.7	116282.6	115.324	19.812	90	1
399-2-20	594270.6	116077.6	114.886	18.8976	90	1
399-2-21	594263.3	116061.9	114.84	18.80616	90	1
399-2-22	594279.7	116073.4	114.87	19.812	90	1
399-2-23	594272.3	116057.6	114.875	18.288	90	1
399-2-24	594280.7	116063.3	114.889	20.574	90	1
399-2-25	594269.2	116088.1	115.638	52.1208	90	1
399-2-26	594244	116081	114.915	18.92808	90	1
399-2-27	594244.1	116078.2	114.896	19.3548	90	1
399-2-28	594246.4	116080	114.855	19.812	90	1
399-2-29	594270.8	116068.1	114.891	18.7452	90	1
399-2-3	594377.4	116220.5	115.0428*	19.812	90	1
399-2-30	594271.2	116065.5	114.913	19.5072	90	1
399-2-31	594273.6	116067.2	114.894	19.2024	90	1
399-2-5	594287.7	116068.8	115	39.9288	90	1
399-2-7	594235.2	116084.5	115.0642*	18.8976	90	1

Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
399-2-8	594243.5	116090.3	114.925	18.288	90	1
399-2-9	594237.7	116089.7	114.908	19.812	90	1
399-3-1	594481.3	116008	117.8439*	23.7744	90	1
399-3-18	594464.7	116020	117.68	39.9288	90	1
399-3-19	594071.9	116030.2	120.647	31.5468	90	1
399-3-23	594237.9	116054.7	115.014	19.812	90	1
399-3-24	594238.8	116044.6	114.978	19.812	90	1
399-3-25	594255.1	116056	114.875	19.812	90	1
399-3-26	594239.8	116034.8	114.986	20.1168	90	1
399-3-27	594247.9	116040.7	114.93	18.8976	90	1
399-3-28	594256.1	116046	114.9	19.6596	90	1
399-3-29	594264.3	116052	114.898	19.5072	90	1
399-3-30	594246.3	116051.4	114.876	18.7452	90	1
399-3-31	594246.7	116048.3	114.886	19.2024	90	1
399-3-32	594249.1	116050.1	114.891	19.2024	90	1
399-1-54	594273.9	116643	114.645	36.1188*	90	1
399-1-55	594152.3	116487.3	114.885	34.4424*	90	1
399-1-56	594090.9	116725.3	114.679	37.6428*	90	1
399-1-57	594382	116353.7	114.747	36.1188*	90	1
399-1-58	593910.8	116352.6	119.851	38.4048*	90	1
399-1-59	594077.4	116135.9	120.775	45.32376*	90	1
399-2-32	594284.6	116195.1	114.847	36.8808*	90	1
399-3-33	594500.7	115966.5	118.37	41.148*	90	1
399-1-68	594166.8	116527	114.602	12.58824*	90	1
399-1-67	594162.4	116481.6	114.835	12.40536	90	1
C8933	594113.2	116439.9	115.6402*	12.10056*	90	1
North Pond Pit-1	594351.8	116435.4	114.4814*	6.7056*	90	1
North Pond Pit-2	594156.8	116387.4	114.8828*	3.6576*	90	1
South Pond Pit-1	594400.8	116127	114.5267*	6.7056*	90	1

Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
South Pond Pit-2	594236.7	116021.7	114.9242*	6.7056*	90	1
399-1-65	594164.5	116481.2	114.617	15.14856	90	1
399-1-66	594168.4	116505	114.514	15.27048	90	1
399-1-69	594169.7	116505	114.54	12.192	90	1
399-1-70	594125	116508.8	114.743	14.90472	90	1
399-1-71	594126.3	116508.8	114.738	12.192	90	1
399-1-72	594080.2	116494.2	114.824	14.7828	90	1
399-1-73	594081.7	116494.2	114.781	12.192	90	1
399-1-74	594097.7	116475.3	114.822	15.3924*	90	1
399-1-75	594098.7	116475.6	114.819	12.243816	90	1
399-1-76	594117.8	116460.6	115.106	15.49908*	90	1
399-1-77	594118.7	116460.6	115.071	12.243816*	90	1
399-1-78	594153.7	116463.2	114.763	15.33144	90	1
399-1-79	594154.9	116463.1	114.778	12.243816	90	1
399-1-80	594089.5	116454.8	114.881	15.3924*	90	1
399-1-81	594090.9	116454.9	114.887	12.40536*	90	1
399-1-82	594151.8	116427.5	114.943	15.5448	90	1
399-1-83	594152.5	116427.4	114.939	12.185904*	90	1
399-1-84	594174.5	116451.4	114.836	18.288*	90	1
399-1-85	594175.5	116451.4	114.799	12.3444*	90	1
399-1-86	594137.7	116478.7	114.865	15.27048	90	1
399-1-87	594138.6	116478.8	114.85	12.192*	90	1
399-1-89	594087.2	116467.6	114.698	15.51432	90	1
399-1-90	594102.8	116478.2	114.812	15.553944	90	1
399-1-91	594118.2	116489.1	114.874	15.291816*	90	1
399-1-92	594132.8	116466.7	114.943	15.0876	90	1
399-1-93	594117	116470.8	114.911	15.51432	90	1
399-1-94	594130.8	116479.7	114.882	15.185136	90	1
399-1-95	594143.9	116488.3	114.707	15.33144	90	1

Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
399-1-96	594146.2	116473.9	114.673	15.051024*	90	1
399-1-97	594157.8	116480.1	114.546	15.24*	90	1
399-8-3	593626.1	116683.6	120.581	31.0896	90	1
C9580	594088.7	116456.4	114.8352*	11.31	90	1
C9581	594116.8	116462.1	115.1454*	12.18	90	1
C9582	594161.1	116484	114.5966*	12.18	90	1
399-1-98	594247.4	116547.8	114.723	10.72896	90	1
399-1-99	594260.3	116536.2	114.66	10.75944	90	1
399-1-100	594248.8	116531.6	114.753	10.69848	90	1
399-1-101	594258.4	116547.7	114.677	10.69848	90	1
399-1-102	594207.6	116499.2	114.793	10.668	90	1
399-1-103	594180.1	116484.1	114.856	13.8684	90	1
399-1-104	594220.7	116588.9	114.836	10.78992	90	1
399-1-105	594233	116591.7	114.777	10.78992	90	1
399-1-106	594243.8	116591.3	114.84	10.668	90	1
399-1-107	594248	116576	114.775	10.668	90	1
399-1-108	594235	116578.3	114.786	10.75944	90	1
399-1-109	594220.4	116575.5	114.86	10.668	90	1
399-1-110	594222.3	116563.1	114.804	10.78992	90	1
399-1-111	594236.8	116564.8	114.83	10.668	90	1
399-1-112	594251.8	116561.5	114.74	10.72896	90	1
399-1-113	594236.1	116552.7	114.751	13.92936	90	1
399-1-114	594223.1	116548.7	114.821	13.5636	90	1
399-1-115	594224.2	116536.6	114.802	13.716	90	1
399-1-116	594235.6	116539.8	114.761	13.5636	90	1
399-1-117	594261.2	116523.1	114.85	10.5156	90	1
399-1-118	594265.1	116509.5	114.827	10.75944	90	1
399-1-119	594247.7	116516.7	114.868	10.69848	90	1
399-1-120	594221	116506.3	114.843	10.7442	90	1

Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
399-1-121	594216.6	116477.8	114.944	10.48512	90	1
399-1-122	594220.4	116492.6	114.928	10.668	90	1
399-1-123	594203.5	116471	114.976	10.63752	90	1
399-1-124	594191.8	116478.4	114.933	13.83792	90	1
399-1-125	594189.3	116462.7	114.937	10.54608	90	1
399-1-126	594178.7	116472.3	114.864	13.92936	90	1
399-1-127	594176.3	116454.9	115.015	13.44168	90	1
399-1-128	594167.6	116461	115.012	10.54608	90	1
399-1-129	594163.9	116445.2	115.116	10.5156	90	1
399-1-130	594157	116454.1	115.125	10.78992	90	1
399-1-131	594205.7	116486.4	114.838	10.48512	90	1
399-1-132	594192.3	116490.9	114.918	13.95984	90	1
399-1-133	594231.4	116485.8	114.908	10.9728	90	1
399-1-134	594245.9	116493.7	114.868	13.716	90	1
399-1-135	594237.2	116500	114.921	13.74648	90	1
399-1-136	594076.5	116504.3	114.845	10.48512	90	1
399-1-137	594085.9	116486.4	114.881	10.30224	90	1
399-1-138	594100.1	116497.1	114.795	10.3632	90	1
399-1-139	594089.1	116513.5	114.666	10.45464	90	1
399-1-140	594250.3	116507.4	114.878	13.8684	90	1
399-1-141	594258.5	116498.2	114.867	13.53312	90	1
399-1-142	594223.4	116520	114.796	10.72896	90	1
399-1-143	594235.1	116510.9	114.894	10.75944	90	1
399-1-144	594235.7	116525.4	114.747	10.75944	90	1
399-1-145	594088.7	116499.5	114.861	10.45464	90	1
399-1-146	594245.1	116568.3	114.785	11.1252	90	1
399-1-147	594216.1	116486.2	114.966	11.09472	90	1
399-1-148	594256.2	116530.2	114.772	11.15568	90	1
399-1-149	594187.9	116480.2	114.896	13.83792	90	1

Table C-1. Geologic Framework Model Well Names, Locations, Maximum Drill Depths, and Surface Elevations (300Area_Collars_Post.csv)

Well Name	X Coordinate	Y Coordinate	Z Coordinate	Depth	Dip	Azimuth
399-1-150	594227.5	116546.4	114.789	13.5636	90	1
399-1-152	594247.6	116498	114.907	13.80744	90	1
399-1-153	594166.1	116453.4	115.09	11.076432	90	1
399-1-154	594227.3	116583.3	114.84	11.06424	90	1
399-1-155	594231.9	116542.8	114.78	13.68552	90	1
399-1-156	594255.7	116529.8	114.767	14.3256	90	1
399-1-157	594246.2	116568.6	114.792	13.8684	90	1
399-1-158	594228.3	116583.9	114.821	13.77696	90	1
399-1-159	594249.1	116502.7	114.891	13.716	90	1
399-1-160	594184	116482	114.889	13.716	90	1
399-1-161	594214.9	116486.6	114.925	13.716	90	1
399-1-162	594167	116454	115.074	13.716	90	1
399-1-164	594236.5	116395.6	114.897	13.62456	90	1
399-1-165	594332.5	116474.1	114.83	13.65504	90	1
399-1-166	594323.7	116586.3	114.771	13.65504	90	1
C9728	594164	116446.2	115.08	9.2964	90	1
C9729	594203.5	116471.9	114.93	9.906	90	1
C9730	594230.6	116485.3	114.89	9.906	90	1
C9731	594206.9	116498.6	114.75	9.906	90	1
C9732	594088.9	116512.8	114.63	9.906	90	1
C9733	594180.9	116484.8	114.78	9.906	90	1
C9734	594189.2	116489.5	114.87	9.906	90	1
C9735	594185.1	116479.4	114.82	9.906	90	1
C9736	594228.6	116543.6	114.76	9.906	90	1

*Data retained from ECF-300FF5-16-0087, Rev. 0. All other vertical and horizontal survey data collected from Hanford Environmental Information System-Environmental Dashboard Application (HEIS-EDA)

Note: All coordinates, elevations, and depths in this table are in meters. The vertical datum is from NAVD88, *North American Vertical Datum of 1988*, and the horizontal coordinate system Washington State Plane (NAD83, *North American Datum of 1983*). Geologic units (indicated in Appendix C [Tables C-2 and C-3]) explained in Section 2.1 in the main text of this calculation.

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-100	0	6.858	Hf sG-msG	10.69848
399-1-100	6.858	7.9248	Hf G	10.69848
399-1-100	7.9248	10.69848	Hf sG-msG	10.69848
399-1-101	0	10.668	Hf sG-msG	10.69848
399-1-101	10.668	10.69848	Hf G	10.69848
399-1-102	0	10.0584	Hf sG-msG	10.668
399-1-102	10.0584	10.668	Hf M	10.668
399-1-103	0	13.8684	Hf sG-msG	13.8684
399-1-104	0	6.7056	Hf sG-msG	10.78992
399-1-104	6.7056	8.2296	Hf G	10.78992
399-1-104	8.2296	10.78992	Hf sG-msG	10.78992
399-1-105	0	9.2964	Hf sG-msG	10.78992
399-1-105	9.2964	10.0584	Hf G	10.78992
399-1-105	10.0584	10.78992	Hf sG-msG	10.78992
399-1-106	0	10.668	Hf sG-msG	10.668
399-1-107	0	3.81	Hf sG-msG	10.668
399-1-107	3.81	5.334	Hf G	10.668
399-1-107	5.334	9.2964	Hf sG-msG	10.668
399-1-107	9.2964	10.668	Hf G	10.668
399-1-108	0	10.3632	Hf sG-msG	10.75944
399-1-108	10.3632	10.75944	Hf G	10.75944
399-1-109	0	10.668	Hf sG-msG	10.668
399-1-110	0	10.78992	Hf sG-msG	10.78992
399-1-111	0	3.9624	Hf sG-msG	10.668
399-1-111	3.9624	10.668	Hf G	10.668
399-1-112	0	5.0292	Hf sG-msG	10.72896
399-1-112	5.0292	5.9436	Hf M	10.72896
399-1-112	5.9436	10.72896	Hf sG-msG	10.72896
399-1-113	0	5.4864	Hf sG-msG	13.92936
399-1-113	5.4864	7.4676	Hf G	13.92936
399-1-113	7.4676	10.668	Hf sG-msG	13.92936
399-1-113	10.668	12.4968	Hf G	13.92936

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-113	12.4968	12.8016	Hf S4	13.92936
399-1-113	12.8016	13.1064	Hf sG-msG	13.92936
399-1-113	13.1064	13.4112	Hf G	13.92936
399-1-113	13.4112	13.92936	Hf sG-msG	13.92936
399-1-114	0	13.5636	Hf sG-msG	13.5636
399-1-115	0	7.9248	Hf sG-msG	12.429744
399-1-115	7.9248	12.192	Hf G	12.429744
399-1-115	12.192	12.3444	Hf sG-msG	12.429744
399-1-115	12.3444	12.429744	Hf S4	12.429744
399-1-116	0	6.5532	Hf sG-msG	13.5636
399-1-116	6.5532	12.6492	Hf G	13.5636
399-1-116	12.6492	13.5636	Hf sG-msG	13.5636
399-1-117	0	5.334	Hf sG-msG	10.5156
399-1-117	5.334	6.096	Hf G	10.5156
399-1-117	6.096	6.5532	Hf sG-msG	10.5156
399-1-117	6.5532	10.0584	Hf G	10.5156
399-1-117	10.0584	10.5156	Hf sG-msG	10.5156
399-1-118	0	6.5532	Hf sG-msG	10.75944
399-1-118	6.5532	10.75944	Hf G	10.75944
399-1-119	0	7.62	Hf sG-msG	10.69848
399-1-119	7.62	9.906	Hf G	10.69848
399-1-119	9.906	10.69848	Hf sG-msG	10.69848
399-1-12	0	7.62	Hf S	14.05128
399-1-12	7.62	9.144	Hf sG-msG	14.05128
399-1-12	9.144	10.668	Hf S	14.05128
399-1-12	10.668	14.05128	Hf sG-msG	14.05128
399-1-120	0	10.668	Hf sG-msG	10.668
399-1-121	0	4.2672	Hf sG-msG	10.48512
399-1-121	4.2672	5.7912	Hf G	10.48512
399-1-121	5.7912	8.8392	Hf sG-msG	10.48512
399-1-121	8.8392	9.4488	Hf G	10.48512
399-1-121	9.4488	10.48512	Hf sG-msG	10.48512
399-1-122	0	10.42416	Hf sG-msG	10.42416
399-1-123	0	10.63752	Hf sG-msG	10.63752
399-1-124	0	9.4488	Hf sG-msG	13.83792
399-1-124	9.4488	11.2776	Hf G	13.83792

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-124	11.2776	13.83792	Hf sG-msG	13.83792
399-1-125	0	6.7056	Hf sG-msG	10.54608
399-1-125	6.7056	7.0104	Hf M	10.54608
399-1-125	7.0104	9.144	Hf G	10.54608
399-1-125	9.144	10.54608	Hf sG-msG	10.54608
399-1-127	0	8.8392	Hf sG-msG	12.792456
399-1-127	8.8392	11.8872	Hf G	12.792456
399-1-127	11.8872	12.792456	Hf sG-msG	12.792456
399-1-128	0	10.5156	Hf sG-msG	10.5156
399-1-129	0	10.5156	Hf sG-msG	10.5156
399-1-130	0	7.3152	Hf sG-msG	10.78992
399-1-130	7.3152	8.2296	Hf G	10.78992
399-1-130	8.2296	8.6868	Hf sG-msG	10.78992
399-1-130	8.6868	10.668	Hf G	10.78992
399-1-130	10.668	10.78992	Hf sG-msG	10.78992
399-1-131	0	5.4864	Hf sG-msG	10.48512
399-1-131	5.4864	6.096	Hf S5	10.48512
399-1-131	6.096	9.906	Hf sG-msG	10.48512
399-1-131	9.906	10.48512	Hf G	10.48512
399-1-132	0	10.668	Hf sG-msG	12.8016
399-1-132	10.668	12.8016	Hf G	12.8016
399-1-133	0	7.62	Hf sG-msG	10.9728
399-1-133	7.62	8.382	Hf G	10.9728
399-1-133	8.382	8.8392	Hf sG-msG	10.9728
399-1-133	8.8392	10.9728	Hf G	10.9728
399-1-134	0	7.9248	Hf sG-msG	13.716
399-1-134	7.9248	10.3632	Hf G	13.716
399-1-134	10.3632	13.2588	Hf sG-msG	13.716
399-1-134	13.2588	13.716	Hf G	13.716
399-1-135	0	7.9248	Hf sG-msG	13.74648
399-1-135	7.9248	8.382	Hf G	13.74648
399-1-135	8.382	13.716	Hf sG-msG	13.74648
399-1-135	13.716	13.74648	Hf G	13.74648
399-1-136	0	6.096	Hf sG-msG	10.48512
399-1-136	6.096	6.4008	Hf G	10.48512
399-1-136	6.4008	10.48512	Hf sG-msG	10.48512

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology
(DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-137	0	10.30224	Hf sG-msG	10.30224
399-1-138	0	10.3632	Hf sG-msG	10.3632
399-1-139	0	10.45464	Hf sG-msG	10.45464
399-1-13A	0	4.572	Hf S	17.0688
399-1-13A	4.572	15.24	Hf sG-msG	17.0688
399-1-13A	15.24	17.0688	Hf S	17.0688
399-1-140	0	7.3152	Hf sG-msG	13.8684
399-1-140	7.3152	12.4968	Hf G	13.8684
399-1-140	12.4968	13.8684	Hf sG-msG	13.8684
399-1-141	0	3.2004	Hf sG-msG	13.53312
399-1-141	3.2004	3.9624	Hf S3	13.53312
399-1-141	3.9624	6.7056	Hf G	13.53312
399-1-141	6.7056	9.144	Hf sG-msG	13.53312
399-1-141	9.144	9.4488	Hf G	13.53312
399-1-141	9.4488	12.4968	Hf sG-msG	13.53312
399-1-141	12.4968	12.954	Hf G	13.53312
399-1-141	12.954	13.53312	Hf sG-msG	13.53312
399-1-142	0	3.3528	Hf sG-msG	10.72896
399-1-142	3.3528	3.6576	Hf S5	10.72896
399-1-142	3.6576	4.572	Hf sG-msG	10.72896
399-1-142	4.572	6.096	Hf G	10.72896
399-1-142	6.096	6.5532	Hf sG-msG	10.72896
399-1-142	6.5532	9.906	Hf G	10.72896
399-1-142	9.906	10.72896	Hf sG-msG	10.72896
399-1-143	0	4.8768	Hf sG-msG	10.75944
399-1-143	4.8768	6.096	Hf G	10.75944
399-1-143	6.096	6.5532	Hf sG-msG	10.75944
399-1-143	6.5532	8.8392	Hf G	10.75944
399-1-143	8.8392	9.4488	Hf sG-msG	10.75944
399-1-143	9.4488	10.75944	Hf G	10.75944
399-1-144	0	7.9248	Hf sG-msG	10.75944
399-1-144	7.9248	9.144	Hf G	10.75944
399-1-144	9.144	10.75944	Hf sG-msG	10.75944
399-1-145	0	10.45464	Hf sG-msG	10.45464
399-1-146	0	9.4488	Hf sG-msG	11.1252
399-1-146	9.4488	11.1252	Hf G	11.1252

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology
(DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-147	0	11.09472	Hf sG-msG	11.09472
399-1-148	0	7.62	Hf sG-msG	11.15568
399-1-148	7.62	10.0584	Hf G	11.15568
399-1-148	10.0584	11.15568	Hf sG-msG	11.15568
399-1-149	0	13.83792	Hf sG-msG	13.83792
399-1-150	0	9.7536	Hf sG-msG	13.5636
399-1-150	9.7536	13.5636	Hf G	13.5636
399-1-152	0	9.4488	Hf sG-msG	13.80744
399-1-152	9.4488	10.3632	Hf G	13.80744
399-1-152	10.3632	11.2776	Hf sG-msG	13.80744
399-1-152	11.2776	12.192	Hf G	13.80744
399-1-152	12.192	13.80744	Hf sG-msG	13.80744
399-1-153	0	11.03376	Hf sG-msG	11.03376
399-1-154	0	11.06424	Hf sG-msG	11.06424
399-1-155	0	9.4488	Hf sG-msG	13.68552
399-1-155	9.4488	10.3632	Hf G	13.68552
399-1-155	10.3632	12.192	Hf sG-msG	13.68552
399-1-155	12.192	13.68552	Hf G	13.68552
399-1-156	0	6.096	Hf sG-msG	13.392912
399-1-156	6.096	13.1064	Hf G	13.392912
399-1-156	13.1064	13.392912	Hf sG-msG	13.392912
399-1-157	0	13.447776	Hf sG-msG	13.447776
399-1-158	0	12.192	Hf sG-msG	13.77696
399-1-158	12.192	13.5636	Hf G	13.77696
399-1-158	13.5636	13.77696	Hf sG-msG	13.77696
399-1-159	0	8.8392	Hf sG-msG	13.716
399-1-159	8.8392	10.668	Hf G	13.716
399-1-159	10.668	13.716	Hf sG-msG	13.716
399-1-160	0	13.716	Hf sG-msG	13.716
399-1-161	0	4.7244	Hf sG-msG	13.716
399-1-161	4.7244	5.4864	Hf S5	13.716
399-1-161	5.4864	8.5344	Hf sG-msG	13.716
399-1-161	8.5344	10.668	Hf G	13.716
399-1-161	10.668	13.4112	Hf sG-msG	13.716
399-1-161	13.4112	13.716	Hf S4	13.716
399-1-162	0	6.096	Hf sG-msG	12.67968

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-162	6.096	6.4008	Hf M	12.67968
399-1-162	6.4008	9.4488	Hf sG-msG	12.67968
399-1-162	9.4488	9.7536	Hf G	12.67968
399-1-162	9.7536	12.4968	Hf sG-msG	12.67968
399-1-162*	12.4968	12.67968	Hf M	12.67968
399-1-164	0	7.9248	Hf sG-msG	13.62456
399-1-164	7.9248	8.8392	Hf M	13.62456
399-1-164	8.8392	13.4112	Hf sG-msG	13.62456
399-1-164	13.4112	13.62456	Hf G	13.62456
399-1-165	0	11.5824	Hf sG-msG	11.606784
399-1-165	11.5824	11.606784	Hf G	11.606784
399-1-166	0	13.65504	Hf sG-msG	13.65504
399-1-16B	0	10.67	Hf sG-msG	15.84
399-1-16B	10.67	13.72	Hf S2	15.84
399-1-16B	13.72	15.84	Hf sG-msG	15.84
399-1-16C	0	4.57	Hf S	16.45
399-1-16C	4.57	9.14	Hf sG-msG	16.45
399-1-16C	9.14	12.19	Hf S2	16.45
399-1-16C	12.19	13.72	Hf sG-msG	16.45
399-1-16C	13.72	16.45	Hf S2	16.45
399-1-17A	0	7.62	Hf sG-msG	12.5
399-1-17A	7.62	12.5	Hf S3	12.5
399-1-17C	0	1.22	Hf S	15.54
399-1-17C	1.22	15.54	Hf sG-msG	15.54
399-1-2	0	2.13	Hf S	18.34
399-1-2	2.13	18.34	Hf sG-msG	18.34
399-1-20	0	15.234	Hf sG-msG	15.234
399-1-21B	0	2.7432	Hf S	20.873
399-1-21B	2.7432	6.096	Hf sG-msG	20.873
399-1-21B	6.096	7.4676	Hf S	20.873
399-1-21B	7.4676	20.873	Hf sG-msG	20.873
399-1-23	0	0.9144	Hf S	16.149
399-1-23	0.9144	16.149	Hf sG-msG	16.149
399-1-33	0	1.3716	Hf S	13.1064
399-1-33	1.3716	13.1064	Hf sG-msG	13.1064
399-1-34	0	1.8288	Hf S	11.8872

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology
(DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-34	1.8288	11.8872	Hf sG-msG	11.8872
399-1-35	0	1.524	Hf S	11.8872
399-1-35	1.524	11.8872	Hf sG-msG	11.8872
399-1-4	0	1.8288	Hf S	13.715
399-1-4	1.8288	13.715	Hf sG-msG	13.715
399-1-5	0	1.8288	Hf S	13.11
399-1-5	1.8288	13.11	Hf sG-msG	13.11
399-1-54	0	18.5928	Hf sG-msG	35.26536
399-1-54	18.5928	19.2024	Hf S	35.26536
399-1-54	19.2024	28.6512	Hf sG-msG	35.26536
399-1-54	28.6512	30.1752	Hf S	35.26536
399-1-54	30.1752	35.26536	Hf sG-msG	35.26536
399-1-55	0	12.4968	Hf sG-msG	15.8496
399-1-55	12.4968	14.9352	Hf G	15.8496
399-1-55	14.9352	15.8496	Hf sG-msG	15.8496
399-1-56	0	5.0292	Hf S	36.8808
399-1-56	5.0292	36.8808	Hf sG-msG	36.8808
399-1-57	0	8.5344	Hf sG-msG	33.528
399-1-57	8.5344	9.144	Hf S2	33.528
399-1-57	9.144	11.5824	Hf sG-msG	33.528
399-1-57	11.5824	17.0688	Hf G	33.528
399-1-57	17.0688	33.528	Hf sG-msG	33.528
399-1-58	0	1.8288	Hf S	19.5072
399-1-58	1.8288	19.5072	Hf sG-msG	19.5072
399-1-59	0	2.4384	Hf sG-msG	23.7744
399-1-59*	2.4384	5.1816	Hf G	23.7744
399-1-59	5.1816	8.8392	Hf S	23.7744
399-1-59	8.8392	23.7744	Hf sG-msG	23.7744
399-1-65	0	13.5636	Hf sG-msG	15.14856
399-1-65	13.5636	15.14856	Hf S	15.14856
399-1-66	0	15.27048	Hf sG-msG	15.27048
399-1-68	0	3.048	Hf sG-msG	12.58824
399-1-68	3.048	8.19912	Hf G	12.58824
399-1-68	8.19912	10.668	Hf sG-msG	12.58824
399-1-68*	10.668	11.5824	Hf S	12.58824
399-1-68	11.5824	12.58824	Hf sG-msG	12.58824

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-7	0	15.85	Hf sG-msG	15.85
399-1-70	0	14.90472	Hf sG-msG	14.90472
399-1-72	0	4.8768	Hf sG-msG	14.7828
399-1-72	4.8768	5.6388	Hf S5	14.7828
399-1-72	5.6388	14.7828	Hf sG-msG	14.7828
399-1-73	0	4.8768	Hf sG-msG	12.192
399-1-73	4.8768	5.6388	Hf G	12.192
399-1-73	5.6388	10.3632	Hf sG-msG	12.192
399-1-73	10.3632	10.668	Hf G	12.192
399-1-73	10.668	12.192	Hf sG-msG	12.192
399-1-74	0	15.3924	Hf sG-msG	15.3924
399-1-76	0	15.49908	Hf sG-msG	15.49908
399-1-78	0	12.4968	Hf sG-msG	15.27048
399-1-78	12.4968	14.0208	Hf M	15.27048
399-1-78	14.0208	15.27048	Hf sG-msG	15.27048
399-1-79	0	12.243816	Hf sG-msG	12.243816
399-1-8	0	14.015	Hf sG-msG	14.015
399-1-80	0	15.3924	Hf sG-msG	15.3924
399-1-81	0	12.40536	Hf sG-msG	12.40536
399-1-82	0	0.9144	Hf S	15.5448
399-1-82	0.9144	5.54736	Hf sG-msG	15.5448
399-1-82	5.54736	6.03504	Hf S3	15.5448
399-1-82	6.03504	15.5448	Hf sG-msG	15.5448
399-1-83	0	0.97536	Hf S	12.155424
399-1-83	0.97536	5.1816	Hf sG-msG	12.155424
399-1-83	5.1816	8.5344	Hf S3	12.155424
399-1-83	8.5344	12.155424	Hf sG-msG	12.155424
399-1-84	0	11.8872	Hf sG-msG	18.288
399-1-84	11.8872	12.4968	Hf G	18.288
399-1-84	12.4968	14.0208	Hf M	18.288
399-1-84	14.0208	18.288	Hf sG-msG	18.288
399-1-85	0	12.3444	Hf sG-msG	12.3444
399-1-86	0	6.7056	Hf sG-msG	15.27048
399-1-86	6.7056	7.62	Hf M	15.27048
399-1-86	7.62	15.27048	Hf sG-msG	15.27048
399-1-89	0	15.51432	Hf sG-msG	15.51432

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-9	0	15.234	Hf sG-msG	15.234
399-1-90	0	15.553944	Hf sG-msG	15.553944
399-1-91	0	1.2192	Hf S	15.291816
399-1-91	1.2192	15.291816	Hf sG-msG	15.291816
399-1-92	0	0.97536	Hf S	15.0876
399-1-92	0.97536	15.0876	Hf sG-msG	15.0876
399-1-93	0	1.0668	Hf S	15.51432
399-1-93	1.0668	8.9916	Hf sG-msG	15.51432
399-1-93	8.9916	10.9728	Hf M	15.51432
399-1-93	10.9728	14.3256	Hf sG-msG	15.51432
399-1-93	14.3256	15.51432	Hf M	15.51432
399-1-95	0	11.5824	Hf sG-msG	15.33144
399-1-95	11.5824	11.8872	Hf G	15.33144
399-1-95	11.8872	15.33144	Hf sG-msG	15.33144
399-1-96	0	10.668	Hf sG-msG	15.051024
399-1-96	10.668	12.192	Hf G	15.051024
399-1-96	12.192	14.6304	Hf sG-msG	15.051024
399-1-96	14.6304	15.051024	Hf S	15.051024
399-1-97	0	15.24	Hf sG-msG	15.24
399-1-98	0	10.72896	Hf G	10.72896
399-1-99	0	6.096	Hf sG-msG	10.75944
399-1-99	6.096	10.75944	Hf G	10.75944
399-2-2	0	18.28	Hf sG-msG	18.28
399-2-3	0	18.29	Hf sG-msG	18.29
399-2-32	0	12.192	Hf sG-msG	16.1544
399-2-32	12.192	16.1544	Hf G	16.1544
399-3-33	0	5.4864	Hf S	17.063
399-3-33	5.4864	14.9352	Hf sG-msG	17.063
399-3-33*	14.9352	15.5448	Hf M	17.063
399-3-33	15.5448	17.063	Hf S	17.063
399-8-3	0	3.3528	Hf S	17.977
399-8-3	3.3528	17.977	Hf sG-msG	17.977
C8933	0	10.88136	Hf sG-msG	10.88136
North Pond Pit-1	0	6.7056	Hf sG-msG	6.7056
North Pond Pit-2	0	3.6576	Hf sG-msG	3.6576
South Pond Pit-1	0	6.7056	Hf sG-msG	6.7056

Table C-2. Detailed Vadose Zone Geologic Framework Model Lithology (DVZ_300FF5_lithology_postremedy_boreholes.csv)

Well Name	From Depth	To Depth	Lithology	Total Depth
South Pond Pit-2	0	6.7056	Hf sG-msG	6.7056
C9580	0	4.524	Hf sG-msG	11.31
C9580	4.524	5.568	Hf G	11.31
C9580	5.568	5.916	Hf M	11.31
C9580	5.916	11.31	Hf G	11.31
C9581	0	6.96	Hf sG-msG	12.18
C9581	6.96	12.18	Hf G	12.18
C9582	0	4.176	Hf sG-msG	12.18
C9582	4.176	6.612	Hf G	12.18
C9582	6.612	7.656	Hf sG-msG	12.18
C9582	7.656	12.18	Hf G	12.18
C9728	0	9.2964	Hf sG-msG	9.2964
C9729	0	9.906	Hf sG-msG	9.906
C9730	0	9.906	Hf sG-msG	9.906
C9731	0	3.048	Hf sG-msG	9.906
C9731	3.048	6.096	Hf S	9.906
C9731	6.096	9.906	Hf sG-msG	9.906
C9732	0	9.906	Hf sG-msG	9.906
C9733	0	6.4008	Hf S	9.906
C9733	6.4008	9.906	Hf sG-msG	9.906
C9734	0	9.906	Hf sG-msG	9.906
C9735	0	9.906	Hf sG-msG	9.906
C9736	0	9.906	Hf sG-msG	9.906

Note: All coordinates, elevations, and depths in this table are in meters. The vertical datum is from NAVD88, *North American Vertical Datum of 1988*, and the horizontal coordinate system Washington State Plane (NAD83, *North American Datum of 1983*).

*Denotes well intervals excluded when creating Geological Model.

G = gravel
Hf = Hanford formation
M = silt
S = sand
SG-msG = sandy gravel to silty sandy gravel

Table C-3. Lower Suprabasalt Sediment Geologic Framework Model Lithology

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-10B	0	16.9672	Hanford	36.2712
399-1-10B	16.972	34.437	Ringold E	36.2712
399-1-10B	34.437	35.437	Ringold LM	36.2712
399-1-13A	0	15.84	Hanford	17.0688
399-1-13B	0	18.82	Hanford	37.73424
399-1-13B	18.82	35.351	Ringold E	37.73424
399-1-16B	0	15.844	Hanford	35.9664
399-1-16B	15.844	34.741	Ringold E	35.9664
399-1-16C	0	16.453	Hanford	54.2544
399-1-16C	16.453	35.046	Ringold E	54.2544
399-1-16C	35.046	53.334	Ringold LM	54.2544
399-1-16C	53.334	54.334	Basalt	54.2544
399-1-16D	0	16.453	Hanford	55.4736
399-1-16D	16.453	33.522	Ringold E	55.4736
399-1-16D	33.522	54.858	Ringold LM	55.4736
399-1-16D	54.858	55.858	Basalt	55.4736
399-1-17B	0	15.539	Hanford	35.052
399-1-17B	15.539	32.913	Ringold E	35.052
399-1-17C	0	15.539	Hanford	52.7304
399-1-17C	15.539	35.046	Ringold E	52.7304
399-1-17C	35.046	50.591	Ringold LM	52.7304
399-1-17C	50.591	51.591	Basalt	52.7304
399-1-2	0	18.343	Hanford	30.7848
399-1-20	0	15.234	Hanford	56.9976
399-1-20	15.234	36.113	Ringold E	56.9976
399-1-20	36.113	53.639	Ringold LM	56.9976
399-1-20	53.639	54.639	Basalt	56.9976
399-1-21B	0	20.873	Hanford	35.052
399-1-21B	20.873	32.913	Ringold E	35.052
399-1-23	16.149	30.474	Ringold E	35.3568
399-1-8	0	14.015	Hanford	32.6136
399-1-8	14.015	31.998	Ringold E	32.6136
399-1-9	0	15.234	Hanford	55.1688
399-1-9	15.234	35.046	Ringold E	55.1688
399-1-9	35.046	51.81	Ringold LM	55.1688
399-1-9	51.81	54.553	Ringold A	55.1688
399-1-9	54.553	55.553	Basalt	55.1688
399-2-1	0	14.32	Hanford	23.4696

Table C-3. Lower Suprabasalt Sediment Geologic Framework Model Lithology

Well Name	From Depth	To Depth	Lithology	Total Depth
399-2-11	0	17.063	Hanford	19.23288
399-2-12	0	19.806	Hanford	19.812
399-2-13	0	16.911	Hanford	19.08048
399-2-15	0	16.758	Hanford	18.7452
399-2-16	0	16.606	Hanford	18.8976
399-2-18	0	17.368	Hanford	19.812
399-2-19	0	16.454	Hanford	18.53184
399-2-2	0	18.282	Hanford	19.812
399-2-20	0	17.063	Hanford	18.8976
399-2-21	0	16.758	Hanford	18.80616
399-2-22	0	17.52	Hanford	19.812
399-2-24	0	17.673	Hanford	20.574
399-2-25	0	17.673	Hanford	52.1208
399-2-25	17.673	37.18	Ringold E	52.1208
399-2-25	37.18	49.677	Ringold LM	52.1208
399-2-25	49.677	50.677	Basalt	52.1208
399-2-26	0	17.673	Hanford	18.92808
399-2-29	0	16.911	Hanford	18.7452
399-2-30	0	16.911	Hanford	19.5072
399-2-31	0	17.063	Hanford	19.2024
399-2-5	0	17.063	Hanford	39.9288
399-2-5	17.063	38.094	Ringold E	39.9288
399-2-7	0	16.454	Hanford	18.8976
399-3-18	0	14.015	Hanford	39.9288
399-3-18	14.015	38.399	Ringold E	39.9288
399-3-23	0	16.454	Hanford	19.812
399-3-24	0	16.149	Hanford	19.812
399-3-25	0	17.368	Hanford	19.812
399-3-26	0	15.844	Hanford	20.1168
399-3-27	0	15.539	Hanford	18.8976
399-3-28	0	17.063	Hanford	19.6596
399-3-29	0	15.996	Hanford	19.5072
399-3-30	0	16.911	Hanford	18.7452
399-3-31	0	16.911	Hanford	19.2024
399-8-3	17.977	26.817	Ringold E	31.0896
399-1-14B	0	14.325	Hanford	36.4236
399-1-14B	14.325	33.069	Ringold E	36.4236
399-1-14B	33.069	36.4236	Ringold LM	36.4236

Table C-3. Lower Suprabasalt Sediment Geologic Framework Model Lithology

Well Name	From Depth	To Depth	Lithology	Total Depth
399-1-4	0	13.715	Hanford	30.7848
399-1-4	13.715	30.7848	Ringold E	30.7848
399-1-1	0	23.4696	Hanford	23.4696
399-1-1	23.4696	24.4696	Ringold E	23.4696
399-1-10A	0	1.524	Fill	13.716
399-1-10A	1.524	13.716	Hanford	13.716
399-1-10A	13.716	14.716	Ringold E	13.716
399-1-11	0	12.8016	Hanford	14.41704
399-1-11	12.8016	15.41704	Ringold E	14.41704
399-1-12	0	3.3528	Fill	19.812
399-1-12	3.3528	14.05128	Hanford	19.812
399-1-12	14.05128	20.812	Ringold E	19.812
399-1-14A	0	0.762	Fill	15.24
399-1-14A	0.762	14.3256	Hanford	15.24
399-1-16A	0	1.2192	Fill	14.478
399-1-16A	1.2192	14.478	Hanford	14.478
399-1-16A	14.478	15.478	Ringold E	14.478
399-1-17A	0	12.4968	Hanford	12.4968
399-1-17A	12.4968	13.4968	Ringold E	12.4968
399-1-26	0	14.7828	Hanford	15.3924
399-1-26	14.7828	16.3924	Ringold E	15.3924
399-1-33	0	13.1064	Hanford	14.0208
399-1-33	13.1064	15.0208	Ringold E	14.0208
399-1-34	0	11.8872	Hanford	15.3924
399-1-34	11.8872	16.3924	Ringold E	15.3924
399-1-35	0	11.8872	Hanford	14.9352
399-1-35	11.8872	15.9352	Ringold E	14.9352
399-1-38	0	15.84376	Hanford	14.84376
399-3-1	0	2.4384	Fill	23.7744
399-3-1	2.4384	14.3256	Hanford	23.7744
399-3-1	14.3256	24.7744	Ringold E	23.7744
399-1-14A	14.3256	16.24	Ringold E	15.24
399-1-5	0	1.83	Fill	13.716
399-1-5	1.83	13.11	Hanford	13.716
399-1-5	13.11	13.716	Ringold E	13.716
399-3-32	0	3.01	Fill	19.2024
399-3-32	3.01	17.063	Hanford	19.2024
399-3-32	17.063	19.2024	Ringold E	19.2024

Table C-3. Lower Suprabasalt Sediment Geologic Framework Model Lithology

Well Name	From Depth	To Depth	Lithology	Total Depth
399-2-23	0	4.88	Fill	18.288
399-2-23	4.88	16.46	Hanford	18.288
399-2-23	16.46	18.288	Ringold E	18.288
399-2-27	0	3.05	Fill	19.3548
399-2-27	3.05	15.54	Hanford	19.3548
399-2-27	15.54	19.3548	Ringold E	19.3548
399-3-19	0	3.96	Fill	31.5468
399-3-19	3.96	25.3	Hanford	31.5468
399-1-13B	35.351	37.73424	Ringold LM	37.73424
399-1-2	18.343	30.7848	Ringold E	30.7848
399-1-21B	32.913	35.052	Ringold LM	35.052
399-1-23	0	0.304	Fill	35.3568
399-1-23	0.304	16.149	Hanford	35.3568
399-1-23	30.474	35.3568	Ringold LM	35.3568
399-1-3	0	3.35	Fill	31.242
399-1-3	3.35	13.405	Hanford	31.242
399-1-3	13.405	32.242	Ringold E	31.242
399-1-7	0	15.85	Hanford	22.86
399-1-7	15.85	22.86	Ringold E	22.86
399-2-1	14.33	23.4696	Ringold E	23.4696
399-2-10	0	3.05	Fill	20.574
399-2-10	3.05	18.13	Hanford	20.574
399-2-10	18.13	20.574	Ringold E	20.574
399-2-14	0	3.05	Fill	18.288
399-2-14	3.05	16.606	Hanford	18.288
399-2-14	16.606	18.288	Ringold E	18.288
399-2-17	0	3.05	Fill	19.2024
399-2-17	3.05	16.911	Hanford	19.2024
399-2-17	16.911	19.2024	Ringold E	19.2024
399-2-2	18.282	19.812	Ringold E	19.812
399-2-28	0	2.44	Fill	19.812
399-2-28	2.44	17.216	Hanford	19.812
399-2-28	17.216	19.812	Ringold E	19.812
399-2-3	0	18.29	Hanford	19.812
399-2-3	18.29	19.812	Ringold E	19.812
399-2-8	0	2.74	Fill	18.288
399-2-8	2.74	16.149	Hanford	18.288
399-2-8	16.149	18.288	Ringold E	18.288

Table C-3. Lower Suprabasalt Sediment Geologic Framework Model Lithology

Well Name	From Depth	To Depth	Lithology	Total Depth
399-2-9	0	2.74	Fill	19.812
399-2-9	2.74	18.13	Hanford	19.812
399-2-9	18.13	19.812	Ringold E	19.812
399-8-3	0	2.13	Fill	31.0896
399-8-3	26.817	31.0896	Ringold LM	31.0896
399-3-19	25.3	31.5468	Ringold E	31.5468
399-8-3	2.13	17.977	Hanford	31.0896

Note: All coordinates, elevations, and depths in this table are in meters. The vertical datum is from NAVD88, *North American Vertical Datum of 1988*, and the horizontal coordinate system Washington State Plane (NAD83, *North American Datum of 1983*). Geologic units explained in Section 2.1 in the main text of this calculation.

Table C-4. Wells within Hanford Formation Detailed Vadose Geologic Framework Model Domain Omitted from Interpolation

Wells Not in Hanford Formation Detailed Vadose Model				
399-1-1	399-1-38	399-1-87	399-2-34	399-3-34
399-1-10A	399-1-39	399-1-94	399-2-35	399-3-35
399-1-10B	399-1-40	399-2-1	399-2-36	399-3-36
399-1-11	399-1-41	399-2-10	399-2-37	399-3-37
399-1-126	399-1-42	399-2-11	399-2-38	399-3-4B
399-1-13B	399-1-43	399-2-12	399-2-39	B8761
399-1-14A	399-1-44	399-2-13	399-2-4	B8762
399-1-14B	399-1-45	399-2-14	399-2-40	B8763
399-1-16A	399-1-46	399-2-15	399-2-5	B8764
399-1-16D	399-1-47	399-2-16	399-2-6	B8765
399-1-17B	399-1-48	399-2-17	399-2-7	B8766
399-1-19	399-1-49	399-2-18	399-2-8	B8767
399-1-21A	399-1-50	399-2-19	399-2-9	B8768
399-1-22	399-1-51	399-2-20	399-3-1	B8769
399-1-24	399-1-52	399-2-21	399-3-18	B8770
399-1-25	399-1-53	399-2-22	399-3-19	C3961
399-1-26	399-1-60	399-2-23	399-3-23	C3962
399-1-27	399-1-61	399-2-24	399-3-24	C5387

Table C-4. Wells within Hanford Formation Detailed Vadose Geologic Framework Model Domain Omitted from Interpolation

Wells Not in Hanford Formation Detailed Vadose Model				
399-1-28	399-1-62	399-2-25	399-3-25	C5388
399-1-29	399-1-63	399-2-26	399-3-26	C5389
399-1-3	399-1-64	399-2-27	399-3-27	C6341
399-1-30	399-1-67	399-2-28	399-3-28	C6342
399-1-31	399-1-69	399-2-29	399-3-29	C6343
399-1-32	399-1-71	399-2-30	399-3-30	C6344
399-1-36	399-1-75	399-2-31	399-3-31	C6345
399-1-37	399-1-77	399-2-33	399-3-32	C6346

Table C-5. Stage B EAA Backfill/Hanford Contacts

Well Name	Well ID	X(East)	Y(North)	Contact Elevation (ft)	Contact Elevation (m)	Value
399-1-98	C9642	594247.39	116547.77	365.07	111.273336	1
399-1-99	C9643	594260.35	116536.26	363.95	110.93196	1
399-1-100	C9644	594248.79	116531.6	364.88	111.215424	1
399-1-101	C9645	594258.37	116547.77	365	111.252	1
399-1-102*	C9646	594207.57	116499.21	362.65	110.53572	1
399-1-103	C9647	594180.09	116484.13	364.7	111.16056	1
399-1-104	C9648	594220.66	116588.91	364.14	110.989872	1
399-1-105	C9649	594232.97	116591.69	363.81	110.889288	1
399-1-106	C9650	594243.81	116591.16	363.31	110.736888	1
399-1-107	C9651	594248.05	116575.95	363.81	110.889288	1
399-1-108	C9652	594234.95	116578.33	363.31	110.736888	1
399-1-109	C9653	594220.4	116575.42	365.64	111.447072	1
399-1-110	C9654	594222.25	116563.11	363.64	110.837472	1
399-1-111	C9655	594236.8	116564.7	363.31	110.736888	1
399-1-112	C9656	594251.75	116561.39	364.32	111.044736	1
399-1-113	C9657	594236.14	116552.66	364.31	111.041688	1
399-1-114*	C9658	594223.05	116548.83	363.31	110.736888	1
399-1-115	C9659	594224.24	116536.66	365.24	111.325152	1
399-1-116	C9660	594235.61	116539.83	364.32	111.044736	1
399-1-117	C9661	594261.15	116523.16	365.07	111.273336	1
399-1-118	C9662	594264.98	116509.4	365.62	111.440976	1
399-1-119*	C9663	594247.73	116516.79	371.57	113.254536	1

Table C-5. Stage B EAA Backfill/Hanford Contacts

Well Name	Well ID	X(East)	Y(North)	Contact Elevation (ft)	Contact Elevation (m)	Value
399-1-120	C9664	594221	116506.25	362.65	110.53572	1
399-1-121*	C9665	594216.6	116477.76	363.03	110.651544	1
399-1-122	C9666	594220.37	116492.61	362.46	110.477808	1
399-1-123	C9667	594203.53	116470.97	363.21	110.706408	1
399-1-124	C9668	594191.78	116478.38	364.14	110.989872	1
399-1-125	C9669	594189.31	116462.68	365.07	111.273336	1
399-1-127*	C9671	594176.32	116454.87	362.28	110.422944	1
399-1-128*	C9672	594167.64	116461.04	366.42	111.684816	1
399-1-129*	C9673	594163.93	116445.21	360.64	109.923072	1
399-1-130*	C9674	594156.99	116454.09	355.69	108.414312	1
399-1-131	C9675	594205.66	116486.39	363.76	110.874048	1
399-1-132	C9676	594192.26	116490.94	360.06	109.746288	1
399-1-133*	C9677	594231.37	116485.77	361.54	110.197392	1
399-1-134	C9678	594245.94	116493.68	366.91	111.834168	1
399-1-135	C9679	594237.24	116500	369.53	112.632744	1
399-1-136	C9680	594076.51	116504.34	363.89	110.913672	1
399-1-137	C9681	594085.92	116486.36	364.26	111.026448	1
399-1-138	C9682	594100.13	116497.09	362.45	110.47476	1
399-1-139	C9683	594089.1	116513.5	363.52	110.800896	1
399-1-140	C9684	594250.43	116507.42	363.58	110.819184	1
399-1-141*	C9685	594258.5	116498.16	366.18	111.611664	1
399-1-142	C9686	594223.44	116520.12	365.62	111.440976	1
399-1-143	C9687	594235.08	116510.86	365.62	111.440976	1
399-1-144	C9688	594235.75	116525.41	365.24	111.325152	1
399-1-145	C9689	594088.7	116499.45	358.82	109.368336	1
399-1-146	C9690	594245.11	116568.35	364.14	110.989872	1
399-1-147	C9691	594216.11	116486.15	363.21	110.706408	1
399-1-148	C9692	594256.28	116530.17	363.4	110.76432	1
399-1-149	C9693	594187.89	116480.2	361.9	110.30712	1
399-1-150	C9694	594227.46	116546.41	364.81	111.194088	1
399-1-152*	C9696	594247.64	116498.04	361.9	110.30712	1
399-1-153*	C9697	594166.08	116453.37	362.46	110.477808	1
399-1-154	C9698	594227.36	116583.22	363.81	110.889288	1
399-1-155	C9699	594231.83	116542.84	363.39	110.761272	1
399-1-156	C9700	594255.69	116529.82	363.75	110.871	1
399-1-157	C9701	594246.19	116568.61	363.81	110.889288	1
399-1-158*	C9702	594228.33	116583.85	361.31	110.127288	1
399-1-159	C9703	594249.07	116502.68	363.95	110.93196	1

Table C-5. Stage B EAA Backfill/Hanford Contacts

Well Name	Well ID	X(East)	Y(North)	Contact Elevation (ft)	Contact Elevation (m)	Value
399-1-160	C9704	594183.95	116481.98	364.88	111.215424	1
399-1-161*	C9705	594214.9	116486.63	365.99	111.553752	1
399-1-162*	C9706	594167.02	116454.04	358.46	109.258608	1
399-1-164	C9708	594236.45	116395.56	361.64	110.227872	1
399-1-165	C9709	594332.5	116473.98	358.64	109.313472	1
399-1-166*	C9710	594323.6	116586.22	362.31	110.432088	1

Note: All coordinates, elevations, and depths in this table are in meters. The vertical datum is from NAVD88, *North American Vertical Datum of 1988*, and the horizontal coordinate system Washington State Plane (NAD83, *North American Datum of 1983*).

*Denotes wells excluded when creating excavation interpolants.

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
North Process Pond*	594219.1	116550.7	110.6964	0.5
North Process Pond	594135	116655	112	0
North Process Pond	594135	116655	108	0
North Process Pond	594135	116655	104	0
North Process Pond	594175	116670	116	0
North Process Pond	594175	116670	112	0
North Process Pond	594175	116670	108	0
North Process Pond	594190.9	116632.7	107.5	0
North Process Pond	594215	116685	116	0
North Process Pond	594215	116685	112	0
North Process Pond	594215	116685	108	0
North Process Pond	594215	116685	104	0
North Process Pond	594255	116700	116	0
North Process Pond	594255	116700	112	0
North Process Pond	594255	116700	108	0
North Process Pond	594255	116700	104	0
North Process Pond	594155	116420	116	0
North Process Pond	594155	116420	112	0
North Process Pond	594155	116420	108	0
North Process Pond	594155	116420	104	0
North Process Pond	594195	116435	116	0
North Process Pond	594195	116435	112	0
North Process Pond	594195	116435	108	0
North Process Pond	594195	116435	104	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
North Process Pond	594235	116450	116	0
North Process Pond	594235	116450	112	0
North Process Pond	594235	116450	108	0
North Process Pond	594235	116450	104	0
North Process Pond	594275	116465	116	0
North Process Pond	594275	116465	112	0
North Process Pond	594275	116465	108	0
North Process Pond	594275	116465	104	0
North Process Pond	594330	116480	104	0
North Process Pond	594330	116480	108	0
North Process Pond	594330	116480	112	0
North Process Pond	594330	116480	116	0
North Process Pond	594310	116502.2	109	0
North Process Pond*	594185	116552.5	112	1
North Process Pond*	594185	116552.5	113	1
North Process Pond*	594225	116567.5	111	1
North Process Pond*	594225	116567.5	112	1
North Process Pond*	594225	116567.5	113	1
North Process Pond	594160	116475.5	108.5	0
North Process Pond*	594265	116582.5	112	1
North Process Pond*	594265	116582.5	113	1
Process Trenches*	594060	116740	116	0
Process Trenches	594060	116740	114	0
Process Trenches	594060	116740	112	0
Process Trenches*	594060	116740	110	0
Process Trenches*	594060	116710	116	0
Process Trenches	594060	116710	114	0
Process Trenches	594060	116710	112	0
Process Trenches*	594060	116710	110	0
Process Trenches*	594060	116680	116	0
Process Trenches	594060	116680	114	0
Process Trenches	594060	116680	112	0
Process Trenches*	594060	116680	110	0
Process Trenches*	594060	116650	116	0
Process Trenches	594060	116650	114	0
Process Trenches	594060	116650	112	0
Process Trenches*	594060	116650	110	0
Process Trenches*	594060	116620	116	0
Process Trenches	594060	116620	114	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
Process Trenches	594060	116620	112	0
Process Trenches*	594060	116620	110	0
Process Trenches*	594060	116590	116	0
Process Trenches	594060	116590	114	0
Process Trenches	594060	116590	112	0
Process Trenches*	594060	116590	110	0
Process Trenches*	594060	116560	116	0
Process Trenches	594060	116560	114	0
Process Trenches	594060	116560	112	0
Process Trenches*	594060	116560	110	0
Process Trenches*	594060	116530	116	0
Process Trenches	594060	116530	114	0
Process Trenches	594060	116530	112	0
Process Trenches*	594060	116530	110	0
Process Trenches*	594060	116500	116	0
Process Trenches	594060	116500	114	0
Process Trenches	594060	116500	112	0
Process Trenches*	594060	116500	110	0
Process Trenches*	594060	116470	116	0
Process Trenches	594060	116470	114	0
Process Trenches	594060	116470	112	0
Process Trenches*	594060	116470	110	0
Process Trenches*	594060	116440	116	0
Process Trenches	594060	116440	114	0
Process Trenches	594060	116440	112	0
Process Trenches*	594060	116440	110	0
Process Trenches*	594075	116740	116	0
Process Trenches	594075	116740	114	0
Process Trenches	594075	116740	112	0
Process Trenches*	594075	116740	110	0
Process Trenches*	594075	116710	116	0
Process Trenches*	594075	116710	114	1
Process Trenches*	594075	116710	112	1
Process Trenches*	594075	116710	110	0
Process Trenches*	594075	116680	116	0
Process Trenches*	594075	116680	114	1
Process Trenches*	594075	116680	112	1
Process Trenches*	594075	116680	110	0
Process Trenches*	594075	116650	116	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
Process Trenches*	594075	116650	114	1
Process Trenches*	594075	116650	112	1
Process Trenches*	594075	116650	110	0
Process Trenches*	594075	116620	116	0
Process Trenches*	594075	116620	114	1
Process Trenches*	594075	116620	112	1
Process Trenches*	594075	116620	110	0
Process Trenches*	594075	116590	116	0
Process Trenches*	594075	116590	114	1
Process Trenches*	594075	116590	112	1
Process Trenches*	594075	116590	110	0
Process Trenches*	594075	116560	116	0
Process Trenches*	594075	116560	114	1
Process Trenches*	594075	116560	112	1
Process Trenches*	594075	116560	110	0
Process Trenches*	594075	116530	116	0
Process Trenches*	594075	116530	114	1
Process Trenches*	594075	116530	112	1
Process Trenches*	594075	116530	111	1
Process Trenches*	594075	116500	116	0
Process Trenches*	594075	116500	114	1
Process Trenches*	594075	116500	112	1
Process Trenches*	594075	116500	110	0
Process Trenches*	594075	116470	116	0
Process Trenches*	594075	116470	114	1
Process Trenches*	594075	116470	112	1
Process Trenches*	594075	116470	111	1
Process Trenches*	594075	116440	116	0
Process Trenches	594075	116440	114	0
Process Trenches	594075	116440	112	0
Process Trenches*	594075	116440	110	0
Process Trenches*	594084	116740	116	0
Process Trenches*	594084	116740	114	0
Process Trenches*	594084	116740	112	0
Process Trenches*	594084	116740	110	0
Process Trenches*	594084	116710	116	0
Process Trenches*	594084	116710	114	1
Process Trenches*	594084	116710	112.5	1
Process Trenches*	594084	116710	110	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
Process Trenches*	594084	116680	116	0
Process Trenches*	594084	116680	114	1
Process Trenches*	594084	116680	112.5	1
Process Trenches*	594084	116680	110	0
Process Trenches*	594084	116650	116	0
Process Trenches*	594084	116650	114	1
Process Trenches*	594084	116650	112.5	1
Process Trenches*	594084	116650	110	0
Process Trenches*	594084	116620	116	0
Process Trenches*	594084	116620	114	1
Process Trenches*	594084	116620	112.5	1
Process Trenches*	594084	116620	110	0
Process Trenches*	594084	116590	116	0
Process Trenches*	594084	116590	114	1
Process Trenches*	594084	116590	112.5	1
Process Trenches*	594084	116590	110	0
Process Trenches*	594084	116560	116	0
Process Trenches*	594084	116560	114	1
Process Trenches*	594084	116560	112.5	1
Process Trenches*	594084	116560	110	0
Process Trenches*	594084	116530	116	0
Process Trenches*	594084	116530	114	1
Process Trenches*	594084	116530	112.5	1
Process Trenches*	594084	116530	110	0
Process Trenches*	594084	116500	116	0
Process Trenches*	594084	116500	114	1
Process Trenches*	594084	116500	112.5	1
Process Trenches*	594084	116500	110	0
Process Trenches*	594084	116470	116	0
Process Trenches*	594084	116470	114	1
Process Trenches*	594084	116470	112.5	1
Process Trenches*	594084	116470	110	0
Process Trenches*	594084	116440	116	0
Process Trenches*	594084	116440	114	0
Process Trenches	594084	116440	112	0
Process Trenches*	594084	116440	110	0
Process Trenches*	594092	116740	116	0
Process Trenches	594092	116740	114	0
Process Trenches	594092	116740	112	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
Process Trenches*	594092	116740	110	0
Process Trenches*	594092	116710	116	0
Process Trenches*	594092	116710	114	1
Process Trenches*	594092	116710	112	1
Process Trenches*	594092	116710	110	0
Process Trenches*	594092	116680	116	0
Process Trenches*	594092	116680	114	1
Process Trenches*	594092	116680	112	1
Process Trenches*	594092	116680	110	0
Process Trenches*	594092	116650	116	0
Process Trenches*	594092	116650	114	1
Process Trenches*	594092	116650	112	1
Process Trenches*	594092	116650	110	0
Process Trenches*	594092	116620	116	0
Process Trenches*	594092	116620	114	1
Process Trenches*	594092	116620	112	1
Process Trenches*	594092	116620	110	0
Process Trenches*	594092	116590	116	0
Process Trenches*	594092	116590	114	1
Process Trenches*	594092	116590	112	1
Process Trenches*	594092	116590	110	0
Process Trenches*	594092	116560	116	0
Process Trenches*	594092	116560	114	1
Process Trenches*	594092	116560	112	1
Process Trenches*	594092	116560	110	0
Process Trenches*	594092	116530	116	0
Process Trenches*	594092	116530	114	1
Process Trenches*	594092	116530	112	1
Process Trenches*	594092	116530	110	0
Process Trenches*	594092	116500	116	0
Process Trenches*	594092	116500	114	1
Process Trenches*	594092	116500	112	1
Process Trenches*	594092	116500	110	0
Process Trenches*	594092	116470	116	0
Process Trenches*	594092	116470	114	1
Process Trenches*	594092	116470	112	1
Process Trenches*	594092	116470	110	0
Process Trenches*	594092	116440	116	0
Process Trenches	594092	116440	114	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
Process Trenches	594092	116440	112	0
Process Trenches*	594092	116440	110	0
Process Trenches*	594107	116740	116	0
Process Trenches	594107	116740	114	0
Process Trenches	594107	116740	112	0
Process Trenches*	594107	116740	110	0
Process Trenches*	594107	116710	116	0
Process Trenches	594107	116710	114	0
Process Trenches	594107	116710	112	0
Process Trenches*	594107	116710	110	0
Process Trenches*	594107	116680	116	0
Process Trenches	594107	116680	114	0
Process Trenches	594107	116680	112	0
Process Trenches*	594107	116680	110	0
Process Trenches*	594107	116650	116	0
Process Trenches	594107	116650	114	0
Process Trenches	594107	116650	112	0
Process Trenches*	594107	116650	110	0
Process Trenches*	594107	116620	116	0
Process Trenches	594107	116620	114	0
Process Trenches	594107	116620	112	0
Process Trenches*	594107	116620	110	0
Process Trenches*	594107	116590	116	0
Process Trenches	594107	116590	114	0
Process Trenches	594107	116590	112	0
Process Trenches*	594107	116590	110	0
Process Trenches*	594107	116560	116	0
Process Trenches	594107	116560	114	0
Process Trenches	594107	116560	112	0
Process Trenches*	594107	116560	110	0
Process Trenches*	594107	116530	116	0
Process Trenches	594107	116530	114	0
Process Trenches	594107	116530	112	0
Process Trenches*	594107	116530	110	0
Process Trenches*	594107	116500	116	0
Process Trenches	594107	116500	114	0
Process Trenches	594107	116500	112	0
Process Trenches*	594107	116500	110	0
Process Trenches*	594107	116470	116	0

Table C-6. Excavation Interpolant Control Points

Waste Site	X(East)	Y(North)	Elevation (m)	Value
Process Trenches	594107	116470	114	0
Process Trenches	594107	116470	112	0
Process Trenches*	594107	116470	110	0
Process Trenches*	594107	116440	116	0
Process Trenches	594107	116440	114	0
Process Trenches	594107	116440	112	0
Process Trenches*	594107	116440	110	0

Note: All coordinates, elevations, and depths in this table are in meters. The vertical datum is from NAVD88, *North American Vertical Datum of 1988*, and the horizontal coordinate system Washington State Plane (NAD83, *North American Datum of 1983*).

*Denotes control points excluded after excavation interpolants were generated.

Appendix D

Software Installation and Checkout Forms

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CHPRC SOFTWARE INSTALLATION AND CHECKOUT FORM

Software Owner Instructions:

Complete Fields 1-13, then run test cases in Field 14. Compare test case results listed in Field 15 to corresponding Test Report outputs. If results are the same, sign and date Field 19. If not, resolve differences and repeat above steps.

Software Subject Matter Expert Instructions:

Assign test personnel. Approve the installation of the code by signing and dating Field 21, then maintain form as part of the software support documentation.

GENERAL INFORMATION:

1. Software Name: Leapfrog Geo Software Version No.: 4.2.1

EXECUTABLE INFORMATION:

2. Executable Name (include path):

[redacted]\Geo.exe

3. Executable Size (bytes): 1,171

COMPILATION INFORMATION:

4. Hardware System (i.e., property number or ID):

Vendor supplied

5. Operating System (include version number):

Windows (Vendor supplied)

INSTALLATION AND CHECKOUT INFORMATION:

6. Hardware System (i.e., property number or ID):

INTERA-00873

7. Operating System (include version number):

Windows 10 Pro version 1607

8. Open Problem Report? (●) No ( ) Yes PR/CR No.

TEST CASE INFORMATION:

9. Directory/Path:

[redacted]\leapfrog\

10. Procedure(s):

per CHPRC-01754 Rev 2, Leapfrog Hydro and Leapfrog-Geo Software Test Plan

11. Libraries:

N/A

12. Input Files:

per CHPRC-01754 Rev 2, Leapfrog Hydro and Leapfrog-Geo Software Test Plan

13. Output Files:

per CHPRC-01754 Rev 2, Leapfrog Hydro and Leapfrog-Geo Software Test Plan

14. Test Cases:

Vendor Installation Package, TC-1, TC-2,TC-3, TC-4

15. Test Case Results:

Pass

16. Test Performed By:

17. Test Results: (●) Satisfactory, Accepted for Use ( ) Unsatisfactory

18. Disposition (include HISI update):

Accepted; installation added to Hanford Off-Site user list

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CHPRC SOFTWARE INSTALLATION AND CHECKOUT FORM (continued)

1. Software Name: Leapfrog Geo Software Version No.: 4.2.1

Prepared By:

19.	WE Nichols	8 MAR 2018
Software Owner (Signature)	Print	Date

20. Test Personnel:

	RM Nell	2/22/18
Sign	Print	Date
Sign	Print	Date
Sign	Print	Date

Approved By:

21.	N/R per SMP	
Software SME (Signature)	Print	Date

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