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Scoping Summary for the ECODS L-3 (East of L Area) (NBN), L-Area Rubble Pit (131-1L), and L-Area Rubble Pit (131-4L) Operable Unit

(RFI/RI Work Plan Characterization)

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DISCLAIMER

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 PROJECT PHASE AND STATUS

This scoping summary supports Core Team discussion for the development of the Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Work Plan for the Early Construction and Operational Disposal Site (ECODS) L-3, L-Area Rubble Pit (LRP) (131-1L), and LRP (131-4L) Operable Unit (OU). These three OU subunits will be referred to as the ECODS L-3, LRP 131-1L, and LRP 131-4L subunits for the remainder of the document (Figure 1). The OU is currently listed in Appendix C of the Federal Facility Agreement.

Varying levels of previous characterization data exists for each of the three OU subunits. Site Evaluation (SE) data reported in 2003 for the ECODS L-3 subunit and SE data reported in 1994 for the LRP 131-4L subunit will be discussed in this scoping meeting. There is no subunit specific characterization data for the LRP 131-1L subunit; however, soil-gas prescreen was performed at the subunit. SE data provides an opportunity to prematurely consider problems warranting action, remedial action objectives, and likely response actions. However, the primary objectives of the RFI/RI Work Plan scoping meeting are to reach Core Team understanding of OU conditions, nature and extent of contamination based on available data, and identify potential data gaps and uncertainties that could impact the scope of the RFI/RI investigation. Core Team agreements will support the development of a RFI/RI Work Plan, including a Sampling and Analysis Plan (SAP). The RFI/RI Work Plan is scheduled for submittal on February 24, 2022.

2.0 LAND USE

The ECODS L-3, LRP 131-1L, and LRP 131-4L OUs are located in an area designated for industrial use as defined by the Savannah River Site (SRS) Land Use Control Assurance Plan (Savannah River Nuclear Solution, LLC [SRNS], 2018). No current or projected future development of the OU is planned. Land use controls (LUCs) will be part of any remedial action to ensure prevention of unrestricted use (e.g., residential), unless unrestricted use is supported by the RFI/RI/Baseline Risk Assessment (BRA) results.

Groundwater is not part of the OU and is addressed in the L-Area Southern Groundwater OU monitored natural attenuation final remedy. There is no current or projected future use of the groundwater as a drinking water source.

3.0 ECODS L-3 (NBN) SUBUNIT

3.1 ECODS L-3 (NBN) History and Background

ECODS L-3 is located in the southern portion of the SRS, immediately southeast of L Area (Figure 1). The subunit is approximately (~) 9.7 kilometers (km) (6.0 miles [mi]) north of the nearest SRS boundary and is within the Steel Creek Watershed. The ECODS L-3 subunit is located ~518 m (1,700 ft) southeast of the southeastern corner of the L Area perimeter fence.

The ECODS L-3 is one of twenty-five ECODS at SRS which were identified during a review of early 1950s aerial photographs. These sites were used during the construction and early operation of SRS for disposal of construction debris and other non-radioactive waste materials. Based on historical photographs and a ground-penetrating radar (GPR) survey completed in 2002, it is estimated that waste disposed of in ECODS L-3 was buried in two trenches located end-to-end (Figure 2). The original trenches were estimated to be ~18 meters (m) (60 feet [ft]) wide by 30 m (100 ft) long. ECODS L-3 was used to dispose of trash and construction debris, such as rubble and concrete, and is estimated to have been in use from November 1953 to June 1954. Prior to use as a disposal site, the area was used as farmland. Sections of the trenches may have been used as a burn pit for disposal of combustible waste.

The ECODS L-3 subunit is in a relatively flat area that slopes gradually to the southwest and is covered with mature pine trees. There is no evidence of stained soil or stressed vegetation within the ECODS L-3 subunit. The nearest wetland to the ECODS L-3 subunit is the extensive wetlands associated with L Lake, ~0.6 km (0.4 mi) to the south. The nearest RCRA/Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA) unit is the LRP 131-1L, which is ~488 m (1,600 ft) northwest of the ECODS L-3 subunit.

A SE characterization effort in 2002 performed a radiological control survey, a GPR survey, and soil sampling. The radiological control survey designated the area as a "Clean Area." Two confirmation samples were sent for laboratory analyses of gross alpha and nonvolatile beta. Sample results confirmed both samples were below the screening levels for both analyses. The GPR survey estimated the ECODS L-3 subunit boundary (Figure 2) and estimated the depth as ~7.3 m (24 ft). However, during soil sampling, the bottom of the two trenches within the subunit was confirmed at depths of 3.4 m (11 ft) or less. Depth to groundwater at the subunit is ~10.7 m (35 ft) below ground surface (bgs) (Westinghouse Savannah River Company [WSRC], 2003).

The SE soil sampling effort collected 90 samples at 5 depth intervals at 23 locations (Figure 2) and were analyzed for the complete list of Target Analyte List (TAL) constituents (inorganics) and the Target Compound List (TCL) of organic compounds, pesticides, and polychlorinated biphenyls (PCBs) (WSRC, 2003). The definitive level data from the SE is considered usable for the purposes of performing a BRA to support remedial decision making. SE data and estimates of subsurface lithology from nearby cone penetrometer technology borehole logs were used to perform a preliminary contaminant migration screening using VZCOMML V.4.0.

3.2 ECODS L-3 Preliminary Screening

The data set from the 2002 SE Report was used to perform preliminary data screening for the ECODS L-3 subunit by comparing the soil data to United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) and SRS soils background data. A more detailed screening at this early stage of the RI/Feasibility Study process allows for better identification of problems that may warrant action and potential data gaps.

Preliminary human health (HH) risk screening on ECODS L-3 was performed using the maximum detected concentration from the 0.0-0.3 m (0-1 ft) soil depth interval. The USEPA RSL table (dated May 2021) was used to obtain the thresholds for the default residential scenario used in the evaluation. Aluminum, antimony (Sb), cadmium (Cd), chromium (Cr), iron, lead (Pb), benzo(a) pyrene (BaP), PCB 1254 and PCB 1260 were identified as HH constituents of potential concern (COPCs) in surface soil. From the list of COPCs, maximum detected concentrations of Cr (assume hexavalent chromium [Cr^{+6}]), Pb, PCB 1254 and PCB 1260 were greater than for the industrial worker RSLs at the ECODS L-3 subunit (Figures 3-5).

Preliminary principal threat source material (PTSM) screening was performed using the maximum detected concentration from the all-depth soil intervals (0.0-0.3 m, 0.3-1.2 m, 1.2-2.4 m, 2.4-3.7 m and 3.7-4.9 m [0-1 ft, 1-4 ft, 4-8 ft, 8-12 ft, 12-16 ft]). The USEPA RSL table (dated May 2021) was used to obtain the thresholds for the default industrial worker scenario used in the evaluation. The data screening indicated that there is no PTSM (Hazard Index [HI] = 2.1, risk = 4.0E-05) at the ECODS L-3 subunit.

Preliminary ecological (ECO) risk screening was performed using the maximum detected concentration from the 0.0-0.3 m (0-1 ft) and 0.3-1.2 m (1-4 ft) depth intervals. The USEPA Region 4 Ecological Risk Assessment Supplemental Guidance (March 2018 update) and the Los Alamos National Laboratory EcoRisk Database (2017) were used to obtain the no-effect screening levels used in data screening. Sb, Cd, Cr, copper (Cu), Pb, mercury (Hg), nickel (Ni), zinc (Zn), bis(2-ethylhexyl) phthalate, cyanide (CN), PCB 1254, and PCB 1260 were identified as ECO COPCs for terrestrial receptors in the 0.0-0.3 m (0-1 ft) interval (Figure 6 for Cu). Maximum detected concentrations of the COPCs (except Sb and PCB 1260) are greater than lowest observed adverse effects level (LOAEL) – based refinement screening values (RSVs) for ecological receptors.

Preliminary ECO COPCs in the 0.3-1.2 m (1-4 ft) interval include: Sb, Cd, Cr, Cu, Pb, manganese, Hg, Ni, vanadium (V), Zn, 1,1-biphenyl, Polyaromatic Hydrocarbons (PAHs) (13 total, including: benzo[g,h,i]perylene, benzo[a]anthracene, BaP, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene,

naphthalene, phenanthrene, pyrene), bis(2-ethylhexyl) phthalate, carbazole, and PCB 1254. From the list of COPCs, maximum detected concentration of Sb, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn, benzo(a)anthracene, fluoranthene, pyrene, bis(2-ethylhexyl) phthalate, and PCB 1254 are greater than LOAEL – based RSVs for ecological receptors (Figure 7 for benzo[a]anthracene).

The preliminary contaminant migration constituent of concern (CMCOC) screen by VZCOMML did not identify any potential CMCOCs for the ECODS L-3 subunit.

Problem(s) Warranting Action	Remedial Action Objectives	Scope of Problem(s)	Likely Response Actions
• Cr, Pb, PCB 1254, and PCB 1260 were detected in surface soil (0-1 ft) at levels that may exceed 1E-06 risk or HQ=1 for the industrial worker scenario.	• Prevent exposure of an industrial worker to Cr, Pb, PCB 1254 and PCB 1260 in surface soils at levels exceeding 1E-06 risk or HQ=1.	• The total surface area of the ECODS L-3 subunit is 406 m^2 (4,370 ft^2). The total volume of unit media (based on a 0- to 1-ft depth) is estimated to be 124 m^3 (4,370 ft^3).	• No Action • LUCs • Soil Cover/LUCs • Excavate and off-site disposal
• Cd, Cr, Cu, Pb, Hg, Ni, Zn, bis(2-ethylhexyl) phthalate, cyanide, and PCB 1254 were detected in surface soil (0-1 ft) that may exceed a HQ=1 for terrestrial ecological receptors.	• Prevent exposure to Cd, Cr, Cu, Pb, Hg, Ni, Zn, bis(2-ethylhexyl) phthalate, cyanide, and PCB 1254 in surface soil at levels that that exceed HQ=1.	• The total surface area of the ECODS L-3 subunit is 406 m^2 (4,370 ft^2). The total volume of unit media (based on a 0- to 1-ft depth) is estimated to be 124 m^3 (4,370 ft^3).	• No Action • Soil Cover/LUCs • Excavate and off-site disposal
• Sb, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn, PAHs, bis(2-ethylhexyl) phthalate, and PCB 1254 were detected in subsurface soil (1-4 ft) that may exceed a HQ=1 for terrestrial ecological receptors.	• Prevent exposure to Sb, Cd, Cr, Cu, Pb, Hg, Ni, Zn, PAHs, bis(2-ethylhexyl) phthalate, and PCB 1254 in subsurface soil at levels that that exceed HQ=1.	• The total surface area of the ECODS L-3 subunit is 406 m^2 (4,370 ft^2). The total volume of unit media (based on a 1- to 4-ft depth) is estimated to be 371 m^3 (13,110 ft^3).	• No Action • LUCs • Excavate and off-site disposal
Uncertainties			
• Due to the absence of an asbestos characterization, it is uncertain if asbestos is present at ECODS L-3 that constitutes a HH problem warranting action. This uncertainty impacts the nature of the problems warranting action and will be managed by the remedial action selected for this subunit. • The extent of Cr, lead and PCBs above HH and ARAR thresholds is uncertain. The concentration of lead is above the HH and ARAR threshold of 400 mg/kg at one location. The concentrations of PCB are above the ARAR concentration of 1 mg/kg at 4 locations for PCB 1254 and at 2 locations for PCB 1260. This uncertainty impacts the extent of the problems warranting action and will be managed by the remedial action selected for this subunit. • The nature and extent of hexavalent chromium is uncertain. Because a total chromium RSL is not available at the USEPA website, total chromium sample results were compared to the RSL for hexavalent chromium (most toxic form) resulting in an overly conservative risk estimate that is biased high. Total chromium results at one surficial location is greater than the SRS soil background maximum concentration (54.3 mg/kg). This uncertainty impacts the nature and extent of the problems warranting action and will be managed by the remedial action selected for this subunit.			

3.3 ECODS L-3 Subunit Strategy

The existing data from the 2002 Site Evaluation data for the ECODS L-3 subunit is adequate to define the nature and extent of contamination in the subunit. Additional sampling may allow for refining of the problem(s) warranting action, however it is not expected to affect the scope of problem(s) or the likely response actions. At other SRS ECODS, an asbestos investigation is commonly completed to support the final risk management decision. In the case of the ECODS L-3, likely response actions related to the presence of lead and PCBs would also address the presence of asbestos containing material. Therefore, SRS will work under the assumption that asbestos containing material is potentially present and will determine likely response actions accordingly. There is uncertainty in the Cr speciation in the subunit because samples in the SE were not analyzed for Cr^{+6}. However, likely response actions for Cr^{+6} in the subunit would be consistent with other HH problems warranting action. Therefore, there are no additional data needs that would affect the likely response actions for the ECODS L-3 subunit, and no additional sampling is proposed in the RFI/RI Work Plan.

4.0 L-AREA RUBBLE PIT (131-4L) SUBUNIT

4.1 L-Area Rubble Pit (131-4L) History and Background

The LRP 131-4L subunit is located north of the L-Area fence and east of Road 7. The area slopes to the southeast toward railroad tracks, which head into L Area (Figure 1). Just before the railroad tracks on the southeastern end of the subunit, there is a depression and drainpipe which collects runoff and carries it under the railroad tracks. Orange ball markers were placed to designate the subunit boundaries, an area ~30.5 m by 30.5 m (100 ft by 100 ft). However, during the 1994 SE effort, the subunit size was questioned due to land disturbance on the northwestern side of the subunit, outside of the orange ball markers. Therefore, the SE considered the LRP 131-4L subunit to be ~36.6 m by 30.5 m (120 ft by 100 ft) to include the disturbed land.

The LRP 131-4L subunit surface elevation ranges from ~81 to 84 m (266 to 276 ft) above mean sea level (amsl). The water table in this area is ~7.6 m (25 ft) bgs. The subunit area is covered in dense vegetation and is surrounded by mature pine trees. There is no evidence of stressed vegetation at the subunit. During the SE, fragments of blacktop and asphalt were observed on the surface.

The nearest RCRA/CERCLA unit is the L-Area Bingham Pump Outage Pits, located ~305 m (1,000 ft) to the northwest. This unit is located side-gradient of the LRP 131-4L subunit and related effects are not expected.

The LRP 131-4L subunit received inert rubble from the L-Area Powerhouse Stack and Silo demolition. The rubble consisted primarily of concrete and asphalt material with some metal. The unlined pit was reported to have operated from 1973 to 1983 before it was filled and seeded in 1983. Operating procedures indicate it was to receive inert, non-hazardous materials and there are no records indicating any disposal of hazardous or radioactive materials.

As part of the SE effort, a soil-gas survey, a radiological control survey, a GPR survey, and soil sampling was performed at the LRP 131-4L subunit (WSRC, 1994). The soil-gas survey of the LRP 131-4L subunit was performed in 1992 and very low levels of tetrachloroethylene (PCE) and Hg were detected. The radiological control survey, completed in 1992, determined that the subunit was a "Clean Area" due to no radioactive contamination detected. The GPR survey was performed in July 1994 and indicated the pit depth ranged from 1.2 to 2.1 m (4 to 7 ft) and sloped to the southeast, following the topography. The subunit boundaries were not able to be determined from the GPR survey.

In September 1994, soil sampling was performed to confirm and investigate the presence of PCE and Hg at the LRP 131-4L, as well as identify nature and extent of any other contaminants present. Eleven subunit locations and one background location were identified for the SE soil sampling (Figure 8). Surface samples were taken at all locations and three locations were sampled at a deeper interval (1.5-2.1 m [5-7 ft] bgs). Attempts were made to collect samples at depth in the central sampling locations, however a consistent asphalt

layer was encountered that prevented access to depths below 0.6 m (2 ft) bgs. A total of 16 samples were taken, 11 subunit surface samples, three subunit samples at depth, one background surface sample, and one background sample at depth.

All soil samples were analyzed for constituents on the TCL with Tentatively Identified Compounds and for constituents on the TAL. Elevated levels of semi-volatile compounds were detected in nine surface samples, with the primary detection being BaP at 2,200 microgram per kilogram (µg/kg). Other PAHs were detected, but below respective action levels. No volatile organic compounds (VOCs) were detected. Metal values were either similar to the background results or were well below respective action levels. Neither PCE or Hg were detected in any soil samples.

4.2 L-Area Rubble Pit (131-4L) Preliminary Screening

The data set from the 1994 SE was used to perform preliminary data screening for LRP 131-4L subunit by comparing the soil data to USEPA RSLs and SRS soils background data. This screening level data is not considered usable for the purposes of performing a baseline risk assessment to support remedial decision. However, the screening was performed to provide a preliminary indication of potential problems warranting action based on the available data. Sample results corresponding to specific depth intervals are not available.

Preliminary HH risk screening was not performed since the SE sample results cannot be related to the surface interval. Per SRS protocols, the HH risk assessment is performed on the 0.0-0.3 m (0-1 ft) interval for soil. Maximum detected concentrations of As, Cr and BaP exceeded the industrial worker RSLs at the LRP 131-4L subunit.

Preliminary PTSM screening was performed using the maximum detected concentration from all depth soil intervals: 0.0-0.6 m, 0.3-0.6 m, 0.3-0.9 m, 0.9-1.2 m, 1.2-1.5 m, and 1.5-2.1 m (0-2 ft, 1-2 ft, 1-3 ft, 3-4 ft, 4-5 ft, and 5-7 ft). The USEPA RSL table (dated

May 2021) was used to obtain the thresholds for the default industrial worker scenario used in the evaluation. The data screening indicated that there is no PTSM (HI = 0.09, risk = 8.9E-06) at the LRP 131-4L subunit.

A preliminary contaminant migration analysis for the LRP 131-4L subunit soil was performed using the SE soils data. The preliminary contaminant migration screen by VZCOMML did not identify any potential CMCOCs for the LRP 131-4L subunit.

Problem(s) Warranting Action	Remedial Action Objectives	Scope of Problem(s)	Likely Response Actions
• To be determined from further subunit characterization.	• To be determined from further subunit characterization.	• To be determined from further subunit characterization.	• To be determined from further subunit characterization.
Uncertainties			
• The nature and extent of waste unit-related contamination is uncertain. The 1994 SE data is not usable for the purposes of baseline risk assessment and remedial decision making. This uncertainty impacts the nature and extent of the problems warranting action and will be managed by characterizing the LRP 131-4L subunit. Proposed sample analyses include TAL/TCL analytes, gross alpha, and nonvolatile beta.			

4.3 L-Area Rubble Pit (131-4L) Subunit Strategy

The 1994 SE data for the LRP 131-4L does not provide definitive level data that can be used for risk level determinations and/or remedial action objectives. Therefore, a full characterization of the subunit that allows for determinations based on South Carolina Department of Health and Environmental Control and USEPA exposure scenarios and contaminant action levels is required.

Soil sampling of the subunit is proposed to be done in a random, unbiased sampling pattern spaced 6.1 m (20 ft) apart within the subunit. A total of 32 locations have been identified for sampling at four depth intervals each, for a total of 128 samples (Figure 9). Depth intervals include surface soil (0.0-0.3 m [0-1 ft]) and subsurface soil (0.3-1.2 m [1-4 ft], 1.8-2.4 m [6-8 ft]), and 3.0-3.6 m [10-12 ft]. A tentative subsurface soil depth is proposed at 4.3-4.9 m (14-16 ft) depth. The tentative interval will only be sampled if the pit bottom is not encountered at shallower depth intervals. Soil cores will be recorded in the field for lithologic descriptions at all sample locations.

Additionally, one of the peripheral locations (Figure 9; LAP4L-001 to LAP4L-012) will be continuously cored to a minimum depth of 15 m (50 ft) bgs and lithologic descriptions recorded.

Shallow depth intervals (0.3-1.2 m and 2.4-3.0 m [0-1 ft and 1-4 ft]) will be collected using a hand-auger. Rotosonic sample collection will be used for all other depths. The locations identified include 20 locations within the subunit boundary and 12 locations at the subunit boundary to aid in extent determination. All samples will be analyzed for all constituents on the TAL and TCL, to include all volatiles, semi-volatiles, pesticides, and PCBs. Additionally, samples will be analyzed for gross alpha and nonvolatile beta. If gross alpha or nonvolatile beta results exceed the respective action levels, a full speciation analysis will be performed on exceeding samples. If the total Cr results indicate concentrations above SRS background concentrations and the likely response actions are dependent on a Cr^{+6} evaluation, then an amended SAP will be submitted to collect Cr^{+6} samples from the subunit and background locations.

In addition to soil sampling, visual inspections for asbestos will be conducted during drilling operations. If asbestos is found, sampling will be suspended pending the outcome of a waste analysis. If asbestos is confirmed, no further sampling will be performed, and the unit path-forward will lead to remedy selection to managed assumed hazards.

Groundwater sampling and surface water sampling are not proposed in this RFI/RI Work Plan. As part of the LASG OU investigation of potential source areas in L Area, LRP 131-4L was not identified as a potential source to groundwater in the LASG OU Record of Decision (Washington Savannah River Company, LLC [WSRC], 2007). Based on results at the LSW 4 monitoring well cluster, there is nothing that indicates an impact related to the LRP 131-1L subunit. However, groundwater analyses at this location did not include all potential contaminants related to the subunit. Therefore, potential impact from the subunit will be evaluated through vadose zone modeling with data collected to support this RFI/RI Work Plan. The proposed sampling to support the RFI/RI Work Plan is summarized in Table 1.

5.0 L-AREA RUBBLE PIT (131-1L) SUBUNIT

5.1 L-Area Rubble Pit (131-1L) History and Background

The LRP 131-1L subunit is a former waste disposal area reportedly used for various construction debris. The LRP 131-1L subunit is located to the east of L Area, ~46 m (150 ft) outside of the facility boundary fence (Figure 1). Plant records indicate that metal, lumber, poles, and concrete were disposed of in the LRP 131-1L subunit. There is no record of hazardous or radioactive material disposed of at the pit.

Running adjacent to the LRP 131-1L subunit is a man-made ditch with a depth of ~3.0 m (10 ft) and width ranging from 15 to 21 m (50 to 70 ft). The ditch receives rainfall runoff and runs to the south, following the L Area facility fence line. The LRP 131-1L subunit is a rectangular area ~12 m (40 ft) by 46 m (150 ft). The subunit area is covered in heavy brush and scattered, mature pine trees with no sign of stress. During site visits in 1991, there was no evidence of buried materials, surface disturbance, or visible protrusions (WSRC, 1991).

Surface elevation at the LRP 131-1L is ~75 m (246 ft) amsl and is relatively flat across the subunit. The subunit gently slopes to the southeast. The subunit is within the Steel Creek Watershed, which is located ~1,280 m (4,200 ft) southeast of the pit. Although there is not reliable information on the pit depth, typical disposal trenches used at SRS are ~3.0 m (10 ft) deep. Based on nearby groundwater monitoring well cluster LAW 3, groundwater depth at this location is ~4.6 m (15 ft) bgs.

The only preliminary screening performed at the LRP 131-1L subunit was a soil-gas survey performed to determine if hazardous waste may be present in the subsurface soils and to identify potential areas of contamination within the unit. A total of ten soil-gas samples were collected along the centerline of the longer subunit dimension. Samples were analyzed for volatile organic compounds (VOCs) and chlorinated VOCs. The survey results determined that VOCs from methane through hexane are likely to be present in the subunit

soils. These compounds are expected in relation to breakdown of typical disposal debris in SRS disposal sites, however contamination within the subunit cannot be ruled out and further investigation is warranted.

5.2 L-Area Rubble Pit (131-1L) Preliminary Screening

There is no characterization data for the LRP 131-1L subunit; therefore, a preliminary data screening was not performed.

Problem(s) Warranting Action	Remedial Action Objectives	Scope of Problem(s)	Likely Response Actions
• To be determined from subunit characterization.	• To be determined from subunit characterization.	• To be determined from subunit characterization.	• To be determined from subunit characterization.
Uncertainties			
• The nature and extent of waste unit-related contamination is uncertain. This uncertainty impacts the nature and extent of the problems warranting action and will be managed by characterizing the LRP 131-1L subunit. Proposed sample analyses include TAL/TCL analytes, gross alpha, and nonvolatile beta.			

5.3 L-Area Rubble Pit (131-1L) Subunit Strategy

The only preliminary screening conducted at the LRP 131-1L subunit was a soil-gas survey completed in 1991. This survey indicated the presence of various VOCs (i.e., methane through hexane). There was no additional characterization of the subunit performed.

Prior to soil sampling at the LRP 131-1L subunit, a GPR survey is proposed in order to verify the subunit boundaries and depth. Once confirmed, the proposed sampling approach will be evaluated to ensure location and depth of samples are adequately located to investigate the unit. Any changes to the proposed plan will result in revision to the sampling strategy. Soil sampling is proposed in a random, unbiased sampling pattern with locations spaced 6.1 m (20 ft) apart within the subunit. A total of 21 locations have been identified for sampling at five depth intervals each, for a total of 105 samples (Figure 10). Depth intervals include surface soil (0.0-0.3 m [0-1 ft]) and subsurface soil (0.3-1.2 m, 2.4-3.0 m, 3.0-3.7 m, and 4.3-4.9 m [1-4 ft, 8-10 ft, 10-12 ft, and 14-16 ft]). A tentative subsurface soil depth is proposed at 5.5-6.1 m (18-20 ft) depth. The tentative interval will only be sampled if the pit bottom is

not encountered at shallower depth intervals either through GPR or drilling. Shallow depth intervals (0.3-1.2 m and 2.4-3.0 m [0-1 ft and 1-4 ft]) will be collected using a hand-auger. Rotosonic sample collection will be used for all other depths. The locations identified include 13 locations within the subunit boundary and 8 locations at the subunit boundary to aid in extent determination.

All samples will be analyzed for all constituents on the TAL and TCL, to include all volatiles, semi-volatiles, pesticides, and PCBs. Additionally, samples will be analyzed for gross alpha and nonvolatile beta. If gross alpha or nonvolatile beta results exceed the respective action levels, a full speciation analysis will be performed on exceeding samples. If the total Cr results indicate concentrations above SRS background concentrations and the likely response actions are dependent on a Cr^{+6} evaluation, then an amended SAP will be submitted to collect Cr^{+6} samples from the subunit and background locations.

In addition to soil sampling, visual inspections for asbestos will be conducted during drilling operations. If asbestos is found, sampling will be suspended pending the outcome of a waste analysis. If asbestos is confirmed, no further sampling will be performed, and the unit path-forward will lead to remedy selection to manage assumed hazards.

Groundwater sampling and surface water sampling are not proposed in this RFI/RI Work Plan. As part of the LASG OU investigation of potential source areas in L Area, LRP 131-1L was not identified as a potential source to groundwater in the LASG OU Record of Decision (WSRC, 2007). Based on results at the LSW 4 monitoring well cluster, there is nothing that indicates an impact related to the LRP 131-1L subunit. However, groundwater analyses at this location did not include all potential contaminants related to the subunit. Therefore, potential impact from the subunit will be evaluated through vadose zone modeling with data collected to support this RFI/RI Work Plan. The proposed sampling to support the RFI/RI Work Plan is summarized in Table 1.

6.0 OPERABLE UNIT STRATEGY

Based on discussions from the RFI/RI Work Plan Scoping Summary and Core Team agreements, SRS will prepare and submit the RFI/RI Work Plan for the ECODS L-3, LRP 131-1L, and LRP 131-4L OU by February 24, 2022. A record of Core Team agreements will be documented in Table 3.

7.0 REFERENCES

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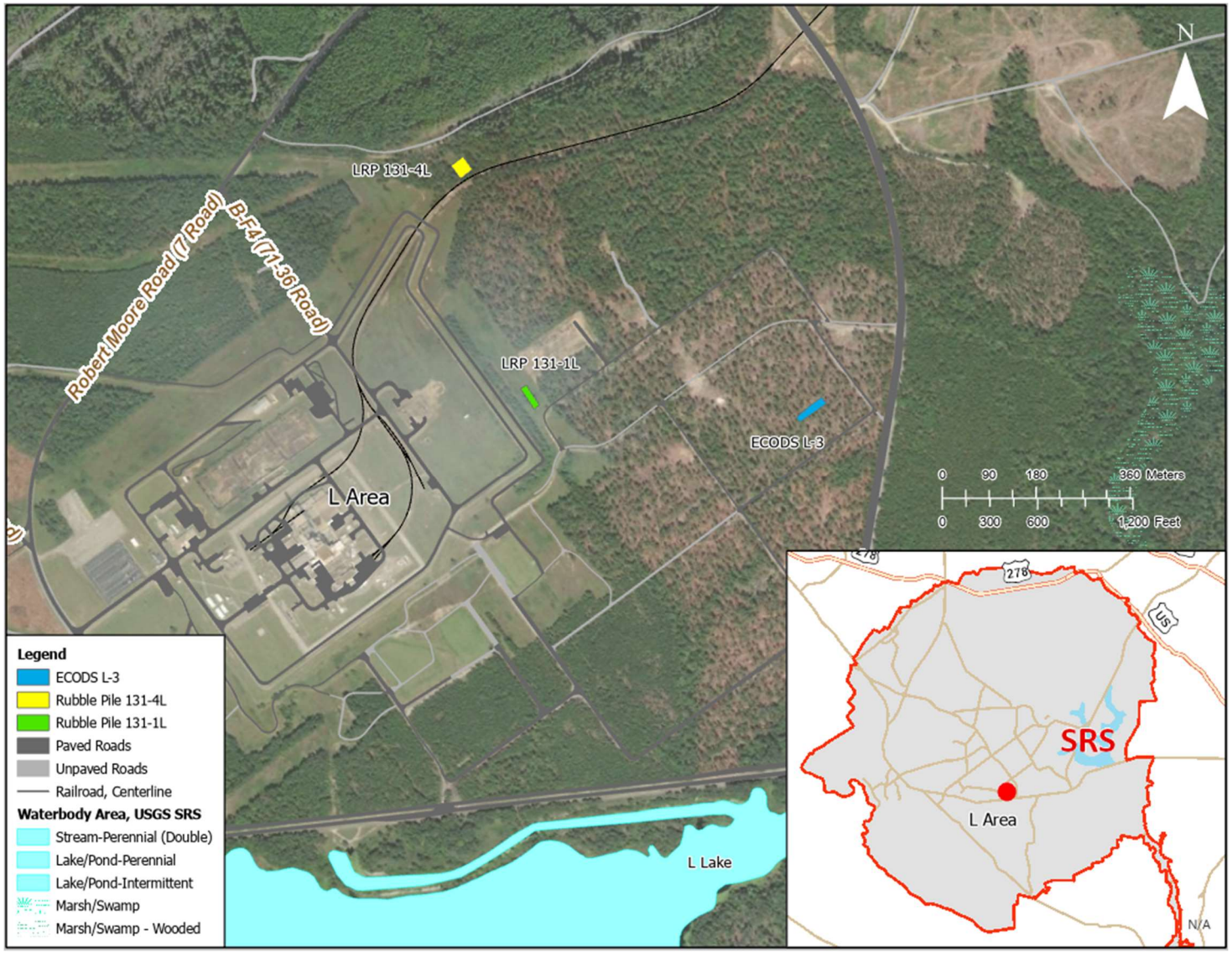

Figure 1. Location of the ECODS L-3, LRP 131-4L, and LRP 131-1L

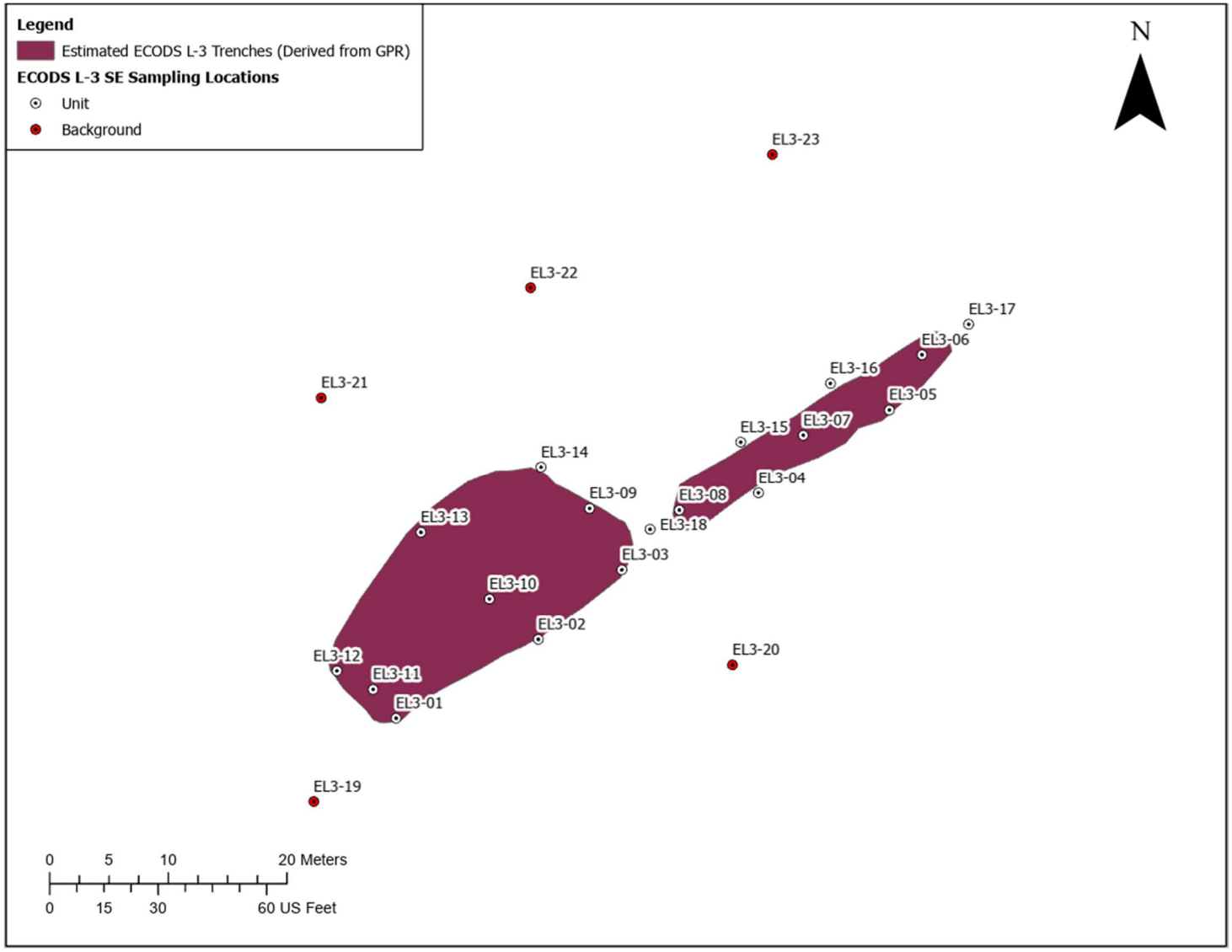

Figure 2. ECODS L-3 Subunit Boundaries and Site Evaluation Sampling Locations

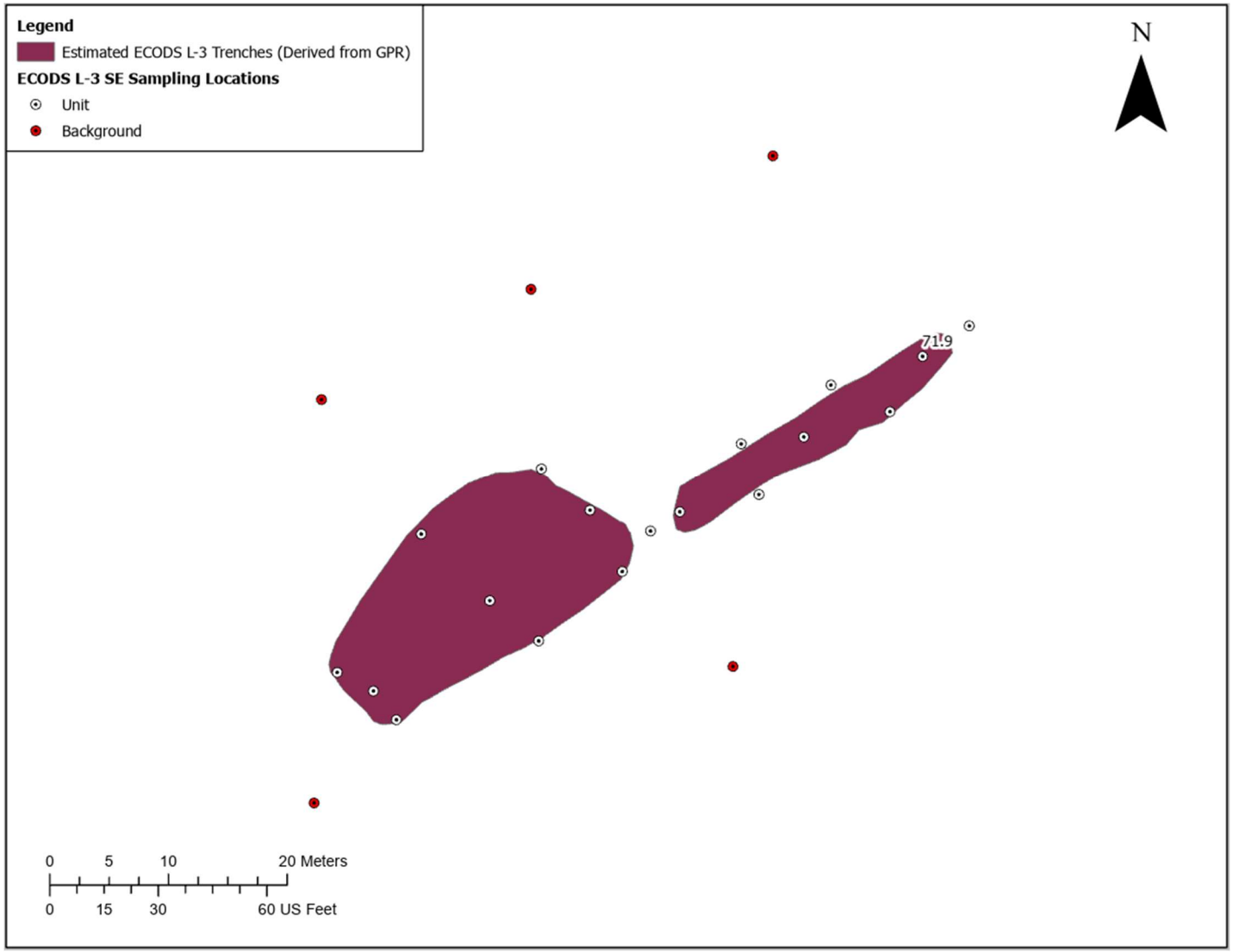

Figure 3. ECODS L-3 SE Chromium Surface Soil (0.0-0.3 m [0-1 ft]) Results [mg/kg] Above SRS Maximum Background (54.3 mg/kg)

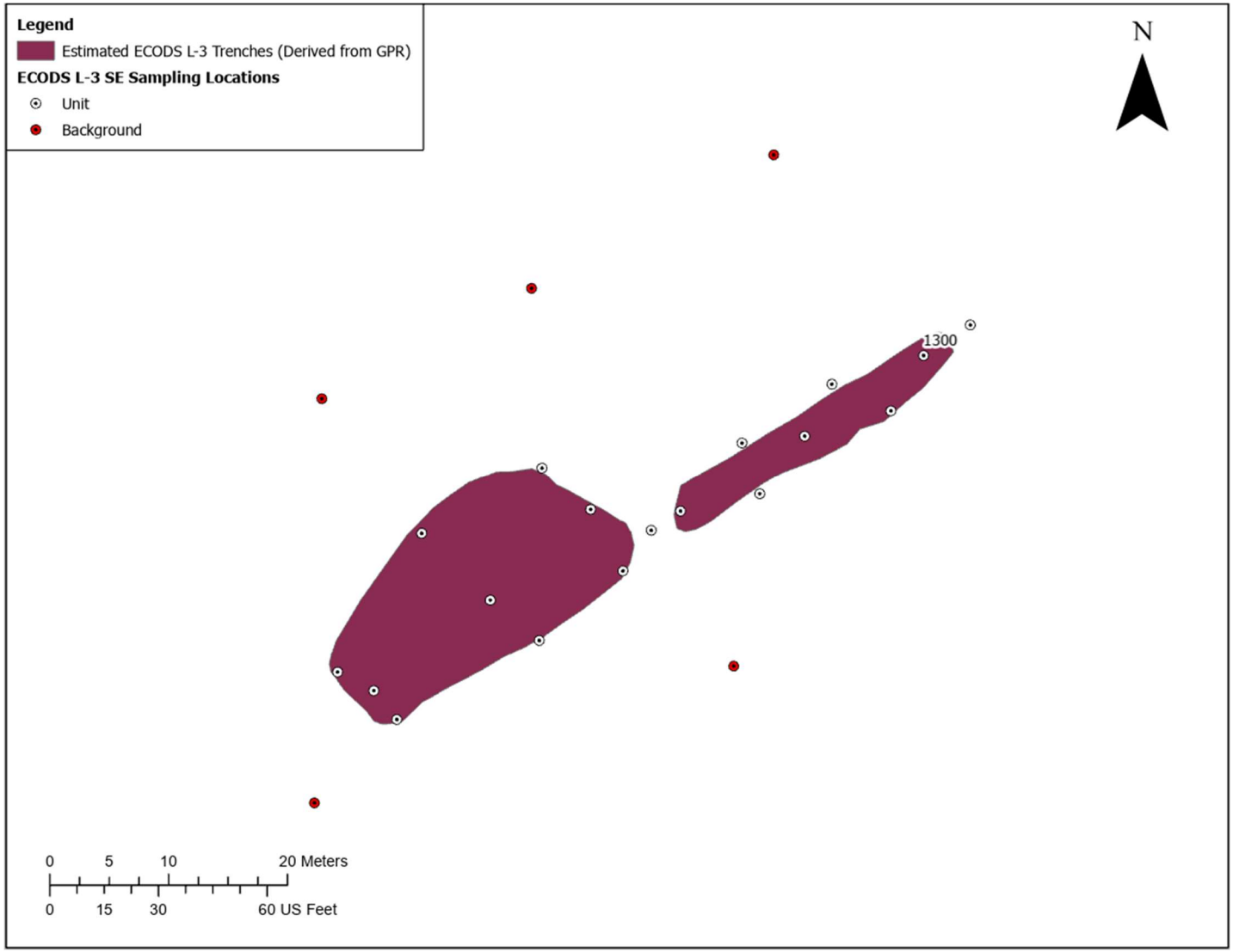

Figure 4. **ECODS L-3 Site Evaluation Lead Surface Soil (0.0-0.3 m [0-1 ft]) Results [mg/kg] Above Industrial Worker RSL (800 mg/kg)**

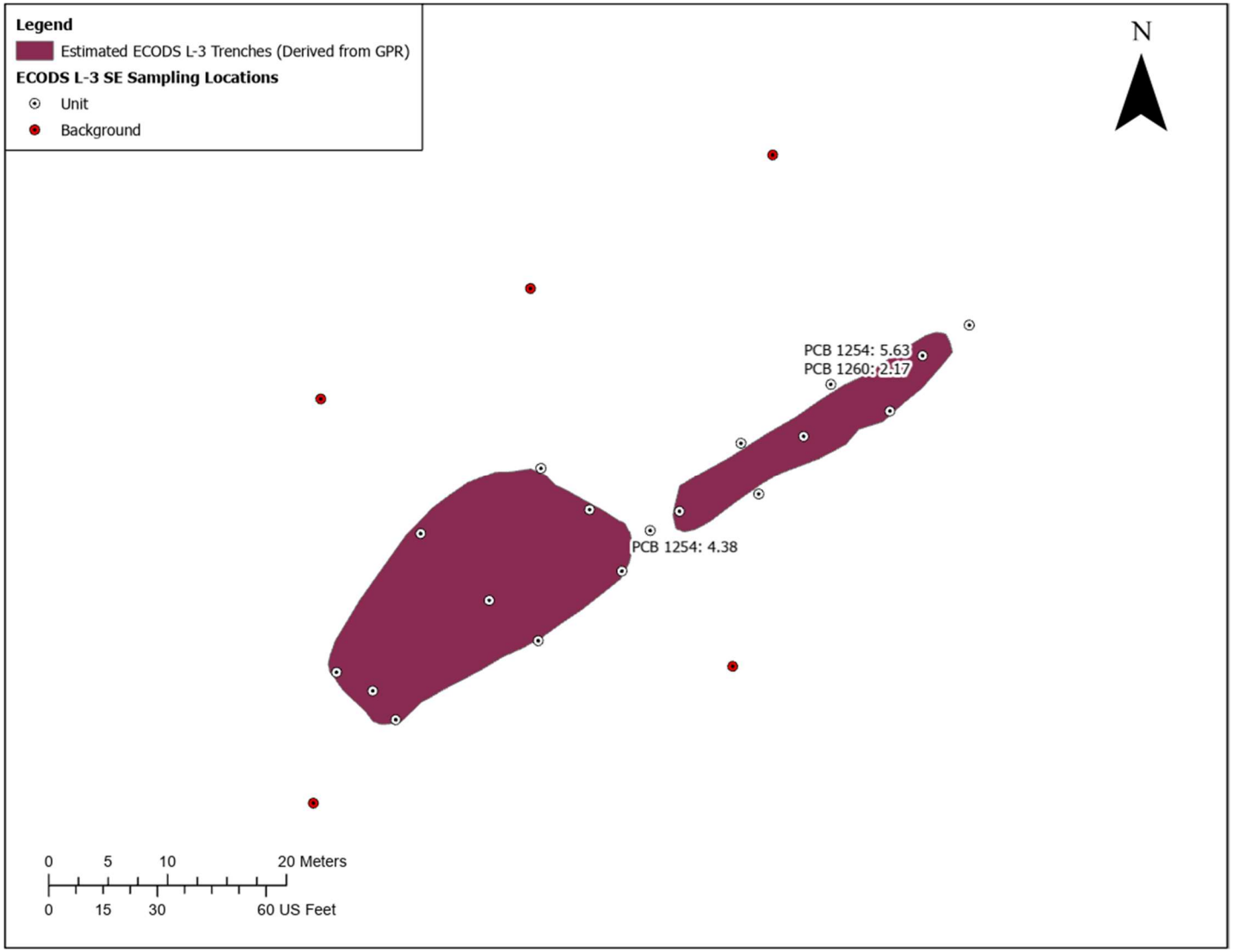

Figure 5. **ECODS L-3 Site Evaluation PCB 1254/1260 Surface Soil (0.0-0.3 m [0-1 ft]) Results [mg/kg] Above Industrial Worker RSLs (0.97 and 0.99 mg/kg)**

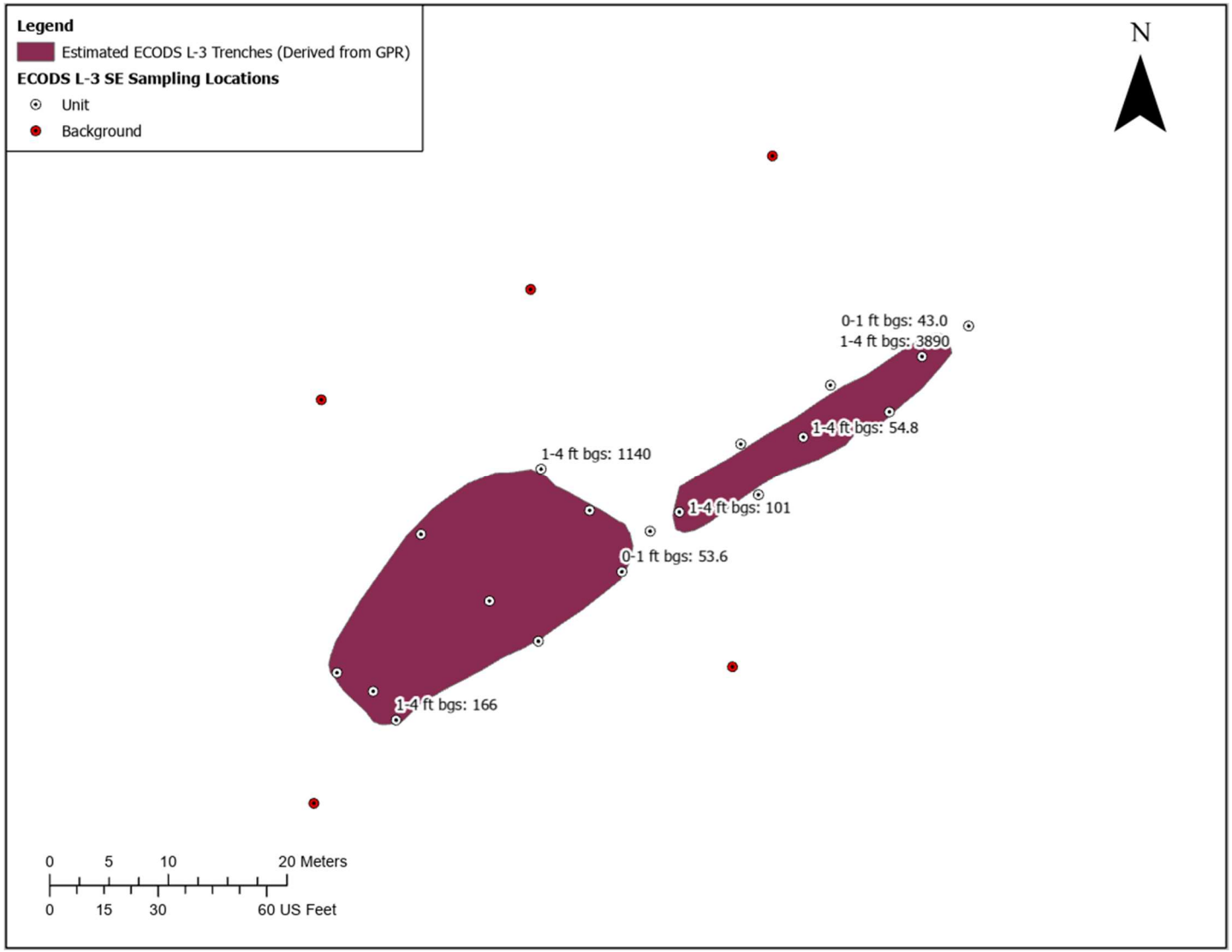

Figure 6. ECODS L-3 Site Evaluation Copper Surface Soil (0.0-0.3 m [0-1 ft]) and Subsurface Soil (0.3-1.2 m [1-4 ft]) Results [mg/kg] Above Ecological RSV (43 mg/kg)

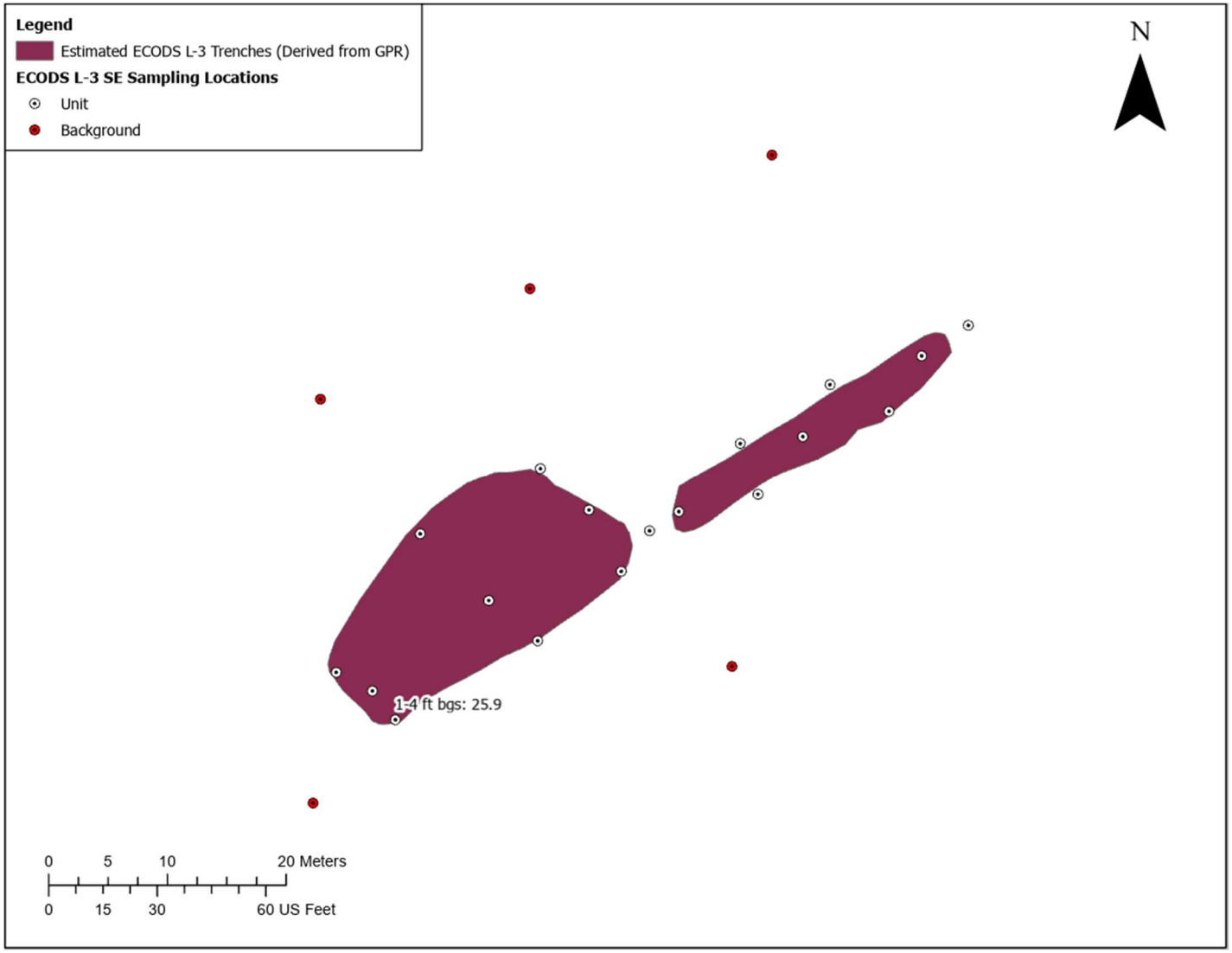

Figure 7. ECODS L-3 Site Evaluation Benzo(a)anthracene Surface Soil (0.0-0.3 m [0-1 ft]) and Subsurface Soil (0.3-1.2 m [1-4 ft]) Results [mg/kg] Above Ecological RSV (7.3 mg/kg)

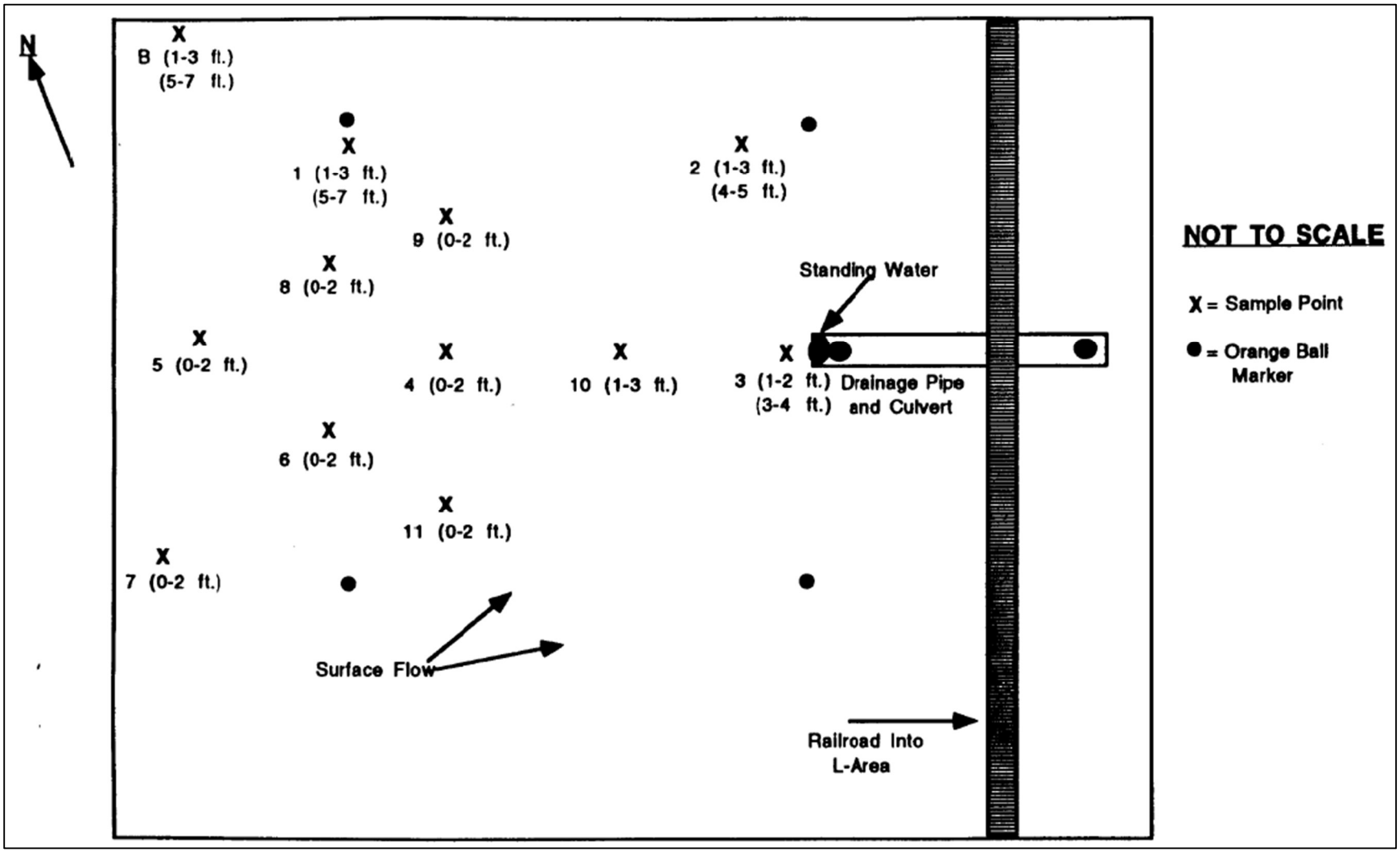

Figure 8. L-Area Rubble Pit 131-4L Site Evaluation Soil Sampling Locations

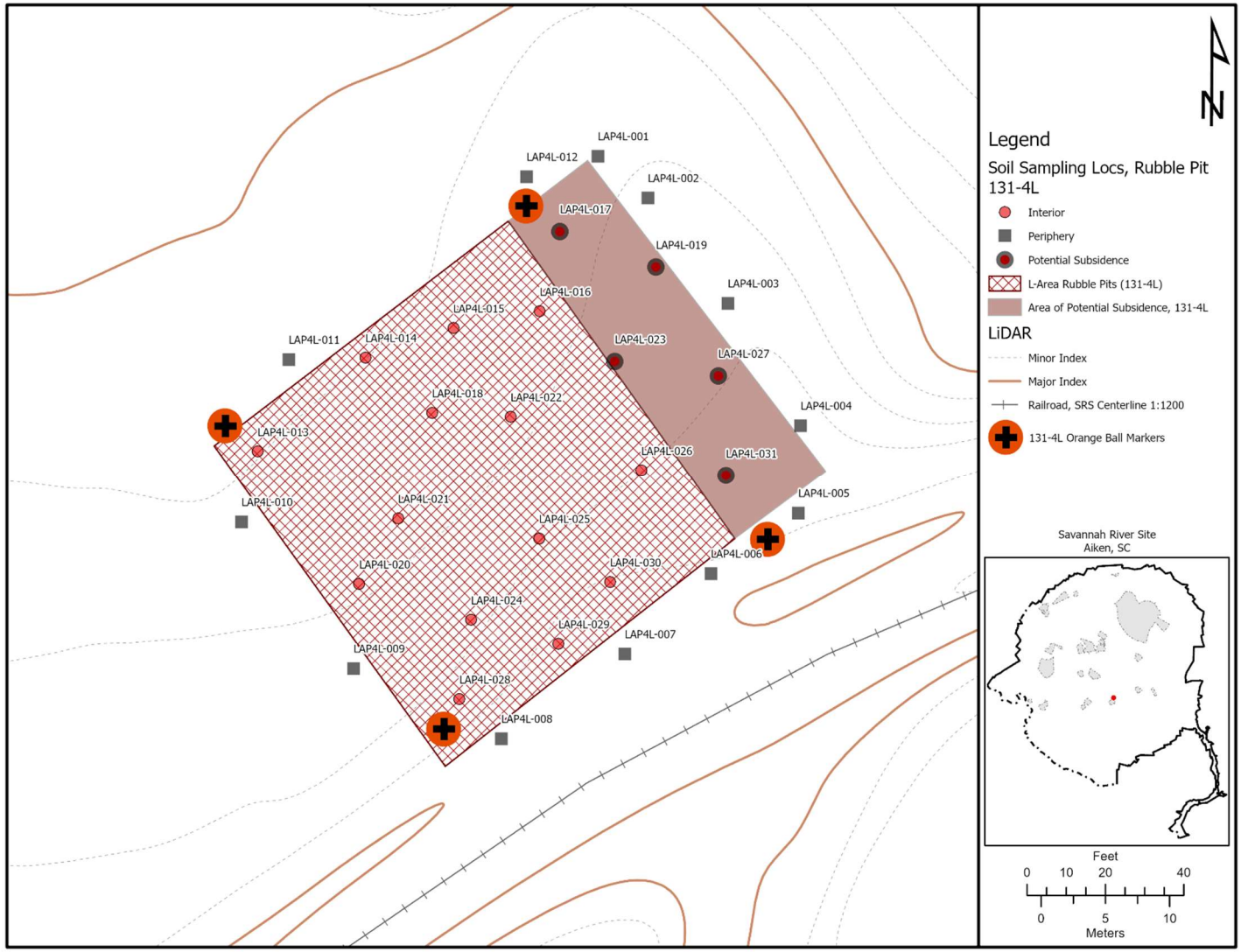

Figure 9. L-Area Rubble Pit 131-4L RFI/RI Work Plan Proposed Sampling Locations

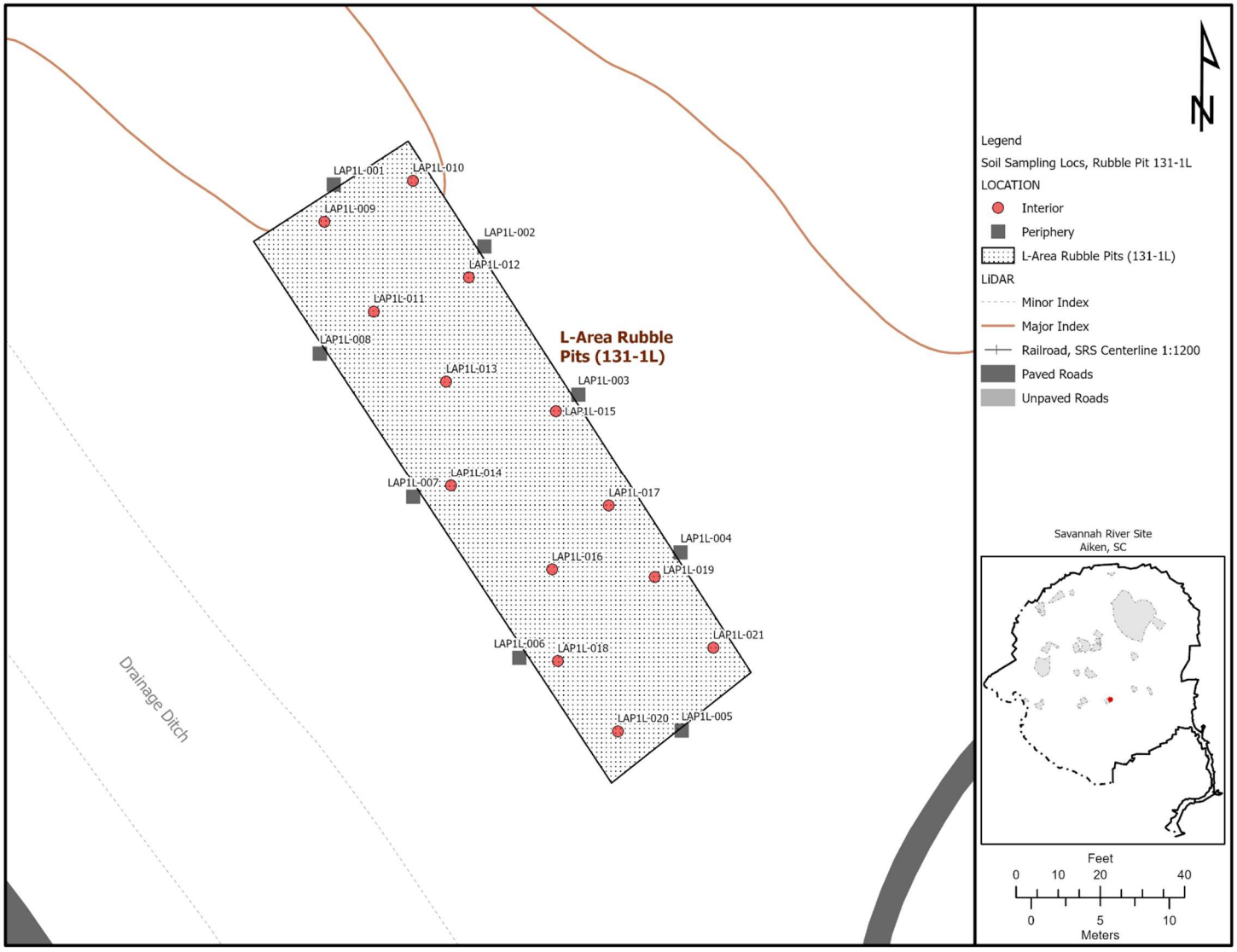

Figure 10. L-Area Rubble Pit 131-1L RFI/RI Work Plan Proposed Sampling Locations

Table 1. Summary of RFI/RI Data Needs

Subunit	Sample Type	Number of Locations	Depth Intervals	Analyses	Purpose
ECODS L-3	N/A	N/A	N/A	N/A	No further sampling needs proposed.
LRP 131-4L	Soil Samples	32 Locations: 20 inside the subunit and 12 at subunit boundary	0-1 ft, 1-4 ft, 6-8 ft, 10-12 ft And 14-16 ft (tentative)	TCL, TAL Metals, radiological indicators, asbestos visual inspection	Provide data for baseline risk assessment and response action alternatives. Data validated to SRS electronic verified and validated (V&V) level, with 10% of the sample batches validated to the SRS definitive level.
LRP 131-1L	Soil Samples	21 Locations: 13 inside the subunit and 8 at subunit boundary	0-1 ft, 1-4 ft, 8-10 ft, 10-12 ft, 14-16 ft, And 18-20 ft (tentative)	TCL, TAL Metals, radiological indicators, asbestos visual inspection	Provide data for baseline risk assessment and response action alternatives. Data validated to SRS electronic V&V level with 10% of the sample batches validated to the SRS definitive level.

Table 2. Record of Core Team Agreements[1]

RECORD OF CORE TEAM AGREEMENTS	
Date	**Description of Agreement**
12/13/2021	*Core Team is in agreement that there are no additional data needs for the ECODS L-3 subunit.*
12/13/2021	*Core Team is in agreements that the proposed sampling strategy for the LRP 131-4L subunit is sufficient in meeting data needs.*
12/13/2021	*Core Team is in agreement that the proposed sampling strategy for the LRP 131-1L subunit is sufficient in meeting data needs.*

[1] Core team agreements should be documented at each phase and should be retained for each successive phase in order to maintain a comprehensive list for the life of the project.

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