OU2/OU4 2021 Soil Sampling Work Plan

Kerr-McGee Chemical Corp—Navassa Superfund Site
Navassa, North Carolina
EPA ID #NCD980557805

Prepared for

Greenfield Environmental Multistate Trust, LLC
Trustee of the Multistate Environmental Response Trust

Prepared by

285 Century Place
Suite 190
Louisville, CO 80027

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ACRONYMS AND ABBREVIATIONS

BaP	benzo[*a*]pyrene
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	chemical of concern
EPA	U.S. Environmental Protection Agency
GPS	global positioning system
HHRA	human health risk assessment
Integral	Integral Engineering, P.C.
ISM	incremental sampling methodology
ITRC	Interstate Technology and Regulatory Council
LSASD	Laboratory Services and Applied Science Division
MS/MSD	matrix spike/matrix spike duplicate
Multistate Trust	Greenfield Environmental Multistate Trust LLC
NAD 83	North American Datum of 1983
NAVD 88	North American Vertical Datum of 1988
NCDEQ	North Carolina Department of Environmental Quality
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PCP	pentachlorophenol
ppt	parts per trillion
QAPP	quality assurance project plan
RPF	relative potency factor
Site	Kerr-McGee Chemical Corp.—Navassa Superfund site
SRI	Supplemental Remedial Investigation
SVOC	semivolatile organic compound
TCDD	2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEQ	toxicity equivalence
VOC	volatile organic compound

VSP	Visual Sample Plan

1 INTRODUCTION

This Soil Sampling Work Plan (Work Plan) details the collection of additional soil data in Operable Units 2 and 4 (OU2 and OU4) of the Kerr-McGee Chemical Corp.—Navassa Superfund Site ("the Site"; U.S. Environmental Protection Agency [EPA] ID# NCD980557805) (Figure 1). Additional soil sampling is needed to support the evaluation of potential human health and ecological risk from exposure to soil chemicals of concern (COCs) as described in the March 10, 2021, *White Paper on Addressing Human Health and Ecological Risks from Exposures to Impacted Soil in OU2 and OU4* (Integral et al. 2021; hereafter referred to as the "Risk Strategy White Paper"). The soil sampling approach described in this Work Plan was put forth in the Risk Strategy White Paper, which was approved by the North Carolina Department of Environmental Quality (NCDEQ) on February 12, 2021, and by EPA on February 16, 2021. This Work Plan is being submitted by Integral Engineering, P.C. (Integral) on behalf of Greenfield Environmental Multistate Trust LLC, not individually but solely in its representative capacity as Trustee of the Multistate Environmental Response Trust (the Multistate Trust).

1.1 SITE OVERVIEW

The Site was formerly owned by the Kerr-McGee Chemical Corporation and was operated as a creosote-based wood treating facility from 1936 to 1974. Under the Comprehensive Environmental Response, Compensation and Liability Act, the Site has been divided into five OUs based on previous land uses and observed impacts (Figure 1). OU2 and OU4 are addressed in this Work Plan. OU2 includes portions of the Site that were previously used for treated and untreated wood storage between OU1 and OU4. OU4, as currently defined, includes all of the Process Area, all of the Pond Area, and part of the Untreated Wood Storage Area.

1.2 OU2 SAMPLING STRATEGY

As part of previous sampling, OU2 was divided into parcels of 0.25 acre or less to determine which parcels meet both the EPA no action criteria and the NCDEQ unrestricted use criteria under North Carolina General Statute § 143B-279.9(d)(1). Surface soil sampling (0–1 ft below ground surface [bgs]) conducted within OU2 in 2020 identified several 0.25-acre parcels with PAHs or dioxins/furans greater than the criterion established for unrestricted (residential) use. NCDEQ has previously indicated that there are sufficient data to meet the NCDEQ unrestricted use criteria for PAHs. However, the vertical extent of dioxins/furans contamination has not been established (Risk Strategy White Paper).

North Carolina's Guidelines for Assessment and Cleanup of Contaminated Sites (NCDEQ 2020) states:

- "Even if the site property is, and/or will be, designated as industrial-use only, the extent of contamination must be delineated to the unrestricted-use goals to identify where land use controls must be placed."

- "The unrestricted-use remediation goals referenced in this document (See Chapter 3.0) must be used as delineation endpoints for soil, groundwater, and surface water during the remedial investigation."

To collect sufficient data for the evaluation, sampling will be completed in OU2 to delineate the vertical extent of dioxins/furans in the 0.25-acre parcels where the 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) toxicity equivalence (TEQ) concentration in surface soils exceeds 50 part per trillion (ppt).

As summarized below, there are seven parcels that have surface soil TCDD TEQ concentrations that exceed 50 ppt (Figure 2). Each of the seven parcels has composite sampling data, and three of the seven have discrete sampling data.

Parcel	Composite Sample > 50 ppt	Discrete Samples > 50 ppt
CS-56	Yes	3 of 5 samples
SB-148	Yes	NA
RISB05	Yes	NA
SS-115	Yes	NA
SB-136	Yes	NA
CS-66	Yes	0 of 6 samples
CS-68	Yes	0 of 6 samples

Notes: NA = not analyzed

The following sampling approach was developed in consultation with EPA and NCDEQ to address the dioxin/furan data gap:

Parcels SB-148, RISB05, SS-115, SB-136, CS-66, and CS-68

- Subsurface discrete soil samples will be collected from 1–2 ft bgs and 2–3 ft bgs at the same five sample locations used in the previous investigation.
- The 1–2 ft bgs discrete samples will be analyzed for dioxins/furans and the 2–3 ft bgs discrete samples will be archived for a maximum of 6 months for potential future analysis.
- If any of the 1–2 ft bgs samples exceeds 50 ppt TCDD TEQ, the associated 2–3 ft bgs sample will be analyzed for dioxins/furans.

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Parcel CS-56

- Subsurface discrete soil samples will be collected from 1–2 ft bgs and 2–3 ft bgs at each of the three discrete sample locations as the previous investigation where detected concentrations were greater than 50 ppt TCDD TEQ.
- The 1–2 ft bgs samples will be analyzed for dioxins/furans and the 2–3 ft bgs samples will be archived for a maximum of 6 months for potential future analysis.
- If any of the 1–2 ft bgs samples exceeds 50 ppt TCDD TEQ, the associated 2-3 ft bgs sample will be analyzed for dioxins/furans.

1.3 OU4 SAMPLING STRATEGY

The sampling approach for OU4 is designed to gather data needed to quantify human health and ecological risks due to exposure to OU4 surface soils. The approach divides OU4 into five subareas based on former and anticipated land use. Human health risks for the Process Area, the Pond Area, and the Untreated Wood Storage Areas (which are all or partially located within OU4) were previously evaluated in the human health risk assessment (HHRA) (EarthCon 2019a), which was approved by EPA and NCDEQ. Table 3-3 of the HHRA presents surface soil COCs for these areas and provides the basis for the chemicals selected for analysis described below. The sampling protocols for each subarea are detailed below.

1.3.1 Eastern Undeveloped Area

Review of aerial photos and available maps of former facility operations indicates that there were no significant activities related to the former wood treatment operations in the northeast corner of OU4 (Figure 1). This area of OU4 is referred to as the "eastern undeveloped area" for the purposes of this Work Plan (Figure 3). Sampling conducted in 2019 confirmed that concentrations of PAHs in soils are below risk-based thresholds along the current OU4 eastern boundary (EarthCon 2019b). Additional sampling will be conducted in the eastern undeveloped area along the boundary where past operations are known to have taken place (i.e., east of the Untreated Wood Storage Area and north of the decommissioning pond footprint) to determine if operations-related impacts extend into the eastern undeveloped area.

The sampling strategy will follow the approach taken during the 2019 sampling to delineate the Eastern Uplands boundary (EarthCon 2019c). A series of five-point composite samples will be collected, with each composite sample collected from a sampling area of approximately 50- by 250-ft. The samples collected in this area will be evaluated for PAHs, dioxins/furans and pentachlorophenol (PCP), consistent with previous sampling performed in OU1/OU2. Because this area borders the Untreated Wood Storage Area and the Pond Area, the sample analyte list

will be expanded to include all of the surface soils COCs identified in the HHRA for both of these areas. The additional analytes include arsenic, volatile organic compounds (VOCs; benzene, ethylbenzene, total xylenes), semivolatile organic compounds (SVOCs; 1,1-biphenyl, carbazole and dibenzofuran), and pesticides (aldrin).

1.3.2 Untreated Wood Storage Area

The Untreated Wood Storage Area within OU4 was subdivided into 0.25-acre or less exposure areas (Figure 3) to generate data at a sufficient density to allow for the evaluation of future residential use and compliance with the EPA no action criteria and the NCDEQ unrestricted use criteria under North Carolina General Statute § 143B-279.9(d)(1). The sampling strategy will follow the approach taken in OU2: one 5-point composite sample will be collected from each of the 0.25-acre or less exposure areas. The composites will include one aliquot from the center of the sampling area and four aliquots collected equidistant from the center of the sampling area to the parcel corner. Samples will be analyzed for PAHs, PCP, and dioxins/furans, consistent with previous sampling performed in OU1/OU2. No additional COCs were identified for the Untreated Wood Storage Area in the 2019 HHRA.

1.3.3 Process Area

The Process Area is the portion of the Site where prior wood treatment operations took place. This area will be subdivided into four exposure areas of 2 acres or less (Figure 3) consistent with the exposure area size designated for evaluating industrial/commercial and recreational (youth sports player) land uses, as presented in the Risk Strategy White Paper. The exposure areas were delineated based on consideration of historical Site operations and the extent of contamination based on existing data. Each of the exposure areas will be sampled using the incremental sampling methodology (ISM; described in Section 2.6), with each exposure unit representing an ISM decision unit, to provide an understanding of the average representative chemical concentration across the exposure area.

ISM samples collected from the Process Area will be analyzed for PAHs, PCP, and dioxins/furans, consistent with previous sampling performed in OU1/OU2. Dibenzofuran, which is a COC identified in the HHRA for the Process Area based on residential land use, will also be evaluated.

1.3.4 Pond Area

The Pond Area where prior wood treatment operations took place will be subdivided into five exposure areas of 2 acres or less (Figure 3) consistent with the exposure area size designated for evaluating industrial/commercial and recreational (youth sports player) land uses. The exposure areas were delineated based on consideration of historical Site operations and the extent of contamination based on existing data. Each of the exposure areas will be sampled

using the ISM to evaluate all of the analytes but VOCs. Discrete samples will also be collected from each exposure area for analysis of VOCs.

ISM samples collected from the Pond Area will be analyzed for PAHs, PCP, and dioxins/furans, consistent with previous sampling performed in OU1/OU2. The following COCs identified in the HHRA for the Pond Area will also be evaluated: arsenic, SVOCs (1,1-biphenyl, carbazole, dibenzofuran), VOCs (ethylbenzene, benzene, total xylenes), and pesticides (aldrin). To analyze for VOCs, a separate, unhomogenized sample will be collected at 5 of the 30 sample increment locations that will be used to create the ISM sample in each exposure area of the Pond Area (Section 2.6). The addition of certain HHRA COCs (i.e., benzene, total xylenes, carbazole, and aldrin, which were designated only as residential COCs and not COCs for other human health receptors) to the analyte list is conservative, because the Pond Area is anticipated to be developed for industrial/commercial or recreational use in the future.

1.3.5 Area Within the Floodplain

The southernmost portion of OU4 is located within the 100-year floodplain (Figure 3). The future land uses for this part of OU4 are constrained because it lies within a flood hazard area, and it is most likely to be used to support nature trails or other natural recreational use. Further, a portion of this area is within the wetlands boundary, as delineated in 2019 (Figure 3).

The area within the floodplain will be considered as a single exposure area[1] for evaluation of human health risks. This area will be divided into two exposure areas for the ecological risk evaluation, one area in the upland region between the wetland boundary (upland exposure area) and the floodplain boundary and one area between the wetlands boundary and the marsh boundary (wetlands exposure area). A total of 19 locations, 11 within the uplands exposure area and eight within the wetlands exposure area, have been identified for discrete sample collection in the area within the floodplain (Figure 3). The sample locations were selected based on existing data (limited to PAHs), consideration of the locations of the former ponds, and evaluation of the data needed to provide spatial coverage to support delineation of remediation areas should the risk assessments conclude there are unacceptable risks.

Soil samples will be analyzed for PAHs, PCP, and dioxins/furans, consistent with previous sampling performed in OU1/OU2. In addition, the sample analyte list for this area will be expanded to include all of the surface soil COCs identified in the HHRA for the Pond Area.[2] The additional analytes include arsenic, SVOCs (1,1-biphenyl, carbazole, dibenzofuran), VOCs (ethylbenzene, benzene, total xylenes), and pesticides (aldrin).

[1] Note: The decommissioning pond includes areas that are both above and below the floodplain. For the purpose of the human health and ecological risk evaluation, the full decommissioning pond is considered to be above the floodplain.

[2] The "Pond Area" as evaluated in the HHRA was inclusive of the area within the floodplain.

2 FIELD METHODS

Field activities will be conducted in general accordance with the most recent EPA Region 4 Laboratory Services and Applied Science Division (LSASD) operating procedures, and other procedures described in the Supplemental Remedial Investigation (SRI) Work Plan, dated May 2012 (AECOM 2012); the SRI Work Plan, dated September 2015 (CH2M Hill 2015a); and the OU1/OU2 Soil Sampling Work Plan and Addendum, dated July 2020 (EarthCon 2020a) and December 2020 (EarthCon 2020b). The number and type of samples to be collected in each OU and exposure area are detailed on Tables 1 through 6. Sampling locations are shown on Figures 2 and 3.

2.1 VEGETATION CLEARING

Sample locations may require removal of vegetation prior to sampling. Underbrush will be cleared from sampling locations, as needed. Cutting and clearing of trees and branches larger than 3 in. in diameter will be avoided. Existing roadways and/or paths should be utilized when possible to reduce the amount of clearing needed to access the sampling locations.

2.2 SURVEYING

After access is cleared of vegetation, a North Carolina-licensed surveyor will stake the composite and discrete sampling locations. The ISM sample locations will not be surveyed but will be located using a handheld global positioning system (GPS) unit as described in Section 2.6.1. Sample location coordinates are provided in Tables 1 through 4. Locations may be modified in the field because of surface obstructions (large trees, debris piles, etc.), in which case the surveyor and/or field team will provide updated coordinates. Horizontal data will be reported on the North American Datum of 1983 (NAD 83) and in the North Carolina State Plane Coordinate System. Vertical data will be reported on the North American Vertical Datum of 1988 (NAVD 88). Data will be delivered in United States Survey Feet.

2.3 SUBSURFACE DISCRETE SOIL SAMPLING (OU2)

Five discrete subsurface soil samples will be collected in OU2 in parcels SB-148, RISB05, SS-115, SB-136, CS-66, and CS-68. Additionally, discrete subsurface soil samples will be collected at three locations in parcel CS-56. Samples will be collected using a track-mounted direct-push drill rig. Sample IDs, coordinates, depths and collection methods are summarized in Table 1. Sampling locations are shown on Figure 2. Soil samples will be collected from each location using a 4-ft macrocore sampler. A new, dedicated acetate liner will be used for the collection of each soil core, and a photograph of each soil core will be taken.

Samples will be collected from intervals at 1–2 ft bgs and 2–3 ft bgs and will be submitted to the analytical laboratory. The laboratory will be instructed to analyze the samples from 1–2 ft bgs for dioxins/furans, and to archive the samples from 2–3 ft bgs for future analysis, if needed. All of the sample containers will be labeled and placed on ice for preservation immediately after collection. Samples will be shipped to SGS Laboratories for analysis.

2.4 SURFACE 5-POINT COMPOSITE SOIL SAMPLING (OU4)

Five-point composite surface soil samples will be collected in the OU4 Untreated Wood Storage Area and in the OU4 Eastern Undeveloped Area Boundary. Samples will be collected using a small diameter stainless steel soil coring device with dedicated acetate liners, or similar method, at 0–1 ft bgs. New acetate liners will be used at each sampling location. Sample IDs, coordinates, depths and collection methods are summarized in Table 2. Sampling locations are shown on Figure 3. Approximately half of each sample will be transferred to laboratory-supplied containers. The samples will be preserved on ice and shipped to the analytical laboratory, where they will be archived for future analysis, if needed. The other half of the sample will be placed in a stainless-steel bowl to be composited with the other four locations in that sample area. Once the five increments have been collected, the soil will be homogenized using a stainless-steel spoon. A sample of the homogenized soil will be collected and placed into laboratory-supplied containers and submitted for laboratory analysis of PAHs, PCP, and dioxins/furans for composite samples from both the Untreated Wood Storage Area and the eastern undeveloped area (Table 6). The composite samples collected from the boundary of the eastern undeveloped area will also be analyzed for arsenic, SVOCs (1,1-biphenyl, carbazole, and dibenzofuran), and pesticides (aldrin) (Table 6).

The sample locations will be located in the field using a handheld GPS unit capable of achieving an accuracy of ±1 ft horizontally. Locations may be modified in the field because of surface obstructions (large trees, debris piles, etc.). Updated coordinates for any repositioned samples will be logged using the GPS unit. All of the sample containers will be labeled and placed on ice for preservation immediately after collection. Samples will be shipped to SGS Laboratories for analysis.

2.5 SURFACE DISCRETE SOIL SAMPLING (OU4)

Discrete surface soil samples will be collected in:

- OU4 area within the floodplain;
- OU4 Eastern Undeveloped Area Boundary (VOCs only); and
- OU4 Pond Area (VOCs only)

These locations are shown in Figure 3. Sampling methods will vary depending on the sample location and whether the sample is to be submitted for VOC analysis (Table 6). Although the samples within the wetland boundary (Section 1.3.5) will be collected at low tide, the boundary between wetlands and the Southern Marsh is not clearly defined, and it is possible that some of the sample locations may be fully saturated/under water at the time of sampling. If these conditions are present and a representative sample cannot be collected at the planned location, the field team will move further inland (while remaining within the wetland boundary).

OU4 in the area within the floodplain

Discrete soil samples will be collected from within OU4 from the area within the floodplain using a small diameter stainless steel soil coring device with dedicated acetate liners, or similar method, at 0–1 ft bgs. New acetate liners will be used at each sampling location. VOC samples will be collected prior to sample homogenization. Following this, the remaining sample will be homogenized using a stainless-steel spoon and transferred to laboratory-supplied containers. Discrete samples collected in OU4 from the area within the floodplain will be submitted for laboratory analysis of PAHs, PCP, dioxins/furans, arsenic, SVOCs (1,1-biphenyl, carbazole, dibenzofuran), VOCs (benzene, ethylbenzene, and total xylenes), and aldrin (Table 6).

VOCs in OU4 Eastern Undeveloped Area Boundary

Because best practices for VOC analysis call for minimal disturbance of sample material (i.e., no homogenization of samples), surface discrete soil samples for VOC analysis will also be collected at each of the composite sample increment locations that will be used to make up the composite samples for the eastern undeveloped area boundary (Section 2.4; Table 6). VOC samples will be collected prior to homogenization and compositing of the increments. VOC samples will be submitted for the analysis of benzene, ethylbenzene, and total xylenes.

VOCs in OU4 Pond Area

Because best practices for VOC analysis call for minimal disturbance of sample material, a discrete surface soil sample for VOC analysis will also be collected from 5 of the 30 sample increment locations that will be used to make up the ISM samples for each of the exposure areas in the Pond Area (Section 2.6; Table 6). The VOC sample will be collected prior to homogenization or compositing of increments into the ISM samples. VOC samples will be submitted for the analysis of benzene, ethylbenzene, and total xylenes.

Sample IDs, coordinates, depths and collection methods are summarized in Tables 2 through 4. Sampling locations are shown on Figure 3. The sample locations will be located in the field using a handheld GPS unit capable of achieving an accuracy of ±1 ft horizontally. Locations may be modified in the field because of surface obstructions (large trees, debris piles, etc.). Updated locations will be logged using the GPS unit. All of the sample containers will be

labeled and placed on ice for preservation immediately after collection. Samples will be shipped to SGS Laboratories for analysis.

2.6 INCREMENTAL SAMPLING METHODOLOGY (ISM) SOIL SAMPLING (OU4)

ISM soil sampling methods will be applied in the OU4 Pond and OU4 Process Areas above the floodplain. ISM is a structured composite sampling and processing protocol designed to reduce data variability and increase sample representativeness for a specified volume of soil. All procedures in this section are in accordance with the Interstate Technology and Regulatory Council (ITRC) ISM Update, dated October 2020 (ITRC 2020).

As described in Section 1.3.2, the area has been divided into nine exposure areas of 2 acres or less, as shown on Figure 3. In each exposure area, a sample increment will be collected from 30 locations, and the sample increments homogenized to create a single composite representative of average conditions across the exposure area. The 30 ISM sample increment locations were randomly selected for each exposure area using the Visual Sample Plan (VSP) software version 7.13 (PNNL 2020). Sample increment locations are shown on Figure 3, and sample IDs, and coordinates are presented in Table 4.

2.6.1 Sample Locations

ISM sample increment locations will be located using a handheld GPS unit capable of achieving an accuracy of ±1 ft horizontally. Locations may be modified in the field because of surface obstructions (large trees, debris piles, etc.). Updated locations will be logged using the GPS unit.

2.6.2 Sample Collection

ISM samples will be collected using a small diameter stainless steel soil coring device to collect approximately one-third cup (2.7 oz) of soil per location from 0–1 ft bgs. The incremental sample will be placed into a single 1- or 2-gal resealable plastic bag for each exposure area and submitted for laboratory compositing. All sample increments will be double bagged to help prevent punctures.

As part of the ISM process, triplicate samples (one initial sample and two quality control samples) will be collected in one of the nine exposure areas to meet the appropriate quality assurance and quality control requirements. Exposure area OU4-PO-03 has been selected for triplicate sampling (Figure 3). Triplicate sampling will entail collection of an increment from the primary sample point, followed by collection of a duplicate increment approximately 10 ft to the northeast of the primary point and a triplicate increment from approximately 10 ft to the

southwest of the primary point. The duplicate and triplicate increments will be collected and containerized in the same manner as the primary increment. GPS coordinates will be collected for each duplicate and triplicate location.

2.6.3 Laboratory Sample Aggregations and Subsampling

All of the sample containers will be labeled and placed on ice for preservation immediately after collection. ISM samples will be shipped to SGS Laboratories in Orlando, Florida, for processing. All compositing will be conducted in accordance with the laboratory standard operating procedures and ITRC ISM guidance (ITRC 2020). At the laboratory, each sample for a given exposure area will be thoroughly homogenized prior to subsampling.

Homogenizing will include spreading the composite ISM sample out evenly onto clean non-ink paper. The sample will be passed through a 10-mesh (2-mm) sieve, with soil aggregates gently broken up before sieving. After the ISM sample has been homogenized, the laboratory will collect subsamples using a 2D slabcake method. Target weights will be within ±1 g of that required for each analysis.

ISM samples collected from the Pond Area will be analyzed for PAHs, PCP, dioxins/furans, arsenic, SVOCs (1,1-biphenyl, carbazole, dibenzofuran), and pesticides (aldrin) (Table 6). ISM samples collected from the OU4 Process Area will be analyzed for PAHs, PCP, dioxins/furans, and dibenzofuran.

2.7 EQUIPMENT DECONTAMINATION

Decontamination procedures for field sampling equipment are described in EPA LSASD ASBPROC-206-R4 (USEPA 2019). Waste generated during decontamination will be containerized in 55-gal drums and disposed offsite in accordance with the SRI Waste Management Plan, dated September 2015 (CH2M Hill 2015b).

2.8 QUALITY CONTROL

Field quality control samples will be collected in accordance with the SRI Quality Assurance Project Plan (QAPP), dated September 2015 (CH2M Hill 2015c), as summarized below and in Tables 5 and 6.

- Field duplicates will be collected at a rate of 1 per 10 samples per area for discrete and composite samples.
- For ISM samples, triplicate samples will be collected in 1 of the 9 exposure units, as described in Section 2.6.

- Matrix spike/matrix spike duplicates (MS/MSD) will be collected at a rate of 1 per 20 samples per sample type, per COC. One MS/MSD sample will be collected in the laboratory from an ISM location by subsampling the remaining processed volume for the selected sample location.
- Field blanks will be collected at a rate of one per week per area.
- Equipment blanks will be collected at a rate of one blank per reusable equipment (stainless steel cores, hand augers, etc.) per media, per 20 samples collected; or one per week, whichever is more frequent. VOC samples will be collected using dedicated equipment; therefore, no equipment blanks will be collected for this analyte group.
- Trip blanks will be analyzed for VOC samples at a rate of 1 per cooler of samples.

2.9 INVESTIGATION-DERIVED WASTE SAMPLING AND MANAGEMENT

The following waste streams may be generated during this investigation:

- Used personal protective equipment, trash, and sampling materials
- Decontamination fluids.

Investigation-derived waste will be placed in a 55-gal drum pending offsite disposal and will be managed in accordance with the SRI Waste Management Plan (CH2M Hill 2015b).

3 LABORATORY METHODS

Soil samples will be properly labeled with the date and time of the sample collection, and with the sample IDs provided in Tables 1 through 4. The samples will be properly packed on ice and shipped under chain-of-custody protocol for analysis at SGS Laboratories in Orlando, Florida. Depending on the soil sample location, samples will be analyzed for PAHs and SVOCs by SW-846 Method 8270D, PCP by SW-846 Method 8270D SIM, dioxins/furans by SW-846 Method 8290A, arsenic by SW-846 6010D, VOCs by SW-846 8260C, and aldrin by SW-846 8081B. Tables 5 and 6 summarize the analyze list for each sample area. Soil target parameters, analytical methods and minimum reporting limits are summarized in Table 7.

Laboratory analyses and reporting will be conducted in accordance with the SRI QAPP (CH2M Hill 2015c). Tables 5 and 6 provide a summary of the quality control samples to be collected.

The laboratory data will be validated, including a Level III (EPA Stage 2A) validation of 90 percent of the data and a Level IV validation (EPA Stage 4) of 10 percent of the laboratory data.

4 DATA EVALUATION AND REPORTING

Following receipt of laboratory data and validation, data will be evaluated and reported as detailed in the following sections.

4.1 TOXICITY EQUIVALENT CALCULATIONS

Consistent with previous reporting at the Site, soil data for PAHs will be converted to benzo[*a*]pyrene (BaP) toxicity equivalence (BaP-TEQ) using BaP as the index PAH (USEPA 1993). BaP-TEQ values will be calculated by computing the sum across congeners of the product of each compound concentration and its relative potency factor (RPF) (USEPA 2010a). RPFs are available for seven carcinogenic PAHs. Non-detect results will be included as one-half the method detection limit.

The dioxin/furan results will be converted to TEQ concentrations using TCDD as the index compound. TCDD TEQ values will be calculated by computing the sum across congeners of the product of a congener-specific concentration and the 2005 World Health Organization mammalian toxic equivalency factors for 17 congeners present in dioxin/furan mixtures (Van den Berg et al. 2006; USEPA 2010b). Non-detect results will be included as the method detection limit.

4.2 REPORTING

The data collected under this Work Plan will be reported in three separate documents—a technical memorandum documenting the results in OU2, an HHRA addendum for OU4, and an ecological risk assessment for OU4. Specifics for these evaluations are detailed in the Risk Strategy White Paper.

5 IMPLEMENTATION SCHEDULE

The table below provides the proposed implementation schedule.

Task Name	Estimated Duration
Vegetation Clearing and Surveying	2 weeks
Site Setup	1 day
Soil Sampling	3 weeks
Laboratory Analysis	2 weeks
Data Validation	3 weeks
Preliminary Results Distribution to EPA and NCDEQ	1 week
Draft Technical Memoranda	10 weeks

6 REFERENCES

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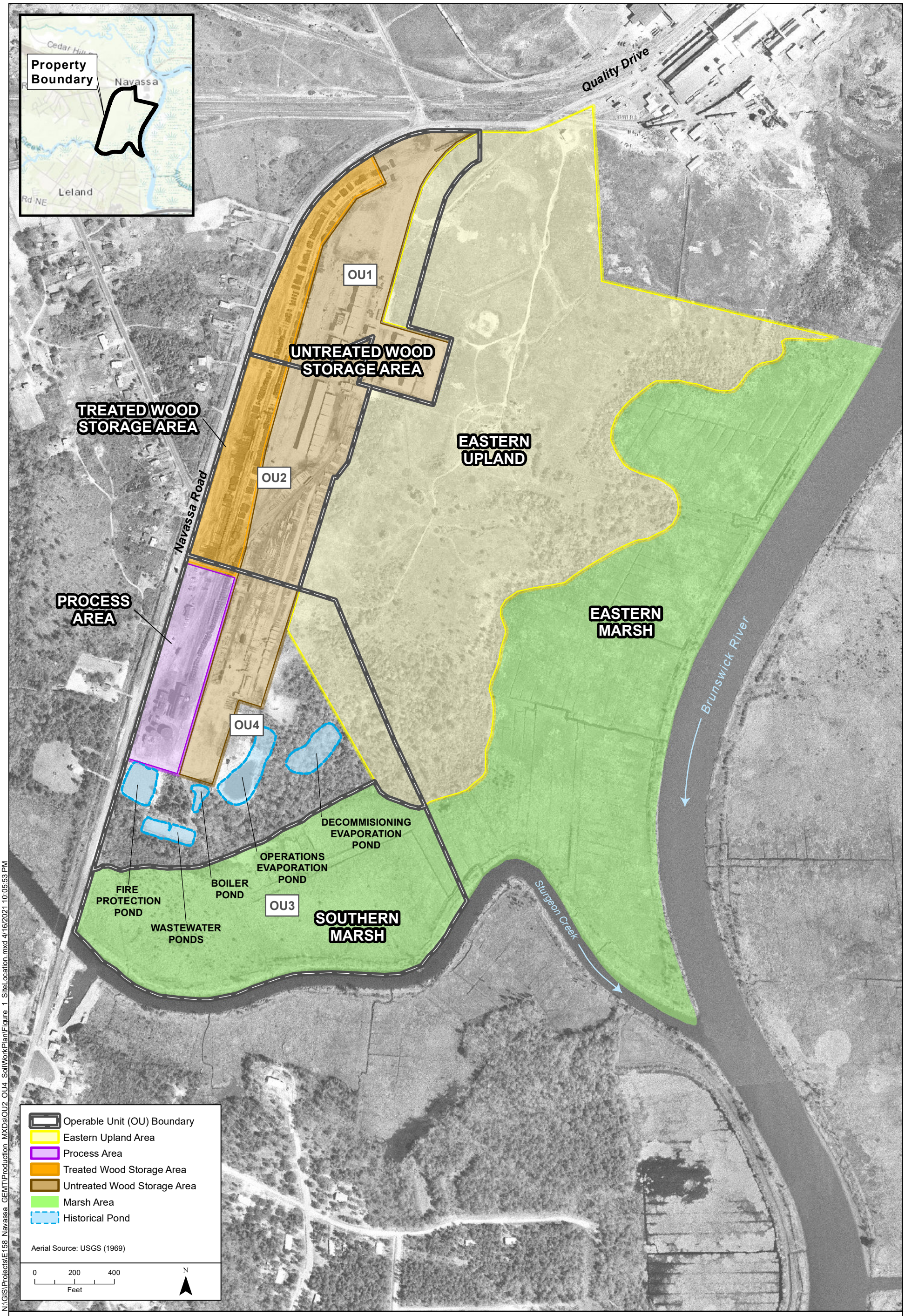
Figures



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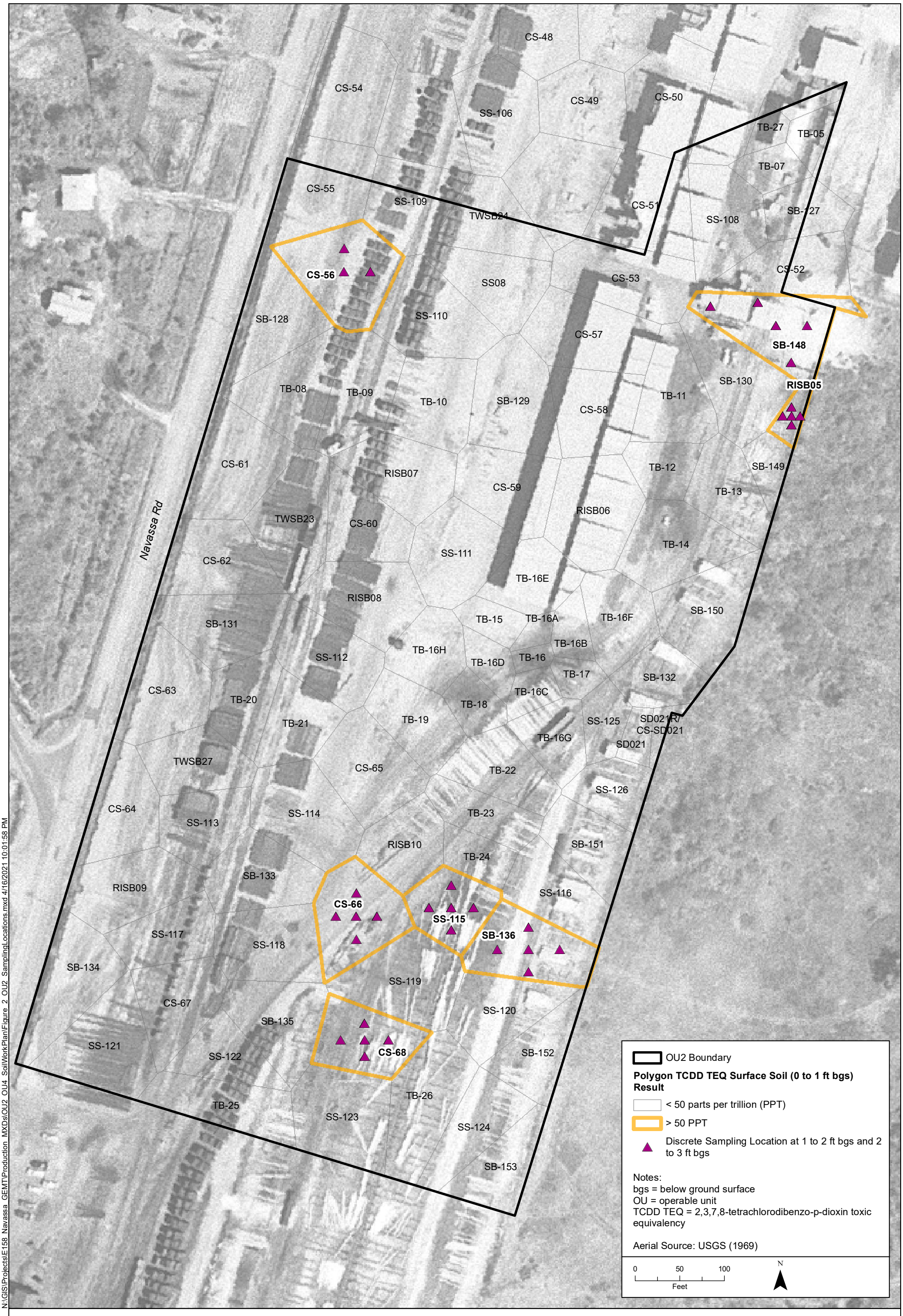
Prepared by: integral engineering pc.

Figure 1.
Site Overview
Kerr-McGee Chemical Corp. - Navassa Superfund Site
Navassa, North Carolina
OU2/OU4 Soil Sampling Work Plan
May 2021



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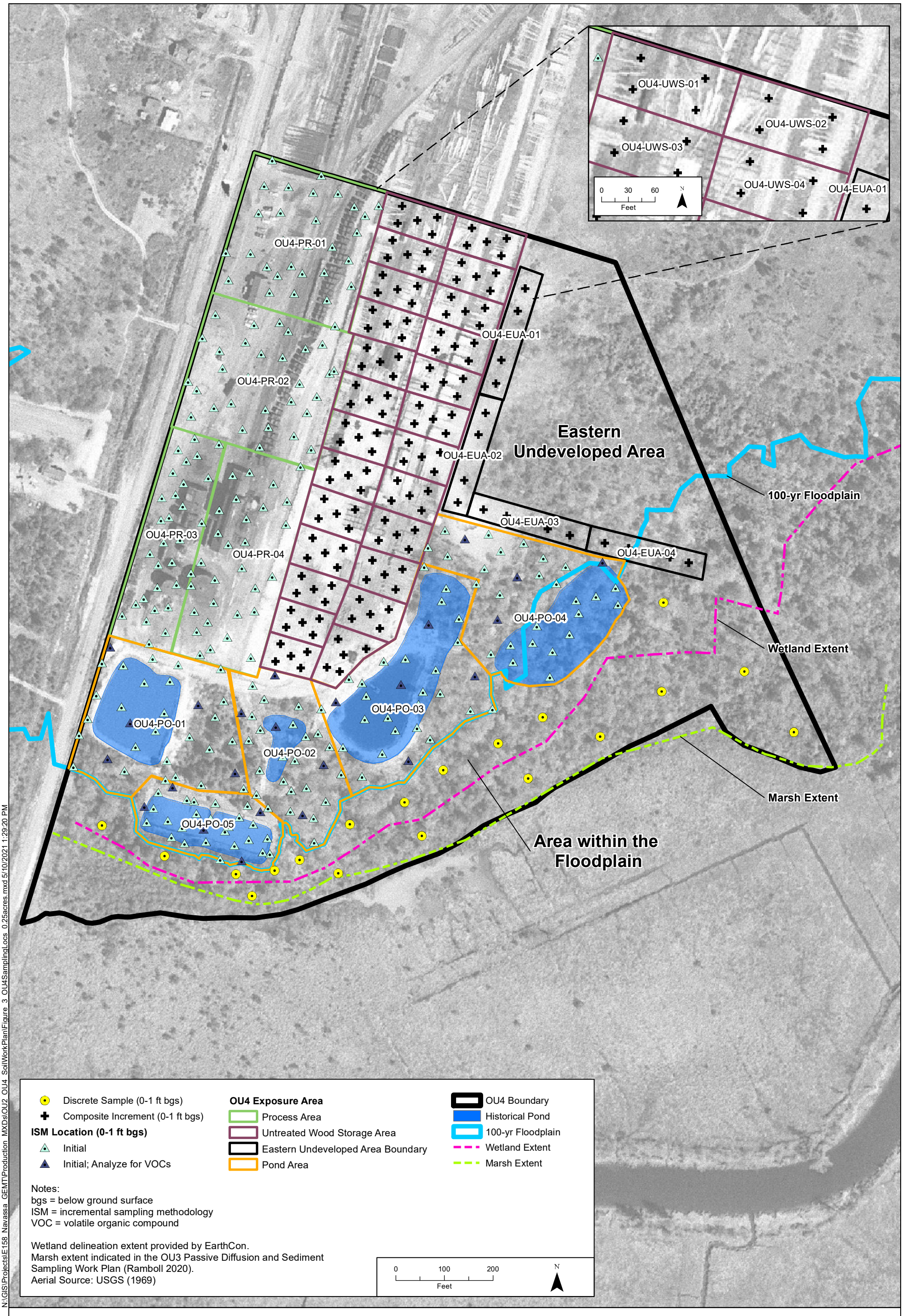
Prepared by: integral engineering pc.

Figure 2.
OU2 Sampling Locations
Kerr-McGee Chemical Corp. - Navassa Superfund Site
Navassa, North Carolina
OU2/OU4 Soil Sampling Work Plan
May 2021



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Prepared by: integral engineering pc.

Figure 3.
OU4 Sampling Locations
Kerr-McGee Chemical Corp. - Navassa Superfund Site
Navassa, North Carolina
OU2/OU4 2021 Soil Sampling Work Plan
May 2021

Tables

Table 1. OU2 Subsurface Soil Sampling Locations

Polygon / Sample Location	Coordinates		2020 Surface Sample Location	2021 Sample ID	
				1 to 2 ft bgs Sample	2 to 3 ft bgs Sample
	Northing (ft)	Easting (ft)		Discrete Sample ID	Discrete Sample ID
RISB05	184616.2438	2303508.406	CS-RISB05-A	CS-RISB05-A(1-2)	CS-RISB05-A(2-3)
	184626.2438	2303508.406	CS-RISB05-B	CS-RISB05-B(1-2)	CS-RISB05-B(2-3)
	184616.2438	2303518.406	CS-RISB05-C	CS-RISB05-C(1-2)	CS-RISB05-C(2-3)
	184606.2438	2303508.406	CS-RISB05-D	CS-RISB05-D(1-2)	CS-RISB05-D(2-3)
	184616.2438	2303498.406	CS-RISB05-E	CS-RISB05-E(1-2)	CS-RISB05-E(2-3)
SB-136	184018.194	2303213.582	CS-SB-136-A	CS-SB-136-A(1-2)	CS-SB-136-A(2-3)
	184043.194	2303213.582	CS-SB-136-B	CS-SB-136-B(1-2)	CS-SB-136-B(2-3)
	184018.194	2303248.582	CS-SB-136-C	CS-SB-136-C(1-2)	CS-SB-136-C(2-3)
	183993.194	2303213.582	CS-SB-136-D	CS-SB-136-D(1-2)	CS-SB-136-D(2-3)
	184018.194	2303178.582	CS-SB-136-E	CS-SB-136-E(1-2)	CS-SB-136-E(2-3)
SB-148	184717.4451	2303491.146	CS-SB-148-A	CS-SB-148-A(1-2)	CS-SB-148-A(2-3)
	184743.4868	2303470.573	CS-SB-148-B	CS-SB-148-B(1-2)	CS-SB-148-B(2-3)
	184717.4451	2303526.146	CS-SB-148-C	CS-SB-148-C(1-2)	CS-SB-148-C(2-3)
	184676.2993	2303508.073	CS-SB-148-D	CS-SB-148-D(1-2)	CS-SB-148-D(2-3)
	184739.3201	2303417.865	CS-SB-148-E	CS-SB-148-E(1-2)	CS-SB-148-E(2-3)
SS-115	184065.2711	2303126.984	CS-SS-115-A	CS-SS-115-A(1-2)	CS-SS-115-A(2-3)
	184090.2711	2303126.984	CS-SS-115-B	CS-SS-115-B(1-2)	CS-SS-115-B(2-3)
	184065.2711	2303151.984	CS-SS-115-C	CS-SS-115-C(1-2)	CS-SS-115-C(2-3)
	184040.2711	2303126.984	CS-SS-115-D	CS-SS-115-D(1-2)	CS-SS-115-D(2-3)
	184065.2711	2303101.984	CS-SS-115-E	CS-SS-115-E(1-2)	CS-SS-115-E(2-3)
CS-56	184777.816	2303006.822	CS-56-A	CS-56-A(1-2)	CS-56-A(2-3)
	184804.0259	2303006.854	CS-56-B	CS-56-B(1-2)	CS-56-B(2-3)
	184777.921	2303036.361	CS-56-C	CS-56-C(1-2)	CS-56-C(2-3)
CS-66	184055.619	2303020.472	CS-66-A	CS-66-A(1-2)	CS-66-A(2-3)
	184081.4709	2303020.74	CS-66-B	CS-66-B(1-2)	CS-66-B(2-3)
	184055.6741	2303043.659	CS-66-C	CS-66-C(1-2)	CS-66-C(2-3)
	184029.5062	2303020.598	CS-66-D	CS-66-D(1-2)	CS-66-D(2-3)
	184055.6029	2302997.559	CS-66-E	CS-66-E(1-2)	CS-66-E(2-3)
CS-68	183916.9401	2303030.042	CS-68-A	CS-68-A(1-2)	CS-68-A(2-3)
	183935.446	2303029.798	CS-68-B	CS-68-B(1-2)	CS-68-B(2-3)
	183916.824	2303056.691	CS-68-C	CS-68-C(1-2)	CS-68-C(2-3)
	183898.4431	2303029.87	CS-68-D	CS-68-D(1-2)	CS-68-D(2-3)
	183916.844	2303003.04	CS-68-E	CS-68-E(1-2)	CS-68-E(2-3)

Notes:

Samples highlighted in **grey** will be sent to the laboratory for immediate analysis. All other samples will be archived at the laboratory for potential future analysis.

Coordinates are presented in North Carolina State Plane, North American Datum 1983.

bgs = below ground surface

Table 2. OU4 Surface Soil Sampling Locations for the Untreated Wood Storage Area and Eastern Undeveloped Area

Sample Location	Northing (ft)	Easting (ft)	Discrete Sample ID	Composite Sample ID
Untreated Wood Storage Area (UWS)				
OU4-UWS-01	183779.8336	2302942.094	OU4-UWS-01-A	OU4-UWS-01(0-1)
	183757.0868	2303014.248	OU4-UWS-01-B	
	183750.9188	2302973.398	OU4-UWS-01-C	
	183744.9556	2302932.917	OU4-UWS-01-D	
	183721.7883	2303003.756	OU4-UWS-01-E	
OU4-UWS-02	183734.8856	2303085.568	OU4-UWS-02-A	OU4-UWS-02(0-1)
	183713.5683	2303157.158	OU4-UWS-02-B	
	183706.5164	2303116.038	OU4-UWS-02-C	
	183699.5871	2303075.076	OU4-UWS-02-D	
	183678.0236	2303146.063	OU4-UWS-02-E	
OU4-UWS-03	183709.7111	2302922.666	OU4-UWS-03-A	OU4-UWS-03(0-1)
	183686.5438	2302993.505	OU4-UWS-03-B	
	183680.4298	2302952.896	OU4-UWS-03-C	
	183674.0394	2302912.419	OU4-UWS-03-D	
	183651.3175	2302983.258	OU4-UWS-03-E	
OU4-UWS-04	183663.9647	2303064.381	OU4-UWS-04-A	OU4-UWS-04(0-1)
	183642.4013	2303135.368	OU4-UWS-04-B	
	183635.2717	2303094.647	OU4-UWS-04-C	
	183628.7385	2303054.134	OU4-UWS-04-D	
	183606.1044	2303123.763	OU4-UWS-04-E	
OU4-UWS-05	183638.4241	2302902.23	OU4-UWS-05-A	OU4-UWS-05(0-1)
	183615.7023	2302973.069	OU4-UWS-05-B	
	183609.1994	2302932.517	OU4-UWS-05-C	
	183602.4851	2302892.28	OU4-UWS-05-D	
	183580.0603	2302962.525	OU4-UWS-05-E	
OU4-UWS-06	183592.9761	2303043.101	OU4-UWS-06-A	OU4-UWS-06(0-1)
	183570.3421	2303112.73	OU4-UWS-06-B	
	183563.747	2303072.581	OU4-UWS-06-C	
	183557.3341	2303032.557	OU4-UWS-06-D	
	183534.3627	2303101.605	OU4-UWS-06-E	

Table 2. OU4 Surface Soil Sampling Locations for the Untreated Wood Storage Area and Eastern Undeveloped Area

Sample Location	Northing (ft)	Easting (ft)	Discrete Sample ID	Composite Sample ID
OU4-UWS-07	183566.5188	2302881.697	OU4-UWS-07-A	OU4-UWS-07(0-1)
	183544.094	2302951.941	OU4-UWS-07-B	
	183537.2668	2302911.351	OU4-UWS-07-C	
	183529.0082	2302871.623	OU4-UWS-07-D	
	183509.046	2302941.694	OU4-UWS-07-E	
OU4-UWS-08	183521.1582	2303021.536	OU4-UWS-08-A	OU4-UWS-08(0-1)
	183498.1869	2303090.585	OU4-UWS-08-B	
	183491.3954	2303050.541	OU4-UWS-08-C	
	183484.4766	2303010.844	OU4-UWS-08-D	
	183461.6457	2303079.122	OU4-UWS-08-E	
OU4-UWS-09	183488.3052	2302870.247	OU4-UWS-09-A	OU4-UWS-09(0-1)
	183470.1997	2302934.555	OU4-UWS-09-B	
	183459.5743	2302897.072	OU4-UWS-09-C	
	183450.5965	2302858.964	OU4-UWS-09-D	
	183429.7012	2302923.552	OU4-UWS-09-E	
OU4-UWS-10	183447.7502	2302999.232	OU4-UWS-10-A	OU4-UWS-10(0-1)
	183424.9193	2303067.51	OU4-UWS-10-B	
	183417.9425	2303027.316	OU4-UWS-10-C	
	183408.8854	2302988.674	OU4-UWS-10-D	
	183389.2378	2303055.368	OU4-UWS-10-E	
OU4-UWS-11	183411.9237	2302847.654	OU4-UWS-11-A	OU4-UWS-11(0-1)
	183391.0283	2302912.243	OU4-UWS-11-B	
	183382.2285	2302874.453	OU4-UWS-11-C	
	183373.0326	2302836.629	OU4-UWS-11-D	
	183352.8479	2302901.758	OU4-UWS-11-E	
OU4-UWS-12	183370.8496	2302977.809	OU4-UWS-12-A	OU4-UWS-12(0-1)
	183351.202	2303044.502	OU4-UWS-12-B	
	183341.871	2303005.586	OU4-UWS-12-C	
	183332.6691	2302967.324	OU4-UWS-12-D	
	183312.5993	2303032.083	OU4-UWS-12-E	

Table 2. OU4 Surface Soil Sampling Locations for the Untreated Wood Storage Area and Eastern Undeveloped Area

Sample Location	Northing (ft)	Easting (ft)	Discrete Sample ID	Composite Sample ID
OU4-UWS-13	183334.2148	2302825.924	OU4-UWS-13-A	OU4-UWS-13(0-1)
	183314.0301	2302891.054	OU4-UWS-13-B	
	183304.5929	2302853.044	OU4-UWS-13-C	
	183294.9764	2302815.092	OU4-UWS-13-D	
	183275.0934	2302880.265	OU4-UWS-13-E	
OU4-UWS-14	183293.7405	2302955.788	OU4-UWS-14-A	OU4-UWS-14(0-1)
	183273.6707	2303020.547	OU4-UWS-14-B	
	183264.0137	2302982.514	OU4-UWS-14-C	
	183254.8039	2302945	OU4-UWS-14-D	
	183233.7837	2303007.859	OU4-UWS-14-E	
OU4-UWS-15	183255.7338	2302804.324	OU4-UWS-15-A	OU4-UWS-15(0-1)
	183235.8509	2302869.498	OU4-UWS-15-B	
	183226.1078	2302831.508	OU4-UWS-15-C	
	183217.3122	2302793.717	OU4-UWS-15-D	
	183195.6959	2302857.318	OU4-UWS-15-E	
OU4-UWS-16	183215.1214	2302932.4	OU4-UWS-16-A	OU4-UWS-16(0-1)
	183194.1013	2302995.258	OU4-UWS-16-B	
	183184.6488	2302957.313	OU4-UWS-16-C	
	183174.5456	2302920.093	OU4-UWS-16-D	
	183154.438	2302981.619	OU4-UWS-16-E	
OU4-UWS-17	183177.9191	2302781.732	OU4-UWS-17-A	OU4-UWS-17(0-1)
	183156.3029	2302845.334	OU4-UWS-17-B	
	183147.3216	2302807.54	OU4-UWS-17-C	
	183137.7639	2302770.358	OU4-UWS-17-D	
	183116.9727	2302832.88	OU4-UWS-17-E	
OU4-UWS-18	183134.1507	2302906.92	OU4-UWS-18-A	OU4-UWS-18(0-1)
	183114.0431	2302968.446	OU4-UWS-18-B	
	183103.8591	2302930.966	OU4-UWS-18-C	
	183092.6574	2302893.851	OU4-UWS-18-D	
	183074.2423	2302955.482	OU4-UWS-18-E	

Table 2. OU4 Surface Soil Sampling Locations for the Untreated Wood Storage Area and Eastern Undeveloped Area

Sample Location	Northing (ft)	Easting (ft)	Discrete Sample ID	Composite Sample ID
OU4-UWS-19	183097.6586	2302758.456	OU4-UWS-19-A	OU4-UWS-19(0-1)
	183076.8674	2302820.978	OU4-UWS-19-B	
	183067.1109	2302783.736	OU4-UWS-19-C	
	183056.6702	2302747.021	OU4-UWS-19-D	
	183036.9186	2302808.801	OU4-UWS-19-E	
OU4-UWS-20	183051.7986	2302881.292	OU4-UWS-20-A	OU4-UWS-20(0-1)
	183033.3835	2302942.923	OU4-UWS-20-B	
	183022.1414	2302905.847	OU4-UWS-20-C	
	183012.0618	2302869.023	OU4-UWS-20-D	
	182991.4915	2302928.852	OU4-UWS-20-E	
OU4-UWS-21	183019.3701	2302735.38	OU4-UWS-21-A	OU4-UWS-21(0-1)
	182999.6184	2302797.16	OU4-UWS-21-B	
	182992.5106	2302760.454	OU4-UWS-21-C	
	182984.0868	2302725.459	OU4-UWS-21-D	
	182966.1703	2302783.906	OU4-UWS-21-E	
OU4-UWS-22	182971.4738	2302854.57	OU4-UWS-22-A	OU4-UWS-22(0-1)
	182950.9035	2302914.399	OU4-UWS-22-B	
	182940.9655	2302876.942	OU4-UWS-22-C	
	182931.5618	2302838.618	OU4-UWS-22-D	
	182911.5016	2302896.085	OU4-UWS-22-E	
OU4-UWS-23	182949.6385	2302713.823	OU4-UWS-23-A	OU4-UWS-23(0-1)
	182931.7219	2302772.269	OU4-UWS-23-B	
	182923.614	2302737.182	OU4-UWS-23-C	
	182914.2652	2302703.877	OU4-UWS-23-D	
	182897.9898	2302758.787	OU4-UWS-23-E	
OU4-UWS-24	182889.7678	2302810.88	OU4-UWS-24-A	OU4-UWS-24(0-1)
	182869.7076	2302868.346	OU4-UWS-24-B	
	182857.3774	2302821.465	OU4-UWS-24-C	
	182831.8455	2302787.729	OU4-UWS-24-D	
	182822.932	2302813.643	OU4-UWS-24-E	

Table 2. OU4 Surface Soil Sampling Locations for the Untreated Wood Storage Area and Eastern Undeveloped Area

Sample Location	Northing (ft)	Easting (ft)	Discrete Sample ID	Composite Sample ID
OU4-UWS-25	182879.7859	2302692.008	OU4-UWS-25-A	OU4-UWS-25(0-1)
	182863.5105	2302746.919	OU4-UWS-25-B	
	182854.6553	2302713.444	OU4-UWS-25-C	
	182843.7538	2302681.877	OU4-UWS-25-D	
	182830.4845	2302733.719	OU4-UWS-25-E	
Eastern Undeveloped Area (EUA)				
OU4-EUA-01	183610.9528	2303195.128	OU4-EUA-01-A	OU4-EUA-01(0-1)
	183564.5645	2303179.99	OU4-EUA-01-B	
	183415.1295	2303135.267	OU4-EUA-01-C	
	183515.1987	2303163.926	OU4-EUA-01-D	
	183463.2515	2303146.028	OU4-EUA-01-E	
OU4-EUA-02	183310.0623	2303099	OU4-EUA-02-A	OU4-EUA-02(0-1)
	183354.5892	2303113.735	OU4-EUA-02-B	
	183215.9917	2303069.887	OU4-EUA-02-C	
	183264.8632	2303084.88	OU4-EUA-02-D	
	183170.9349	2303056.484	OU4-EUA-02-E	
OU4-EUA-03	183156.1997	2303109.48	OU4-EUA-03-A	OU4-EUA-03(0-1)
	183143.0688	2303157.544	OU4-EUA-03-B	
	183116.5348	2303241.677	OU4-EUA-03-C	
	183128.6517	2303199.685	OU4-EUA-03-D	
	183103.1715	2303286.67	OU4-EUA-03-E	
OU4-EUA-04	183087.1366	2303359.099	OU4-EUA-04-A	OU4-EUA-04(0-1)
	183067.6914	2303450.021	OU4-EUA-04-B	
	183076.6774	2303407.718	OU4-EUA-04-C	
	183057.7729	2303492.77	OU4-EUA-04-D	
	183046.79	2303531.552	OU4-EUA-04-E	

Notes:

Samples highlighted in **grey** will be sent to the laboratory for immediate analysis. Discrete samples collected from the Untreated Wood Storage Area will be archived at the laboratory for potential future analysis.

Coordinates are presented in North Carolina State Plane, North American Datum 1983.

Table 3. OU4 Surface Soil Sampling Locations for the Area within the Floodplain

Location ID	Northing (ft)	Easting (ft)	Sample ID
FP-01	182506.46	2302324.62	OU4-FP-01(0-1)
FP-02	182443.16	2302453.80	OU4-FP-02(0-1)
FP-03	182406.36	2302600.63	OU4-FP-03(0-1)
FP-04	182413.70	2302680.18	OU4-FP-04(0-1)
FP-05	182435.36	2302731.07	OU4-FP-05(0-1)
FP-06	182509.11	2302834.37	OU4-FP-06(0-1)
FP-07	182553.88	2302947.14	OU4-FP-07(0-1)
FP-08	182619.86	2303026.43	OU4-FP-08(0-1)
FP-09	182675.16	2303139.83	OU4-FP-09(0-1)
FP-10	182729.10	2303231.14	OU4-FP-10(0-1)
FP-11	182964.66	2303479.42	OU4-FP-11(0-1)
FP-12	182361.35	2302633.56	OU4-FP-12(0-1)
FP-13	182408.11	2302810.65	OU4-FP-13(0-1)
FP-14	182485.28	2302982.67	OU4-FP-14(0-1)
FP-15	182602.77	2303201.12	OU4-FP-15(0-1)
FP-16	182689.11	2303348.92	OU4-FP-16(0-1)
FP-17	182782.07	2303475.40	OU4-FP-17(0-1)
FP-18	182823.22	2303645.64	OU4-FP-18(0-1)
FP-19	182698.38	2303747.61	OU4-FP-19(0-1)

Notes:

Coordinates are presented in North Carolina State Plane, North American Datum 1983.

Table 4. OU4 Surface Soil Sampling Locations for the Process Area and Pond Area

Exposure Area	Northing (ft)	Easting (ft)	ISM Increment ID	Discrete VOC Sample ID	Composited ISM Sample ID
OU4-PR-01	183684.91	2302579.69	OU4-PR-01-01		OU4-PR-01(0-1)
	183628.02	2302585.30	OU4-PR-01-02		
	183682.88	2302630.21	OU4-PR-01-03		
	183765.17	2302647.05	OU4-PR-01-04		
	183822.07	2302658.28	OU4-PR-01-05		
	183655.45	2302663.90	OU4-PR-01-06		
	183602.62	2302669.51	OU4-PR-01-07		
	183874.90	2302675.12	OU4-PR-01-08		
	183637.17	2302686.35	OU4-PR-01-09		
	183767.21	2302691.96	OU4-PR-01-10		
	183710.31	2302697.58	OU4-PR-01-11		
	183820.04	2302708.81	OU4-PR-01-12		
	183657.48	2302714.42	OU4-PR-01-13		
	183600.59	2302720.03	OU4-PR-01-14		
	183641.74	2302736.88	OU4-PR-01-15		
	183698.63	2302748.10	OU4-PR-01-16		
	183808.35	2302759.33	OU4-PR-01-17		
	183751.46	2302764.95	OU4-PR-01-18		
	183842.89	2302776.17	OU4-PR-01-19		
	183643.77	2302781.79	OU4-PR-01-20		
	183586.88	2302787.40	OU4-PR-01-21		
	183696.60	2302798.63	OU4-PR-01-22		
	183534.05	2302804.24	OU4-PR-01-23		
	183806.32	2302809.86	OU4-PR-01-24		
	183669.17	2302832.31	OU4-PR-01-25		
	183616.34	2302837.93	OU4-PR-01-26		
	183778.89	2302843.54	OU4-PR-01-27		
	183726.06	2302849.15	OU4-PR-01-28		
	183760.60	2302865.99	OU4-PR-01-29		
	183780.92	2302894.06	OU4-PR-01-30		
OU4-PR-02	183436.04	2302793.31	OU4-PR-02-01		OU4-PR-02(0-1)
	183557.24	2302558.16	OU4-PR-02-02		
	183355.24	2302746.28	OU4-PR-02-03		
	183476.44	2302652.22	OU4-PR-02-04		
	183361.22	2302661.04	OU4-PR-02-05		
	183482.42	2302566.98	OU4-PR-02-06		
	183280.43	2302755.10	OU4-PR-02-07		
	183401.62	2302519.95	OU4-PR-02-08		
	183522.82	2302708.07	OU4-PR-02-09		
	183320.83	2302614.01	OU4-PR-02-10		
	183442.02	2302802.13	OU4-PR-02-11		
	183374.69	2302590.49	OU4-PR-02-12		
	183495.89	2302778.62	OU4-PR-02-13		
	183415.09	2302731.59	OU4-PR-02-14		
	183536.29	2302637.52	OU4-PR-02-15		
	183388.16	2302766.86	OU4-PR-02-16		
	183509.36	2302531.71	OU4-PR-02-17		
	183307.36	2302719.83	OU4-PR-02-18		
	183428.56	2302625.77	OU4-PR-02-19		
	183347.76	2302508.19	OU4-PR-02-20		
	183468.96	2302696.31	OU4-PR-02-21		
	183365.71	2302555.22	OU4-PR-02-22		
	183486.91	2302743.34	OU4-PR-02-23		
	183284.91	2302649.28	OU4-PR-02-24		
	183325.31	2302666.92	OU4-PR-02-25		
	183446.51	2302572.86	OU4-PR-02-26		
	183379.18	2302713.95	OU4-PR-02-27		
	183500.38	2302619.89	OU4-PR-02-28		
	183419.58	2302502.31	OU4-PR-02-29		
	183540.78	2302690.43	OU4-PR-02-30		

Table 4. OU4 Surface Soil Sampling Locations for the Process Area and Pond Area

Exposure Area	Northing (ft)	Easting (ft)	ISM Increment ID	Discrete VOC Sample ID	Composited ISM Sample ID
OU4-PR-03	183278.87	2302481.93	OU4-PR-03-01		OU4-PR-03(0-1)
	182880.86	2302422.23	OU4-PR-03-02		
	183088.52	2302452.08	OU4-PR-03-03		
	183140.43	2302463.27	OU4-PR-03-04		
	183209.65	2302493.12	OU4-PR-03-05		
	182950.08	2302433.42	OU4-PR-03-06		
	183001.99	2302478.20	OU4-PR-03-07		
	183025.07	2302508.05	OU4-PR-03-08		
	183180.81	2302448.35	OU4-PR-03-09		
	183232.72	2302470.74	OU4-PR-03-10		
	182973.15	2302411.03	OU4-PR-03-11		
	183128.89	2302530.44	OU4-PR-03-12		
	183042.37	2302440.89	OU4-PR-03-13		
	182938.54	2302366.26	OU4-PR-03-14		
	183094.28	2302485.66	OU4-PR-03-15		
	183301.94	2302515.51	OU4-PR-03-16		
	182903.93	2302455.81	OU4-PR-03-17		
	182955.85	2302461.41	OU4-PR-03-18		
	183267.33	2302521.11	OU4-PR-03-19		
	183163.50	2302491.26	OU4-PR-03-20		
	183186.58	2302476.33	OU4-PR-03-21		
	182927.00	2302416.63	OU4-PR-03-22		
	183134.66	2302446.48	OU4-PR-03-23		
	183290.41	2302565.89	OU4-PR-03-24		
	183048.14	2302468.87	OU4-PR-03-25		
	183255.80	2302498.72	OU4-PR-03-26		
	182996.22	2302439.02	OU4-PR-03-27		
	183065.44	2302424.09	OU4-PR-03-28		
	183221.19	2302543.50	OU4-PR-03-29		
	182961.61	2302394.24	OU4-PR-03-30		
OU4-PR-04	183000.46	2302508.29	OU4-PR-04-01		OU4-PR-04(0-1)
	182905.26	2302519.88	OU4-PR-04-02		
	182857.66	2302526.83	OU4-PR-04-03		
	183048.07	2302529.15	OU4-PR-04-04		
	182869.56	2302547.70	OU4-PR-04-05		
	182964.76	2302554.65	OU4-PR-04-06		
	183012.36	2302556.97	OU4-PR-04-07		
	183107.57	2302563.92	OU4-PR-04-08		
	183155.17	2302566.24	OU4-PR-04-09		
	182893.36	2302582.46	OU4-PR-04-10		
	183083.77	2302584.78	OU4-PR-04-11		
	183226.57	2302594.05	OU4-PR-04-12		
	183178.97	2302601.01	OU4-PR-04-13		
	182940.96	2302603.33	OU4-PR-04-14		
	183036.16	2302612.60	OU4-PR-04-15		
	183089.72	2302619.55	OU4-PR-04-16		
	183137.32	2302621.87	OU4-PR-04-17		
	183232.52	2302628.82	OU4-PR-04-18		
	182851.71	2302631.14	OU4-PR-04-19		
	182946.91	2302638.10	OU4-PR-04-20		
	182994.51	2302640.41	OU4-PR-04-21		
	183161.12	2302656.64	OU4-PR-04-22		
	182924.29	2302542.50	OU4-PR-04-23		
	183065.92	2302668.23	OU4-PR-04-24		
	183018.31	2302675.18	OU4-PR-04-25		
	183208.72	2302677.50	OU4-PR-04-26		
	182946.70	2302514.89	OU4-PR-04-27		
	183125.42	2302703.00	OU4-PR-04-28		
	183173.02	2302705.32	OU4-PR-04-29		
	183244.42	2302733.13	OU4-PR-04-30		

Table 4. OU4 Surface Soil Sampling Locations for the Process Area and Pond Area

Exposure Area	Northing (ft)	Easting (ft)	ISM Increment ID	Discrete VOC Sample ID	Composited ISM Sample ID
OU4-PO-01	182627.17	2302266.30	OU4-PO-01-01		OU4-PO-01(0-1)
	182692.82	2302277.96	OU4-PO-01-02		
	182725.65	2302295.46	OU4-PO-01-03		
	182774.89	2302312.95	OU4-PO-01-04		
	182840.55	2302324.62	OU4-PO-01-05		
	182643.58	2302336.28	OU4-PO-01-06	OU4-PO-01-06	
	182873.38	2302342.11	OU4-PO-01-07	OU4-PO-01-07	
	182835.00	2302369.02	OU4-PO-01-08		
	182750.27	2302365.44	OU4-PO-01-09		
	182618.96	2302371.27	OU4-PO-01-10		
	182717.44	2302382.93	OU4-PO-01-11	OU4-PO-01-11	
	182668.44	2302393.83	OU4-PO-01-12		
	182799.52	2302412.09	OU4-PO-01-13		
	182849.88	2302429.59	OU4-PO-01-14		
	182701.03	2302435.42	OU4-PO-01-15		
	182737.96	2302452.91	OU4-PO-01-16		
	182639.48	2302458.74	OU4-PO-01-17		
	182803.62	2302464.57	OU4-PO-01-18		
	182606.65	2302476.24	OU4-PO-01-19		
	182836.45	2302482.07	OU4-PO-01-20		
	182688.72	2302505.40	OU4-PO-01-21		
	182754.38	2302522.89	OU4-PO-01-22	OU4-PO-01-22	
	182590.23	2302528.72	OU4-PO-01-23		
	182664.10	2302546.22	OU4-PO-01-24		
	182729.76	2302557.88	OU4-PO-01-25		
	182828.24	2302569.54	OU4-PO-01-26		
	182762.58	2302575.38	OU4-PO-01-27		
	182680.51	2302592.87	OU4-PO-01-28		
	182614.86	2302598.70	OU4-PO-01-29	OU4-PO-01-29	
	182582.03	2302616.20	OU4-PO-01-30		
OU4-PO-02	182731.86	2302633.43	OU4-PO-02-01		OU4-PO-02(0-1)
	182521.98	2302759.80	OU4-PO-02-02		
	182647.91	2302696.62	OU4-PO-02-03		
	182689.89	2302744.01	OU4-PO-02-04		
	182815.81	2302680.82	OU4-PO-02-05	OU4-PO-02-05	
	182619.93	2302649.23	OU4-PO-02-06		
	182745.85	2302775.60	OU4-PO-02-07		
	182535.98	2302712.41	OU4-PO-02-08		
	182577.95	2302713.90	OU4-PO-02-09		
	182703.88	2302650.71	OU4-PO-02-10		
	182584.17	2302745.49	OU4-PO-02-11		
	182710.10	2302682.30	OU4-PO-02-12	OU4-PO-02-12	
	182752.07	2302729.69	OU4-PO-02-13		
	182542.19	2302666.51	OU4-PO-02-14		
	182668.12	2302792.88	OU4-PO-02-15		
	182794.05	2302634.92	OU4-PO-02-16		
	182472.24	2302761.28	OU4-PO-02-17		
	182598.16	2302698.10	OU4-PO-02-18		
	182640.14	2302721.79	OU4-PO-02-19		
	182766.06	2302658.61	OU4-PO-02-20		
	182556.19	2302784.98	OU4-PO-02-21		
	182682.11	2302627.02	OU4-PO-02-22		
	182612.15	2302816.57	OU4-PO-02-23		
	182738.08	2302611.22	OU4-PO-02-24	OU4-PO-02-24	
	182528.20	2302737.59	OU4-PO-02-25	OU4-PO-02-25	
	182654.13	2302674.41	OU4-PO-02-26		
	182570.18	2302642.81	OU4-PO-02-27		
	182696.10	2302769.18	OU4-PO-02-28		
	182714.76	2302717.84	OU4-PO-02-29		
	182630.81	2302781.03	OU4-PO-02-30	OU4-PO-02-30	

Table 4. OU4 Surface Soil Sampling Locations for the Process Area and Pond Area

Exposure Area	Northing (ft)	Easting (ft)	ISM Increment ID	Discrete VOC Sample ID	Composited ISM Sample ID
OU4-PO-03	182684.04	2302999.53	OU4-PO-03-01		OU4-PO-03(0-1)
	182843.63	2302904.17	OU4-PO-03-02		
	183003.22	2303094.90	OU4-PO-03-03		
	182754.97	2302975.69	OU4-PO-03-04		
	182808.17	2302832.64	OU4-PO-03-05		
	182967.75	2303023.37	OU4-PO-03-06		
	182701.77	2302928.01	OU4-PO-03-07		
	182772.70	2302868.40	OU4-PO-03-08		
	182932.29	2303059.14	OU4-PO-03-09		
	182666.31	2302820.72	OU4-PO-03-10		
	182825.90	2303011.45	OU4-PO-03-11		
	183038.68	2302987.61	OU4-PO-03-12		
	182743.15	2303082.98	OU4-PO-03-13		
	182796.34	2302939.93	OU4-PO-03-14	OU4-PO-03-14	
	182849.54	2302948.87	OU4-PO-03-15		
	182760.88	2302805.82	OU4-PO-03-16	OU4-PO-03-16	
	182920.47	2302996.55	OU4-PO-03-17	OU4-PO-03-17	
	182654.49	2302901.19	OU4-PO-03-18		
	182814.08	2303091.92	OU4-PO-03-19	OU4-PO-03-19	
	182707.68	2302972.71	OU4-PO-03-20		
	182607.50	2302859.71	OU4-PO-03-21		
	182778.61	2303020.39	OU4-PO-03-22		
	182725.42	2302865.42	OU4-PO-03-23		
	182885.00	2303056.16	OU4-PO-03-24		
	182728.04	2302913.11	OU4-PO-03-25		
	182781.24	2302984.63	OU4-PO-03-26		
	182994.02	2303032.32	OU4-PO-03-27		
	182745.78	2303127.68	OU4-PO-03-28		
	182639.38	2302954.83	OU4-PO-03-29	OU4-PO-03-29	
	182798.97	2302859.46	OU4-PO-03-30		
OU4-PO-04	183004.01	2303259.52	OU4-PO-04-01		OU4-PO-04(0-1)
	183056.43	2303232.57	OU4-PO-04-02		
	182859.85	2303124.76	OU4-PO-04-03		
	182977.80	2303340.39	OU4-PO-04-04		
	183095.74	2303070.85	OU4-PO-04-05	OU4-PO-04-05	
	182899.17	2303286.48	OU4-PO-04-06		
	183017.11	2303178.66	OU4-PO-04-07	OU4-PO-04-07	
	182916.64	2303219.09	OU4-PO-04-08		
	183034.59	2303111.28	OU4-PO-04-09		
	183105.66	2303120.08	OU4-PO-04-10		
	182877.33	2303165.19	OU4-PO-04-11		
	182995.27	2303380.82	OU4-PO-04-12		
	183113.21	2303030.42	OU4-PO-04-13		
	182811.80	2303246.05	OU4-PO-04-14		
	182929.75	2303138.23	OU4-PO-04-15	OU4-PO-04-15	
	183047.69	2303353.86	OU4-PO-04-16	OU4-PO-04-16	
	182969.06	2303299.96	OU4-PO-04-17		
	183087.00	2303192.14	OU4-PO-04-18		
	182942.85	2303305.01	OU4-PO-04-19		
	183060.80	2303035.47	OU4-PO-04-20		
	182864.22	2303251.10	OU4-PO-04-21		
	182982.17	2303143.29	OU4-PO-04-22		
	183021.48	2303224.15	OU4-PO-04-23		
	183038.95	2303278.06	OU4-PO-04-24		
	182842.38	2303170.24	OU4-PO-04-25		
	182960.33	2303385.87	OU4-PO-04-26		
	183078.27	2302995.04	OU4-PO-04-27		
	182881.70	2303210.67	OU4-PO-04-28		
	183070.22	2303145.20	OU4-PO-04-29		
	182934.12	2303264.58	OU4-PO-04-30	OU4-PO-04-30	

Table 4. OU4 Surface Soil Sampling Locations for the Process Area and Pond Area

Exposure Area	Northing (ft)	Easting (ft)	ISM Increment ID	Discrete VOC Sample ID	Composited ISM Sample ID
OU4-PO-05	182556.47	2302514.35	OU4-PO-05-01		OU4-PO-05(0-1)
	182448.04	2302670.35	OU4-PO-05-02		
	182513.09	2302416.84	OU4-PO-05-03		
	182469.72	2302494.85	OU4-PO-05-04		
	182534.78	2302650.85	OU4-PO-05-05	OU4-PO-05-05	
	182599.84	2302455.85	OU4-PO-05-06		
	182433.58	2302611.85	OU4-PO-05-07	OU4-PO-05-07	
	182498.64	2302533.85	OU4-PO-05-08	OU4-PO-05-08	
	182520.32	2302548.47	OU4-PO-05-09		
	182585.38	2302470.47	OU4-PO-05-10	OU4-PO-05-10	
	182476.95	2302626.47	OU4-PO-05-11		
	182542.01	2302431.47	OU4-PO-05-12		
	182480.16	2302665.47	OU4-PO-05-13		
	182545.22	2302411.97	OU4-PO-05-14	OU4-PO-05-14	
	182436.79	2302567.97	OU4-PO-05-15		
	182501.85	2302489.97	OU4-PO-05-16		
	182523.54	2302606.97	OU4-PO-05-17		
	182552.45	2302558.22	OU4-PO-05-18		
	182509.08	2302636.22	OU4-PO-05-19		
	182574.14	2302441.22	OU4-PO-05-20		
	182465.71	2302597.22	OU4-PO-05-21		
	182530.76	2302519.22	OU4-PO-05-22		
	182494.62	2302577.72	OU4-PO-05-23		
	182559.68	2302499.72	OU4-PO-05-24		
	182451.25	2302655.72	OU4-PO-05-25		
	182516.31	2302460.72	OU4-PO-05-26		
	182472.93	2302538.72	OU4-PO-05-27		
	182482.57	2302468.03	OU4-PO-05-28		
	182547.63	2302624.03	OU4-PO-05-29		
	182504.26	2302585.03	OU4-PO-05-30		

Notes:

bgs = below ground surface
ISM = incremental sampling methodology
PO = pond area
PR = process area
VOC = volatile organic compound

Coordinates are presented in North Carolina State Plane, North American Datum 1983.

Table 5. OU2 Proposed Laboratory Methods and Sample Summary

Operable Unit (OU) and Subarea	Sample Type	Depth Increment, Description	Analytes	Method	No. Samples	Field Duplicates [a]	Field Triplicates [a]	Equipment Blanks [b]	Field Blanks (est.) [c]	MS	MSD	Total No. Samples
OU2	Discrete	1-2 ft bgs	Dioxins/Furans	8290A	33	4	na	2	1	2	2	44
		2-3 ft bgs	Archive	na	33	4	na	2	1	2	2	44

Notes:
bgs = below ground surface
MS = matrix spike
MSD = matrix spike duplicate
na = not applicable

[a] Field duplicates/triplicates will be collected at a frequency of 1 per 10 samples for discrete and composite samples.
[b] Equipment blanks will be collected at a frequency of 1 per 20 samples per piece of equipment.
[c] Field blanks will be collected at the rate of one per week.

Table 6. OU4 Proposed Laboratory Methods and Sample Summary

Operable Unit (OU) and Subarea	Sample Type	Depth Increment, Description	Analytes	Method	No. Samples	Field Duplicates [a]	Field Triplicates [a]	Equipment Blanks [b]	Field Blanks (est.) [c]	Trip Blanks [d]	MS [e]	MSD [e]	Total No. Samples
OU4 Eastern Undeveloped Area Boundary	5-point Composite	0-1 ft bgs; one composite from each exposure area	Dioxins/Furans	8290A	4	1	na	1	1	na	1	1	9
			PAHs/SVOCs [f]	8270D	4	1	na	1	1	na	1	1	9
			PCP	8270D SIM	4	1	na	1	1	na	1	1	9
			Arsenic	6010D	4	1	na	1	1	na	1	1	9
			Aldrin	8081B	4	1	na	1	1	na	1	1	9
	Discrete	0-1 ft bgs; one sample from each exposure area	VOCs [g]	8260C	20	2	na	na	1	2	1	1	27
OU4 Former Untreated Wood Storage Area	5-point Composite	0-1 ft bgs; one composite from each exposure area	Dioxins/Furans	8290A	25	3	na	2	1	na	1	1	33
			PAHs	8270D	25	3	na	2	1	na	1	1	33
			PCP	8270D SIM	25	3	na	2	1	na	1	1	33
OU4 Process Area	ISM	0-1 ft bgs; 30 increments collected for each exposure area	Dioxins/Furans	8290A	4	na	0	1	1	na	0	0	6
			PAHs/SVOC [h]	8270D	4	na	0	1	1	na	0	0	6
			PCP	8270D SIM	4	na	0	1	1	na	0	0	6
OU4 Pond Area	ISM	0-1 ft bgs; 30 increments collected for each exposure area	Dioxins/Furans	8290A	5	na	1	1	1	na	1	1	10
			PAHs/SVOCs [f]	8270D	5	na	1	1	1	na	1	1	10
			PCP	8270D SIM	5	na	1	1	1	na	1	1	10
			Arsenic	6010D	5	na	1	1	1	na	1	1	10
			Aldrin	8081B	5	na	1	1	1	na	1	1	10
	Discrete	0-1 ft bgs; 5 samples from each exposure area	VOCs [g]	8260C	25	3	na	na	1	2	2	2	35
OU4 Area within the Floodplain	Discrete	0-1 ft bgs	Dioxins/Furans	8290A	19	2	na	1	1	na	1	1	25
			PAHs/SVOCs [f]	8270D	19	2	na	1	1	na	1	1	25
			PCP	8270D SIM	19	2	na	1	1	na	1	1	25
			Arsenic	6010D	19	2	na	1	1	na	1	1	25
			Aldrin	8081B	19	2	na	1	1	na	1	1	25
			VOCs [g]	8260C	19	2	na	1	1	na	1	1	25

Notes:

bgs = below ground surface
ISM = incremental sampling methodology
MS = matrix spike
MSD = matrix spike duplicate
na = not applicable
PAH = polycyclic aromatic hydrocarbon
PCP = pentachlorophenol
SVOC = semivolatile organic compound
VOC = volatile organic compound

[a] Field duplicates will be collected at a frequency of 1 per 10 samples for discrete and composite samples. Field triplicates will be collected at a frequency of 1 per 10 samples for ISM samples.
[b] Equipment blanks will be collected at a frequency of 1 per 20 samples per piece of equipment. VOC samples will be collected using dedicated sample equipment; therefore, no equipment blanks will be collected.
[c] Field blanks will be collected at the rate of one per week.
[d] Trip blanks will be analyzed for VOC samples at a rate of 1 per cooler of samples.
[e] MS/MSDs will be analyzed at a frequency of 1 per 20 samples per sample type and analyte.
[f] The following SVOCs will be reported: 1,1-biphenyl, carbazole, and dibenzofuran.
[g] The following VOCs will be reported: benzene, ethylbenzene, and total xylenes.
[h] The following SVOC will be reported for Process Area samples: dibenzofuran.

Table 7. Soil Target Parameters, Analytical Methods, and Project Minimum Reporting Limits

Parameter	CAS Number	Method	Units	Lab Method Detection Limit	Lab Reporting Limit
PAHs					
1-Methylnaphthalene	90-12-0	8270D	mg/kg	0.017	0.17
2-Methylnaphthalene	91-57-6	8270D	mg/kg	0.017	0.17
Acenaphthene	83-32-9	8270D	mg/kg	0.018	0.17
Acenaphthylene [a]	208-96-8	8270D	mg/kg	0.017	0.17
Anthracene	120-12-7	8270D	mg/kg	0.019	0.17
Benzo[*a*]anthracene	56-55-3	8270D	mg/kg	0.017	0.17
Benzo[*a*]pyrene	50-32-8	8270D	mg/kg	0.02	0.17
Benzo[*b*]fluoranthene	205-99-2	8270D	mg/kg	0.018	0.17
Benzo[*g,h,i*]perylene [a]	191-24-2	8270D	mg/kg	0.017	0.17
Benzo[*k*]fluoranthene	207-08-9	8270D	mg/kg	0.022	0.17
Chrysene	218-01-9	8270D	mg/kg	0.017	0.17
Dibenz[*a,h*]anthracene	53-70-3	8270D	mg/kg	0.021	0.17
Fluoranthene	206-44-0	8270D	mg/kg	0.017	0.17
Fluorene	86-73-7	8270D	mg/kg	0.018	0.17
Indeno[1,2,3-*cd*]pyrene	193-39-5	8270D	mg/kg	0.02	0.17
Naphthalene	91-20-3	8270D	mg/kg	0.017	0.17
Phenanthrene [a]	85-01-8	8270D	mg/kg	0.017	0.17
Pyrene	129-00-0	8270D	mg/kg	0.019	0.17
Pentachlorophenol	87-86-5	8270D SIM	mg/kg	0.017	0.13
Dioxins					
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	8290A	pg/g	0.5	0.5
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	8290A	pg/g	1.25	2.5
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	8290A	pg/g	1.25	2.5
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	8290A	pg/g	2.5	2.5
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	8290A	pg/g	1.25	2.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	8290A	pg/g	1.25	2.5
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	8290A	pg/g	5	5
Furans					
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	8290A	pg/g	0.25	0.5
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	8290A	pg/g	1.3	2.5
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	8290A	pg/g	2.5	2.5

Table 7. Soil Target Parameters, Analytical Methods, and Project Minimum Reporting Limits

Parameter	CAS Number	Method	Units	Lab Method Detection Limit	Lab Reporting Limit
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	8290A	pg/g	1.3	2.5
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	8290A	pg/g	1.3	2.5
2,3,4,6,7,8-Hexchlorodibenzofuran (HxCDF)	60851-34-5	8290A	pg/g	1.3	2.5
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	8290A	pg/g	1.3	2.5
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	8290A	pg/g	1.3	2.5
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	8290A	pg/g	1.3	2.5
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	8290A	pg/g	2.5	5
SVOCs					
1,1-Biphenyl	92-52-4	8270 D	µg/kg	17	170
Carbazole	86-74-8	8270 D	µg/kg	23	170
Dibenzofuran	132-64-9	8270 D	µg/kg	17	170
VOCs					
Benzene	71-43-2	8260B	µg/kg	1.2	5
Ethylbenzene	100-41-4	8260B	µg/kg	1	5
Total Xylenes	1330-20-7	8260B	µg/kg	2.1	15
Inorganics					
Arsenic	7440-38-2	6010 SO	mg/kg	0.1	0.5
Pesticides					
Aldrin	309-00-2	8081B	µg/kg	0.52	1.7

Notes:

BaP-TEQ = benzo[*a*]pyrene toxicity equivalence
CAS = Chemical Abstracts Service
PAH = polycyclic aromatic hydrocarbon
SVOC = semivolatile organic compound
TCDD TEQ = 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalence
VOC = volatile organic compound

[a] Pyrene used as a surrogate.