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February 18, 2026

Sean Gallagher
NCDEQ – Division of Waste Management
Superfund Section
Special Remediation Branch – Pre-Regulatory Landfill Unit
1646 Mail Service Center
Raleigh, NC 27699-1646

Re: Draft Remedial Action Plan for WDA-B and WDA-C Revision 1
Albemarle Dump
Nanny Drive, Albemarle, Stanly County, North Carolina
Site ID No. NONCD0000571
Task Order No. 571RA-32
Terracon Project No. 71237029C

Dear Mr. Gallagher:

Terracon Consultants, Inc. (Terracon) is pleased to submit this draft Remedial Action Plan (dRAP) for Waste Disposal Area B and Waste Disposal Area C to the North Carolina Department of Environmental Quality (NCDEQ), Division of Waste Management, Superfund Section - Special Remediation Branch, Pre-Regulatory Landfill (PRLF) Unit. This dRAP presents a preliminary design basis and specifications for the selected remedial alternative, as recommended in the Feasibility Study dated April 29, 2025 (Terracon, 2025b). Terracon completed this dRAP in general accordance with the work plan for Task Order 571RA-32 (Draft Remedial Action Plan) dated June 10, 2025, and NCDEQ's Authorization to Proceed dated June 18, 2025.

Terracon appreciates the opportunity to provide this dRAP to the NCDEQ PRLF Unit and looks forward to continuing to work with you on this project. If you have any questions regarding this report, or need additional information, please contact Michael Dail at (984) 202-4055.

Sincerely,

Terracon

For:
Angie Ardila
Staff Environmental Engineer

Donald R. Malone, P.E.
Senior Engineering Consultant

Kyle F. Church
Senior Project Manager

Michael B. Dail, P.G.
Senior Geologist

Attachments: Draft Remedial Action Plan for WDA-B and WDA-C Revision 1

Draft Remedial Action Plan for WDA-B and WDA-C Revision 1

Nanny Drive, Albemarle, Stanly County, North Carolina

Site ID No. NONCD0000571

State Contract No. N42621-A

Task Order No. 571RA-32

February 18, 2026 |Terracon Project No. 71237029C

Prepared By:

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Special Remediation Branch – Pre-Regulatory Landfill Unit

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1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) prepared this Draft Remedial Action Plan (dRAP) for Waste Disposal Area B (WDA-B) and Waste Disposal Area C (WDA-C) at the Albemarle Dump site (Site ID No. NONCD0000571), located in Albemarle, Stanly County, North Carolina. The site location is shown on a United States Geological Survey Topographic Vicinity Map (**Figure 1**).

1.1 Purpose

This dRAP was prepared on behalf of the North Carolina Department of Environmental Quality (NCDEQ), Division of Waste Management (DWM), Superfund Section – Special Remediation Branch, Pre-Regulatory Landfill (PRLF) Unit. This dRAP evaluates and presents a preliminary design basis for the selected remedial alternative, as recommended in the Feasibility Study dated April 29, 2025 (Terracon, 2025b). The NCDEQ PRLF Unit reviewed the Feasibility Study and approved Remedial Alternative B as the preferred remedial action alternative for WDA-B and WDA-C. The general components of Remedial Alternative B include:

- Site controls (erosion-control measures and staging areas);
- Sheet-piling wall to support the northern extents of WDA-B during excavation of chemically impacted soil;
- Temporarily reroute of Nanny Drive on the north side of WDA-B to redirect traffic and avoid the excavation;
- Construct a treatment area within WDA-C to stage the mobile thermal desorption (MTD) units;
- Construct an asphalt pad, or other NCDEQ-approved material, to establish a Corrective Action Temporary Unit (TU) within the bounds of WDA-C for loading untreated soil into the MTD units and for storage of treated soil after processing in the MTD units;
- Excavate approximately 3,200 cubic yards (CY) of chlorinated volatile organic compounds (CVOCs) impacted soil from WDA-B to a depth of 20 feet below ground surface (bgs);
- Temporarily stage CVOC-impacted in the TU – the total daily storage volume will not exceed the daily processing volume of the MTD units;
- Process the CVOC-impacted soil in the MTD units;
- Soil treated within the MTD units will then be placed in a post-treatment TU for treatment confirmation sampling and waste characterization sampling needed for transportation and disposal at a NCDEQ-approved Subtitle D landfill;
- Blend potassium permanganate ($KMnO_4$) into the bottom 5 foot of the excavation;
- Backfill the excavation using soil from an approved on-site borrow area, or other borrow area with the NCDEQ PRLF Unit's prior approval;

- Decontaminate and remove the treatment zone and TU from WDA-C; and
- Construct an earthen cover system over WDA-C.

Terracon developed this dRAP in accordance with the NCDEQ–PRLF Unit's Guidelines for Addressing Pre-Regulatory Landfills and Dumps, dated February 2025 (NCDEQ, 2025c), and is being submitted to the NCDEQ for review and comment. Following NCDEQ input, the dRAP will be advertised for public comment.

1.2 Objectives for the Remedial Action

Terracon prepared this dRAP to evaluate and present a preliminary design for the selected remedial alternative for WDA-B, as recommended in the Feasibility Study dated April 29, 2025 (Terracon, 2025b) and the Evaluation of Remedial Alternatives for WDA-C dated September 22, 2025 (Terracon, 2025e). This dRAP also identifies potential logistical issues that must be resolved in future remedial design planning stages. The proposed remedial actions were developed based on the following:

- The results of remedial investigation activities completed at the site;
- Feedback from the NCDEQ PRLF Unit;
- Conceptual engineering design of the selected remedial alternative;
- Preliminary Erosion and Sediment Control (E&SC) Plan; and
- Existing perpetual land use restrictions for the site parcel.

2.0 REMEDIAL INVESTIGATION SUMMARY

2.1 Site Description and History

The site is located on Nanny Drive, south of Old Herlocker Road and approximately 1 mile west of the intersection of Old Herlocker Road and Old Salisbury Road in Albemarle, North Carolina (**Figure 1**). The property includes both wooded and cleared land (**Figures 2** and **3**), with an intermittent stream (an unnamed tributary to Long Creek) that generally flows westward to a small pond located at the western extent of the site. The land surrounding the site includes residential properties, agricultural, and wooded land. Residential properties are located to the south and west of the site parcel.

Historical records indicate that the City of Albemarle leased the property to a local garbage hauling service, which used the site from approximately 1964 until the late 1970s (AECOM, 2021). Afterward, the disposal material was covered with soil, and the property was sold. Currently, the site is used for residential and agricultural purposes and is zoned as "RA-Residential-Agricultural District" (Stanly County GIS, 2025).

The site includes three separate waste disposal areas (WDA-A, WDA-B, and WDA-C) that were previously identified to occupy 10.47 acres of the overall 77.16-acre parcel (Stanly County Parcel No. 653901079384) owned by Ms. Ruth A. Page Heirs (Stanly County GIS, 2025). **Figure 2** presents a map of the site showing the presumed layout of the waste disposal areas prior to Terracon's investigations in late 2023.

Most of the site is vegetated with trees and grassy areas. The property contains several structures, including a single-family home and detached buildings. Additional site features include Nanny Drive, the realignment of Nanny Drive constructed in September 2024 that runs along the southern side of WDA-C, and an unnamed tributary to Long Creek that bisects the site.

2.2 Geology and Hydrogeology

The site is located in the Piedmont Physiographic Province of North Carolina (Piedmont), which lies between the Blue Ridge Mountains to the west and the Coastal Plain to the east. The Piedmont is characterized by a complex mixture of ancient crystalline rocks, primarily metamorphic and igneous in origin, such as schist, gneiss, granite, and diorite. Bedrock depths vary from the ground surface (at outcrops) to depths of over 70 feet. The bedrock of the Piedmont typically weathers in the shallow subsurface into a variable thickness of unconsolidated material known as the regolith. The regolith may include alluvium, a soil zone, and a zone of weathered, decomposed bedrock referred to as saprolite.

The site lies approximately 3 miles south of the hinge of a major northeast-southwest trending, upright synform known as the New London syncline. Bedrock at the site has been described as part of the mafic and intermediate metavolcanic unit of the Albemarle Group.

However, a geologic contact separating these metavolcanic rocks from the metasedimentary (meta-graywacke) rocks of the Yadkin Formation has been mapped close to the site (North Carolina Geological Survey, 1985).

Consistent with typical groundwater systems of the Piedmont, the water-bearing units at the site include the unconsolidated regolith, a transition zone, and the underlying fractured meta-greywacke, which generally becomes more competent with depth (AECOM, 2021). Groundwater elevations ranged from 468.39 to 553.86 feet above mean sea level (**Figure 3**). The inferred direction of groundwater flow is toward the west toward the discharge boundary to the west (Long Creek) and possibly aligning with the suspected bedding planes beneath the site (AECOM, 2021). Groundwater appears to converge toward the unnamed tributary of Long Creek in the northeast area of the site, likely due to the same hydrogeologic conditions and weathering processes that contributed to forming the tributary (e.g., bedrock fractures, more permeable aquifer matrices). Historical vertical head data suggests downward hydraulic gradients are present beneath and west of WDA-C, due to groundwater recharge and connectivity between the transition zone and the underlying bedrock fractures (AECOM, 2021).

2.3 Sensitive Environments

In June 2011, URS Corporation – North Carolina (URS) conducted an Environmentally Sensitive Area (ESA) assessment to determine whether the site qualified as "Environmentally Sensitive." The results of the assessment were presented in the Remedial Investigation – First Phase Report, submitted to the NCDEQ on October 3, 2011 (URS, 2011), and are summarized below:

- The property drains to Long Creek, located approximately half a mile from the site. According to the 2010 303(d) list of impaired waters reported to the United States Environmental Protection Agency (USEPA), Long Creek is impaired downstream due to standard violation for copper.
- Long Creek is also a tributary of Rocky River, which is listed as impaired in the 2010 303(d) list of impaired waters due to standard violations for copper, zinc, and turbidity.
- Threatened and endangered species with the potential to inhabit the site include:
    - Schweinitz's Sunflower (Helianthus schweinitzii)
    - Yadkin River Goldenrod (Solidago plumose)

2.4 Waste Disposal Areas

Figure 4 shows the updated locations for the three waste disposal areas (WDA-A, WDA-B, and WDA-C) that occupy approximately 10.59 acres of the overall 77.16-acre parcel (Stanly County Parcel No. 653901079384). These WDAs have been delineated and characterized

through multiple remedial investigations (URS, 2011, 2012, 2013a, 2013b, 2014; Terracon, 2024, and 2025a). The findings from these investigations are summarized below:

- WDA-A:
  - WDA-A occupies approximately 9.55 acres in the northeastern portion of the site.
  - An animal burial ground is located in northeastern portion of WDA-A.
  - Waste buried in WDA-A generally consisted of glass, rock, asphalt, fabric, cloth, styrofoam, burnt materials, brick, metal, wood, rubber, newspaper, and a variety of plastics.
  - An estimated 1,000 CYs of surface waste was identified south of the WDA-A boundary, which consisted of metal, construction debris, and household products.
  - Soil cover thicknesses ranged from 0 to 8 feet across the WDA; however, the soil cover thickness was less than 1.5 feet across the majority of the disposal area.
  - Petroleum odors were noted at multiple boring locations across WDA-A, and a free-product petroleum mix was observed in one soil bore at approximately 13 feet bgs.
- WDA-B:
  - WDA-B occupies approximately 0.39 acres in the west-central portion of the site and intersects the newly rerouted Nanny Drive and Stanley Parcel No. 653901074825.
  - Waste buried in WDA-B generally consisted of glass, burnt material, and metal.
  - An estimated 1,100 CYs of surface waste was identified south and west of the WDA-B boundary, consisting primarily of appliances and vehicles.
  - Soil cover thicknesses ranged from 0 to 2 feet across the WDA; however, the cover was less than 1.5 feet across the majority of the disposal area.
  - High concentrations of tetrachloroethene (PCE) and its degradation products, trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE), have been identified in soil samples, indicating that WDA-B is likely the primary source area of contamination. Terracon believes past surface dumping of liquid chemical wastes contributed to the impacts in WDA-B due to the shallow soil impacts.
- WDA-C:
  - WDA-C occupies approximately 0.65 acres in the north-central portion of the site.

- Waste buried in WDA-C generally consisted of metallic objects suspected to be drums, buried reinforced concrete, box spring mattresses, appliances, car parts, coils of chicken wire, metallic pipes, and other similar objects.
- A total volume of 1,535 CYs of metallic waste was estimated in the center and toward the north and northeast of the disposal area.
- Soil borings were not advanced in this disposal area to determine soil cover thickness.
- A soil boring located on the northern boundary of the disposal area exhibited a strong odor and elevated photoionization detector (PID) readings.

URS (2011, 2012, 2013a, 2013b, 2014) conducted geophysical surveying, advanced soil borings, and installed monitoring wells to delineate contamination at the site. The URS-delineated waste disposal areas are shown in **Figure 2**. AECOM acquired URS in 2014 and continued conducting remedial investigations at the site. In the dRAP submitted by AECOM on September 3, 2021 to the NCDEQ PRLF Unit, the proposed remedial actions for the project included rerouting Nanny Drive to avoid the areas containing debris, removing debris and impacted soil from WDA-C, and then backfilling the area with clean soil. These actions were based on AECOM's assumption that WDA-C was the primary source area.

The site was transferred to Terracon in 2023. After reviewing the documents available in the historical record, Terracon proposed passive soil vapor sampling in WDA-B and WDA-C to confirm AECOM's key assumptions. The passive vapor sampling identified unexpectedly high concentrations of CVOCs within WDA-B with the highest concentrations along the northern edge of WDA-B, suggesting that contaminant impacts to WDA-B were not fully delineated (Terracon, 2024).

Subsequent soil and soil vapor sampling in October and December 2023 confirmed that CVOC impacts were significantly greater in WDA-B than in WDA-C with approximately 99 percent (%) of the CVOC mass estimated to reside within and immediately adjacent to the previously delineated WDA-B (Terracon, 2024 and 2025a). As a result, the Terracon proposed to shift the remedial action priority to the northern portion of WDA-B. With approval from NCDEQ PRLF Unit, Terracon shifted the priority of the Feasibility Study (Terracon, 2025b) to screen and select remedial technologies applicable to the remediation of CVOC-impacted soil within WDA-B (**Figure 4**).

2.5 Media Characterization

The following subsections summarize media characterization at the site based on findings from previous remedial investigations.

2.5.1 Waste Characterization

In May 2024, Terracon and Cascade Environmental used a Geoprobe® equipped with a membrane interface / hydraulic profiling tool (MiHPT) to install 26 sample points within WDA-B and the surrounding field to simultaneously collect data on volatile organic compounds (VOCs), soil permeability, and soil type/lithology. Data collected using a halogen-specific detector (XSD) was used to estimate the volume of waste and impacted soil, as the XSD provided the greatest resolution and contrast in the dataset due to the high concentrations of CVOCs in WDA-B. Based on the XSD detector responses, the estimated volume of waste and highly impacted soil in WDA-B likely ranges from 1,400 to 2,500 CYs, corresponding to detector readings between 600,000 and 300,000 microvolts, respectively (Terracon, 2025a).

2.5.2 Soil Characterization

Following the MiHPT investigation, Terracon oversaw M&W Drilling as they advanced 24 soil borings in WDA-B and 6 soil borings in WDA-C, continuing until the Macro-Core® samplers reached refusal at each location. Terracon collected 79 soil samples (plus 2 duplicates) from WDA-B and 14 samples (plus 1 duplicate) from WDA-C, targeting depths and locations based on MiHPT data and PID readings to assess VOC concentrations (Terracon, 2025a).

Chlorinated solvents (including PCE; TCE; cis-1,2-DCE; and vinyl chloride [VC]) exceeded Residential Preliminary Soil Remediation Goals (PSRGs) in multiple samples collected from WDA-B, with PCE concentrations reaching up to 25,700,000 micrograms per kilogram in duplicate sample 571-WDAB-SB-06 (8–10). Other VOCs (including 1,2,4-trimeylbenzene; 1,3,5-trimethylbenzene; ethylbenzene; methylene chloride; naphthalene; and xylenes) were also detected above Residential PSRGs in multiple samples from waste disposal areas WDA-B and WDA-C (Terracon, 2025a).

Additionally, AECOM (2021) conducted an investigation of WDA-A and WDA-B to assess suspected asbestos-containing material (ACM) in site soils. No asbestos was detected in the samples submitted for laboratory analysis. Terracon did not encounter any suspect ACM during subsequent investigations of WDA-B and WDA-C.

2.5.3 Sediment Characterization

According to AECOM's dRAP, a total of 23 sediment samples were collected at 13 sampling locations over a 3-year period (May 2012 to January 2014). In May 2012, 13 sediment samples were collected along the intermittent stream, an unnamed tributary to Long Creek, that generally flows westward to a small pond located at the western extent of the site. These samples were analyzed for VOCs, and the analytical results were compared to the PSRGs. PCE was detected at concentrations that exceeded the Protection of Groundwater PSRGs at sediment sample location S3 and in a duplicate sample collected from location S4 (URS, 2012).

In January 2013, five sediment samples were collected along the intermittent stream and analyzed for VOCs. Results were compared to the Residential, Industrial, and Protection of Groundwater PSRGs. Sediment sample SS-3 exhibited a PCE concentration above the Protection of Groundwater PSRG; however, the concentration was below the Residential and Industrial PSRGs (URS, 2013a).

In January 2014, five sediment samples were again collected along the intermittent stream and analyzed for VOCs. Results were compared to the same PSRG categories. Sediment sample SS-2 exhibited a PCE concentration above the Protection of Groundwater PSRG (URS, 2014).

2.5.4 Groundwater Characterization

As stated in the MiHPT and Waste Characterization Sampling Report submitted by Terracon on January 14, 2025 (Terracon, 2025a), several data gaps remained at the site, including incomplete horizontal and vertical delineation of the extent of groundwater impacts. To date, only limited groundwater assessments have been conducted.

Groundwater samples have been collected on three occasions: May 2012, January 2013, and February 2014 (AECOM, 2021). These sampling events were conducted by URS and documented in the remedial investigation delineation phase reports submitted in November 2012, May 2013, and March 2014 (URS, 2012, 2013a, and 2014). The site currently includes 19 permanent monitoring wells.

During the May 2012 sampling event, one permanent and three temporary monitoring wells were sampled for VOCs, semi-volatile organic compounds (SVOCs), metals, and other general chemical parameters. Analytical results were compared to the Title 15A North Carolina Administrative Code (NCAC) 2L.0202 Groundwater Standards (2L Standards) and background concentrations. Concentrations of arsenic, beryllium, chromium, iron, lead, manganese, and nickel exceeded the 2L Standards in at least one of the groundwater samples. Iron and manganese were considered to be naturally occurring based on literature values for the southeastern region of the United States (URS, 2012).

AECOM (2021) collected groundwater samples in January 2013 and February 2014, which were submitted to a laboratory for VOC analyses. Analytical results were compared to the 2L Standards. Four constituents (PCE; TCE; cis-1,2- DCE; and VC) were detected at concentrations that exceeded the 2L Standards. The highest PCE concentrations were detected downgradient of WDA-C in samples from monitoring well MW-L.

2.5.5 Surface Water Characterization

Surface water samples have been collected along the unnamed tributary to Long Creek, which generally flows westward to a small pond located at the western extent of the site (**Figure 3**). AECOM (2021) collected surface water samples in July 2011, May 2012, January 2013, and January 2014. Generally, surface water samples were collected at five locations (SW-1 through SW-5) during each event. However, samples were collected at 16

locations during the May 2012 sampling event. Analytical results were compared to the Title 15A NCAC 2B.0200 Surface Water Standards (2B Standards). PCE, TCE, and iron were detected at concentrations that exceeded the 2B Standards in one or more surface water samples (AECOM, 2021).

2.5.6 Potable Water Characterization

A total of 38 water supply wells have been identified by previous consultants within 1,000 feet of the site (Schnabel, 2009 and AECOM, 2021). **Figure 3** depicts the locations of these wells. Contaminants of concern (COCs) associated with the site have been detected in groundwater from six downgradient water supply wells (Wells 1, 3, 12, 13, 15, and 28). These wells are equipped with Point-of-Entry (POE) filtration systems, which generally include sediment filters, two or three Granular Activated Carbon (GAC) vessels, and an ultraviolet (UV) filter.

Wells 1, 3, and 15, along with Well 14 (which does not have a POE system), are sampled on a quarterly basis. The additional POE systems (Wells 12, 13, and 28) are sampled on an annual basis. Samples are also collected from fifteen nearby water supply wells (Wells 2, 4, 5, 11, 16, 17, 18, 21, 22, 23, 24, 25, 29, 30, and TBD-4) on an annual basis to monitor contaminant migration.

Terracon conducted a maintenance event for the POE systems from September 29 through October 1, 2025. Maintenance activities included replacing the GAC vessels, sediment filters, and servicing the UV light bulbs and filters. Following the maintenance activities, water samples were collected. The following COCs were present in the influent samples at concentrations that exceeded regulatory standards: benzene; 1,1-dichloroethene; cis-1,2-DCE; naphthalene; PCE; 1,1,2-trichloroethane, TCE; and VC. However; only one effluent sample (Well 1) exhibited detections of COCs at estimated (J-flagged) values. No other effluent sample exhibited COC concentrations above the laboratory's method detection limits; and therefore, no regulatory standards were exceeded. Analytical results from the post-maintenance sampling event were presented in the reports for Task Orders 571WS-26 and 571WS-26a dated November 6, 2025 (Terracon, 2025c). Additionally, in September and October 2025, Terracon completed the annual sampling event for the fifteen water supply wells listed above. Analytical results were presented in the Task Order 571WS-27 report dated November 11, 2025 (Terracon, 2025d). No COCs were detected in the samples at concentrations that exceeded regulatory standards.

2.5.7 Landfill Gas Characterization

The Remedial Investigation – Landfill Gas Sampling Report submitted by URS (2013b) on September 25, 2013, documents the subsurface evaluation of landfill gas conditions both outside and within the waste disposal areas through the installation of landfill gas probes. Eleven soil gas probes (LG-1, LG-2, LG-3, LG-5, LG-6, LG-7, LG-8, LG-9, LG-13, LG-14, and LG-15) were installed in April 2013. Due to water intrusion into the borings, five landfill gas

probes (FC-1, LG-10-FC, LG-11-FC, LG-12-FC, and LG-14-FC) were manually installed as flux chambers within WDA-A and WDA-B.

Gas probe samples were analyzed for VOCs, and the analytical results were compared to the Residential and Industrial/Commercial Vapor Intrusion Screening Levels (VISLs). Several VOCs were detected above the Residential VISLs. Additionally, acrolein was detected above the Industrial/Commercial VISLs.

Due to the acrolein exceedances, URS conducted a second sampling event in June 2013 to verify the presence of the compound. Nine gas probe samples (LG-1, LG-2, LG-3, LG-5, LG-6, LG-7, LG-8, LG-9, and LG-15) and one duplicate sample (LG-DUP) were collected during the June 2013 resampling event. These samples were analyzed for VOCs. Chlorobenzene; chloroform; 1,4-dichlorobenzene; 1,1-dichloroethane; ethylbenzene; m&p xylenes; 1,2,4-trimethylbenzene; PCE; TCE; and VC were detected above the Residential VISLs, and Freon 113 was detected above the Industrial/Commercial VISLs. Acrolein was not detected in the June 2013 samples; therefore, the acrolein detections in the April 2013 samples were considered anomalous (URS, 2013b).

2.6 Contaminants of Concern

VOCs and metals have been detected above their applicable regulatory thresholds across multiple media and sampling events over several years. PCE and its degradation products, TCE; cis-1,2-DCE; and VC have consistently been detected at elevated concentrations in various media. PCE has been identified as the primary COC for the site. **Table 1** summarizes the site's COCs by media.

3.0 FEASIBILITY STUDY

Terracon submitted a Feasibility Study to the NCDEQ PRLF Unit on April 29, 2025, to screen and select remedial alternatives for WDA-B. The Feasibility Study focused solely on subsurface contamination of CVOCs, and not on domestic waste identified near the land surface of the south side of WDA-B. The following sections describe the feasibility study development process, as well as the description and evaluation of the remedial technologies considered.

3.1 Feasibility Study Development Process

Terracon identified various remedial technologies applicable to the site based on a combination of experiences at similar sites, professional judgment regarding technical feasibility, knowledge of site-specific conditions, and feedback/guidelines from NCDEQ PRLF Unit. Site-specific conditions, constraints, and logistical, environmental, and engineering challenges limited the number of feasible remedial technologies and process options. The following factors were considered in the remedial technology selection:

- Proximity to environmentally sensitive areas (i.e., wetlands, residential neighborhoods);
- Time required for site stabilization;
- Long-term stability and resistance to weathering;
- Complexity of implementation;
- Protection from human interferences;
- Logistical challenges of structural fill and aggregate borrow locations/sources;
- Volumes and costs of required materials; and
- Costs and labor required for installation.

3.2 Remedial Technology Descriptions

3.2.1 Soil Cover

A soil cover system is an engineered solution used to isolate waste materials from the surrounding environment, typically applied over landfills, contaminated sites, or other waste containment areas. It can serve as a barrier to water infiltration, gas emissions, and physical disturbance, and often supports vegetation to enhance ecological restoration.

In a typical soil cover remedy, a geotextile layer is placed directly over the waste to act as a visual and physical indicator of the waste boundary. This is followed by the placement of approximately 12 inches of soil, with the uppermost 6 inches consisting of topsoil or amended fill designed to support plant growth. The geotextile provides separation and demarcation between the waste and the cover materials, helping to maintain the integrity of the system.

Depending on site-specific conditions and regulatory requirements, additional components such as low-permeability barriers (e.g., compacted clay or geomembranes), drainage layers, and gas venting systems may be incorporated to enhance performance. The final design aims to minimize infiltration, promote surface stability, and support long-term site management. Successful implementation also includes vegetation establishment and routine monitoring to ensure the cover remains effective over time.

3.2.1 Cellular Confinement System

Cellular confinement systems (CCS), also known as geocells, are lightweight, expandable, three-dimensional honeycomb-like structures typically made from high-density polyethylene (HDPE). These systems form a grid of interconnected cells that confine and stabilize infill materials, enhancing the strength and stability of cohesionless soils across a wide range of applications.

The CCS grids are generally 8 to 10 feet wide and 12 to 60 feet long. They require tendons, ties, or keys to connect adjacent panels and are anchored using various devices, such as stakes or driven anchors, depending on site conditions. Each cell is filled with materials such as soil, aggregate base course (ABC), or #57 stone, based on the product type, manufacturer specifications, or cover system use cases beyond covering the disposal area such as parking areas or maintenance roads.

3.2.2 Excavation

An excavation typically begins with thorough site preparation, including surveying the area, marking excavation boundaries, and identifying underground utilities to prevent damage. The excavation would then be performed using heavy equipment such as excavators. To ensure safety and facilitate access, sidewalls would be sloped, especially in deeper excavations.

Excavated soil within the defined boundary of WDA-B would be live loaded into trucks, hauled to the treatment area within WDA-C, and loaded into the TU to prevent runoff and cross contamination. During this phase, the soil would be screened and sampled on a periodic basis to determine contaminant concentrations prior to treatment in the MTD units. Based on analytical results of post-treatment soil samples, the soil would be transported off-site for disposal at the appropriate landfill. Hazardous soil would be sent to a Subtitle C landfill, while non-hazardous soil would be disposed in a Subtitle D landfill.

After the contaminated soil is removed, the excavation area would be backfilled with pre-approved fill material from the borrow area and compacted in layers to restore the proposed grade. The site would then be regraded and stabilized, with either vegetation or pavement, to prevent erosion and support future land use. Throughout the process, detailed documentation would be maintained, including field logs, sampling data, transport manifests, and final confirmation sampling results to verify the effectiveness of the remediation strategy.

3.2.3 Soil Mixing with $KMnO_4$

Soil mixing with $KMnO_4$ is a chemical oxidation technique used to remediate soil impacted by CVOCs, particularly chlorinated solvents like PCE and TCE. The process involves mechanically blending $KMnO_4$ into contaminated soil to promote in situ chemical oxidation (ISCO), which breaks down high toxicity compounds into less toxic or non-toxic byproducts. The PCE–$KMnO_4$ reaction is aqueous-based and proceeds through the oxidation and/or hydrolysis reaction pathways. The reaction rates are greatly influenced by the acidity of the reaction solution (Haung et al., 2002). In pH ranges between 3 and 7 standard units (s.u.), the reaction yields carbon dioxide (CO_2) as gas and oxalic, formic, and glycolic acids. Under acidic conditions (e.g., pH <3 s.u.), the oxidation pathway would dominate and PCE would be directly mineralized into CO_2 and chloride. Under neutral to alkaline conditions (e.g., pH between 7 and 10 s.u.), the hydroxylation pathway dominates the reaction and PCE would be primarily transformed into oxalic acid prior to complete PCE mineralization. The chlorine atoms in PCE should be rapidly liberated during the reactions and the rates of chloride production would be close to the rate of PCE degradation.

The procedure for applying and blending the $KMnO_4$ would begin by using an excavator with bucket or specialized mixing attachments to blend a $KMnO_4$ solution into the excavation bottom, after achieving the target excavation depth of approximately 20 feet bgs. $KMnO_4$ would be applied at a specified loading rate, commonly around 1% by weight. However, the actual loading rate would be determined following a Natural Oxidant Demand (NOD) test. The oxidant would be mixed thoroughly into the soil to ensure uniform distribution and to maximize contact with the contaminants.

After mixing the $KMnO_4$ solution into the soil, it would react with the CVOCs, initiating a reduction-oxidation (redox) reaction that degrades contaminants through the previously described pH-dependent pathways. These reactions can occur rapidly, depending on soil permeability, moisture content, and contaminant type. In some cases, $KMnO_4$ may also migrate into the saturated zone, offering additional benefit of in situ groundwater treatment.

3.2.4 Mobile Thermal Treatment Units

MTD units are portable systems designed to remediate impacted soil by applying energy, typically in the form of steam or hot air, which increases the temperature of the soil and causes the CVOCs to volatilize. This process vaporizes the contaminants, effectively separating them from the solid material. Off-gases are often transferred to a recovery unit for processing and potential reuse. At sites with high concentrations of organic off-gases, the gas may be cooled and condensed back into liquid, which can be reused or treated. If contaminant concentrations are sufficiently low and dust is not a concern, the off-gases may be released untreated into the atmosphere (USEPA, 2021).

There are several types of portable thermal desorption systems, with designs varying based on the method of heat transfer to the impacted soil and the type of off-gas treatment

system used. Terracon recommends using portable MTD units capable of treating off gases to avoid releasing emissions into the atmosphere.

3.3 Remedial Alternative Descriptions

With prior input from NCDEQ PRLF, Terracon selected two primary remedial technology alternatives for further evaluation and development within the Feasibility Study. These alternatives are briefly described below:

- Remedial Alternative A: Excavate and remove impacted soils for disposal at a NCDEQ-approved Subtitle C landfill, permitted to receive hazardous waste. $KMnO_4$ would be blended into the bottom of the excavation, followed by backfilling with soil from an approved borrow area. An earthen cover system would then be installed over WDA-C.
- Remedial Alternative B: Similar to Remedial Alternative A, except the excavated soil would be treated at the site using the MTD treatment units. The treated soil would then be transported to and disposed of at a NCDEQ-approved Subtitle D landfill, permitted to receive only non-hazardous waste.

3.3.1 Remedial Alternative A: Excavation with Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Remedial Alternative A involves the excavation of approximately 3,200 CYs of impacted soil from the CVOC Impact Area of WDA-B (**Figure 4**). Terracon estimated the total excavated soil volume at 6,700 CYs (or 10,100 tons), including approximately 3,500 CYs (5,250 tons) of soil from the cut-back slope of the excavation sidewalls outside the defined CVOC Impact Area of WDA-B.

Terracon is planning to conduct a geotechnical assessment along the lateral edges of the CVOC Impact Area to determine the specifications and recommended methods for stabilizing the excavation sidewalls using benching or sloping. The assessment would also include soil sampling to pre-characterize soil from the cut-back slope and untreated soil for disposal. In addition, soil and groundwater samples will be collected from the highly impacted areas of WDA-B to perform a bench-scale NOD test. For the purposes of the preliminary design and cost estimate herein, Terracon presumes the sidewalls of the excavation would have a 45-degree slope (1:1 Rise-to-Run) to approximately 20 feet bgs to provide access to deeper impacted soils. Additionally, approximately 120 linear feet of sheet piling would be used to stabilize the side wall on the north side of the CVOC Impact Area, immediately adjacent to the Nanny Drive re-route (**Figure 5**).

Based on the existing analytical datasets (Terracon, 2024 and 2025a), Terracon presumes that 100% of the soil that exceeded the Non-Residential PSRGs would be classified as hazardous, and that 50% of the soil exceeding the Residential PSRGs would be hazardous. As mentioned above, soil generated from the cut-back slope would be pre-characterized to

support a Contained-In Determination (see **Section 3.4.2**) and evaluate whether it can be re-used as backfill for the excavation. Soil from the cut-back slope that is not impacted by VOCs would be temporarily stockpiled at the site and re-used as backfill for the excavation. Hazardous soil would be transported to a Subtitle C landfill, presumably Republic Services Subtitle C Landfill in Belleville, Michigan (USEPA ID# MID048090633), while non-hazardous soil would be disposed of at a Subtitle D landfill in North Carolina, presumably at the Uwharrie Environmental Landfill (UEL) in Mount Gilead, North Carolina, operated by Republic Services.

Prior to backfilling, $KMnO_4$ would be blended into the base of the excavation to a depth of approximately 5 feet (i.e., from 20 to 25 feet bgs), at an estimated loading rate of approximately 1% by weight. The actual loading rate would be determined following the NOD test. $KMnO_4$ would chemically oxidize the residual CVOCs in the soil to accelerate the decomposition of chlorinated solvents and potentially reduce the rate of leaching to groundwater. Following soil mixing, the excavation would be backfilled with soil from an on-site borrow area (**Figure 5**), or another NCDEQ-approved borrow source.

As part of this alternative, Terracon proposes to install an earthen cover system over WDA-C. The soil cover system would act as a barrier to reduce the potential for infiltration of stormwater from precipitation, as well as prevent digging and direct contact with the underlying waste. An impermeable geomembrane would be placed directly over the waste, followed by 12 inches of soil, with the uppermost 6 inches consisting of topsoil or amended fill to support vegetation growth. The impermeable geomembrane would provide both physical separation between the waste and the cover materials and functional protection by maintaining the integrity of the system. It would also serve to prevent water infiltration and retard the pathway for subsurface gases to impact ambient air above the disposal area, contributing to long-term environmental protection and site stability.

Remedial Alternative A could be completed within a relatively short timeframe (i.e., 5 to 6 months after mobilization), without requiring long-term management, treatment system operations, or long-term monitoring of soil. Additionally, some $KMnO_4$ may leach into the saturated zone, potentially contributing to partial remediation of CVOCs in groundwater beneath the treatment area. However, disposal of characteristically hazardous waste would necessitate transportation to a Subtitle C landfill, increasing both transportation time and risk, as well as significantly elevating disposal costs.

3.3.2 Remedial Alternative B: Excavation with On-Site Treatment Followed by Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Remedial Alternative B is similar to Remedial Alternative A, except the excavated soil would be treated at the site using the MTD treatment units to reduce concentrations to below hazardous levels. The excavation rates would be controlled during the operational phase of the project to minimize the accumulation of untreated soil in the TU. Remedial Alternative B includes the installation of a treatment area for the operation of the MTD units and soil

staging within the TU. Terracon would utilize WDA-C as the designated treatment area. To establish the treatment zone, a geotextile layer would be placed directly over the compacted waste, followed by a 4-inch layer of gravel or ABC. The MTD units and the TU would be staged directly on top of the aggregate layer. A small asphalt pad (2,500 square feet), or other NCDEQ-approved material, would be constructed to establish the TU within the bounds of WDA-C for loading untreated soil into the MTD units. The TU would be installed within part of WDA-C to prevent mixing of aggregate and soil during daily loading of untreated soil into the MTD units. The treated soil would be transported to and disposed of at a NCDEQ-approved Subtitle D landfill, presumably the UEL in Mount Gilead, North Carolina.

Once the implementation activities for WDA-B are complete and all treated soil has been removed, the TU would be decontaminated and demolished. A composite sample would then be collected of the demolition debris for characterization of the material prior to disposal. For planning and costing purposes, Terracon assumed the TU would be impacted by the treatment operations; and therefore, disposed at the UEL in Mount Gilead, North Carolina. The underlying aggregate layer would remain in place and serve as an additional component of the cover system for WDA-C. The cover system would consist of the existing aggregate layer followed by an impermeable geomembrane and approximately 8 inches of soil from the approved on-site borrow area. The uppermost 6 inches would consist of topsoil, or amended fill, to support vegetation growth.

Similar to Remedial Alternative A, $KMnO_4$ would be blended into the base of the excavation to a depth of approximately 5 feet, at an estimated loading rate of approximately 1% by weight. The actual loading rate would be determined following the NOD test. $KMnO_4$ would chemically oxidize the residual CVOCs in the soil to accelerate the decomposition of chlorinated solvents and potentially reduce the leaching rate to groundwater. Following soil mixing, the excavation would be backfilled with soil from the on-site borrow area (**Figure 5**), or other NCDEQ-approved on-site or off-site borrow sources.

Remedial Alternative B could be completed within a relatively short timeframe, approximately 8 to 9 months following mobilization. It offers the advantages of lower transportation and disposal costs, and reduced risk of accidental releases, due to the elimination of characteristically hazardous waste during transport. These factors significantly reduce the logistical complexities, risks, and costs associated with off-site disposal.

3.4 Remedial Alternatives Evaluation

The following subsections compare Remedial Alternatives A and B against the feasibility study criteria described in the Guidelines for Addressing Pre-Regulatory Landfills and Dumps (2025), which include the following:

- Overall protection of human health and the environment;
- Compliance with applicable or relevant and appropriate requirements (ARARs);

- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume through treatment;
- Short-term effectiveness;
- Implementability;
- Acceptance by state regulatory agencies;
- Community acceptance; and
- Cost.

This comparison was initially presented in the Feasibility Study (Terracon, 2025b) but updated herein based on the current preliminary design basis for the remedial strategies in the dRAP.

3.4.1 Overall Protection of Human Health and the Environment

Remedial Alternative A: Excavation with Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Excavation would remove contaminated soils from the site, significantly reducing the risk of human exposure to CVOCs. By eliminating direct contact with the contamination, this approach would be protective of both human health and the environment. Terracon expects the excavated material would be characteristically hazardous (if untreated); and therefore, potential off-site risks would exist during transport of the wastes to an off-site Subtitle C landfill, presumably Republic Services Subtitle C Landfill in Belleville, Michigan (USEPA ID# MID048090633). Potential risks include accidental releases during transit and possible long-term environmental impacts to soil and groundwater if the landfill containment systems (e.g., liners) fail.

The blending of $KMnO_4$ into the soil at the base of the excavation is intended to accelerate the degradation of CVOCs in residual soils left in the bottom of the excavation. This treatment reduces the potential for CVOCs to leach into underlying groundwater, thereby enhancing the overall protection of the remedy. The oxidation process breaks down CVOCs into non-toxic compounds, further mitigating risks to human health and the environment.

Remedial Alternative B: Excavation with On-Site Treatment Followed by Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

In contrast to Remedial Alternative A, Remedial Alternative B would use portable MTD units to lower CVOC concentrations to below hazardous levels. The treated soil would be less contaminated and could be sent to a nearby Subtitle D landfill in North Carolina, lowering transport-related risks due to its proximity to the site and lower CVOC concentrations. The treated soil would be temporarily stored on site in the TU until the laboratory analytical results confirm attainment of the cleanup goals. Therefore, careful management of the soil in the TU would be required to reduce the risks to human health and the environment.

3.4.2 Compliance with ARARs

During NCDEQ approval of this dRAP, the plan will be subject to regulatory review and approval to ensure compliance with ARARs prior to implementation of the selected remedy. In accordance with the Land Disposal Restrictions (LDR) program under Title 40 Code of Federal Regulations (CFR) Part 268 (USEPA, 1998), a Contained-In Determination is proposed for soil outside of the primary excavation zone for WDA-B (i.e., soil within the cutback slope required to stabilize the excavation sidewalls). Consistent with the Contained-In Policy and Land Disposal Restrictions: Summary of Requirements (USEPA, 2001), soil is no longer subject to regulation as hazardous waste or the LDRs when:

- it no longer exhibits hazardous waste characteristics or
- constituent concentrations are below site-specific risk-based levels.

This Contained-In Determination is appropriate given that the solvents disposed in WDA-B were land applied between 1964 and the late 1970s (AECOM, 2021), and preceded the implementation of USEPA's LDR program in 1986 under 40 CFR 268. **Section 4.5** describes Terracon's procedures for evaluating whether soil outside the defined CVOC Impact Area of WDA-B exhibits hazardous waste characteristics or exceeds site-specific risk-based levels. Acceptance of this dRAP report would indicate concurrence with the proposed approach regarding the re-use of soil within the cut-back slope as backfill. This process is consistent with NCDEQ's "Contained-In" Policy for Excavated Contaminated Soil that Contains a Listed Hazardous Waste dated January 24, 2025 (NCDEQ, 2025b), and NCDEQ's Hazardous Waste Generator Closure Guidelines dated January 14, 2025 (NCDEQ, 2025a).

3.4.3 Long-Term Effectiveness and Permanence

Excavation offers rapid and permanent removal of contamination from the site. The effectiveness of this approach depends on a thorough understanding of site conditions, the accuracy of the source area model, and the skill of the equipment operator. The blending of $KMnO_4$ into the soil left at the bottom of the excavation offers a relatively low-cost and straightforward supplemental method for addressing residual CVOC contamination in the source area. The oxidation process would continue until the $KMnO_4$ is depleted or no longer in contact with the contaminants, contributing to further degradation of CVOCs and enhancing the overall effectiveness of the remedy.

Both remedial alternatives present effectiveness and permanent long-term remedies for the site. However, Remedial Alternative B presents a more permanent remedial solution, as it would remove most of the contaminants from the soil prior to off-site disposal. In contrast, Remedial Alternative A involves off-site disposal of the impacted soil in a Subtitle C landfill, which just relocates the contaminants to a more secure long-term storage unit. Long-term environmental impacts to soil and groundwater beneath the landfill could occur if the containment systems (e.g., liners) fail.

3.4.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Remedial Alternative A: Excavation with Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Excavation reduces contaminant mobility and volume through the physical removal of impacted soil from the site. After the soil is transported off the site, the receiving Subtitle C Landfill would become responsible for managing the toxicity and mobility of the excavated material in accordance with regulatory requirements.

The mixing of $KMnO_4$ at the base of the excavation would provide an additional treatment mechanism to target residual contamination remaining at the bottom of the excavation. This chemical oxidation process would reduce the toxicity of CVOCs remaining at the bottom of the excavation by breaking them down into non-toxic byproducts; thereby enhancing the overall effectiveness of the remedy.

Remedial Alternative B: Excavation with On-Site Treatment Followed by Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Remedial Alternative B builds upon the benefits of Remedial Alternative A by incorporating on-site thermal desorption of the CVOCs, which should significantly reduce both the concentration and toxicity of impacted soils. On-site treatment allows the soil to be disposed in a Subtitle D landfill in North Carolina, closer to the site, while avoiding permanent relocation to a Subtitle C landfill as included in Alternative A.

3.4.5 Short-Term Effectiveness

Both remedial alternatives include excavation and the blending of $KMnO_4$ into the base of the excavation. These combined remedies would quickly reduce CVOC concentrations in on-site soil and provide additional short-term effectiveness by chemically oxidizing residual contamination remaining in the base of the excavation. Terracon anticipates that the oxidation process to occur over a 4- to 6-month period, depending on site-specific conditions and the extent of residual CVOCs.

3.4.6 Implementability

Remedial Alternatives A and B are both readily implementable using typical construction and remediation techniques. Prior to the implementation of either remedial alternative, site preparation activities would be conducted, including surveying, marking excavation boundaries, and implementing erosion and sediment control (E&SC) measures to minimize the potential for silt-laden runoff to impact downgradient areas. Nanny Drive and Stanley Parcel No. 653901074825 encumber the northern side of the excavation. Therefore, a portion of Nanny Drive would be temporarily rerouted to redirect traffic and avoid the excavation. Sheet piling would be used to stabilize the excavation side wall immediately adjacent to Nanny Drive.

As mentioned above, soil generated from the cut-back slope would be pre-characterized to support a Contained-In Determination and evaluate whether it can be re-used as backfill for the excavation. Soil from the cut-back slope that is not impacted by VOCs would be temporarily stockpiled at the site and re-used as backfill for the excavation.

Terracon would also conduct a geotechnical assessment along the lateral edges of the CVOC Impact Area (i.e., in the cut-back slope) to determine the specifications and recommended methods for stabilizing the excavation sidewalls using benching or sloping. The assessment would include the collection of:

- Soil samples to pre-characterize soil from the cut-back slope to support a Contained-In Determination (see **Section 3.4.2**) and evaluate whether it can be re-used as backfill for the excavation.
- Soil samples from the middle of WDA-B that exhibited with greatest COC concentrations (Terracon, 2025a) to begin the waste profiling process for off-site disposal.
- Soil and groundwater samples for bench-scale NOD testing.

For the purposes of the preliminary design and cost estimate herein, Terracon presumes the sidewalls of the excavation would have a 45-degree slope (1:1 Rise-to-Run) to approximately 20 feet bgs to provide access to deeper impacted soils (**Figure 6**). Additionally, approximately 120 linear feet of sheet piling would be used to stabilize the side wall on the north side of the CVOC Impact Area, immediately adjacent to the Nanny Drive re-route (**Figure 5**). Including soil from sloping, Terracon estimates up to 6,700 CYs (10,100 tons) of soil would be excavated. Of this total, approximately 3,500 CY (5,250 tons) of soil from the cut-back slope would be managed under the Contained-In Policy and, therefore, would not require treatment or off-site disposal.

Before backfilling, $KMnO_4$ would be blended into the bottom 5 feet of the excavation (20 to 25 feet bgs) at an estimated loading rate of approximately 1% by weight. The actual loading rate would be determined following the NOD test. Soil from a pre-approved borrow area would be used to backfill the excavation and compacted in lifts to restore grade. The ground surface surrounding the excavation would be re-graded to promote positive runoff from the excavation area and the stabilized with vegetative cover to prevent erosion and support future land use.

Remedial Alternative A: Excavation with Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Remedial Alternative A does not include treatment prior to off-site disposal. Hence, Terracon evaluated analytical data to estimate the volume of hazardous and non-hazardous soil. Based on the evaluation, Terracon presumed that 100% of the soil that exceeded the Non-Residential PSRGs would be classified as hazardous, and that 50% of the soil exceeding the Residential PSRGs would also be hazardous. Soil generated from sloping of the excavation sidewalls would be managed under the Contained-In Policy, and therefore, would not

require treatment or disposal. The sloped soil would be temporarily stockpiled and re-used as backfill for the excavation. Hazardous soil would be transported to a Subtitle C landfill, presumably Republic Services Subtitle C Landfill in Belleville, Michigan (USEPA ID# MID048090633), while non-hazardous soil would be disposed of at a Subtitle D landfill in North Carolina.

As part of this alternative, Terracon proposes to install earthen cover system over WDA-C. The soil cover system would act as a barrier to reduce the potential for infiltration of stormwater from precipitation, as well as prevent digging and direct contact with the underlying waste. An impermeable geomembrane would be placed directly over the waste, followed by 12 inches of soil, with the uppermost 6 inches consisting of topsoil or amended fill to support vegetation growth.

Remedial Alternative B: Excavation with On-Site Treatment Followed by Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Remedial Alternative B is similar to Remedial Alternative A, except the excavated soil would be treated on the site using portable MTD treatment units to reduce concentrations to below hazardous levels. The excavation rates would be controlled during the operational phase of the project to minimize the accumulation of untreated soil in the TU.

Remedial Alternative B also includes the installation of a treatment area for the operation of the MTD units and soil contained in the TU. Terracon would utilize WDA-C as the designated treatment area. To establish the treatment zone, a geotextile layer would be placed directly over the compacted waste, followed by a 4-inch layer of gravel or ABC. The MTD units and the TUs would be staged directly on top of the aggregate layer. To prevent mixing of aggregate and soil during daily loading untreated soil into the MTD units, an asphalt pad would be installed. The treated soil would be transported to and disposed of at a Subtitle D landfill, presumably the UEL in Mount Gilead, North Carolina.

After the implementation activities for WDA-B are complete and all treated soil has been removed, the TU would be demolished. A composite sample would be collected for characterization of the material prior to disposal. However, for planning and costing purposes, Terracon assumed that the TU would be impacted by the treatment operations; and therefore, the debris would be disposed at the UEL in Mount Gilead, North Carolina. The underlying aggregate layer would remain in place and serve as an additional component of the soil cover system for WDA-C. The cover system would consist of the existing aggregate layer followed by an impermeable geomembrane and approximately 8 inches of soil from the approved on-site borrow area. The uppermost 6 inches consisting of topsoil or amended fill to support vegetation growth.

Remedial Alternative B could be completed within a relatively short timeframe, approximately 8 to 9 months following mobilization. It offers the advantages of lower transportation and disposal costs, and reduced risk of accidental releases due to the

elimination of characteristically hazardous waste during transport. These factors significantly reduce the logistical complexities, risks, and costs associated with off-site disposal.

3.4.7 Acceptance by State Regulatory Agencies

The NCDEQ PRLF Unit has reviewed the Feasibility Study submitted on April 29, 2025, and has approved Remedial Alternative B as the remedial action for the site. This dRAP is being submitted to the NCDEQ for review and approval.

3.4.8 Community Acceptance

Both alternatives would impact traffic along Nanny Drive and within Stanley Parcel No. 653901074825. To accommodate this, Nanny Drive would be temporarily rerouted to redirect traffic away from the excavation area. **Figure 5** illustrates the preliminary layout of the 10-foot-wide temporary road, which is designed to bypass the excavation zone. Sheet piling would extend above grade along the north side of the excavation to prevent unauthorized access. Clear signage would be installed to mark the detour and guide traffic safely along the temporary route.

Remedial Alternative A: Excavation with Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

Excavation is a widely accepted industry-standard remedy and provides a straightforward, visible method for source area removal. Community members will be able to observe the impacted soils being physically removed from their property, which can help build trust and transparency in the remediation process. Similarly, ISCO is a commonly used technique for the remediation of CVOCs. In this case, soil mixing at the bottom of the excavation offers a practical and cost-effective method to introduce $KMnO_4$ into the subsurface, eliminating the need for more expensive and time-consuming injection methods.

Remedial Alternative B: Excavation with On-Site Treatment Followed by Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

In addition to the benefits mentioned above for Remedial Alternative A, the MTD treatment units typically offer a self-contained, emission-free design for treating impacted soils prior to disposal. Contaminants are adsorbed onto GAC or other adsorbent filter media, effectively eliminating potential emission sources and making the process more acceptable to the local community. To minimize environmental and community impacts during treatment, soil in the TU would be covered with plastic sheeting and properly maintained. This would help prevent the migration of impacted soils beyond the boundaries of the treatment area within and reduce the potential for odor-related concerns from nearby residents.

3.4.9 Cost

The estimated costs for Remedial Alternatives A and B are summarized below.

Remedial Alternative A: Excavation with Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

- Probable estimated cost: $6,500,000 (+/- 30%)
- Estimated schedule:
  - Remedial Design, Planning, and Contracting: 6 months
  - Remedial Oversight and Field Activities: 5 to 6 months
  - Prepare Closure Report for the Remedial Alternative: 3 to 4 months

Remedial Alternative B: Excavation with On-Site Treatment Followed by Off-Site Disposal and $KMnO_4$ Blending at the Excavation Base

- Probable estimated cost: $5,650,000 (+/- 30%)
- Estimated schedule:
  - Remedial Design, Planning, and Contracting: 6 months
  - Remedial Oversight and Field Activities: 8 to 9 months
  - Prepare Closure Report for the Remedial Alternative: 3 to 4 months

The Feasibility Study estimated costs of $4,925,000 (+/– 30%) for Remedial Alternative A and $3,950,000 (+/– 30%) for Remedial Alternative B. The cost estimates in the dRAP have been updated to incorporate additional scope intended to improve:

- Overall protection of human health and the environment;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume through treatment;
- Short-term effectiveness;
- Implementability; and
- Community acceptance.

The updated estimates include the following additional scope items:

- Incorporation of a WDA-C closure system;
- A redesigned treatment area, which includes a temporary asphalt pad;
- Installation of impermeable liners over WDA-B and WDA-C;
- Expanded E&SC measures;
- Enhanced excavation management (e.g., Sheet piling/road reroute, cutbacks etc.); and
- Additional labor and expense costs due to the anticipated longer duration required to implement the above.

4.0 PRELIMINARY ENGINEERING DESIGN

NCDEQ PRLF Unit selected Remedial Alternative B as the preferred remedial action for the WDA-B, based on the results of the prior Remedial Investigations (URS, 2011, 2012, 2013a, 2013b, 2014; Terracon, 2024, and 2025a), NCDEQ policies, and the evaluation of alternatives in the Feasibility Study (Terracon, 2025b). The following sections present the preliminary conceptual engineering design for the proposed remedy, including, where applicable, an evaluation of its potential impact on sensitive environments. The specific features of the remedy are listed below:

1. Clear the proposed area of disturbance of woody vegetative material, including roots;
2. Install and maintain E&SC measurements during construction;
3. Grading and road construction, including temporary road reroute;
4. Construct treatment area (WDA-C);
5. Soil excavation and treatment;
6. Soil mixing with $KMnO_4$;
7. Fill material and compaction;
8. Restoration of the site, including fine grading and stabilizing areas with climate appropriate vegetative cover to comply with E&SC standards and sensitive environments restoration plan; and
9. Post-remedy monitoring.

These features, along with other important considerations, are described in detail in the following sections.

4.1 Health and Safety Plan

Terracon will prepare a site-specific Health and Safety Plan (HASP) prior to the commencement of the construction activities to protect workers and the surrounding community from potential hazards. The HASP will outline the procedures, equipment, and protocols necessary to minimize health and safety risks. It will include a description of the project and site conditions, identification of potential hazards (chemical, physical, biological), required personal protective equipment, emergency response procedures, and decontamination protocols. The plan will also define work zones, outline training requirements, and ensure compliance with regulatory standards such as those set by the Occupational Safety and Health Administration.

4.2 Erosion and Sediment Control Plan

An E&SC Plan will be prepared in general accordance with the applicable provisions of the North Carolina Sedimentation Pollution Control Act of 1973, Title 15A, Chapter 4 of the North Carolina Administrative Code, and the North Carolina Erosion and Sediment Control Planning and Design Manual dated May 2013. The draft E&SC Plan is in **Appendix A**. The E&SC measures will be designed to mitigate impacts resulting from a 10-year storm event. These measures will likely include the construction entrance, diversion channels, check dams, silt fencing, a sediment basin, and other Best Management Practices (BMPs).

The E&SC Plan will be submitted to the NCDEQ Department of Energy, Mineral, and Land Resources (DEMLR) 3 months prior planned implementation of the work. Upon NCDEQ's review, the plan will be revised to incorporate comments from regulatory managers and resubmitted as the Final Erosion and Sedimentation Control Plan (Revision 1). An electronic Notice of Intent form requesting a Certificate of Coverage under the NCG010000 Construction General Permit (NCG01 Permit) will be submitted prior to initiation of the construction activities.

4.3 Applicable Permits and Approvals

Based on the current preliminary remedial design and proposed treatment approach, Terracon anticipates the remedial actions will require various regulatory notifications and/or permit applications, including state-level reviews and approvals of the permits. The permits and approvals listed below are anticipated or potentially required based on the current preliminary design, and are subject to confirmation:

- **Hazardous Waste / Resource Conservation Recovery Act (RCRA)**
  - Contained-In Determination – NCDEQ Hazardous Waste Section.
  - Subtitle C Treatment, Storage, or Disposal Facility (TSDF) Waste Acceptance – Receiving TSDF facility for the GAC from the MTD units and/or other waste byproducts.
- **Solid Waste**
  - Subtitle D Landfill Waste Acceptance – Receiving landfill for treated soil.
- **Erosion and Sediment Control**
  - NCG01 Construction General Permit – NCDEQ DEMLR.
- **Air Quality**
  - Air Quality Authorization (Permit-by-Rule) – NCDEQ Division of Air Quality.

The applicability of specific permits will be confirmed during the final design and permitting coordination phases of the project. The site has an existing USEPA site identifier (ID

NONCD0000571) to generate and ship wastes. This is currently a location-based ID but it is currently "inactive" as the facility is not generating RCRA wastes. NCDEQ will need to be notified of the change in status prior to generating wastes. Terracon's understanding is that a RCRA Hazardous Waste Treatment Permit (Part B TSDF Permit) will not be required.

The additional data collection described in Section 4.6 will be used to confirm applicable permitting requirements and support coordination with regulatory stakeholders during final design development.

4.4 Site Preparation

Site preparation activities will include the temporary diversion to Nanny Drive, as well as clearing and grubbing vegetative material within WDA-B and WDA-C. Denuded areas subject to erosion will be covered and/or stabilized in accordance with the E&SC Plan.

Portable sanitary facilities will be located near the work area. Equipment and supply storage areas will be established, as needed, adjacent to the appropriate work zones. Personnel and equipment decontamination areas will be constructed and clearly identified in accordance with the requirements of the site-specific HASP.

4.4.1 Fencing

Silt and safety fences will be placed along the perimeter of the permitted disturbed area to identify the limits of disturbance and reduce sediment migration off the site. The proposed placement of the silt and safety fence, along with a detail showing proper installation and maintenance requirements, will be included an appendix of the Final E&SC Plan (Revision 1).

Silt and safety fences will be installed and fully functional prior to the start of construction activities in the affected area. Other BMPs, such as straw wattles or compost filter socks, may be used as alternatives to silt fence where appropriate.

4.4.2 Temporary Road Reroute

The expanded WDA-B and the preliminary excavation limits intersect with the newly rerouted Nanny Drive and Stanley Parcel No. 653901074825. As a result, Nanny Drive will be temporarily rerouted to redirect traffic and avoid the excavation area. **Figure 5** illustrates the preliminary layout of the temporary road, which will be 10 feet wide and designed to bypass the excavation zone. The distance between the temporary road and the excavation limits will be determined based on a geotechnical assessment, which will include advancing several soil borings around the excavation area. This assessment will also provide information on soil stability to confirm that the ground can support traffic loads without excessive settlement or erosion.

Jersey barriers will be placed along the north side of the excavation to prevent unauthorized access to the area. Additionally, clear signage will be installed to indicate the detour and ensure that traffic navigates safely along the temporary road.

4.5 Designated Treatment Area

Deployment of the MTD units requires a treatment area for the system operations and for soil staging in the TU. To reduce the potential for CVOC impacts to environmental media in areas not currently impacted by CVOCs, Terracon proposes to utilize WDA-C as the designated treatment area. To establish the treatment zone, the area will be cleared and grubbed, followed by installation of the approved E&SC BMPs. Materials unsuitable for compaction will be removed and disposed of at the appropriate landfill facility. The subgrade will then be graded, leveled, and compacted in preparation for treatment zone setup.

A geotextile layer will be placed directly over the waste, followed by a 6-inch layer of gravel or ABC. The MTD units and TU for soil staging will be placed directly on top of the aggregate layer. A 50-foot by 50-foot pad will be constructed within the bounds of WDA-C to prevent mixing of the soil into the aggregate during daily loading of untreated soil from the TU into the MTD units. The pad will consist of approximately 4 inches of aggregate topped with a compacted asphalt, concrete, or , other NCDEQ-approved material.

After the implementation activities for WDA-B are complete and all treated soil has been removed, the TU will be demolished. A composite sample will then be collected for characterization of the material prior to disposal. For planning and costing purposes, Terracon assumed that the pad will be impacted by the treatment operations; and therefore, disposed of at the UEL in Mount Gilead, North Carolina. The underlying aggregate layer will remain in place and serve as an additional component of the cover system for WDA-C. The cover system will be installed in layers: the existing aggregate layer from the treatment compound will remain in place and covered with an impermeable geomembrane. Approximately 8 inches of soil from the approved on-site borrow area will be placed over the geomembrane, with the uppermost 6 inches consisting of topsoil or amended fill to support vegetation growth.

Following remedial implementation, the disturbed area will be stabilized with an appropriate vegetative cover, consistent with the requirements of the Final E&SC Plan (Revision 1).

4.6 Proposed Remedial Design Data Collection Activities for WDA-B

4.6.1 Procedures to Define Extents of Excavation in WDA-B

Terracon estimates approximately 3,200 CYs (4,800 tons) of soil from the CVOC Impact Area will require excavation and treatment (**Figure 4**). The total excavated soil volume is

estimated to be 6,700 CYs (10,100 tons), including 3,500 CYs (5,250 tons) of soil in the cutback slope of the excavation sidewalls. Prior to the excavation activities, Terracon proposes to further delineate the excavation limits by installing additional soil borings approximately 10 feet outside the CVOC Impact Area, using a combination of field screening methods — including PID screening and AQR ColorTec™ colorimetric testing — and laboratory analyses for Total VOCs using USEPA Method 8260.

Approximately 20 soil borings will be advanced to the proposed excavation depth, outside of the known source area in WDA-B, to define the outer limits of the excavation (**Figure 5**). The samples will be analyzed for total VOCs by USEPA 8260. Terracon will tabulate and compare the analytical results to NCDEQ Residential PSRGs and USEPA's Toxicity Characteristic Leaching Procedure (TCLP) criteria under 40 CFR 261.41 (using the "20-times" rule). Terracon will also utilize the NCDEQ Risk Calculator to evaluate potential human-health risks from soil outside the primary excavation area. The results will be submitted to NCDEQ to support a Contained-In Determination (see **Section 3.4.2**) to evaluate whether the soil can be re-used as backfill in WDA-B. Substantially higher costs would be incurred to implement Remedial Alternative B if the excavation extents exceed the limits in **Figure 5** (i.e., more than 3,200 CYs [4,800 tons] of soil require treatment and/or off-site disposal).

Additionally, five soil borings will be advanced within WDA-B to pre-characterize waste for disposal. Based on the Generator Closure Guidelines for Cleanup of Environmental Media and Debris at Generator Sites dated January 14, 2025 (NCDEQ, 2025a) and the "Contained-In" Policy for Excavated Contaminated Soil that Contains a Listed Hazardous Waste (NCDEQ, 2025b), the soil samples will be analyzed for the following:

- Total VOCs by USEPA 8260;
- TCLP VOCs by USEPA Methods 1311/8260;
- Total metals (including mercury) by 6010D;
- TCLP metals (including mercury) by USEPA Methods 1311/6020/7470;
- Total SVOCs by USEPA Methods 8270;
- Organochlorine Pesticides by USEPA Methods 1311/8081;
- Herbicides by USEPA Method 8151;
- TCLP extractable SVOCs, including herbicides, pesticides and Total Polychlorobiphenyls by USEPA Method 8082;
- Ignitability by Solid Waste 846 1010; and
- pH/corrosivity by Standard Method 4500H+B/EPA 9045.

During this phase of work, soil and groundwater samples will be collected from the highly impacted areas of WDA-B to perform a bench-scale NOD test. This test will determine the amount of oxidant ($KMnO_4$) consumed by soil and groundwater before the oxidant can effectively treat contaminants.

The analytical results from the pre-characterization assessment will be used for waste profiling prior to implementation. Terracon will finalize analytical criteria based on guidance from the selected Subtitle C and D landfills; therefore, this list of analytical requirements may change. Grab and composite samples will also be collected prior to disposal to confirm pre-characterization.

4.6.2 Procedures for Geotechnical Investigation

Terracon's current design basis for the removal actions at WDA-B presumes the excavation sidewalls would have a 45-degree slope (1:1 Rise-to-Run) to approximately 20 feet bgs to provide access to deeper impacted soils. Terracon will conduct a geotechnical investigation along the lateral edges of the CVOC Impact Area, concurrent with the investigation in **Section 4.6.1**, to determine the recommended methods and specifications for benching or sloping of the excavation sidewalls. Approximately 15 soil borings will be advanced to the proposed excavation depth, beyond the known source area in WDA-B, to obtain soil samples for the following geotechnical test methods:

- Moisture Content Determination (ASTM D2216) - Quantity: 45 Samples – three intervals at each boring.
- Wash 200 (ASTM D1140) - Quantity: 15 Samples – one interval per boring
- Atterberg Limits Determination (ASTM D4318) - Quantity: 15 Samples – one interval per boring.
- Standard Proctor (ASTM D698) - Quantity: 5 Samples - one grab sample at select locations.

Two borings along Nanny Drive will extend to approximately 40 feet bgs to develop a design basis for the 120 linear feet of sheet piling planned along the north side of the excavation (**Figure 5**).

4.7 Preliminary Excavation Approach

Figure 5 depicts the preliminary excavation limits for WDA-B, based on the waste characterization analytical data collected in June 2024 (Terracon, 2025a). **Figure 6** presents the preliminary excavation cross-sections. The excavation targets approximately 3,200 CYs (4,800 tons) of contaminated soil to a depth of 20 feet.

The soils encountered during previous environmental investigations in WDA-B have been characterized as silty clay and sandy silt. Accordingly, the excavation approach is based on a Type "B" soil classification. Sidewalls will be sloped to approximately 20 feet bgs using a 45-degree slope (1:1 Rise-to-Run) to ensure safe access and slope stability. The north sidewall, adjacent to the temporarily realigned Nanny Drive, will be structurally supported with sheet piling. However, this approach may be revised following the geotechnical investigation. Terracon will evaluate and recommend appropriate setbacks between the temporary realignment of Nanny Drive, the sheet piling, and the excavation limits to

minimize disturbance to the residential property immediately north of the waste disposal area.

The excavation rate should not exceed the estimated daily throughput of the MTD treatment units (i.e., estimated at 100 CY per day) to prevent soil remaining in the TU overnight. Terracon will conduct continuous air monitoring during the site activities to ensure worker safety in the vicinity of the excavation. Air monitoring procedures for VOCs would be included in the site-specific HASP. Additionally, no equipment will be staged within 2 feet of the excavation per 29 CFR 1926 Subpart P.

4.8 Management of Soil in the TU and the MTD Treatment Units

4.8.1 Clean Soil Outside the Limits of WDA-B

Remedial Alternative B assumes 3,500 CYs (5,250 tons) of soil in the cutback slope of the excavation sidewalls is outside the extents of WDA-B; and thus, does not contain hazardous constituents. As discussed in **Section 4.6.1**, Terracon will conduct a remedial investigation to further define the extents of the CVOC Impact Area (**Figure 4**). Depending on the results from the investigations, the soil in the cutback slope may be defined as either:

- Exempt from management as waste (i.e., constituent concentrations are less than the Residential PSRGs or result in a Hazard Index of <0.1 as determined by the NCDEQ Risk Calculator) - with prior input from the NCDEQ-PRLF Unit, soils meeting this criterion would be either:
    - staged adjacent to WDA-B, and used as backfill after completing the removal action or
    - hauled directly off the site to a Subtitle D landfill for disposal, without processing in the MTD Treatment Units.
- "Contained-Out" (i.e., constituent concentrations are between the Residential PSRGs and TCLP standards) - the soils would be managed as non-hazardous waste and hauled to a Subtitle D landfill for disposal (without processing through the MTD Treatment Units).
- "Contained-In" (i.e., constituent concentrations are greater than the TCLP standards) - the soils would be managed in the MTD Treatment Units, and after treatment and additional laboratory testing, hauled to a Subtitle D landfill for disposal.

Depending on the results from the remedial investigation, the boundaries for the CVOC Impact Area (**Figure 4**) might be adjusted based on the improved understanding of the required excavation limits. Additional costs may be required to implement Remedial Alternative B, if more than 3,200 CYs (4,800 tons) of soil exceed the Residential PSRGs or a Hazard Index of >0.1 (as determined by the NCDEQ Risk Calculator); and thus, require off-site disposal with or without treatment in the MTD treatment units.

4.8.2 Soil Processing in the MTD Treatment Units

The MTD units can process soil at an estimated rate of 100 CYs per day. Therefore, the excavation rate in WDA-B should not exceed the estimated throughput of the MTD treatment units to prevent the overnight storage of soil in the TU. The portable MTD units heat the soil to volatilize the CVOCs from the sorbed phase into the vapor phase. The off-gases could be cooled and then filtered through a multi-media system that includes GAC, or other adsorbent filter media.

The portable units are often staged and delivered on 45-foot trailers. Two trailers and one control trailer will be staged on-site, occupying a 75-foot by 100-foot area of the treatment compound. A 50-foot by 50-foot pad will be installed near the MTD units to serve as the TU, or designated loading zone for untreated soil into the MTD units. No untreated soil will be placed directly over the aggregate layer of the treatment compound. The remaining portion of the gravel pad will be used for the storage of treated soil. **Figure 7** presents a conceptual layout of the treatment area and outlines the general steps of the treatment process.

4.9 Staging of Treated Soil

The treated soil after processing through the MTD units will be held in the TU ranging from 25 to 100 CYs, pending laboratory confirmation that it meets applicable disposal criteria. All the treated soil must achieve non-hazardous classifications; and thus, transported to and disposed of at a Subtitle D landfill in North Carolina, or re-processed through the MTD treatment units.

The proposed treatment and TU in WDA-C would measure approximately 160 feet by 330 feet. The thermal desorption treatment units would occupy an approximate 75-foot by 100-foot area, leaving ample space for staging of the treated soil in the TU, each ranging in size from 25 to 100 CYs (i.e., the estimated processing rate through the MTDs in 1 day). If all the treated soil were to be managed within 25 CY batches, then the staging area over WDA-C should be able to accommodate up to 90 separate soil storage areas, each separated by approximately 10 feet on all sides for ingress and egress of trucks. Each storage area would be covered with 6-mil plastic sheets and weighted with concrete masonry unit blocks at the end of each day to minimize runoff, cross-contamination, and wind-blown dust.

4.10 Waste Characterization of Soil for Off-Site Disposal

Terracon proposes to collect two grab samples per 100-cubic yards of soil to be disposed off the site, in accordance with the Generator Closure Guidelines for Cleanup of Environmental Media and Debris at Generator Sites dated January 14, 2025 (NCDEQ, 2025a) and the "Contained-In" Policy for Excavated Contaminated Soil that Contains a Listed Hazardous Waste (NCDEQ, 2025b). Terracon assumes the treated soil will be characterized as non-

hazardous; therefore, grab samples will be analyzed for total VOCs using USEPA Method 8260.

Terracon will finalize the analytical criteria with guidance from the selected Subtitle C and D landfills and the NCDEQ PRLF Unit. Laboratory turnaround times of 5 days will be specified to expedite analytical results and avoid the accumulation of treated soil pending waste characterization.

After each treated soil pile is confirmed to be non-hazardous, it would be transported off the site for disposal at a Subtitle D landfill. If any soil is characterized as hazardous, the entire lot (ranging from 25 to 100 CYs) would be retreated until the concentrations are less than regulatory requirements.

4.11 Confirmatory Soil Sampling after Removal Actions

After completing the removal actions, Terracon will collect confirmation soil samples along the base and sidewalls of the excavation. The excavation area will be divided into segments until achieving the estimated daily limit (treatment limit). Samples will be collected every 10 linear feet in all directions. The base samples will not be collected until achieving the target excavation depth of 20 feet bgs. Each sample will extend 0 to 3 inches into the excavation sidewalls or base, utilizing the bucket of the excavator. The sample aliquot will be collected from a portion of the soil not in contact with the excavator bucket. Each confirmatory soil sample will be analyzed for Total VOCs by USEPA Method 8260.

If the analytical results do not achieve the Residential PSRGs (i.e., unrestricted use), then Terracon will enter the results into the NCDEQ Risk Calculator to evaluate whether additional soil excavation would be necessary. The results will be discussed with the NCDEQ prior to implementing additional work within WDA-B (e.g., prior to blending the $KMnO_4$ into the bottom of the excavation).

4.12 Soil Mixing with $KMnO_4$

Following treatment and disposal, an aqueous solution of $KMnO_4$ (estimated at 1% by weight) will be blended into the bottom 5 feet of the excavation (i.e., from 20 to 25 feet bgs), possibly using an excavator with bucket or specialized mixing attachments . The total estimated mass of $KMnO_4$ is 11,300 pounds (5.65 tons) of $KMnO_4$. However, the actual loading rate will be determined following the NOD test, which may alter the required amount of $KMnO_4$. The oxidant will be thoroughly mixed into the soil to promote uniform distribution and maximize contact with the contaminants.

After mixing, the $KMnO_4$ will react with the CVOCs, initiating a redox reaction that degrades the contaminants according to the reactions in **Section 3.2.3**. The reactions can occur rapidly, depending on soil permeability, moisture content, and contaminant type. A portion

of the $KMnO_4$ may also migrate into the saturated zone to initiate CVOCs treatment in groundwater.

4.13 Fill Material and Compaction

4.13.1 Borrow Area

In April 2023, Terracon personnel, the PRLF Unit Project Manager, and the property owner completed a site visit to identify potential on-site locations for obtaining fill material required during implementation of the RAP. The on-site borrow source area identified during the visit is shown in **Figure 5**. Sampling activities were conducted in accordance with the NCDEQ Special Remediation Branch Guidelines for Addressing Pre-Regulatory Landfills and Dumps, March 2022, and Terracon's Work Plan 571RA-13 through 571RA-17a dated June 5, 2023 (Terracon, 2023a). Sampling and analysis procedures were presented in the Remedial Action Phase – Task Orders 571RA-15 and 15a letter report submitted to the NCDEQ on October 13, 2023 (Terracon, 2023b).

Several contaminants were detected in samples collected from the on-site borrow area above the laboratory method detection limits. Terracon used the NCDEQ Risk Calculator to evaluate the potential risk to human health by the constituents detected in the samples. The results exceeded the risk thresholds for unrestricted use as beneficial fill but did not exceed thresholds for non-residential workers, construction workers, or recreational users/trespassers.

Terracon provided the laboratory analytical reports, analytical results table, and NCDEQ Risk Calculator output to the PRLF Unit PM for submission to the NCDEQ Toxicologist on October 4, 2023. Following further evaluation of potential risks to human health and the environment, the NCDEQ Toxicologist approved the on-site borrow area for use during RAP implementation on October 6, 2023.

Based on a conservative average excavation depth of 5 feet bgs, Terracon estimates that at least 25,000 CYs of soil are available within the on-site borrow area. This volume should be more than adequate for use during implementation of the RAP because it is significantly more than the estimated excavation volume (6,700 CYs) and the estimated cover system volume for WDA-C (1,956 CYs). Other on-site or off-site borrow areas may also be used with NCDEQ PRLF Unit's prior approval.

4.13.2 Compaction

The approved backfill material will be placed in controlled lifts. Prior to compaction, the moisture content of the fill will be adjusted to its optimum range, as determined by Proctor testing, to ensure at least 95% compaction of the backfill. Areas that fail to meet compaction criteria will be reworked until compliance is achieved. Throughout the process, documentation of lift thickness, moisture conditioning, and compaction results will be maintained to support quality assurance and regulatory compliance. Per 29 CFR Part 1926

Subpart P, personnel will not enter unprotected excavations deeper than 5 feet bgs. Backfill and compaction efforts will be observed by Terracon staff and compaction efforts will be made with a remote-controlled trench roller from approximately 20 feet bgs to 5 feet bgs. Compaction testing will be performed with a nuclear density testing gauge from 5 feet bgs to ground surface.

4.14 Restoration of Site

The disturbed areas will be seeded and stabilized after completion of backfilling and compaction activities specified herein. The total limit of disturbance (LOD) is approximately 8.8 acres (**Appendix A**). Restoration details will be presented in the Final E&SC Plan (Revision 1) to be developed in future phases of this project.

4.14.1 Fine Grading

The LOD will be graded to promote positive drainage and prevent ponding, while minimizing the disturbed area and maintaining stable slopes. The top 6 inches of soil imported from an approved borrow source will be amended to encourage vegetative growth and reduce the potential for erosion. Final slopes grades are not expected to exceed a gradient of 3H:1V.

4.14.2 Soil Stabilization

The LOD includes WDA-B, WDA-C, re-alignment for Nanny Drive, the on-site borrow area, and the designated buffers around each area. The LOD will be stabilized with vegetation, with the exception of Nanny Drive. Channels and slopes shall be stabilized within 7 calendar days of ceasing land disturbance activities in those areas. All other areas will be stabilized within 14 calendar days of ceasing land disturbance activities in those areas. After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization has been achieved. The ground shall be stabilized sufficiently such that rain would not dislodge the soil. Detailed temporary and permanent stabilization information would be provided in the Final ES&C Plan (Revision 1) to be developed in future phases of this project.

4.15 Post-Remedy Monitoring

Following implementation of the remedy, E&SC monitoring would be conducted weekly and within 24 hours after rainfall events exceeding 1 inch, in accordance with the NCDEQ North Carolina Construction General Permit (NCG010000 Permit) requirements. After completing the RAP implementation, site visits would be conducted weekly until vegetation is fully established in the disturbed areas. Photographs will be submitted to NCDEQ for review over

a 9-month period following remedy completion. Any areas exhibiting erosion or insufficient vegetated cover would be addressed by the financially responsible party (i.e., the general contractor) until the site is officially released from the E&SC permit by the NCDEQ Land Quality Section. Temporary E&SC features will be removed upon release from the NCG010000 Permit requirements.

In addition to post-remedy monitoring, Wells 1, 3, and 15, along with Well 14 (which does not have a POE system), will continue to be sampled on a quarterly basis, and Wells 12, 13, and 28, as well as nearby water supply wells (Wells 2, 4, 5, 11, 16, 17, 18, 21, 22, 23, 24, 25, 29, 30, and TBD-4) will continue to be sampled annually to monitor contaminant migration.

5.0 PERPETUAL LAND USE RESTRICTIONS

Institutional controls are a critical component of the site remedy. A Declaration of Perpetual Land Use Restrictions (Declaration) was filed with the Office of the Register of Deeds for Stanly County on May 3, 2023. The Declaration is recorded in Deed Book 1819, Page 1200. A Notice Plat, or Notice of Environmental Contamination, was also recorded on May 3, 2023, in Map Book 30, Page 275. The property is legally described in Deed Book 496, Page 462.

The Declaration and Notice Plat serve as formal notifications of environmental conditions and land use restrictions on the property. The Declaration includes a total of 15 perpetual land use restrictions, and the Notice Plat presents the Nanny Drive realignment and the URS-delineated WDAs. A copy of the legal property description, the Declaration, and the Notice Plat are attached to this dRAP as **Appendix B**.

6.0 SCHEDULE

The following presents a preliminary schedule for Remedial Alternative B:

Task	Duration
Bid Package Preparation and Permitting	6 Weeks
Subcontractor Solicitation and Selection	6 Weeks
Pre-Construction Meetings and Planning	4 Weeks
RAP Implementation	8-9 Months
Post-Construction E&SC Monitoring	3 Months
Removal of E&SC Features	4 Weeks
Complete Closure Report	12 Weeks

The schedule is subject to change based on the selected general contractor's bid schedule and input from state regulatory agency stakeholders. The anticipated number of adverse weather days has been calculated and incorporated into the estimated schedule above.

Precipitation data from the STANLY CO AIRPORT, NC US weather station over the past 3 years was obtained from the National Oceanic and Atmospheric Administration website. Daily precipitation totals were tabulated and compared against a disruption threshold of 0.5 inches within a 24-hour period.

- From August 2022 to July 2023, there were 18 days with rainfall equal to or greater than 0.5 inches.
- From August 2023 to July 2024, there were 21 such days.
- From August 2024 to July 2025, there were 25 such days.

The average number of rainy days with precipitation equal to or greater than 0.5 inches over the 3-year period was 21 days. Accordingly, 21 adverse weather days have been included in the schedule.

7.0 BUDGET ESTIMATE

A breakdown of the estimated costs for remedial action construction is provided in the table below:

Description	Remedial Alternative B
Construction	$ 4,600,000
Oversight	$ 330,000
Post-Remedy Monitoring	$ 70,000
Closure Report	$ 30,000
Total	**$ 5,030,000**

Additional non-oversight costs for this remedy include field personnel for confirmatory and waste characterization sampling, air monitoring during excavation and treatment, compaction testing and construction materials services required to safely execute the excavation and restoration of WDA-B, and vibration monitoring. Non-oversight costs are shown in the table below:

Non-Oversight Costs				
Description	**Labor**	**Subcontracts**	**Expenses**	**Total**
Waste Characterization	$95,000	$50,000	$5,000	$150,000
Air Monitoring	$65,000	$85,000	$25,000	$175,000
Compaction Testing	$70,000	$0	$15,000	$85,000
Vibration Monitoring	$20,000	$0	$20,000	$40,000

8.0 SOLE USE STATEMENT AND CERTIFICATION

This report was prepared solely for the intended use by the NCDEQ PRLF Unit under contract N42621-A, dated January 4, 2022, and amended May 8, 2024, and in general accordance with the scope of work for Task Order 571RA-32.

Use of this document for other purposes is at the sole risk of the user.

CERTIFICATION STATEMENT

"I certify that to the best of my knowledge, after thorough investigation, the information contained in or accompanying this certification is true, accurate, and complete."

Donald R. Malone, PE / Terracon Consultants, Inc.
Name of Environmental Consultant / Company

Don Malone
Signature of Environmental Consultant

2/19/26
Date

I, Dina Longo-Armfield, a Notary Public of said County and State, do hereby certify that Don Malone did personally appear and sign before me this day, produced proper identification in the form of Personally Known was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 19th day of February, 2026.

(OFFICIAL SEAL)

DINA LONGO-ARMFIELD NOTARY PUBLIC WAKE COUNTY, NC

Notary Public (signature)

My commission expires: 3.19.2030

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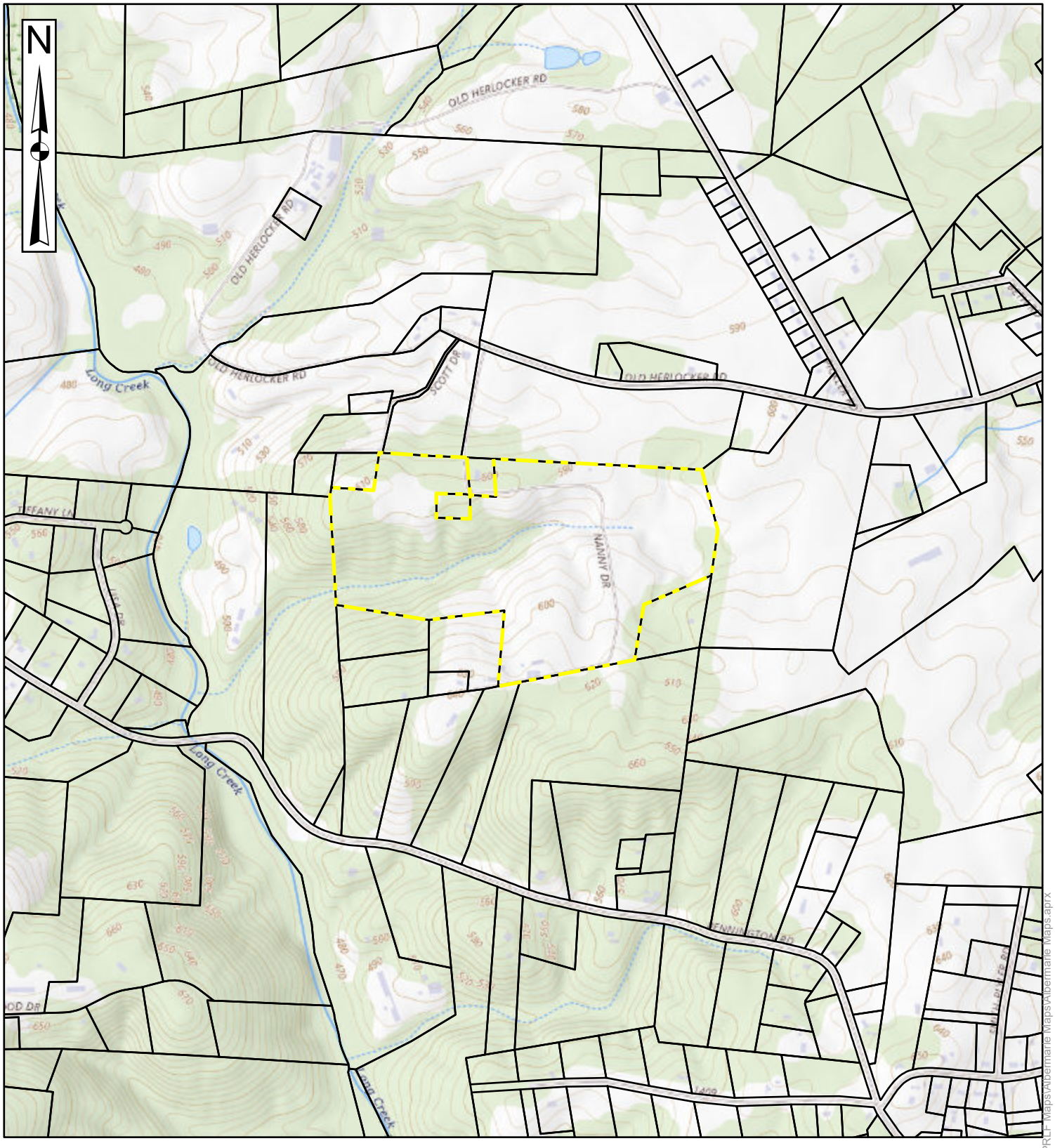
United States Environmental Protection Agency (USEPA), 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. EPA/540/G-89/004, OSWER Directive 9355.3-01, Office of Emergency and Remedial Response, Washington, DC. October.

USEPA, 2021. Community Guide to Thermal Desorption. Office of Land and Emergency Management (5203P). EPA-542-F-21-024. https://semspub.epa.gov/work/HQ/401623.pdf.

Figures



Legend

- Site Boundary
- Stanly County Parcels

0 500 1,000 2,000

Feet

DATA SOURCES:
ESRI USGS Topographic Basemap 2025; Site Boundary based on NC One Map Stanly County

PM: KC	Project No. 71257029C
Drawn By: NR	Scale: 1 in = 1,000 ft.
Checked By: AA	Filename: Albermarle Maps
Approved By: MD	Date: September 2025

Terracon
Explore with us
3150 Spring Forest Rd Suite 100 Raleigh, NC 27616
Phone: (919) 873-2211 terracon.com

Site Location Map

Pre-Regulatory Landfill
Albemarle Dump
Site ID No. NONCD0000571
Albemarle, Stanly County, North Carolina

FIGURE

1

G:\00\70\20231\237029_Nanny Drive\Maps\PRLF Maps\Albemarle Maps\Albemarle Maps.aprx

Legend

- Site Boundary
- Borrow Source Area
- Stanly County Parcels
- Surface Water
- Waste Disposal Areas

0 125 250 500

Feet

DATA SOURCES:
Drone Orthomagery obtained by Terracon October 2025; Esri Aerial Imagery; Site Boundary based on NC One Map Stanly County

PM: KC	Project No. 71257029C
Drawn By: NR/MM	Scale: 1 in = 250 ft.
Checked By: AA	Filename: Albermarle Maps
Approved By: MD	Date: November 2025

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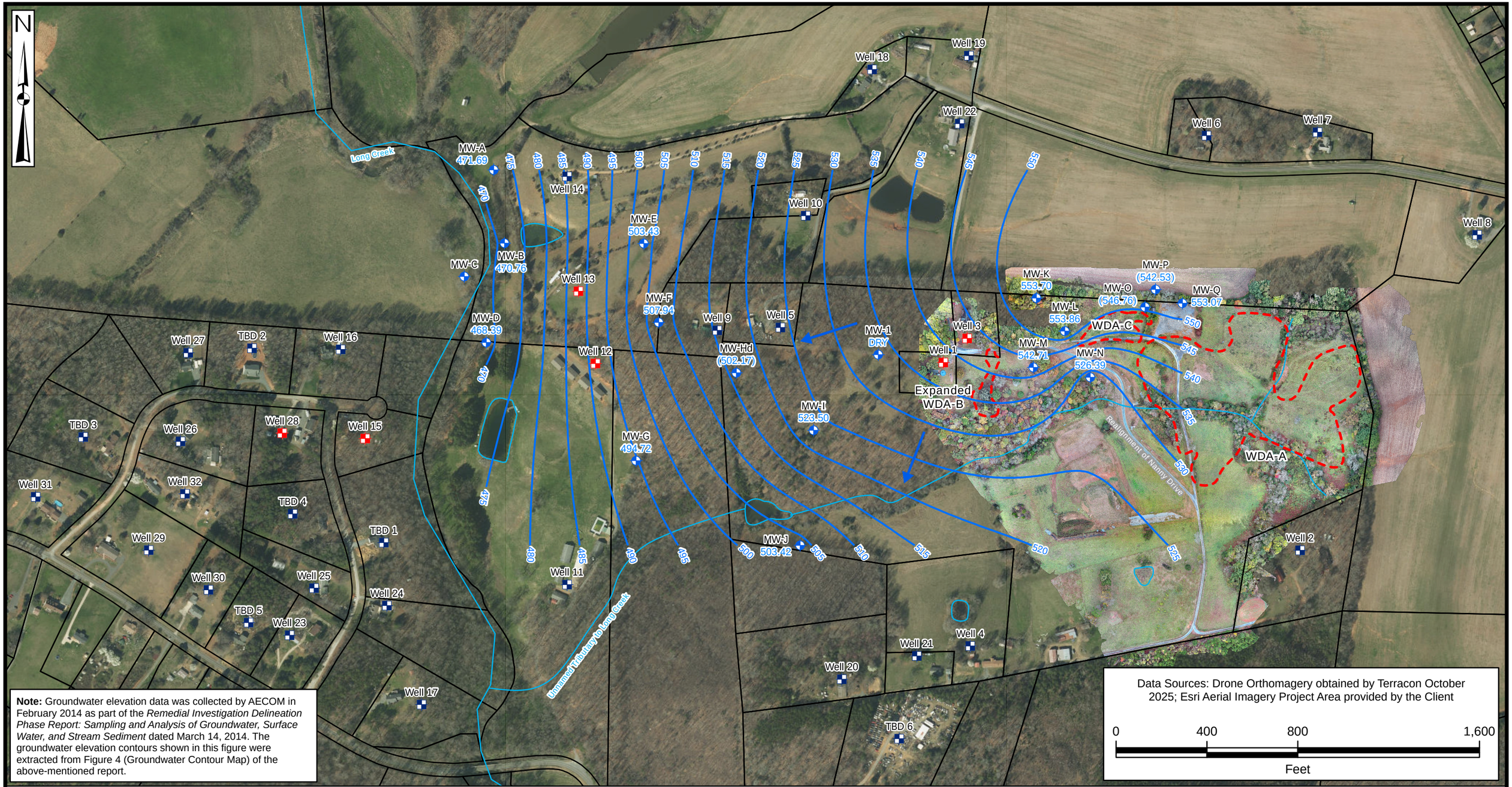
Waste Disposal Areas (Prior to 2023)

Pre-Regulatory Landfill
Albemarle Dump
Site ID No. NONCD0000571
Albemarle, Stanly County, North Carolina

FIGURE

2

G:\00702023\71237029_Nanny Drive\Maps\PRLF Maps\Albermarle Maps\Albermarle Maps.aprx



Note: Groundwater elevation data was collected by AECOM in February 2014 as part of the *Remedial Investigation Delineation Phase Report: Sampling and Analysis of Groundwater, Surface Water, and Stream Sediment* dated March 14, 2014. The groundwater elevation contours shown in this figure were extracted from Figure 4 (Groundwater Contour Map) of the above-mentioned report.

Legend

- Stanly County Parcels
- Waste Disposal Areas
- Surface Water
- Monitoring Wells
- Water Supply Well with POE System
- Water Supply Well
- Groundwater Flow Direction
- Groundwater Contour (Dashed where Inferred)
- 553.07 — Groundwater Elevation (feet above mean sea level)
- (542.53) — Groundwater Elevation (Not Used for Contouring)

PM:	KC
Drawn By:	NR/MM
Checked By:	AA
Approved By:	MD

Project No.	71237029C
Scale:	1 in = 400 ft
Filename:	Albermarle Maps
Date:	November 2025

terracon
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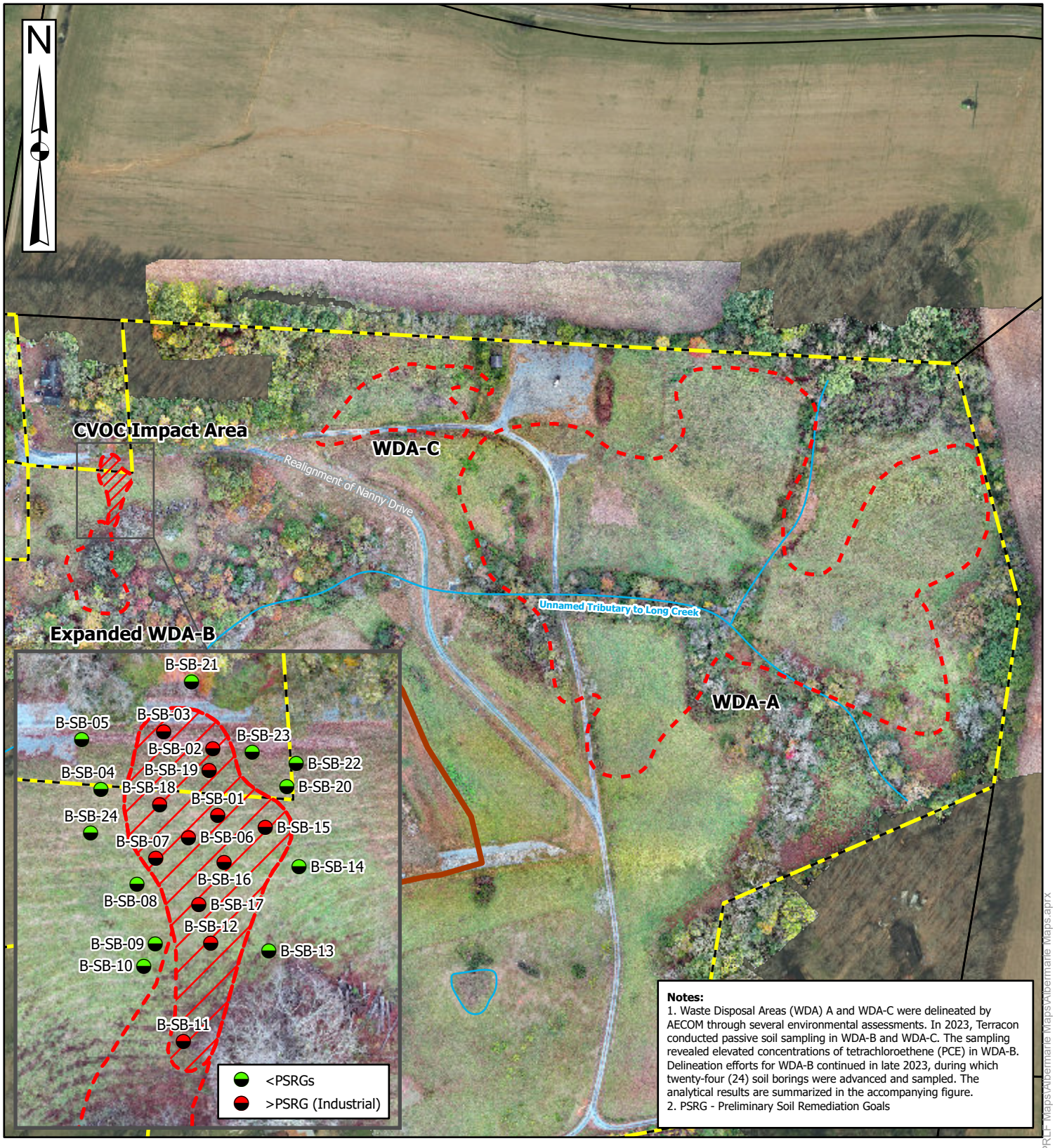
Phone: (919) 873-2211 terracon.com

Well Location Map

Pre-Regulatory Landfill
Albemarle Dump
Site ID No. NONCD0000571
Albemarle, Stanly County, North Carolina

FIGURE

3



Notes:
1. Waste Disposal Areas (WDA) A and WDA-C were delineated by AECOM through several environmental assessments. In 2023, Terracon conducted passive soil sampling in WDA-B and WDA-C. The sampling revealed elevated concentrations of tetrachloroethene (PCE) in WDA-B. Delineation efforts for WDA-B continued in late 2023, during which twenty-four (24) soil borings were advanced and sampled. The analytical results are summarized in the accompanying figure.
2. PSRG - Preliminary Soil Remediation Goals

Legend

- Site Boundary
- Stanly County Parcels
- CVOC Impacted Area
- Borrow Source Area
- Waste Disposal Areas
- Potential Surface Water Features

0 125 250 500
Feet

DATA SOURCES:
Drone Orthomagery obtained by Terracon October 2025; Esri Aerial Imagery; Site Boundary based on NC One Map Stanly County

PM:	KC
Drawn By:	NR
Checked By:	AA
Approved By:	MD
Project No.	71257029C
Scale:	1 in = 250 ft.
Filename:	Albermarle Maps
Date:	February 2026

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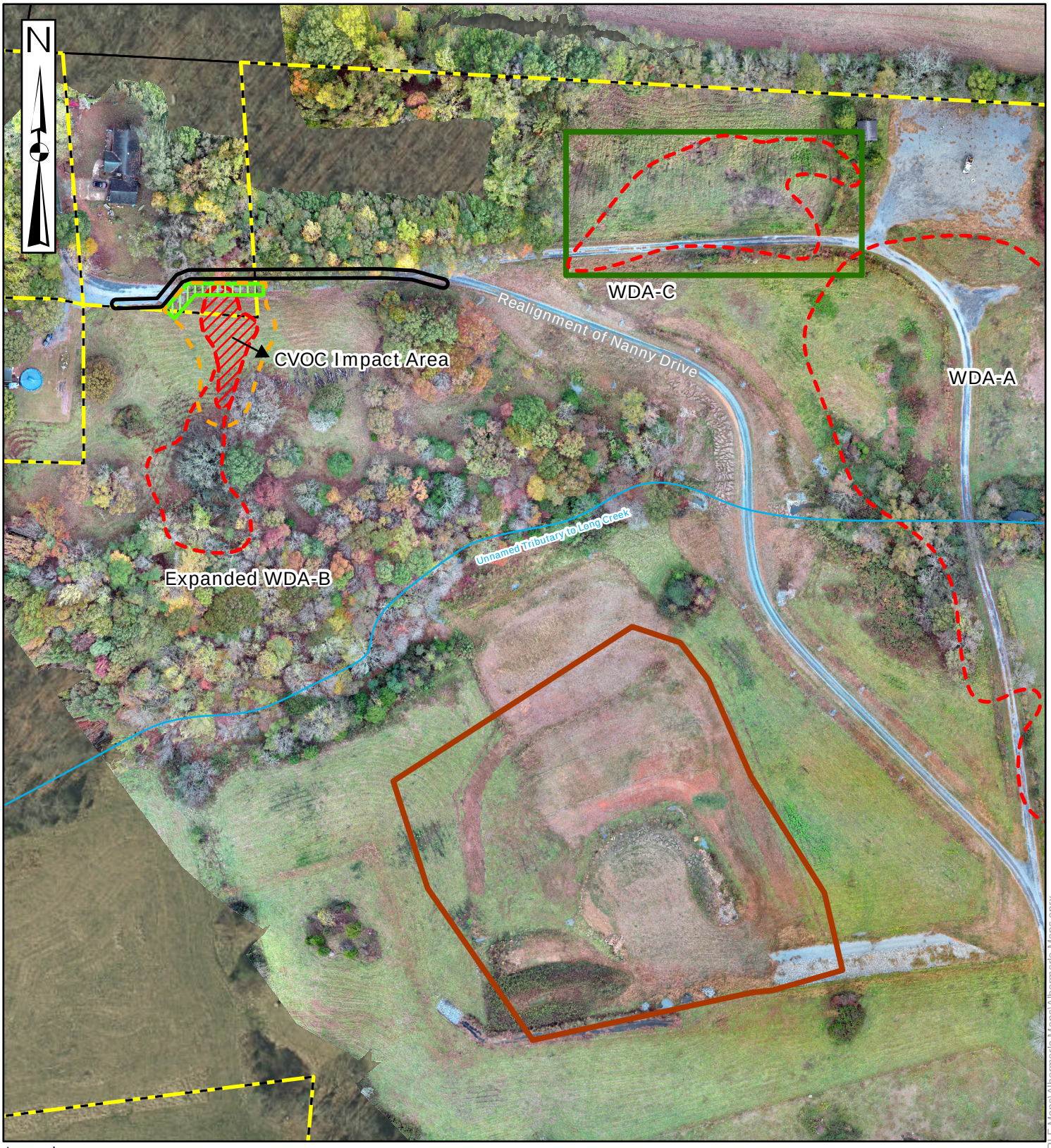
Phone: (919) 873-2211 terracon.com

Waste Disposal Areas (Post 2023)

Pre-Regulatory Landfill
Albemarle Dump
Site ID No. NONCD0000571
Albemarle, Stanly County, North Carolina

FIGURE
4

G:\00\70\20231\71237029_Nanny Drive\Maps\PRLF Maps\Albermarle Maps\Albermarle Maps.aprx



Legend

- Site Boundary
- Stanly County Parcels
- Designated Treatment Area
- Sheet Piling
- Preliminary Excavation Limits
- Borrow Source Area
- CVOC Impact Area
- Temporary Nanny Drive Reroute
- Waste Disposal Areas
- Surface Water

0 150 Feet

DATA SOURCES:
Drone Orthomagery obtained by Terracon October 2025; Esri Aerial Imagery; Site Boundary based on NC One Map Stanly County

PM: KC	Project No. 71257029C
Drawn By: NR/MM	Scale: 1 in = 150 ft.
Checked By: AA	Filename: Albermarle Maps
Approved By: MD	Date: November 2025

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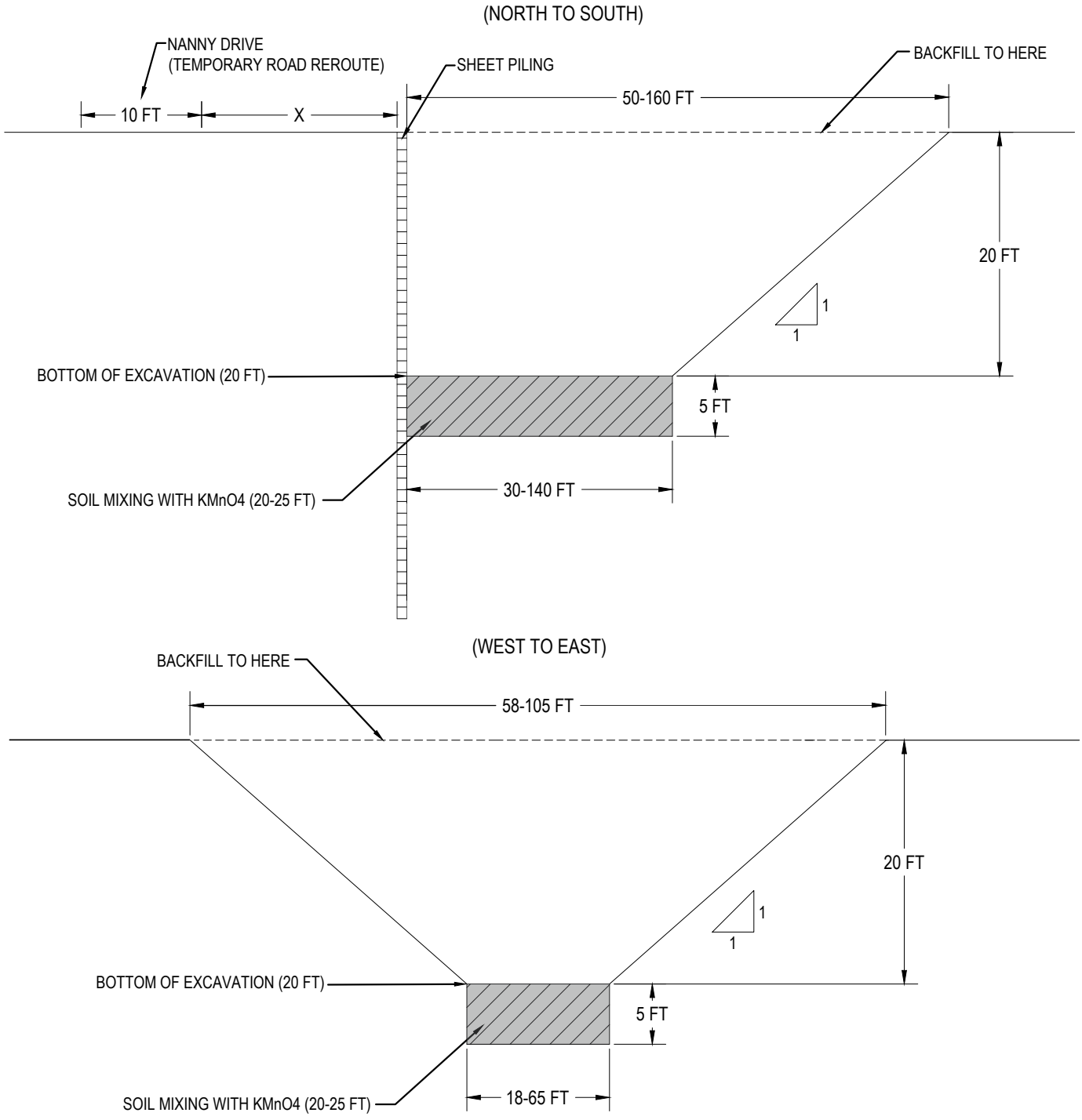
RAP Working Areas (WDA-B and WDA-C)

Pre-Regulatory Landfill
Albemarle Dump
Site ID No. NONCD0000571
Albemarle, Stanly County, North Carolina

FIGURE 5

G:\00702023\71237029_Nanny Drive\Maps\PRLF Maps\Albermarle Maps\Albermarle Maps.aprx

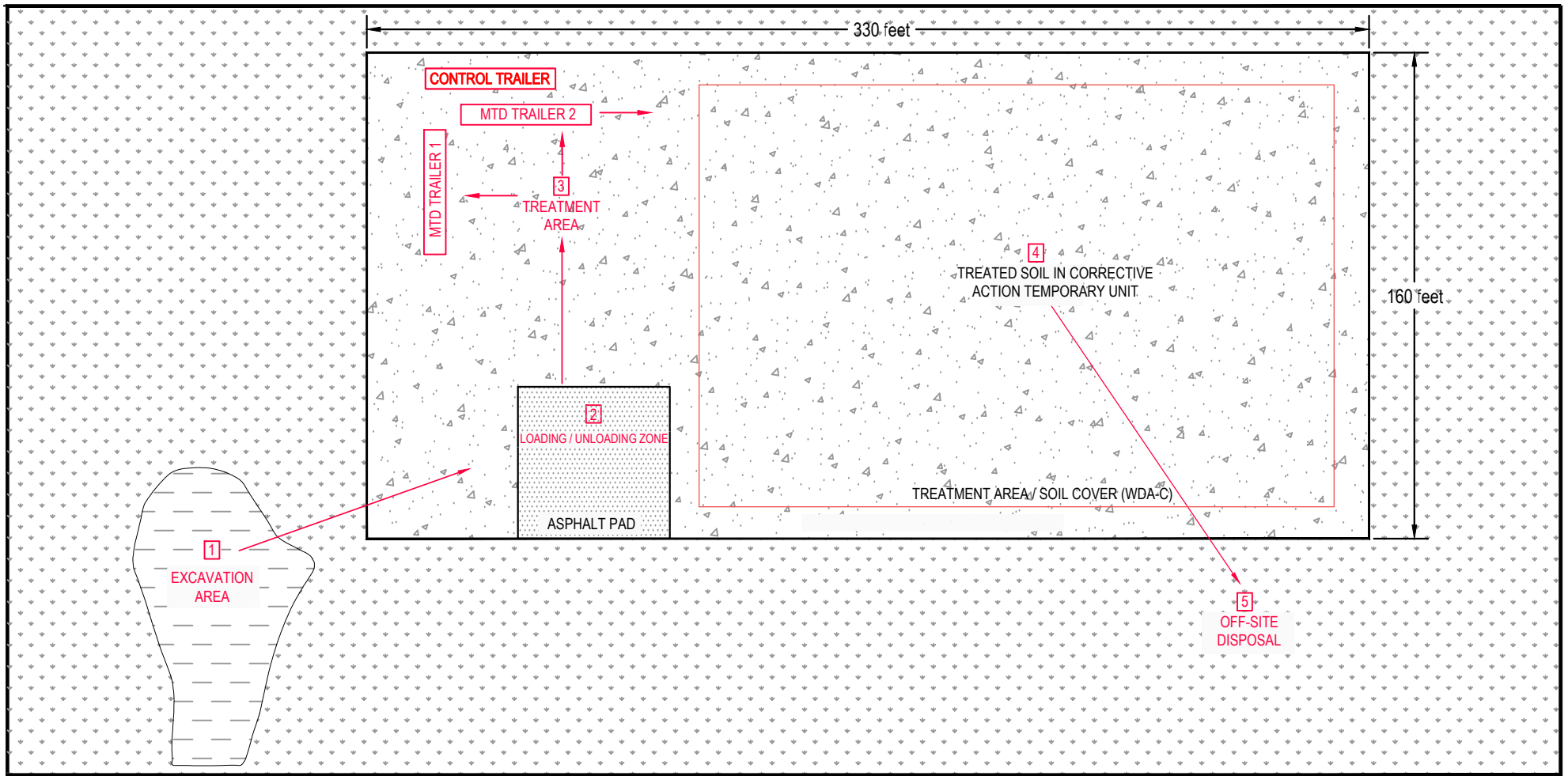


NOTES:

1. THIS DIAGRAM IS FOR GENERAL LOCATION ONLY; IT IS NOT INTENDED FOR CONSTRUCTION PURPOSES.
2. EXCAVATION DIMENSIONS ARE PRESENTED AS A RANGE DUE TO THE SHAPE OF THE TARGETED AREA.
3. THE GENERAL EXCAVATION APPROACH IS BASED ON TYPE "B" SOIL CLASSIFICATION.
4. THE TARGET TOTAL DEPTH OF EXCAVATION IS 20 FEET BELOW GROUND SURFACE (BGS).
5. SIDEWALLS WOULD BE SLOPED TO APPROXIMATELY 20 FEET BGS USING A 1H:1V RATIO (45-DEGREE ANGLE) TO ENSURE SAFE ACCESS AND SLOPE STABILITY.
6. THE NORTH SIDEWALL OF THE EXCAVATION WOULD BE SUPPORTED WITH SHEET PILING, AS IT BORDERS NANNY DRIVE.
7. SOIL MIXING WITH POTASSIUM PERMANGANATE (KMNO4) WOULD OCCUR FROM 20 TO 25 FEET BGS.
8. THE DISTANCE FROM THE EXCAVATION TO THE TEMPORARY ROAD REROUTE (X) WILL BE DETERMINED BASED ON A GEOTECHNICAL ASSESSMENT.

Project Mngr: AA	Project No. 71237029C	Terracon	EXCAVATION CROSS-SECTIONS
Drawn By: RLW	Scale: NOT TO SCALE		PRE-REGULATORY LANDFILL
Checked By: AA/MRF	File No. 71237029C-5		ALBEMARLE DUMP
Approved By: AA	Date: SEPTEMBER 2025	3150 Spring Forest Rd, Ste 100 Raleigh, NC 27616 (919) 873-2211 (919) 873-9555	SITE ID NO. NONCD0000571
			ALBEMARLE, STANLY COUNTY, NORTH CAROLINA

FIGURE 6



NOTES:

1. CY - CUBIC YARD
2. MTD - MOBILE THERMAL DESORPTION
3. SOIL STORAGE IN CORRECTIVE ACTION TEMPORARY UNIT (TU)
4. EXCAVATION RATE WOULD BE LIMITED TO THE TREATMENT RATE TO AVOID LARGE ACCUMULATIONS OF UNTREATED SOIL IN THE TU.
5. TU WOULD BE LINED, AND COVERED WITH PLASTIC AT THE END OF EACH WORK DAY.
6. TREATED SOIL MUST COOL FOR 12 TO 24 HOURS PRIOR TO SAMPLING.
7. CLEAN SOIL WOULD BE DISPOSED OF AT A SUBTITLE D LANDFILL AFTER WASTE CHARACTERIZATION SAMPLING HAS BEEN COMPLETED.
8. THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

GRAVEL
GRASS
SILTY CLAY
ASPHALT

Project Mngr:	KC
Drawn By:	RLW
Checked By:	AA/MRF
Approved By:	AA

Project No.	71237029C
Scale:	NOT TO SCALE
File No.	71237029C-7
Date:	NOV. 2025

Terracon
3150 Spring Forest Rd, Ste 100 Raleigh, NC 27616
(919) 873-2211 (919) 873-9555

TREATMENT LAYOUT AREA

PRE-REGULATORY LANDFILL
ALBEMARLE DUMP
SITE ID NO NONCD0000571
ALBEMARLE, STANLY COUNTY, NORTH CAROLINA

FIGURE 7

Tables

Table 1 - Contaminants of Concern
Albemarle Dump
Site ID No. NONCD0000571
Albemarle, Stanly County, North Carolina

Contaminants of Concern		Media					
		Soil/Waste	Sediment	Groundwater	Potable Water**	Surface Water	Land Gas
VOCs	1,1,2-Trichloroethane				X		
	1,1-Dichloroethane				X		X
	1,2,4-Trimethylbenzene	X					X
	1,3,5-Trimethylbenzene	X					
	1,4-Dichlorobenzene						X
	Benzene				X		
	Chlorobenzene						X
	Chloroform						X
	cis-1,2-Dichloroethene	X		X	X		
	Ethylbenzene	X					X
	Freon 113***						X
	Methylene chloride	X					
	Naphthalene	X			X		
	m&p-Xylene						X
	Total xylenes	X					
	Tetrachloroethene	X	X	X	X	X	X
	Trichloroethene	X		X	X	X	X
	Vinyl Chloride	X		X	X		X
Metals	Arsenic			X			
	Beryllium			X			
	Chromium			X			
	Iron			X*		X*	
	Lead			X			
	Manganese			X*			
	Nickel			X			
Applicable Stanadard and/or SL:		**PSRG (Residential)**		**2L Standard or MCL**		**2B Standard**	**VISL (Residential)**

Notes:

Constituent of concern (COC) exceeds its applicable standard and/or screening level (SL) in one or more samples.

Constituents detected in samples without an applicable standard or SL were retained as COCs for each media except groundwater (per NCDEQ).

2B Standard: NCAC 2B.0200 Surface Water Standard.

2L Standard: North Carolina Administrative Code (NCAC) 2L.0202 Groundwater Standard.

MCL: Environmental Protection Agency (EPA) Maximum Contaminant Level.

NCDEQ: North Carolina Department of Environmental Quality

PSRGs: Inactive Hazardous Sites Branch (IHSB) Preliminary Soil Remediation Goal (Residental) - October 2016.

VISL: Vapor Intrusion Screening Levels.

VOC: Volatile Organic Compound.

X*: Iron and manganese in groundwater were considered to be naturally occurring based on literature values for the southeastern region of the United States

**Influent samples from wells with point-of-entry systems exhibited COC exceedances; however, no exceedances were detected in effluent samples.

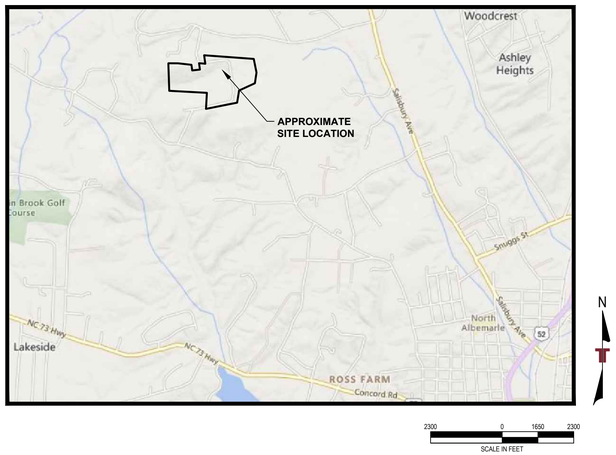
***Freon 113 was detected above the Industrial/Commercial VISLs.

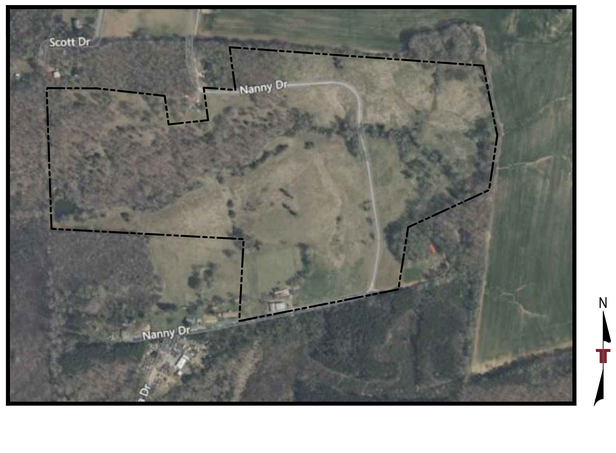
Appendix A

Draft Erosion and Sediment Control Plan

ALBEMARLE DUMP
WDA-B & WDA-C REMEDIATION

SITE ID# NONCD0000571
NANNY DRIVE
ALBEMARLE, STANLY COUNTY, NORTH CAROLINA





INDEX OF EXHIBITS:

PROJECT INFORMATION

NAME OF PROJECT: ALBEMARLE DUMP

ENGINEER: TERRACON CONSULTANTS, INC
2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NC 27604
984-202-4055

PIN AND REFERENCE: 653901079384.000

DEED REFERENCE: DB 496 PG 462

ZONE CLASSIFICATION: RESIDENTIAL-AGRICULTURAL DISTRICT

FLOOD ZONE CLASS: ZONE X, FIRM 3710653900J, PANEL NO. 6539, EFFECTIVE 2008

WATERSHED CLASSIFICATION: LONG CREEK - PEE DEE RIVER

811 Know what's below. Call before you dig.

NC DEPT OF ENVIRONMENTAL QUALITY

Environmental Quality

217 WEST JONES STREET
RALEIGH, NORTH CAROLINA 27699

ENGINEERING PLANS PREPARED BY:

TERRACON CONSULTANTS, INC.
3150 SPRING FOREST ROAD, SUITE 100
RALEIGH, NC 27616

REV	DATE	BY	DESCRIPTION

TITLE SHEET
ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
ALBEMARLE, STANLY COUNTY NORTH CAROLINA

terracon
Consulting Engineers and Scientists
800 MORRISON ROAD COLUMBUS, OHIO 43230
PH. (614) 863-3113 FAX. (614) 863-0475

EXHIBIT 1

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	1 OF 10

PROJECT DESCRIPTION

THE WORK DEPICTED AND DESCRIBED IN THESE DRAWINGS SHALL CONSIST OF FURNISHING AND INSTALLING EROSION AND SEDIMENT CONTROL MEASURES AND CLEARING AND GRUBBING, GRADING, WASTE EXCAVATION AND TREATMENT AND OFF-SITE DISPOSAL, AND CAPPING IN ACCORDANCE WITH THIS TECHNICAL SCOPE OF WORK AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, AND DIMENSIONS SHOWN ON THESE PLANS.

GENERAL NOTES

1. DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH PROBLEMS. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.

2. IN THE EVENT OF CONFLICT BETWEEN THE DESIGN, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT WILL GOVERN.

3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC AND/OR PRIVATE UTILITIES WHICH MAY LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR, AT HIS OR HER EXPENSE, OF ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. THREE FULL WORKING DAYS PRIOR TO EXCAVATION THE CONTRACTOR SHALL CALL 811 BEFORE YOU DIG. ONCE AN ACTIVE PUBLIC UTILITY LOCATE TICKET IS OPENED FOR THE SITE, IT MUST BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

4. EXCAVATIONS SHALL COMPLY WITH 29 CFR 1926 OSHA CONSTRUCTION INDUSTRY STANDARDS REGARDING EXCAVATIONS, TRENCHING, SHORING AND BRACING. EXCAVATIONS SHALL BE COMPLETED AND MAINTAINED IN A SAFE AND STABLE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.

5. CONTRACTOR SHALL PREPARE AND SUBMIT TO THE PROJECT MANAGER A SITE HEALTH AND SAFETY PLAN FOLLOWING OSHA REQUIREMENTS FOR HAZARDOUS WASTE MANAGEMENT.

6. THE CONSTRUCTION WORKERS SHALL BE OSHA 40-HOUR HAZWOPER TRAINED IF CONDUCTING WORK INVOLVING LAND DISTURBING ACTIVITIES WITHIN ANY DELINEATED WASTE DISPOSAL AREA.

7. THE CONSTRUCTION WORKERS SHALL BE TRAINED ON THE IDENTIFICATION OF HAZARDOUS MATERIALS INCLUDING FIBROUS ASBESTOS IF CONDUCTING WORK INVOLVING WASTE DISPOSAL AREA

8. THE CONTRACTOR ACKNOWLEDGES SATISFACTION AS TO THE NATURE AND LOCATION OF THE WORK, THE GENERAL AND LOCAL CONDITIONS, PARTICULARLY THOSE BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING, AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, ROADS AND UNCERTAINTIES OF WEATHER, GROUNDWATER TABLE OR SIMILAR PHYSICAL CONDITIONS AT THE SITE, THE CONFORMATION OF SUBSURFACE MATERIALS TO BE ENCOUNTERED, THE PRESENCE AND LOCATION OF SUBSURFACE UTILITIES, THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRIOR TO AND DURING THE PROSECUTION OF THE WORK AND ALL OTHER MATTERS WHICH CAN IN ANY WAY AFFECT THE WORK OR THE COST THEREOF UNDER THIS CONTRACT. ANY FAILURE BY THE CONTRACTOR TO ACQUAINT ITSELF WITH ALL AVAILABLE INFORMATION OR CONDUCT INVESTIGATIONS TO ITS OWN SATISFACTION CONCERNING THESE CONDITIONS WILL NOT RELIEVE IT FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK.

EROSION & SEDIMENT CONTROL NARRATIVE & NOTES

1. EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS. THE MINIMUM STANDARDS OF NORTH CAROLINA SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. SEE PLANS FOR PROPOSED EROSION AND SEDIMENT CONTROL MEASURES.

2. STRUCTURAL PRACTICES:

- SILT FENCE AND STRAW WATTLES OR FILTER SOCKS SHALL BE INSTALLED AS SHOWN ON THE PLANS OR NEEDED FOR SEDIMENT CONTROL.
- SEDIMENT BASIN SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS.
- DRAINAGE CHANNELS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS.
- OUTLET PROTECTION SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS.
- EROSION CONTROL MATTING SHALL BE INSTALLED AS INDICATED ON THE PLANS

SEDIMENT BASIN, PERIMETER CHANNELS, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

3. CONSTRUCTION SHALL BE SEQUENCED SO THAT GRADING OPERATIONS WILL BEGIN AND END AS SOON AS POSSIBLE. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES.

4. GROUND STABILIZATION SHALL BE IMPLEMENTED USING APPROPRIATE TECHNIQUES AND WITHIN THE TIMEFRAMES SPECIFIED ON EXHIBIT 4 AND SPECIFICATIONS ON THIS PLAN SET.

5. SEDIMENT TRACKING ON THE PUBLIC ROADWAY IS NOT ALLOWED. IN ACCORDANCE WITH NORTH CAROLINA SEDIMENTATION CONTROL LAW IN THE EVENT THAT SEDIMENT IS INADVERTENTLY TRACKED ONTO A PUBLIC ROAD, THE ROAD SHALL BE CLEANED THOROUGHLY BY THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA ON-SITE. STREET WASHING OF SEDIMENTS TO STORM DRAIN SYSTEM IS NOT ALLOWED. STORM DRAINS MUST BE PROTECTED, AT MINIMUM, WITH STRAW WATTLES OR SIMILAR BMP. IF STREET WASH WASTEWATER CAN BE CONTROLLED FROM ENTERING STORM DRAINAGE SYSTEM, THEN IT SHALL BE PUMPED BACK ONTO THE SITE, CONTAINED AND DISPOSED OF PROPERLY.

6. EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED, DOCUMENTED AND REPORTED IN ACCORDANCE WITH THE SCHEDULE AND REQUIREMENTS ON EXHIBIT 3. NECESSARY REPAIRS MUST BE MADE IMMEDIATELY TO ENSURE EFFECTIVE AND EFFICIENT OPERATION.

CONSTRUCTION SEQUENCE

THIS SEQUENCE IS DESIGNED TO MINIMIZE SOIL EROSION AND SEDIMENTATION. THE CONTRACTOR MAY DEVIATE SLIGHTLY FROM THE STAGING OF PERMANENT SITE IMPROVEMENTS, BUT DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENT CONTROL MEASURES WILL NOT BE ALLOWED.

THE STAGING OF EARTHMOVING ACTIVITIES FOR THIS PROJECT IS A GENERAL DESCRIPTION OF THE WORK REQUIRED. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH NORTH CAROLINA REGULATIONS, AND ALL OTHER APPLICABLE FEDERAL, STATE OR LOCAL REQUIREMENTS.

1. PRIOR TO GRADING OR OTHER EARTH DISTURBANCE ON THE SITE, EROSION CONTROLS ARE TO BE INSTALLED.

2. THE CONTRACTOR SHALL INSTALL SILT FENCE/STRAW WATTLES/FILTER SOCKS AND SEDIMENT BASIN PRIOR TO CLEARING AND GRUBBING, IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES. CONSTRUCT PROPOSED SEDIMENT CONTROL DEVICES AS SOON AS CLEARING AND GRUBBING OPERATIONS ALLOW. DIVERSIONS SHALL BE SEEDED AND MULCHED IMMEDIATELY. SURFACE WATER SHALL BE DIVERTED AWAY FROM ALL EXCAVATIONS AND THE FACE OF ALL FILLS TO PREVENT FLOODING AND SOFTENING OF THE SUBGRADE OR COMPACTED MATERIALS.

3. CLEAR AND GRUB, AND REMOVE TOPSOIL. TOPSOIL STOCKPILE SHALL BE SEEDED AND MULCHED. E&SC BMPS SHALL BE CONSTRUCTED AROUND TOPSOIL STOCKPILES. CLEARING AND GRUBBING SHALL REMOVE ALL BRUSH, TREES, ROOTS, STUMPS, FENCES, SIGNS OR ANY OTHER MATERIAL THAT IS NOT TO BE REUSED FOR THE CONSTRUCTION. NO CLEARING AND GRUBBING DEBRIS SHALL BE BURIED ON-SITE. FOR CLEARING WITHIN LIMIT OF DISTURBANCE (LOD), STUMPS AND ROOTS LARGER THAN 2 INCHES IN DIAMETER SHALL BE COMPLETELY GRUBBED AND PROPERLY DISPOSED OFF-SITE. ALL TIMBER, TREETOPS, BRANCHES, STUMPS LESS THAN 2 INCHES IN DIAMETER, SHALL BE CHIPPED, GROUND, AND/OR MULCHED AND MAY BE USED AS SITE BMP'S WITH THE REMAINDER BEING PROPERLY DISPOSED OFF-SITE. CLEARING TO BE COMPLETED ONLY AS NEEDED WITHIN THE LOD TO COMPLETE THE PROJECT AS DEPICTED.

4. TOPSOIL OUTSIDE OF THE WASTE DISPOSAL AREA SHALL BE STRIPPED AND STOCKPILED WITH APPROPRIATE STABILIZATION TO PREVENT EROSION. TOPSOIL SHALL BE REUSED DURING THE RECLAMATION PROCESS AS NEEDED.

5. CONTRACTOR SHALL REMEDIATE THE WASTE DISPOSAL AREAS IN ACCORDANCE WITH THE PLANS AND SPECIFICATION ON THE WASTE REMOVAL AND CAPPING PLANS INCLUDED IN THE E&SC PLAN NARRATIVE.

6. CULVERT INLET AND OUTLET PROTECTION SHALL BE CONSTRUCTED IMMEDIATELY UPON PLACEMENT OF INLETS AND CULVERTS. INSTALLATION OF MATTING AND/OR RIPRAP TO OCCUR ONCE DITCHES ARE CONSTRUCTED.

7. ANY PORTION OF THE SITE THAT HAS BEEN GRADED, INCLUDING, BUT NOT LIMITED TO, ANY STRIPPING, STUMPING, LEVELING, SLOPING OR TRENCHING MUST HAVE APPROPRIATE TEMPORARY OR PERMANENT BMPS INSTALLED PRIOR TO THE END OF EACH WORK DAY.

8. GROUND STABILIZATION SHALL BE IMPLEMENTED USING APPROPRIATE TECHNIQUES AND WITHIN THE TIMEFRAMES AND SPECIFICATIONS ON THIS PLAN SET.

9. UPON SITE STABILIZATION, EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED AND THE AREAS REPAIRED/STABILIZED IN ACCORDANCE WITH STATE STANDARDS.

10. CONTRACTOR, ENGINEER, OWNER'S REPRESENTATIVE, AND NCDEQ SHALL CONDUCT FINAL SITE INSPECTION PRIOR TO FINAL PAYMENT.

REV.	DATE	BY	DESCRIPTION

NOTES

ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
ALBEMARLE, STANLY COUNTY NORTH CAROLINA

terracon
Consulting Engineers and Scientists
800 MORRISON ROAD
PH. (614) 863-3113
COLUMBUS, OHIO 43230
FAX. (614) 863-0475

EXHIBIT 2

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	2 OF 10

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

REV.	DATE	BY	DESCRIPTION

NCG01 SELF-INSPECTION, RECORD KEEPING AND REPORTING NOTES
ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
ALBEMARLE, STANLY COUNTY
NORTH CAROLINA

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EXHIBIT 3

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	3 OF 10

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

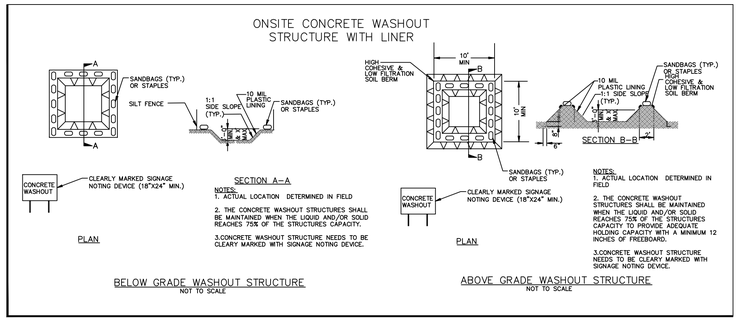
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

REV	DATE	BY	DESCRIPTION

GROUND STABILIZATION AND MATERIAL HANDLING NOTES
ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
ALBEMARLE, STANLY COUNTY NORTH CAROLINA

terracon
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800 MORRISON ROAD
COLUMBUS, OHIO 43230
PH: (614) 863-3113
FAX: (614) 863-0475

EXHIBIT 4

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	4 OF 10

DAVID B. & NINA HONEYCUTT
PIN 652902984149.000
DEED BOOK 991, PAGE 210

JEREMIAH A. & JENNIFER A. CLEGG
PIN 653901080310.000
DEED BOOK 1697, PAGE 683

HERLOCKER FARMS, INC
PIN 653901196155.000
DEED BOOK1516, PAGE 848

WADE & PATRICIA R. HATLEY
PIN 652902971888.000
DEED BOOK 312, PAGE 314

JUSTIN BLAKE
PIN 652902974971.000
DEED BOOK 1344, PAGE 691

JUSTIN T. & MAEGAN K. CARTER
PIN 653901074825.000
DEED BOOK 1657, PAGE 1355

30'± EASEMENT PER DB 389 PG 918 & 364 PG 277

EXISTING 12" RCP CULVERT

DISPOSAL AREA C
0.646 ACRES

116' EASEMENT PER DB 337 PG 152

NANNY DRIVE

EXISTING CULVERT

DISPOSAL AREA A
9.552 ACRES

ANIMAL BURIAL GROUND

SANDRA Y. PAGE
PIN 653901072615.000
DEED BOOK 1515, PAGE 186

DISPOSAL AREA B
0.483 ACRES

EXISTING 12" HDPE CULVERT

HERLOCKER FARMS, INC
PIN 653901273381000
DEED BOOK1433, PAGE 859

BLANDY HARDWOODS, INC
PIN 6529.0296.1601.000
DEED BOOK 386, PAGE 380

UNNAMED TRIBUTARY OF LONG CREEK

GEORGE L. & RUTH A. PAGE
PIN 653901079384.000
DEED BOOK 459, PAGE 462

POND

STONE

CONTROL CORNER
N: 596,891.11
E: 1,629,379.54

LARRY D. & KRISTA S. ALMOND
PIN 652902966648.000
DEED BOOK 1733, PAGE 1495

CONTROL CORNER
N: 596,828.05
E: 1,630,587.80

WILLIAM R. ALMOND, JR. & ANITA E. ALMOND
PIN 653901168865.000
DEED BOOK 509, PAGE 900

CONTROL CORNER
N: 596,510.10
E: 1,631,560.68

GEORGE L. & RUTH A. PAGE
PIN 653901063519.000
DEED BOOK 205, PAGE 200

MARVIN W. & MYRA P. POPLIN
PIN 653901061385.000
DEED BOOK 374, PAGE 149

15' EASEMENT PER DB 374 PG 149

KEVIN & JENNIE M. MORRIS
PIN 653901052037.000
DEED BOOK 1220, PAGE 181

GRADENE M. PAGE & TINA P. MARTIN
PIN 653901160004.000
DEED BOOK 1678, PAGE 37

GmC

GoF

Ud

BaD

TcB2

SITE DATA:
TOTAL PROPERTY AREA = 72.8 ACRES
TOTAL DISTURBED AREA = 8.9 ACRES

ONSITE SOIL SERIES:

MAP UNIT SYMBOL	MAP UNIT NAME
BaD	Badin channery silt loam, 8 to 15 percent slopes
GmC	Goldston very channery silt loam, 4 to 15 percent slopes
GoF	Goldston very channery silt loam, 15 to 45 percent slopes
TcB2	Tarrus channery silt clay loam, 2 to 8 percent slopes, moderately eroded
Ud	Udorthents, loamy

LEGEND
- EXISTING GRADE CONTOURS (FEET ABOVE MEAN SEA LEVEL)
- PROPERTY BOUNDARY
- EXISTING LIMIT OF WASTE
- EXISTING WATERWAY
- EXISTING CULVERT
- SOIL BOUNDARY
- WIRE FENCE
- RIPARIAN BUFFER

TOPO NOTE:

SURVEY PROVIDED BY TAYLOR WISEMAN & TAYLOR AND DATED JUNE 12, 2023. SURVEY WAS PERFORMED USING GPS SURVEY METHODOLOGIES USING NORTH CAROLINA GEODETIC SURVEY'S (NCGS). HORIZONTAL: NAD83 (2011) NC STATE PLANE COORDINATE SYSTEM. VERTICAL: NAVD88.

N

SCALE IN FEET: 100 0 50 100

REV	DATE	BY	DESCRIPTION

EXISTING SITE CONDITIONS

ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
ALBEMARLE, STANLY COUNTY NORTH CAROLINA

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EXHIBIT 5

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	1"=100'
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	5 OF 10

DAVID B. & NINA HONEYCUTT
PIN 652902984149.000
DEED BOOK 991, PAGE 210

JEREMIAH A. & JENNIFER A. CLEGG
PIN 653901080310.000
DEED BOOK 1697, PAGE 683

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DEED BOOK1516, PAGE 848

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DEED BOOK 312, PAGE 314

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PIN 652902974971.000
DEED BOOK 1344, PAGE 691

JUSTIN T. & MAEGAN K. CARTER
PIN 653901074825.000
DEED BOOK 1657, PAGE 1355

30'± EASEMENT PER DB 389 PG 918 & 364 PG 277

TEMPORARY ACCESS

WASTE CAPPING AREA (DISPOSAL AREA C = 0.646 ACRES)

LAYDOWN AREA

116' EASEMENT PER DB 337 PG 153

NANNY DRIVE

WASTE REMOVAL AREA (DISPOSAL AREA B - 0.483 ACRES)

ACCESS ROAD

SILT FENCE

NANNY DRIVE

DISPOSAL AREA A
9.552 ACRES

ANIMAL BURIAL GROUND

SANDRA Y. PAGE
PIN 653901072615.000
DEED BOOK 1515, PAGE 186

EXISTING DIVERSION CHANNEL

EXISTING 12" HDPE CULVERT

SILT FENCE

LIMIT OF DISTURBANCE

BASIN OUTLET

OUTLET PROTECTION

OUTLET PROTECTION

TRAP

EXISTING 24" RCP CULVERT

EXISTING 60" DIAMETER RCP CULVERT

SKIMMER BASIN 4.5

INLET

EXISTING DIVERSION CHANNEL

HERLOCKER FARMS, INC
PIN 653901173381000
DEED BOOK1433, PAGE 859

LIMIT OF BORROW AREA

BLANDY HARDWOODS, INC
PIN 6529 0296 1601.000
DEED BOOK 386, PAGE 380

UNNAMED TRIBUTARY OF LONG CREEK

GEORGE L. & RUTH A. PAGE
PIN 653901079384.000
DEED BOOK 496, PAGE 462

EXISTING DIVERSION CHANNEL

CONSTRUCTION ENTRANCE

OUTLET PROTECTION

HAUL ROUTE/RIP-RAP ENERGY DISSIPATOR

CLEAN WATER DIVERSION 2

EXISTING CLEAN WATER DIVERSION 2

POND

POND

POND

STONE

CONTROL CORNER
N: 596,891.11
E: 1,629,379.54

LARRY D. & KRISTA S. ALMOND
PIN 652902966648.000
DEED BOOK 1733, PAGE 1495

CONTROL CORNER
N: 596,826.05
E: 1,630,587.80

WILLIAM R. ALMOND, JR. & ANITA E. ALMOND
PIN 653901168865.000
DEED BOOK 509, PAGE 900

CONTROL CORNER
N: 596,510.10
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GEORGE L. & RUTH A. PAGE
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DEED BOOK 205, PAGE 200

MARVIN W. & MYRA P. POPLIN
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DEED BOOK 374, PAGE 149

15' EASEMENT PER DB 374 PG 149

KEVIN & JENNIE M. MORRIS
PIN 653901052037.000
DEED BOOK 1220, PAGE 181

NANNY DRIVE

GRADENE M. PAGE & TINA P. MARTIN
PIN 653901160004.000
DEED BOOK 1678, PAGE 37

SHED

1-STORY FRAME

N

SCALE IN FEET

NOTE:

TOTAL DISTURBED AREA = 8.8 ACRES.

LEGEND

- EXISTING GRADE CONTOURS (FEET ABOVE MEAN SEA LEVEL)
- PROPERTY BOUNDARY
- EXISTING LIMIT OF WASTE
- APPROXIMATE LIMITS OF DISTURBANCE
- SILT FENCE
- EXISTING WATERWAY
- DIVERSION CHANNEL
- CLEAN WATER DIVERSION
- EXISTING CULVERT
- PROPOSED CULVERT
- WIRE FENCE
- PROPOSED FENCE
- RIPARIAN BUFFER

NOTE:

1. DETAILED PLAN SET FOR NANNY DRIVE RELOCATION AND NEW CULVERT INCLUDED IN E&SC PLAN NARRATIVE. DETAILED ROAD RELOCATION PLAN SET INCLUDES CULVERT PUMPAROUND OPERATION AND E&SC MEASURES, ROAD PROFILE AND CROSS SECTIONS, AND SHOULDER SPECIFICATIONS. ROAD SHOULDER SHALL SLOPE FROM PROPOSED ALIGNMENT AND ROAD ELEVATION AT A 3:1 SLOPE TO MATCH EXISTING SURROUNDING GRADE.

TOPO NOTE:

SURVEY PROVIDED BY TAYLOR WISEMAN & TAYLOR AND DATED JUNE 12, 2023. SURVET WAS PERFORMED USING GPS SURVEY METHODOLOGIES USING NORTH CAROLINA GEODETIC SURVEY'S (NCGS). HORIZONTAL: NAD83 (2011) NC STATE PLANE COORDINATE SYSTEM. VERTICAL: NAVD88.

REV	DATE	BY	DESCRIPTION

WASTE REMOVAL AND CAPPING PLAN

ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION

NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY

NANNY DRIVE

NORTH CAROLINA

ALBEMARLE, STANLY COUNTY

terracon
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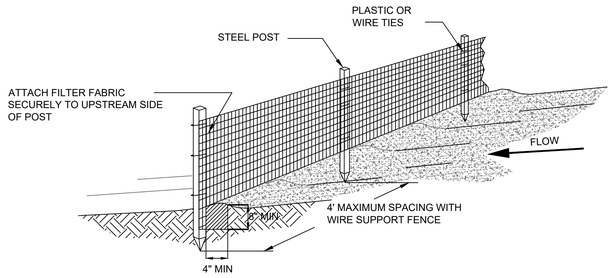
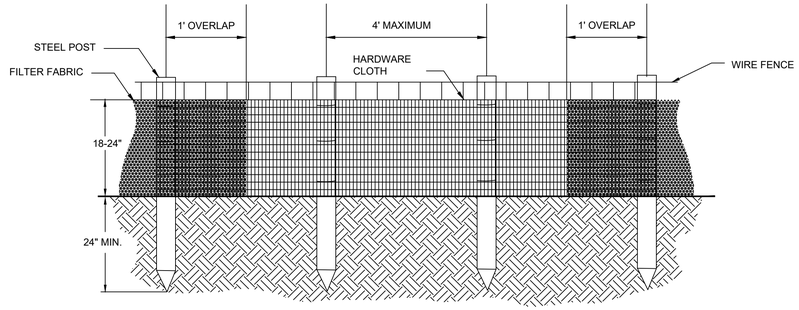
EXHIBIT 6

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	1"=100'
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	6 OF 10



SILT FENCE TYPICAL INSTALLATION

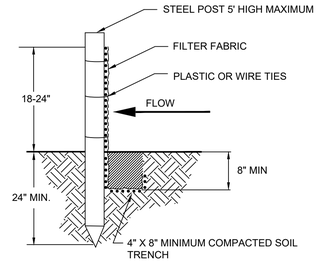


SILT FENCE OUTLET FRONT VIEW

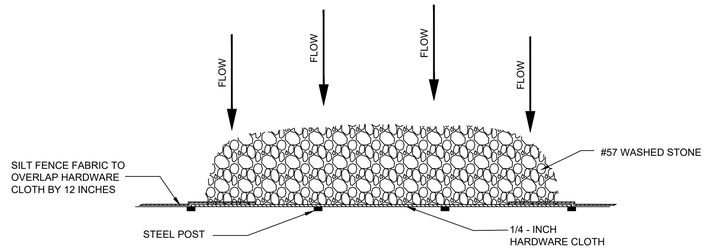
NOTE:
1.01 FILTER FABRIC
- A. FILTER FABRIC FOR THIS PROJECT SHALL BE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D6461/D6461M-16A. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120°F.

1.02 POSTS
- A. POST SHALL BE 1.25 LB/LINEAR FEET MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE STEEL POSTS HAVE PROJECTIONS TO FACILITY FASTING OF THE WIRE.
- B. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER FABRIC AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.

1.03 WIRE FENCING
- A. WIRE REINFORCEMENT SHALL BE A MINIMUM 14 GAUGE AND HAVE A MAXIMUM MESH SPACING OF 6 INCHES.



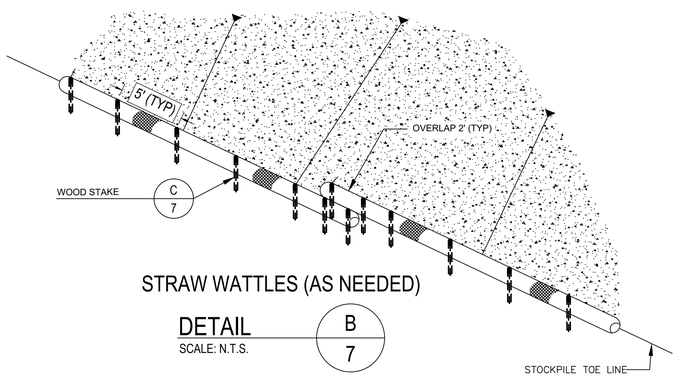
TYPICAL FENCE POST



SILT FENCE OUTLET PLAN VIEW

FILTER FABRIC SILT FENCE/SILT FENCE OUTLET

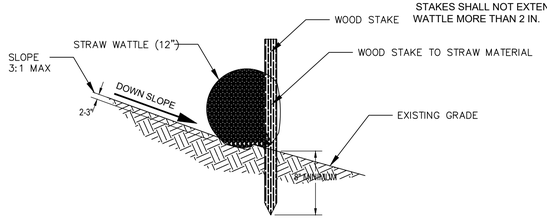
DETAIL A 7
SCALE: N.T.S.



STRAW WATTLES (AS NEEDED)

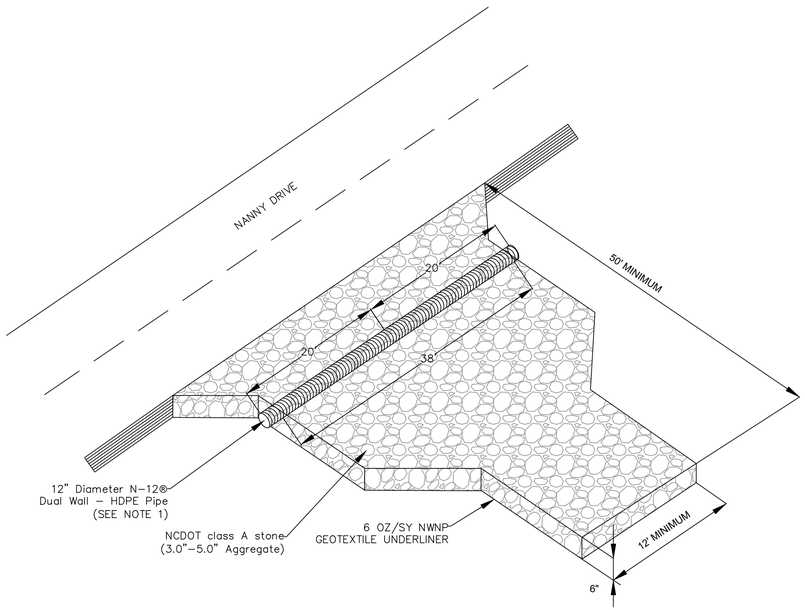
DETAIL B 7
SCALE: N.T.S.

NOTE:
1.01 STRAW WATTLE
- A. STRAW WATTLE SHALL BE AEC PREMIER STRAW WATTLES, AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, ARLINGTON, TX (1-866-9FIBERS).
- B. AEC PREMIER STRAW WATTLE CONSISTS OF CERTIFIED SEED FREE AGRICULTURAL STRAW INSIDE A FLEXIBLE AND DURABLE TUBULAR NETTING WITH METAL CLIPS OR KNOTTED ENDS. AEC PREMIER STRAW WATTLE IS DESIGNED TO PROVIDE INTIMATE CONTACT WITH THE SOIL, WHICH PREVENTS BLOWOUTS AND UNDERMINING. AEC PREMIER STRAW WATTLE MAY BE PLACED ACROSS CHANNEL BOTTOMS, ON HILLSLOPES, OR AROUND INLET STRUCTURES. AEC PREMIER STRAW WATTLE SHALL BE MANUFACTURED IN THE U.S.A.
- C. STRAW WATTLE SHALL HAVE THE FOLLOWING NOMINAL MATERIAL CHARACTERISTICS.
- D. PROPERTY MINIMUM DIAMETER=11.5 IN. WATTLE DENSITY(+OR- 10%)=(12 IN) 3.82 LB/FT3. WATTLE DIMENSIONS (W X L)(+OR- 10%)=12 IN X 10.0 FT.
- E. STAKES SHALL BE WOODEN, 1 1/8 IN WIDE X 1 1/8 IN THICK BY A MINIMUM OF 30 IN LONG FOR 9 IN AND 12 IN AEC PREMIER STRAW WATTLES AND 48 IN LONG FOR 20 IN AEC PREMIER STRAW WATTLE. STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLE MORE THAN 2 IN.



WOOD STAKE

DETAIL C 7
SCALE: N.T.S.



TYPICAL CONSTRUCTION ENTRANCE AND CONSTRUCTION ROAD

DETAIL D 7
SCALE: N.T.S.

NOTE:
1. CULVERT TO BE ADDED WHERE APPLICABLE.

REV	DATE	BY	DESCRIPTION

DETAILS
ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
NORTH CAROLINA
ALBEMARLE, STANLY COUNTY

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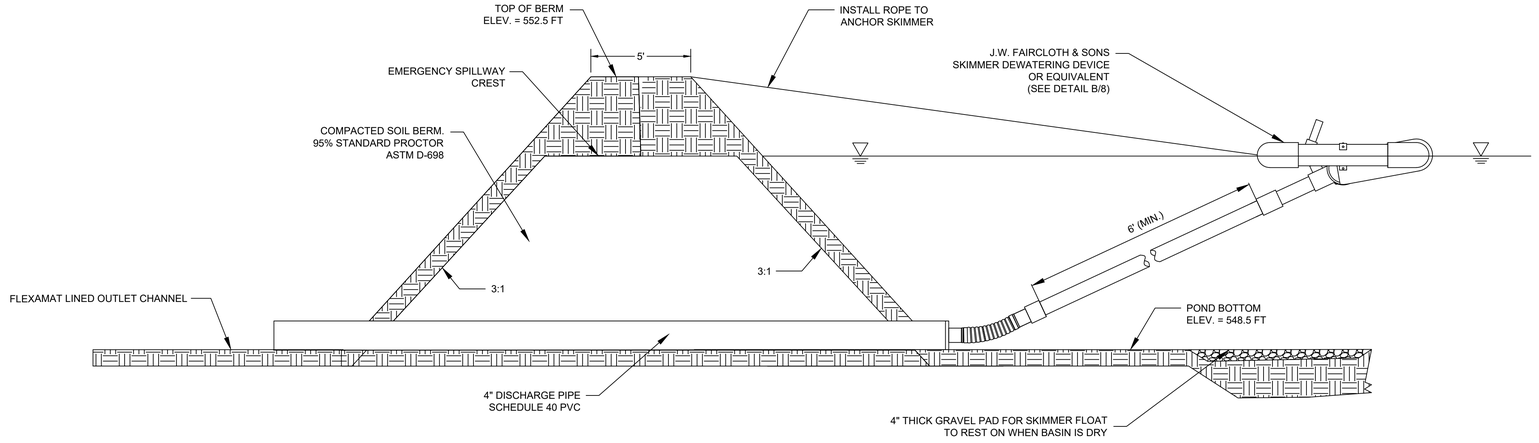
EXHIBIT 7	
DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	7 OF 10



SKIMMER BASIN DEWATERING SYSTEM

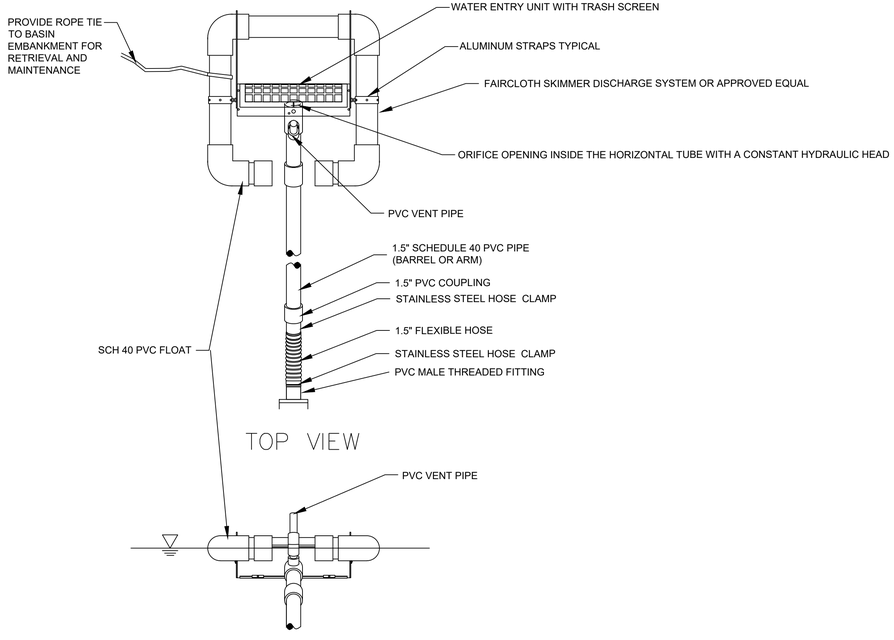
DETAIL A/8

SCALE: N.T.S.

NOTE:

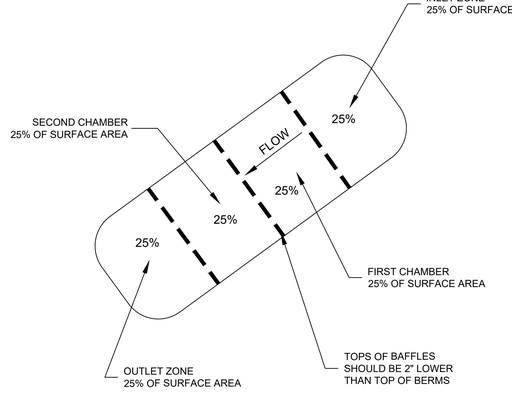
1.01 SKIMMER BASIN
- A. AGGREGATE FOR THE SKIMMER BASIN SHOULD BE A WELL-GRADED MIXTURE OF STONE WITH A D50 SIZE OF 9 - 14 INCHES. NORTH CAROLINA DEPARTMENT OF TRANSPORTATION #5 OR #57 EROSION CONTROL STONE IS RECOMMENDED.

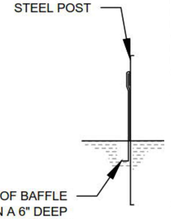
1.02 SKIMMER FLOAT DEWATERING DEVICE
- A. SKIMMER FLOAT DEWATERING DEVICE:
  1. SHALL BE J.W. FAIRCLOTH & SONS, INC. SKIMMER DEWATERING DEVICE WITH SIZE AND ORIFICE OPENING AS PRESENTED ON DETAIL B/10 SCHEDULE, OR ENGINEER APPROVED EQUAL.
  2. INSTALL COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS.
- B. FILTER FABRIC SHALL BE 6 OUNCE PER SQUARE YARD NON-WOVEN NEEDLE PUNCHED GEOTEXTILE.
- C. INSTALL A ROPE TO ANCHOR SKIMMER AND ATTACH IT TO THE SIDE OF THE BASIN



SKIMMER FLOAT

DETAIL B/8





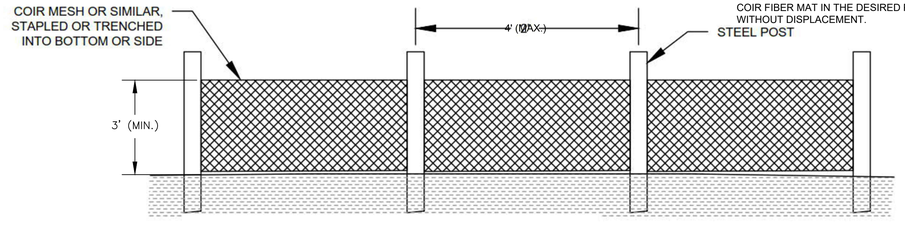
NOTES:

1.01 BAFFLE MATERIAL
- A. USE MATTING MADE OF 100% COCONUT FIBER (COIR) TWINE WOVEN INTO HIGH STRENGTH MATRIX WITH THE PROPERTIES SHOWN BELOW.

COIR FIBER BAFFLE MATERIAL PROPERTY REQUIREMENTS	
THICKNESS	0.30 IN. MINIMUM
TENSILE STRENGTH (WET) MINIMUM	900X680LB/FT
ELONGATION (WET) MAXIMUM	69% X 34%
FLOW VELOCITY	10-12 FT/SEC
WEIGHT MINIMUM	20 OZ/ SQ YD (680G/M2)
MINIMUM WIDTH	6.5 FEET
OPEN AREA	50% MAXIMUM

1.02 STAPLES
- A. STAPLES SHOULD BE MADE OF 0.125 INCH DIAMETER NEW STEEL WIRE FORMED INTO A "U" SHAPE NOT LESS THAN 12 INCHES IN LENGTH WITH A THROAT OF 1 INCH IN WIDTH. THE STAPLES ANCHOR THE POROUS BAFFLES INTO THE SIDES AND BOTTOM OF THE BASIN.

2.03 POSTS
- A. ENSURE THAT STEEL POSTS FOR POROUS BAFFLES ARE OF A SUFFICIENT HEIGHT TO SUPPORT BAFFLES AT DESIRED HEIGHT. POSTS SHOULD BE APPROXIMATELY 1-3/8" WIDE MEASURED PARALLEL TO THE FENCE, AND HAVE A MINIMUM WEIGHT OF 1.25 LB/LINEAR FT. THE POSTS MUST BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14.0 SQUARE INCHES AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE TO HAVE A MEANS OF RETAINING WIRE AND COIR FIBER MAT IN THE DESIRED POSITION WITHOUT DISPLACEMENT.



POROUS BAFFLE

DETAIL C/8

SCALE: N.T.S.

NOTE:

REFER TO EXHIBIT 6 FOR POND LAYOUT AND DIMENSIONS.

REV.	DATE	BY	DESCRIPTION

DETAILS

ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION

NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY

NANNY DRIVE

NORTH CAROLINA

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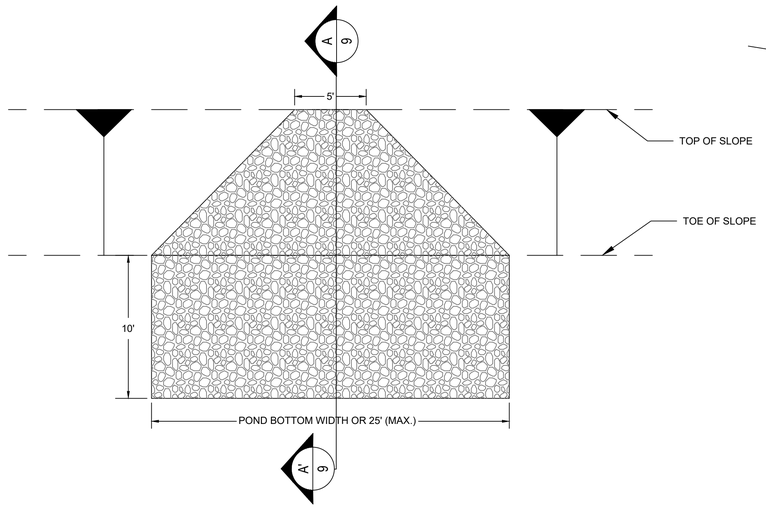
EXHIBIT 8

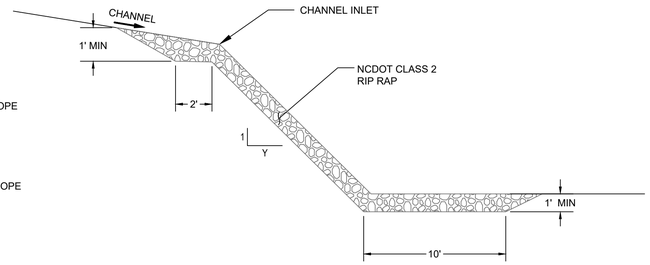
DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	8 OF 10



RIP-RAP APRON

DETAIL A/9

SCALE: N.T.S.



POND INLET RIP-RAP APRON DETAIL

ELEVATION A-A'/9

SCALE: N.T.S.

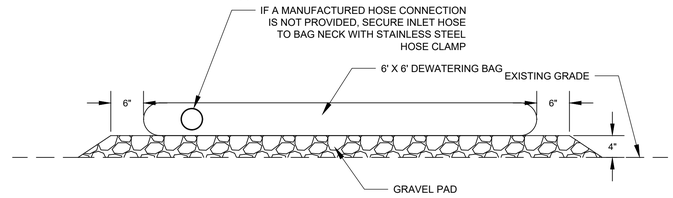
NOTES:

1.01 INSTALLATION:

A. INSTALL ULTRATECH INTERNATIONAL, INC. ULTRA-DEWATERING BAG PART #9724-O/S, 6' X 6', OR ENGINEERING APPROVED EQUAL.
B. PLACE BAG ON 4" THICK GRAVEL PAD COMPRISE OF #57 STONE
C. SECURE NECK OF DEWATERING BAG TIGHTLY TO DISCHARGE HOSE WITH STAINLESS STEEL HOSE CLAMP.

1.02 MAINTENANCE REQUIREMENTS:

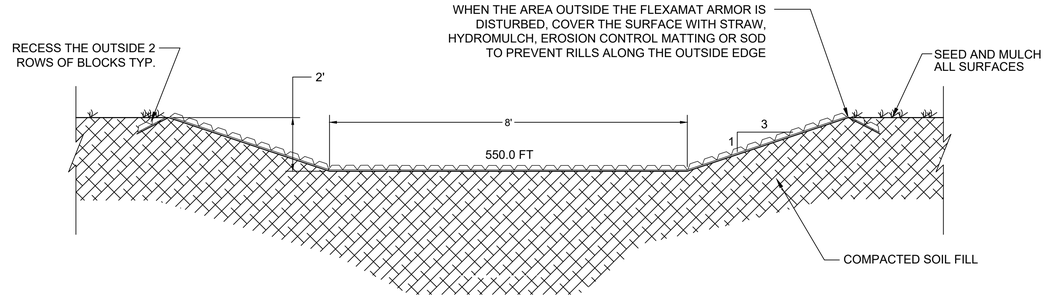
A. INSPECT INLET PIPE AND BAG FOR DAMAGE/BLOCKAGE
B. REPLACE BAG WHEN ¾ FULL OF SEDIMENT
C. SPREAD AND SEED SILT FROM DEWATERING BAGS PER THE PERMANENT SEEDING TABLE ON DRAWING 5.



DEWATERING BAG

DETAIL B/9

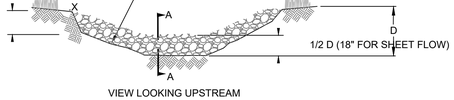
SCALE: N.T.S.



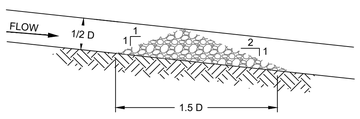
SKIMMER BASIN EMERGENCY SPILLWAY

DETAIL D/9

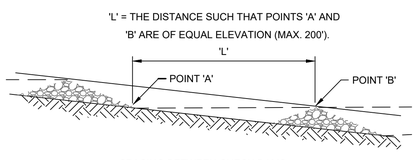
SCALE: N.T.S.



VIEW LOOKING UPSTREAM



SECTION A - A

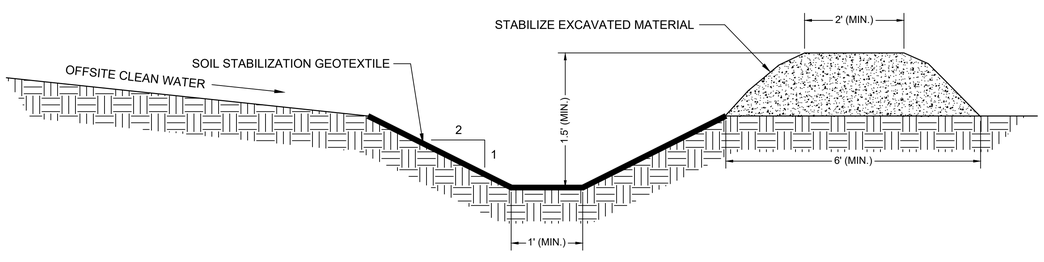


SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM

DETAIL C/9

SCALE: N.T.S.

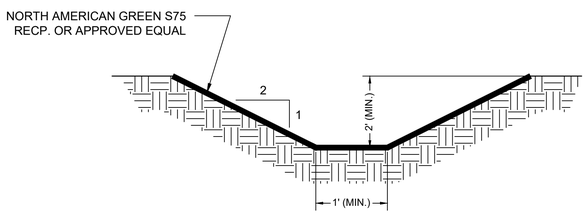


PLAN VIEW LINE

CLEAN WATER DIVERSION DETAIL

DETAIL E/9

SCALE: N.T.S.



DIVERSION CHANNEL DETAIL

DETAIL F/9

SCALE: N.T.S.

REV.	DATE	BY	DESCRIPTION

DETAILS

ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION

NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY

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FAX. (614) 863-0475

EXHIBIT 9

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	9 OF 10

SECTION 01 57 00
CONSTRUCTION ENTRANCE

PART 3 EXECUTION

3.01 EXAMINATION

VERIFY COMPACTED SUBGRADE OR GRANULAR BASE IS ACCEPTABLE AND READY TO SUPPORT DEVICES AND IMPOSED LOADS. VERIFY NON-WOVEN GEOTEXTILE IS FREE OF HOLES AND TEARS AND THAT IT HAS NOT DETERIORATED FROM ULTRA-VIOLENT EXPOSURE.

3.02 INSTALLATION

A. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER DEBRIS AND GRADE IT TO THE LINES AND GRADES ON THE CONSTRUCTION DRAWINGS.
B. PLACE NON-WOVEN GEOTEXTILE TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS.
C. PLACE THE GRAVEL, ON TOP OF THE GEOTEXTILE, TO THE LINES AND GRADES SHOWN ON THE PLANS, AND SMOOTH THE ROCK GRAVEL SURFACE WITH A ROLLER
D. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.

3.03 MAINTENANCE

A. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FORM LEAVING THE CONSTRUCTION SITE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

END OF SECTION

SECTION 01 57 13.1
TEMPORARY EROSION AND SEDIMENT CONTROLS POROUS BAFFLES

PART 2 PRODUCTS

2.01 BAFFLE MATERIAL

A. USE MATTING MADE OF 100% COCONUT FIBER (COIR) TWINE WOVEN INTO HIGH STRENGTH MATRIX WITH THE PROPERTIES SHOWN BELOW.

COIR FIBER BAFFLE MATERIAL PROPERTY REQUIREMENTS	
THICKNESS	0.30 IN. MINIMUM
TENSILE STRENGTH (WET)	900X680LB/FT MINIMUM
ELONGATION (WET)	69% X 34% MAXIMUM
FLOW VELOCITY	10-12 FT/SEC
WEIGHT	20 OZ/ SQ YD (680G/M2) MINIMUM
MINIMUM WIDTH	6.5 FEET
OPEN AREA	50% MAXIMUM

2.02 STAPLES

A. STAPLES SHOULD BE MADE OF 0.125 INCH DIAMETER NEW STEEL WIRE FORMED INTO A "U" SHAPE NOT LESS THAN 12 INCHES IN LENGTH WITH A THROAT OF 1 INCH IN WIDTH. THE STAPLES ANCHOR THE POROUS BAFFLES INTO THE SIDES AND BOTTOM OF THE BASIN.

2.03 POSTS

A. ENSURE THAT STEEL POSTS FOR POROUS BAFFLES ARE OF A SUFFICIENT HEIGHT TO SUPPORT BAFFLES AT DESIRED HEIGHT. POSTS SHOULD BE APPROXIMATELY 1-3/8" WIDE MEASURED PARALLEL TO THE FENCE, AND HAVE A MINIMUM WEIGHT OF 1.25 LB/LINEAR FT. THE POSTS MUST BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14.0 SQUARE INCHES AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE TO HAVE A MEANS OF RETAINING WIRE AND COIR FIBER MAT IN THE DESIRED POSITION WITHOUT DISPLACEMENT.

2.04 INSTALLATION

A. GRADE THE BASIN SO THAT THE BOTTOM IS UNIFORMLY LEVEL.
B. INSTALL THE COIR FIBER BAFFLES IMMEDIATELY UPON EXCAVATION OF THE BASINS.
C. INSTALL POSTS ACROSS THE WIDTH OF THE SEDIMENT TRAP.
D. STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES SPACED A MAXIMUM OF 4 FEET APART. THE TOP OF THE FABRIC SHOULD BE A MINIMUM OF 6 INCHES HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE A MINIMUM OF 2 INCHES LOWER THAN THE TOP OF THE EARTHEN EMBANKMENT.
E. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISCHARGE POINT. BASINS LESS THAN 20 FEET IN LENGTH MAY USE 2 BAFFLES.
F. ATTACH A 9 GAUGE HIGH TENSION WIRE STRAND TO THE STEEL POSTS AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION WITH PLASTIC TIES OR WIRE FASTENERS TO PREVENT SAGGING. IF THE TEMPORARY SEDIMENT BASIN WILL BE CONVERTED TO A PERMANENT STORMWATER BASIN OF A GREATER DEPTH, THE BAFFLE HEIGHT SHOULD BE BASED ON THE POOL DEPTH DURING USE AS A TEMPORARY SEDIMENT BASIN.
G. EXTEND 9 GAUGE MINIMUM HIGH TENSION WIRE STRAND TO SIDE OF BASIN OR INSTALL STEEL T-POSTS TO ANCHOR BAFFLE TO SIDE OF BASIN AND SECURE TO VERTICAL END POSTS.
H. DRAPE THE COIR FIBER MAT OVER THE WIRE STRAND MOUNTED AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION. SECURE THE COIR FIBER MAT TO THE WIRE STRAND WITH PLASTIC TIES OR WIRE FASTENERS. ANCHOR THE MATTING TO THE SIDES AND FLOOR OF THE BASIN WITH 12 INCH WIRE STAPLES, APPROXIMATELY 1 FT. APART, ALONG THE BOTTOM AND SIDE SLOPES OF THE BASIN.
I. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN.
J. ADJUSTMENTS MAY BE REQUIRED IN THE STAPLING REQUIREMENTS TO FIT INDIVIDUAL SITE CONDITIONS

PART 3 EXECUTION

3.01 MAINTENANCE

A. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL EVENT. MAKE ANY REPAIRS TO DAMAGED PORTIONS IMMEDIATELY.
B. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
C. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.

END OF SECTION

SECTION 01 57 13.2
TEMPORARY EROSION AND SEDIMENT CONTROLS SILT FENCE

PART 2 PRODUCTS

2.01 FILTER FABRIC

A. FILTER FABRIC FOR THIS PROJECT SHALL BE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D6461/D6461M-16A. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120°F.

2.02 POSTS

A. POST SHALL BE 1.25 LB/LINER AFT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE STEEL POSTS HAVE PROJECTIONS TO FACILITY FASTING OF THE WIRE.

2.03 WIRE FENCING

A. WIRE REINFORCEMENT SHALL BE A MINIMUM 14 GAUGE AND HAVE A MAXIMUM MESH SPACING OF 6 INCHES.

PART 3 EXECUTION

3.01 EXAMINATION

A. VERIFY ALL COMPONENTS OF THE SILT FENCE ARE NOT DAMAGED AND IN STABLE CONDITION.

3.02 INSTALLATION

A. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
B. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
C. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
D. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
E. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
F. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC SIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
G. EXCAVATE A TRENCH OF APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FORM THE BARRIER.
H. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM SIDE OF THE TRENCH.
I. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
J. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

3.03 MAINTENANCE

A. INSPECT SILT FENCES AT LEAST ONCE PER WEEK AND AFTER EACH RAINFALL EVENT. MAKE ANY REPAIRS TO DAMAGED PORTIONS IMMEDIATELY.
B. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
C. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

END OF SECTION

SECTION 01 57 13.3
TEMPORARY EROSION AND SEDIMENT CONTROLS SKIMMER BASIN

PART 2 PRODUCTS

A. AGGREGATE FOR THE SEDIMENT BASIN RIPRAP APRON SHALL BE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION CLASS 2 RIP RAP STONE FOR EROSION CONTROL.
B. SKIMMER FLOAT DEWATERING DEVICE SHALL BE J.W. FAIRCLOTH & SONS, INC. SKIMMER, OR APPROVED EQUAL. CONSTRUCT PER MANUFACTURER RECOMMENDATIONS
C. FILTER FABRIC SHALL BE 6 OUNCE PER SQUARE YARD NON-WOVEN NEEDLE PUNCHED GEOTEXTILE.
D. DEWATERING BAG SHALL BE INTERSTATE PRODUCTS, INC MODEL# 9724-O/S OR APPROVED EQUAL.

PART 3 EXECUTION

3.01 EXAMINATION

A. VERIFY THE LINES AND GRADES OF THE SURROUNDING AREA IS CORRECT, PRIOR TO PLACEMENT OF THE SKIMMER BASIN.

3.02 INSTALLATION

A. CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
B. STOCKPILE ALL TOPSOIL OR SOIL CONTAINING ORGANIC MATTER FOR USE ON THE OUTER SHELL OF THE EMBANKMENT TO FACILITATE VEGETATIVE ESTABLISHMENT. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.
C. CONSTRUCT EMBANKMENT USING FILL MATERIAL THAT IS FREE OF ROOTS, WOODY VEGETATION, ROCKS, AND OTHER OBJECTIONABLE MATERIAL. SCARIFY AREAS ON WHICH FILL IS TO BE PLACED BEFORE PLACING FILL. PLACE FILL MATERIAL IN LIFTS OF 6 TO 8 INCH AND COMPACT BY ROUTING THE CONSTRUCTION HAULING EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF HEAVY EQUIPMENT, OR A COMPACTOR MAY BE USED. CONSTRUCT THE EMBANKMENT TO AN ELEVATION 6 INCHES HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLING.
D. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVISE FROM SETTLING INTO MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER, OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE.
E. INSTALL THE SKIMMER DEWATERING DEVICE
F. CONTRUCT THE EMERGENCY SPILLWAY WITH FLEXAMAT SURFACE PROTECTION.
G. CONSTRUCT THE INLETS. DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION.
H. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT IMMEDIATELY AFTER CONSTRUCTION
I. INSTALL POROUS BAFFLES AS SPECIFIED IN SECTION 01 57 13.1.

MAINTENANCE

A. INSPECT TEMPORARY SKIMMER BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS.
B. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREA.
C. AFTER ALL SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, DEWATER THE BASIN PRIOR TO REMOVAL. DISCHARGE DEWATERING THROUGH DEWATERING BAGS. REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY.
D. INSPECT THE SKIMMER FLOAT APPARATUS WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
E. IF THE SKIMMER FLOAT IS CLOGGED WITH TRASH OR DEBRIS PULL THE APPARATUS TO THE BANK AND REMOVE DEBRIS. CHECK THE ORIFICE INSIDE THE SKIMMER TO ENSURE NO TRASH HAS GOTTEN PAST THE SCREEN.
F. IF SEDIMENT HAS ACCUMULATED IN THE SKIMMER FLOAT BED PREVENTING COMPLETE BASIN DRAINAGE, REMOVE APPARATUS AND RE-EXCAVATE THE BED TO THE DESIRED DEPTH.
G. IF THE ORIFICE, BARREL ARM, OR DISCHARGE PIPE IS CLOGGED REMOVE PULL THE SKIMMER FLOAT APPARATUS TO THE BANK. RAISE THE ORIFICEAS HIGH AS POSSIBLE AND APPLY HYDRAULIC BACK PRESSURE TO REMOVE THE OBSTRUCTION. CONTINUE TO FLUSH THE PIPE FOR 1-2 MINUTES AFTER THE OBSTRUCTION HAS CLEARED. IF THE OBSTRUCTION CANNOT BE REMOVED WITH HYDRAULIC PRESSURE, A PLUMBER'S SNAKE OR AUGUR CAN BE USED.

END OF SECTION

SECTION 01 57 13.4
TEMPORARY EROSION AND SEDIMENT CONTROLS TEMPORARY SEEDING

PART 2 PRODUCTS

2.01- IN ACCORDANCE WITH NPDES CONSTRUCTION STORMWATER GENERAL PERMIT NCG010000, SEEDING SHALL BE IMPLEMENTED AS OUTLINED IN THE FOLLOWING TABLE:

Temporary Seeding			
	Jan. 1 - May 1	May 1 - Aug. 15	Aug. 15 - Dec. 30
Seed	Rye Grain (120 lb/acre) Kobe Annual Lespedeza (50 lb/acre)	German Millet (40 lb/acre	Rye Grain (120 lb/acre)
Seed Application	Scarify soil to prepare seed bed. Use a cyclone seeder, drill, cultipacker seeder, or hydroseeder.		
Lime	2,000 lb/acre ground agricultural limestone.		
Fertilizer	1,000 lb/acre 10-10-10 fertilizer.		
Mulch	4,000 lb/acre straw.		
Tacking	Asphalt, netting, or a mulch anchoring tool to anchor straw.		
Maintenance	Re-fertilize if growth is not fully adequate. Reseed, re-fertilize and mulch immediately following erosion or other damage.		
Soil amendments (lime and fertilizer) may be revised based on soil test results			

PART 3 EXECUTION

3.01 INSTALLATION

A. COMPLETE GRADING BEFORE PREPARING SEEDBEDS, AND INSTALL ALL NECESSARY EROSION CONTROL PRACTICES SUCH AS, DIKES, WATERWAYS, AND BASINS. MINIMIZE STEEP SLOPES BECAUSE THEY MAKE SEEDBED PREPARATION DIFFICULT AND INCREASE THE EROSION HAZARD. IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES USING A RIPPER, HARROW, OR CHISEL PLOW.
B. APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH OF THE SOIL IS NOT KNOWN, AN APPLICATION OF GROUND AGRICULTURAL LIMESTONE AT THE RATE OF 1 TO 1 ½ TONS/ACRE ON COARSE-TEXTURED SOILS AND 2-3 TONS/ACRE ON FINE TEXTURED SOILS IS USUALLY SUFFICIENT. APPLY LIMESTONE UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH A PH OF 6 OR HIGHER NEED NOT BE LIMED.
C. USE FERTILIZER ACCORDING TO BASE APPLICATION RATES ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1,000 LB/ACRE. INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. IF A HYDRAULIC SEEDER IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES BEFORE APPLICATION.
D. IF RECENT TILLAGE OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL ROUGHENING MAY NOT BE REQUIRED, EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS. GROVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING.
E. EVENLY APPLY SEED USING A CYCLONE SEEDER (BROADCAST), DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER AT 40 LB/ACRE. BROADCAST SEEDING AND HYDROSEEDING ARE APPROPRIATE FOR STEEP SLOPES WHERE EQUIPMENT CANNOT BE DRIVEN. HAND BROADCASTING IS NOT RECOMMENDED BECAUSE OF THE DIFFICULTY IN ACHIEVING A UNIFORM DISTRIBUTION.SMALL GRAINS SHOULD BE PLANTED NO MORE THAN 1 INCH DEEP, AND GRASSES AND LEGUMES NO MORE THAN ½ INCH. BROADCAST SEED MUST BE COVERED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRMED WITH A ROLLER OR CULTIPACKER. HYDROSEEDED MIXTURES SHOULD INCLUDE A WOOD FIBER MULCH.
F. APPLY 4,000 LB/ACRE. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

3.02 MAINTENANCE

A. RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

3.03 MAINTENANCE

A. CONTRACTOR SHALL WARRANTY THIS WORK POST-CONSTRUCTION (I.E. SEED MIX, FERTILIZER, MULCH, TACKIFIER AND RECOMMENDED SOIL AMENDMENTS) UNTIL THE SOIL IS STABILIZED AS REQUIRED BY THE DEPARTMENT.

END OF SECTION

SECTION 01 57 13.5
TEMPORARY EROSION AND SEDIMENT CONTROLS STRAW WATTLES

PART 2 PRODUCTS

2.01 STRAW WATTLE

A. STRAW WATTLE SHALL BE AEC PREMIER STRAW WATTLES, AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, ARLINGTON, TX (1-866-9FIBERS).
B. AEC PREMIER STRAW WATTLE CONSISTS OF CERTIFIED SEED FREE AGRICULTURAL STRAW INSIDE A FLEXIBLE AND DURABLE TUBULAR NETTING WITH METAL CLIPS OR KNOTTED ENDS. AEC PREMIER STRAW WATTLE IS DESIGNED TO PROVIDE INTIMATE CONTACT WITH THE SOIL, WHICH PREVENTS BLOWOUTS AND UNDERMINING. AEC PREMIER STRAW WATTLE MAY BE PLACED ACROSS CHANNEL BOTTOMS, ON HILLSLOPES, OR AROUND INLET STRUCTURES. AEC PREMIER STRAW WATTLE SHALL BE MANUFACTURED IN THE U.S.A.
C. STRAW WATTLE SHALL HAVE THE FOLLOWING NOMINAL MATERIAL CHARACTERISTICS.
D. PROPERTY MINIMUM DIAMETER=11.5 IN. WATTLE DENSITY(+OR- 10%)=(12 IN) 3.82 LB/FT3. WATTLE DIMENSIONS (W X L)(+OR- 10%)=12 IN X 10.0 FT.

2.02 STAKES

A. STAKES SHALL BE WOODEN, 1 1/8 IN WIDE X 1 1/8 IN THICK BY A MINIMUM OF 30 IN LONG FOR 9 IN AND 12 IN AEC PREMIER STRAW WATTLES AND 48 IN LONG FOR 20 IN AEC PREMIER STRAW WATTLE. STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLE MORE THAN 2 IN.

PART 3 EXECUTION

3.01 SITE PREPARATION

A. BEFORE PLACING STRAW WATTLES, THE CONTRACTOR SHALL CERTIFY THAT THE SUBGRADE HAS BEEN PROPERLY COMPACTED, GRADED SMOOTH, HAS NO DEPRESSIONS, VOIDS, SOFT OR UNCOMPACTED AREAS, IS FREE FROM OBSTRUCTIONS SUCH AS TREE ROOTS, PROTRUDING STONES OR OTHER FOREIGN MATTER, AND IS SEEDED AND FERTILIZED ACCORDING TO PROJECT SPECIFICATIONS WERE APPLICABLE. THE CONTRACTOR SHALL NOT PROCEED UNTIL ALL UNSATISFACTORY CONDITIONS HAVE BEEN REMEDIED. BY BEGINNING CONSTRUCTION, CONTRACTOR SIGNIFIES THAT THE PRECEDING WORK IS IN CONFORMANCE WITH THIS SPECIFICATION.
B. CONTRACTOR SHALL FINE GRADE THE SUBGRADE BY HAND DRESSING WHERE NECESSARY TO REMOVE LOCAL DEVIATIONS.
C. NO VEHICPS ULAR TRAFFIC SHALL BE PERMITTED DIRECTLY ON THE STRAW WATTLE.

3.02 INSTALLATION

A. STRAW WATTLE SHALL BE INSTALLED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND IN ACCORDANCE WITH DETAILS ON THE CONTRACT DRAWINGS. THE EXTENT OF STRAW WATTLE SHALL BE AS SHOWN ON THE PROJECT DRAWINGS.
B. STRAW WATTLE SHOULD BE INSTALLED TO INTERCEPT WATER FLOW AND COLLECT SEDIMENT ON SITE. THEY MAY BE PLACED OVER BARE SOIL OR ON TOP OF EROSION CONTROL BLANKETS. STRAW WATTLES ARE TYPICALLY INSTALLED IN A 2-INCH TRENCH WITH THE ENDS OF THE WATTLE FACING UPSTREAM.
C. THEY SHALL BE SECURED TO THE SUBGRADE BY WOOD STAKES EVERY FOUR LINEAL FEET ACROSS THE LENGTH OF THE STRAW WATTLE. THE STAKES SHALL BE DRIVEN THROUGH THE CENTER OF THE STRAW WATTLE ONLY AND DRIVEN INTO THE GROUND A MINIMUM OF 24 INCHES.
D. STRAW WATTLE SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION AND ROOT SYSTEMS ARE PRESENT.

3.03 QUALITY ASSURANCE

A. STRAW WATTLE SHALL NOT BE DEFECTIVE OR DAMAGED. DAMAGED OR DEFECTIVE MATERIALS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

3.04 MAINTENANCE

A. INSPECT STRAW WATTLE AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE WATTLE TO ITS ORIGINAL STATE. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE WATTLE.

SECTION 32 92 19
PERMANENT SEEDING

PART 2 PRODUCTS

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A NORTH CAROLINA DEPARTMENT OF AGRICULTURE (DEPARTMENT) SOILS TEST (OR EQUAL) FOR ALL AREAS TO BE SEEDED, SPRIGGED, SODDED, OR PLANTED, AS REQUIRED BY THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

2.01 SEEDING PLAN

A. BASED ON RECOMMENDATIONS FROM THE NORTH CAROLINA DEPARTMENT OF AGRICULTURE FOR THE REGION, THE SEEDING PLAN IS AS FOLLOWS:

Permanent Seeding			
	May 15 - Aug. 15	Aug. 15 - Apr. 15	Apr. 15 - Jun. 30
Seed	German Millet (10 lb/acre	Rye Grain (40lb/acre)	Bermuda Grass (25 lb/acre)
Seed Application	Scarify soil to prepare seed bed. Use a cyclone seeder, drill, cultipacker seeder, or hydroseeder.		
Lime	2,000 lb/acre ground agricultural limestone.		
Fertilizer	1,000 lb/acre 10-10-10 fertilizer.		
Mulch	4,000 lb/acre straw.		
Tacking	Asphalt, netting, or a mulch anchoring tool to anchor straw.		
Maintenance	Re-fertilize if growth is not fully adequate. Reseed, re-fertilize and mulch		
Soil amendments (lime and fertilizer) may be revised based on soil test results			

A. ADDING MIXTURE: IF THE SEEDING PLAN VARIES FROM THE ABOVE, PLEASE REFER TO TABLES 6.11.A THOROUGH 6.11.D FROM THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, FOR REFERENCE. CONSIDER SEEDING TEMPORARY, ANNUAL SPECIES IF THE TIME OF YEAR IS NOT APPROPRIATE FOR PERMANENT SEEDING.

B. FERTILIZER: AMENDMENTS TO THE SOIL SHALL BE IN ACCORDANCE WITH THE ABOVE AND MAY BE AMENDED BASED ON THE TEST RESULTS OBTAINED FROM THE DEPARTMENT.

C. MULCH: MULCH IN ACCORDANCE WITH THE ABOVE. MULCH MUST COVER A MINIMUM OF EIGHTY PERCENT OF THE SOIL SURFACE AND MUST BE SECURED BY A TACKING AGENT, CRIMPING, OR PROTECTIVE BIODEGRADABLE NETTING.

PART 3 EXECUTION

3.01 EXAMINATION

A. VERIFY GRADES AND ELEVATIONS OF BASE OR FOUNDATION FOR OTHER WORK ARE CORRECT.

3.02 INSTALLATION

D. COMPLETE GRADING BEFORE PREPARING SEEDBEDS, AND INSTALL ALL NECESSARY EROSION CONTROL PRACTICES SUCH AS, DIKES, WATERWAYS, AND BASINS. MINIMIZE STEEP SLOPES BECAUSE THEY MAKE SEEDBED PREPARATION DIFFICULT AND INCREASE THE EROSION HAZARD. IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES USING A RIPPER, HARROW, OR CHISEL PLOW.
E. APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH OF THE SOIL IS NOT KNOWN, AN APPLICATION OF GROUND AGRICULTURAL LIMESTONE AT THE RATE OF 1 TO 1 ½ TONS/ACRE ON COARSE-TEXTURED SOILS AND 2-3 TONS/ACRE ON FINE TEXTURED SOILS IS USUALLY SUFFICIENT. APPLY LIMESTONE UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH A PH OF 6 OR HIGHER NEED NOT BE LIMED.
F. USE FERTILIZER ACCORDING TO BASE APPLICATION RATES ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, APPLY A 10-10-10 GRADE FERTILIZER AT 750-1,000 LB/ACRE. INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. IF A HYDRAULIC SEEDER IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES BEFORE APPLICATION.
G. IF RECENT TILLAGE OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL ROUGHENING MAY NOT BE REQUIRED, EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS. GROVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING.
H. EVENLY APPLY SEED USING A CYCLONE SEEDER (BROADCAST), DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. BROADCAST SEEDING AND HYDROSEEDING ARE APPROPRIATE FOR STEEP SLOPES WHERE EQUIPMENT CANNOT BE DRIVEN. HAND BROADCASTING IS NOT RECOMMENDED BECAUSE OF THE DIFFICULTY IN ACHIEVING A UNIFORM DISTRIBUTION.

SMALL GRAINS SHOULD BE PLANTED NO MORE THAN 1 INCH DEEP, AND GRASSES AND LEGUMES NO MORE THAN ½ INCH. BROADCAST SEED MUST BE COVERED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRMED WITH A ROLLER OR CULTIPACKER. HYDROSEEDED MIXTURES SHOULD INCLUDE A WOOD FIBER MULCH.

A. APPLY 4,000 LB/ACRE OF STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

3.03 MAINTENANCE

A. REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

B. CONTRACTOR SHALL WARRANTY THIS WORK POST-CONSTRUCTION (I.E. SEED MIX, FERTILIZER, MULCH, TACKIFIER AND RECOMMENDED SOIL AMENDMENTS) UNTIL THE SOIL IS STABILIZED AS REQUIRED BY THE DEPARTMENT.

SECTION 33 46 00
TEMPORARY DIVERSION CHANNELS
PART 1 GENERAL

PART 2 PRODUCTS

2.01 STORMWATER CHANNEL

A. ALL STORMWATER CHANNELS SHALL BE FORMED AND COMPACTED OUT OF THE CLOSURE SURFACE.

2.02 ROLLED EROSION CONTROL PRODUCT

A. THE ROLLED EROSION CONTROL PRODUCT (RECP) USED FOR PROTECTING THE STORMWATER CHANNELS SHALL BE DOUBLE NET BIODEGRADABLE ORGANIC FIBER COMPRISED OF 70% STRAW AND 30% COCONUT.
B. RECP SHALL BE SECURED USING 18" 10-GAUGE LANDSCAPING STAPLES.

2.03 RIP-RAP

A. THE RIP-RAP, IF USED FOR ARMORING THE STORMWATER CHANNELS SHALL BE COMPOSED OF AGGREGATE THAT IS FREE FROM SHARP ANGELS THOUGH NOT SMOOTHLY ROUNDED. THE AGGREGATE SHALL BE 8-INCH NORTH CAROLINA #5 OR #57 WASHED STONE, UNLESS OTHERWISE NOTED.

2.04 GEOTEXTILE

A. THE GEOTEXTILE, IF USED IN THE CHANNELS SHALL BE 8 OZ/SQ YD NON-WOVEN GEOTEXTILE.

PART 3 EXECUTION

3.01 EXAMINATION

A. VERIFY GRADES AND ELEVATIONS OF BASE OR FOUNDATION FOR OTHER WORK ARE CORRECT PRIOR TO INSTALLATION OF THE CHANNELS.
B. ENSURE ALL PRODUCTS ARE IN GOOD WORKING CONDITION, FREE OF DEFECTS.

3.02 INSTALLATION OF STORMWATER CHANNEL WITH RECP

A. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.
B. EXCAVATE THE CROSS SECTION TO THE LINES AND GRADES OF THE FOUNDATION OF THE COVER SYSTEM AS SHOWN ON THE PLANS. BRING OVER-EXCAVATED AREAS TO GRADE BY INCREASING THE THICKNESS OF THE COVER SYSTEM OR BY BACKFILLING THE MOIST SOIL COMPACTED TO THE DENSITY OF SURROUNDING MATERIAL. OVERCUT AROUND THE CHANNEL PERIMETER TO ALLOW FOR KEYING OF THE RECP DURING INSTALLATION.
C. REMOVE AND PROPERLY DISPOSE OF ALL EXCESS SOILS SO THAT SURFACE WATER MAY ENTER THE CHANNEL FREELY.
D. INSTALL THE RECP ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
E. RECP SHALL ONLY BE INSTALLED ON CHANNELS WITH A TRAVERSE GRADE OF 5% OR LESS.

3.03 INSTALLATION OF STORMWATER CHANNEL WITH FLEXAMAT

A. CLEAR THE FOUNDATION AREA OF TREES, STUMPS, ROOTS, LOOSE ROCK, AND OTHER OBJECTIONABLE MATERIAL.
B. EXCAVATE THE CROSS SECTION TO THE LINES AND GRADES OF THE FOUNDATION OF THE COVER SYSTEM AS SHOWN ON THE PLANS. BRING OVER-EXCAVATED AREAS TO GRADE BY INCREASING THE THICKNESS OF THE COVER SYSTEM OR BY BACKFILLING THE MOIST SOIL COMPACTED TO THE DENSITY OF SURROUNDING MATERIAL.
C. IMMEDIATELY UPON COMPLETION OF THE CHANNEL, VEGETATE ALL DISTURBED AREAS OR OTHERWISE PROTECT THEM AGAINST SOIL EROSION. WHERE CHANNEL CONSTRUCTION WILL TAKE LONGER THAN 30 DAYS, STABILIZE CHANNELS BY REACHES.

3.04 MAINTENANCE REQUIREMENTS OF STORMWATER CHANNEL WITH RECP

A. INSPECT THE CHANNEL AFTER EVERY RAINFALL EVENT. IMMEDIATELY MAKE REPAIRS TO DAMAGED AREAS NO LONGER MEETING THE SPECIFICATION. IT IS PARTICULARLY IMPORTANT TO CHECK THE CHANNEL OUTLET AND ALL ROAD CROSSINGS FOR BANK STABILITY AND EVIDENCE OF PIPING OR SCOUR HOLES. REMOVE ALL SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGNED CARRYING CAPACITY.

3.05 MAINTENANCE REQUIREMENTS OF STORMWATER CHANNEL WITH FLEXAMAT

A. INSPECT CHANNELS AFTER MAJOR RAINS, AND MAKE REPAIRS TO DAMAGED AREAS NO LONGER MEETING SPECIFICATIONS PROMPTLY. GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCENTRATED FLOW ENTERS. CAREFULLY CHECK STABILITY AT ROAD CROSSINGS, AND LOOK FOR INDICATIONS OF PIPING, SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY. REMOVE ALL SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIGNED CARRYING CAPACITY. MAINTAIN ALL VEGETATION ADJACENT TO THE CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW.

REV.	DATE	BY	DESCRIPTION

TECHNICAL SPECIFICATIONS

ALBEMARLE DUMP WDA-B & WDA-C REMEDIATION
NORTH CAROLINA DEPT OF ENVIRONMENTAL QUALITY
NANNY DRIVE
ALBEMARLE, STANLY COUNTY
NORTH CAROLINA

Terracon
Consulting Engineers and Scientists
800 MORRISON ROAD
COLUMBUS, OHIO 43230
PH. (614) 863-3113
FAX. (614) 863-0475

EXHIBIT 10

DESIGNED BY:	BMY
DRAWN BY:	DAB
APPVD. BY:	MSF
SCALE:	as noted
DATE:	11/20/2025
JOB NO.	71237029
ACAD NO.	wdarem-set4
SHEET NO.:	10 OF 10

Appendix B

Property Legal Description, Declaration, and Notice Plat

462

STANLY COUNTY 03-11-92

STATE OF NORTH CAROLINA

MAR 11 '92

P.B. 10700

Real Estate Excise Tax

≈00.00

Office of Register of Deeds
Stanly County, N.C.

Filed for registration on the 11th day of March 19 92 at 4:27 O'Clock P. M. and duly verified in Record Book No. 496 Page 462

Cecil I. Almond
Register of Deeds

Excise Tax -0-

4:27 PM Recording Time, Book and Page $8.00

Tax Lot No. ..... Parcel Identifier No. ..... CHECKED BY TAX ASSESSOR

Verified by ..... County on the ..... day of ....., 19.....

by .....

Mail after recording to .....

.....

This instrument was prepared by Samp C. Hopkins, Jr., HOPKINS & HOPKINS, Attorneys, Albemarle, NC

Brief description for the Index N. Albemarle Township

NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made this 11th day of March, 19 92, by and between

GRANTOR	GRANTEE
SCOTTIE LEE BURLESON and wife, SANDRA P. BURLESON	GEORGE LEE PAGE and wife, RUTH A. PAGE

Enter in appropriate block for each party: name, address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of ....., N. Albemarle Township, Stanly County, North Carolina and more particularly described as follows:

Lying and being South of, but not adjoining Old Herlocker Road (S.R. #1422); and,

BEGINNING at a new iron pipe at the south terminus of a thirty-foot right-of-way, a new corner, said point being S. 07-47-21 E. 30.66 feet from an existing iron pipe, the Southwest corner of Lanny Orrin Page, as described in Deed Book 384, apge 615, Stanly County Registry, and runs thence a new line, S. 07-47-21 E. 175.89 feet to a new iron pipe; thence a new line, S. 83-52-08 W. 250.00 feet to a new iron pipe; thence a new line, N. 07-47-21 W. 181.29 feet to a new iron pipe; thence a new line, N. 83-52-08 E. 220.38 feet to a new iron pipe in the west side of a thirty-foot right-of-way; thence S. 85-51-00 E. 30.26 feet to the point of Beginning, and containing 1.04 acre, as surveyed by Dent Hall Turner, R.L.S., April 30, 1991.

THERE IS ALSO CONVEYED HEREWITH, the perpetual, non-exclusive right of ingress, egress and regress over and across that certain 30-foot easement, which is appurtenant to the above-described premises, and more particularly described as follows:

BEGINNING at an existing iron pipe in the center line of S.R. #1422, a common corner of L.D. Lowder as described in Deed Book 211, page 185, Stanly County Registry, and Ada Jane Morton, as described in Deed Book 243, page 189, Stanly County Registry, and runs thence with the center line of S.R. #1422, S. 67-36-54 E. 30.54 feet to a

point; thence with the East line of the thirty-foot easement, S. 11-36-03 W. 803.76 feet to an existing iron pipe; thence with the line of Lanny Orrin Page, S. 07-47-21 E., passing an existing iron pipe at 271.15 feet, and continuing 30.66 feet, for a total distance of 301.81 feet to a new iron pipe; thence N. 85-51-00 W. 30.26 feet to a new iron pipe; thence with the West line of the thirty-foot easement to a six-inch round stone; thence with the line of Ada Jane Morton, N. 11-36-03 E. 813.40 feet to the point of Beginning, and being known as Nanny Drive.

For reference see Deed Book 353, page 88, Stanly County Registry.

For further reference see deed from George Lee Page and wife, Ruth A. Page, to Scottie Lee Burleson and wife, Sandra P. Burleson, dated May 21, 1991, and duly recorded in Deed Book 394, page 938, Stanly County Registry.

The property hereinabove described was acquired by Grantor by instrument recorded in .....

See Above.

A map showing the above described property is recorded in Plat Book ..... page.....

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated. Title to the property hereinabove described is subject to the following exceptions:

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

.....
(Corporate Name)

By: .....

..... President

ATTEST:

.....

..... Secretary (Corporate Seal)

USE BLACK INK ONLY

Scottie Lee Burleson (SEAL)
SCOTTIE LEE BURLESON

Sandra P. Burleson (SEAL)
SANDRA P. BURLESON

..... (SEAL)

..... (SEAL)

SEAL-STAMP

NORTH CAROLINA, Stanly County.

OFFICIAL SEAL
Notary Public, North Carolina
Stanly County
CINDY S. BARRINGER
My Commission Expires

I, a Notary Public of the County and State aforesaid, certify that Scottie Lee Burleson and wife, Sandra P. Burleson Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this 11th day of March, 19 92.

My commission expires: 9/2/92 Cindy S. Barringer Notary Public

SEAL-STAMP

NORTH CAROLINA, ...County.

I, a Notary Public of the County and State aforesaid, certify that .....,

personally came before me this day and acknowledged that ____ he is ..... Secretary of

..... a North Carolina corporation, and that by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its ..... President, sealed with its corporate seal and attested by ..... as its ..... Secretary. Witness my hand and official stamp or seal, this .....day of ....., 19.....

Use Black Ink

My commission expires: ..... Notary Public

The foregoing Certificate(X) of Cindy S. Barringer, a Notary Public of Stanly County, NC

.....

.....

is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

Cecil I. Almond REGISTER OF DEEDS FOR Stanly COUNTY

By Delaine W. Eudy Deputy/Assistant - Register of Deeds

BOOK 1819 PAGE 1200(7) 457626

Filed: 05/03/2023 02:31:54 PM
Suzanne W. Lowder, Register of Deeds
Stanly County, NC
Kaylan Roland

√: Hayden B.

7/26

DECLARATION OF PERPETUAL LAND USE RESTRICTIONS

For Property Owned by: George Lee Page and wife, Ruth A. Page

The real property which is the subject of this Declaration of Perpetual Land Use Restrictions ("Declaration") is contaminated with hazardous substances, and is part of an INACTIVE HAZARDOUS SUBSTANCE OR WASTE DISPOSAL SITE ("the Site") as defined by North Carolina's Inactive Hazardous Sites Response Act of 1987, which consists of Section 130A-310 through Section 130A-310.19 of the North Carolina General Statutes ("N.C.G.S."). This Declaration is part of a Remedial Action Plan for the Site that has been approved by the Secretary of the North Carolina Department of Environmental Quality, Division of Waste Management, Superfund Section or its successor in function, or his/her delegate, as authorized by N.C.G.S. Section 130A-310.3(f). The North Carolina Department of Environmental Quality shall hereafter be referred to as "DEQ". Hereafter, the Division of Waste Management, Superfund Section shall be referred to as "Superfund Section".

Ruth A. Page, is the owner in fee simple of the property ("the Property"), which is located at Nanny Drive in the County of Stanly, City of Albemarle, State of North Carolina, and is the real property legally described in Deed Book 496, Page 462 in the Office of the Register of Deeds for Stanly County. The Property is also shown on a Notice of Environmental Contamination, in the form of a survey plat ("Notice Plat"), which has been recorded prior to the recordation of this Declaration in Map Book ____ Page_____ in the Office of the Register of Deeds for Stanly County.

For the purpose of protecting public health and the environment, Ruth A. Page hereby declares that all of the Property shall be held, sold and conveyed subject to the following perpetual land use restrictions, which shall run with the land; shall be binding on all parties having any right, title or interest in the Property or any part thereof, their heirs, successors and assigns; and shall, as provided in N.C.G.S. Section 130A-310.3(f), be enforceable without regard to lack of privity of estate or contract, lack of benefit to particular land, or lack of any property interest in particular land. These restrictions shall continue in perpetuity and cannot be amended or canceled unless and until the Stanly County Register of Deeds receives and records the written concurrence of the Secretary of DEQ or its successor in function, or his/her delegate. If any provision of this Declaration is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.

PERPETUAL LAND USE RESTRICTIONS

The following restrictions shall apply to the entire property or only to Disposal Area A, Disposal Area B and Disposal Area C of the Property (the restriction is specified in each paragraph below):

1. The Disposal Area A, B and C shown on the Notice Plat shall be used for open space only. "Open space" for purposes of this restriction means an undeveloped area where the sole human use shall be non-dermal recreational activities such as hiking, running, hunting, fishing and bird watching. All other uses at the Property are prohibited, except as approved in writing by the Superfund Section or its successor in function.

2. The Disposal Area A, B and C shown on the Notice Plat shall not be used for the following:
   a) Horseback riding
   b) Bicycle riding
   c) Motorized vehicle or motorbike riding
   d) Farming
   e) Gardening
   f) Grazing of livestock
   g) Timber production
   h) Kennel or private animal pens
   i) Mining, extraction of coal, oil, gas or any other minerals or non-mineral substances
   j) Storage of any bulk materials

3. No surface or subsurface native or fill earthen materials may be removed from the Disposal Area A, B and C shown on the Notice Plat without prior written approval by the Superfund Section or its successor in function.

4. No above- or below-ground construction or improvements (including, but not limited to, utilities, roads, sidewalks, landscaping, asphalt, concrete, other impervious materials, temporary and permanent structures) and no alteration or disturbance of the existing soil and contours, other than erosion control measures, are allowed in the Disposal Area A, B and C shown on the Notice Plat without prior written approval by the Superfund Section or its successor in function.

5. No new trees or shrubs may be planted in the Disposal Area A, B and C shown on the Notice Plat.

6. The Disposal Area A, B and C shown on the Notice Plat shall not be accessed by any mobile heavy equipment including, but not limited to, cranes, tractors, and excavators without prior written approval by the Superfund Section or its successor in function.

7. Surface water shall not be used on the Property for any purpose without prior written approval by the Superfund Section or its successor in function.

8. No activities that would cause the exposure, removal, or use of groundwater, including but not limited to, installation of new water supply wells, fountains, ponds, lakes, swimming pools or other features that use groundwater, or construction or excavation activities that would encounter or expose groundwater may occur on the Property without prior approval of the Superfund Section or its successor in function.

9. No new water supply wells may be installed at the Property after the date of recordation of this Declaration.

10. The Property Owner shall conduct and comply with the following maintenance activities unless the Property Owner is a single-family residence, non-profit organization or school:

    A. No woody vegetation shall be allowed to grow on the Disposal Area A, B and C shown on the Notice Plat.

    B. All grassed areas shall be properly maintained to ensure that a healthy vegetative cover is always present. Mowing or brush hogging of the Disposal Area A, B and C shown on the Notice Plat should be conducted twice a year.

    C. A soil cover of a thickness of twelve (12) inches shall be maintained over the geotextile erosional marker covering the Disposal Area A, B and C shown on the Notice Plat. Erosion of the soil cover shall be repaired promptly upon discovery.

11. If the property owner is a single-family residence, non-profit organization or school, the Property Owner shall conduct and comply with the following maintenance activities:

    A. No woody vegetation shall be allowed to grow on the Disposal Area A, B and C shown on the Notice Plat.

    B. All grassed areas shall be properly maintained to ensure that a healthy vegetative cover is always present. Mowing or brush hogging of the Disposal Area A, B and C shown on the Notice Plat should be conducted twice a year.

12. Signs surrounding Disposal Area A, B and C shall be maintained indicating the presence of contamination and restricting disturbance of soil and/or access. The front of each sign shall face away from Disposal Area A, B and C. Each sign shall be located at a maximum distance of 100 feet apart and in a manner such they are easily visible along the perimeter of Disposal Area A, B and C at all times. The signs shall state the following using similar font with a minimum of one-half (0.5) inch font size:

NOTICE

SUBSURFACE WASTE

Contact the Property Owner
Regarding Land Use Restrictions
Prior to Disturbing Soil

13. No person conducting environmental assessment or remediation at the Site or involved in determining compliance with applicable land use restrictions at the Property, at the direction of, or pursuant to a permit or order issued by the Superfund Section or its successor in function may be denied access to the Property for the purpose of conducting such activities.

14. Each person who owns any portion of the Property shall cause the instrument of any sale, lease, grant, or other transfer of any interest in the Property to include a provision expressly requiring the lessee, grantee, or transferee to comply with this Declaration. The failure to include such provision shall not affect the validity or applicability of any land use restriction in this Declaration.

15. Each person who owns any portion of the Property shall submit a letter, in January of each year on or before January 31st, to the Superfund Section or its successor in function, confirming the following:
    a) This Declaration is still recorded in the Office of the Stanly County Register of Deeds.
    b) Activities and conditions at the Property remain in compliance with the land use restrictions herein.
    c) The Property has not been subdivided since the last letter report submitted to the Superfund Section.
    d). The Disposal Area A, B and C has been inspected to verify the following:
        i. Erosion of the cover system has not occurred; and
        ii. Fencing, bollards and signs are in good condition and remain in original location.

REPRESENTATIONS AND WARRANTIES

The owner of the Property hereby represents and warrants that the owner of the Property is the sole owner of the Property holding fee simple title to the Property free and clear;

that the owner of the Property has the power and authority to enter into this Declaration, to grant the rights and interests herein provided and to carry out all obligations hereunder; and

that this Declaration will not materially violate or contravene or constitute a material default under any other agreement, document or instrument to which the owner of the Property is a party or by which the owner of the Property may be bound or affected.

ENFORCEMENT

Adherence to the above land use restrictions is necessary to protect public health and the environment. The restrictions are an integral part of the remedy for the contamination at the Site and shall be enforceable without regard to lack of privity of estate or contract, lack of benefit to particular land, or lack of any property interest in particular land. These land use restrictions shall be enforced by any owner, operator, or other party responsible for any part of the Site. The above land use restrictions may also be enforced by the Superfund Section through the remedies provided in N.C.G.S. Chapter 130A, Article 1, Part 2 or by means of a civil action, and may also be enforced by any unit of local government having jurisdiction over any part of the Site. Any attempt to cancel this Declaration without the approval of the Superfund Section or its successor in function shall constitute noncompliance with the Remedial Action Plan approved by the Superfund Section for the Site and shall be subject to enforcement by the Superfund Section to the full extent of the law. Failure by any party required or authorized to enforce any of the above restrictions shall in no event be deemed a waiver of the right to do so thereafter as to the same violation or as to one occurring prior or subsequent thereto.

FUTURE SALES, LEASES, CONVEYANCES AND TRANSFERS

When any portion of the Property is sold, leased, conveyed or transferred, pursuant to N.C.G.S. Section 130A-310.8(e) the deed or other instrument of transfer shall contain in the description section, in no smaller type than that used in the body of the deed or instrument, a statement that the real property being sold, leased, conveyed, or transferred has been used as a hazardous substance or waste disposal site and a reference by book and page to the recordation of the Notice of Environmental Contamination referenced in this Declaration.

OWNER SIGNATURE

IN WITNESS WHEREOF, I execute these presents on this 6 day of April, 2023

Signatory's name typed or printed: Ruth A. Page

Signature: Ruth A. Page

STATE OF NORTH CAROLINA
COUNTY OF Stanly

I, Elizabeth E Rabon, a Notary Public, do hereby certify that Ruth A Page personally appeared before me this day, produced proper identification in the form of _____, and

WITNESS my hand and official seal this 6 day of April, 2023

Elizabeth E. Rabon
Notary Public

My Commission expires: 2-8-2026

[SEAL]

ELIZABETH E RABON
NOTARY PUBLIC
Stanly County
North Carolina
My Commission Expires Feb. 8, 2026

APPROVAL AND CERTIFICATION OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

The foregoing Declaration of Perpetual Land Use Restrictions is hereby approved and certified.

By: William F. Hunneke

William F. Hunneke, Chief
Superfund Section
Division of Waste Management
North Carolina Department of Environmental Quality

STATE OF NORTH CAROLINA
COUNTY OF Wake

I, LaTonya Clark, a Notary Public, do hereby certify that William Hunneke personally appeared before me this day, produced proper identification in the form of StateWorkID, and signed this Declaration.

WITNESS my hand and official seal this 14 day of April, 2023.

LaTonya Clark
Notary Public

My Commission expires: October 20, 2024

[SEAL]

LaTonya Clark
Notary Public
Wake County, North Carolina
My Commission Expires
October 20, 2024

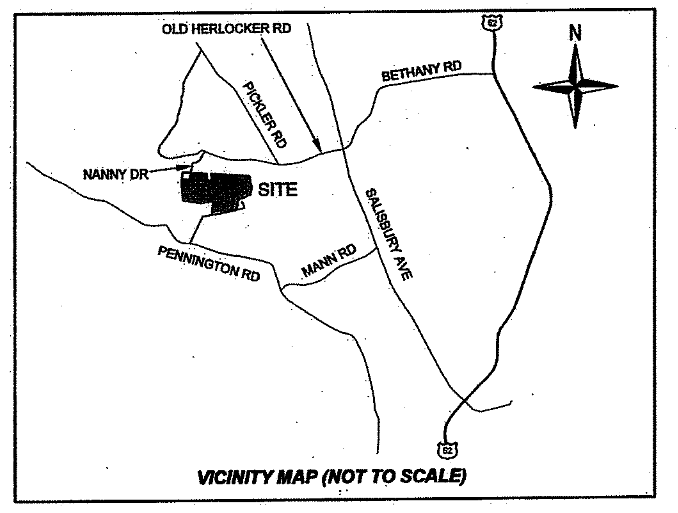
REGISTER OF DEEDS CERTIFICATION

The foregoing Declaration of Perpetual Land Use Restrictions is certified to be duly recorded at the date and time, and the Book and Page, shown on the first page hereof.

Register of Deeds for Stanly County

By: _____
Signature

_____
Type or print name and title



APPROVED FOR THE PURPOSES OF N.C.G.S. 130A-310.8.

WILLIAM F. HUNNEKE
CHIEF, SUPERFUND SECTION
DIVISION OF WASTE MANAGEMENT

NORTH CAROLINA

WAKE COUNTY

I, LaTonya Clark, A NOTARY PUBLIC OF SAID COUNTY AND STATE, DO HEREBY CERTIFY THAT William Hunneke DID PERSONALLY APPEAR AND SIGN BEFORE ME THIS THE 19 DAY OF April 2023

NOTARY PUBLIC (SIGNATURE)

MY COMMISSION EXPIRES October 20, 2024

N.C. REVIEW OFFICER CERTIFICATE

STATE OF NORTH CAROLINA

STANLY COUNTY

I, Robert Remsburg, REVIEW OFFICER OF STANLY COUNTY CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

REVIEW OFFICER 5/3/2023 DATE

CERTIFICATE OF FLOODPLAIN ADMINISTRATOR APPROVAL:

THIS PLAT HAS BEEN REVIEWED AND MEETS THE APPROVAL OF THE STANLY COUNTY'S FLOODPLAIN ADMINISTRATOR. SIGNED THE 3rd DAY OF May 20 23.

STANLY COUNTY FLOODPLAIN ADMINISTRATOR

PROPERTY OWNER CERTIFICATION:

I CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREIN, WHICH IS LOCATED IN THE JUSTISDICTION OFSTANLY COUNTY, AND THAT I (WE) HERBY ADOPT THIS PLAT WITH OUR FREE CONSENT.

Ruth A. Page 4-6-23
OWNER REPRESENTATION DATE

NORTH CAROLINA

Stanly COUNTY

I, Elizabeth E Rabon A NOTARY PUBLIC OF SAID COUNTY AND STATE, DO HEREBY CERTIFY THAT Ruth A Page DID PERSONALLY APPEAR AND SIGN BEFORE ME THIS THE 6 DAY OF April 2023

NOTARY PUBLIC (SIGNATURE)

MY COMMISSION EXPIRES 2-8-2026

GENERAL NOTES

1) THE PURPOSE OF THIS PLAT IS TO DISPLAY PERMANENT IMPROVEMENTS, AND SURFACE WATER FEATURES ON THE SUBJECT PROPERTY.
2) PROPERTIES SHOWN HEREON ARE SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD THAT WOULD BE REVEALED BY A THOROUGH TITLE SEARCH. THIS PLAT SHOULD NOT BE RELIED UPON AS A COMPLETE RECORD OF ALL EASEMENTS THAT MAY AFFECT THESE PROPERTIES.
3) UNIT OF MEASUREMENT IS U.S. SURVEY FEET (FT) UNLESS SPECIFICALLY NOTED AS METERS (m).
4) ALL COORDINATES AND DISTANCES SHOWN HEREON ARE NORTH CAROLINA STATE PLANE GRID COORDINATES AND DISTANCES. COMBINED SCALE FACTOR = 0.99985139 / 1.00014863.
5) AREA(S) CALCULATED BY THE COORDINATE METHOD.
6) THE AREAS AND TYPE OF CONTAMINATION DEPICTED UPON THE MAP ARE APPROXIMATIONS DERIVED FROM THE BEST AVAILABLE INFORMATION AT THE TIME OF FILING.
7) SOME INFORMATION DISPLAYED HEREON WAS PROVIDED BY AECOM AND WAS NOT LOCATED AS PART OF THIS SURVEY.
8) THE QUANTITY OF HAZARDOUS SUBSTANCES ON SITE ARE NOT KNOWN.
9) 15A NCAC 02C.0107(b)(1) STATES THAT, THE SOURCE OF WATER FOR ANY WATER SUPPLY WELL SHALL NOT BE FROM A WATER BEARING ZONE OR AQUIFER THAT IS CONTAMINATED.
10) THE SUBJECT PROPERTY MAY BE REGULATED BY ANY LOCAL ORDINANCES RELATING TO THE GROUNDWATER USE (WATERLINE CONNECTION REQUIREMENTS, WELL INSTALLATION PROHIBITIONS OR GROUNDWATER USE RESTRICTIONS, FOR EXAMPLE).
11) A DECLARATION OF PERPETUAL LAND-USE RESTRICTIONS LIMITING THE USES OF THIS OF THIS PROPERTY, IS BEING RECORDED CONCURRENTLY WITH THIS NOTICE PLAT.
12) HAZARDOUS SUBSTANCES KNOWN TO BE PRESENT WITHIN DISPOSAL AREA A, B AND C INCLUDE ORGANIC AND INORGANIC COMPOUNDS/CHEMICALS.
13) HAZARDOUS SUBSTANCES KNOWN TO BE PRESENT AT THE SITE IN THE FOLLOWING MEDIA ARE:
GROUNDWATER - ARSENIC, BERYLLIUM, CHROMIUM, CIS-1,2-DICHLOROETHYLENE, LEAD, MANGANESE, NICKEL, TETRACHLOROETHYLENE, TRICHLOROETHYLENE AND VINYL CHLORIDE
SURFACE WATER - TETRACHLOROETHYLENE AND TRICHLOROETHYLENE.
SOIL VAPOR - BENZENE, 1,4-DICHLOROBENZENE, 1,1-DICHLOROETHANE, ETHYLBENZENE, TRICHLOROETHYLENE, 1,2,4-TRIMETHYLBENZENE, 1,3,5-TRIMETHYLBENZENE AND VINYL CHLORIDE

WHEN THIS PROPERTY OR ANY PART OF IT IS SOLD, LEASED, CONVEYED, OR TRANSFERRED, N.C.G.S. 130A-310(e) REQUIRES THAT THE FOLLOWING LANGUAGE BE PLACED IN THE DESCRIPTION SECTION OF THE DEED OR OTHER INSTRUMENT OF TRANSFER IN NO SMALLER TYPE THAN THAT USED IN THE BODY OF THE DEED:

HAZARDOUS SUBSTANCES ARE PRESENT IN ENVIRONMENTAL MEDIA AT THE PROPERTY AND THE PROPERTY HAS BEEN REMEDIATED UNDER THIS PART WITH THE APPROVAL OF THE DEPARTMENT BY USE OF LAND USE CONTROLS. A NOTICE PLAT IS RECORDED AT THE STANLY COUNTY REGISTER OF DEED'S OFFICE IN MAP BOOK ____, PAGE ____.

UPON NORTH CAROLINA SUPERFUND SECTION APPROVAL AND RECORDATION IN ACCORDANCE WITH N.C.G.S. 130A-310.8(b), THIS NOTICE SUPERSEDES ANY PREVIOUSLY RECORDED NOTICE(S) OF INACTIVE HAZARDOUS WASTE OR DISPOSAL SITE FOR THIS PROPERTY.

PROPERTY DATA

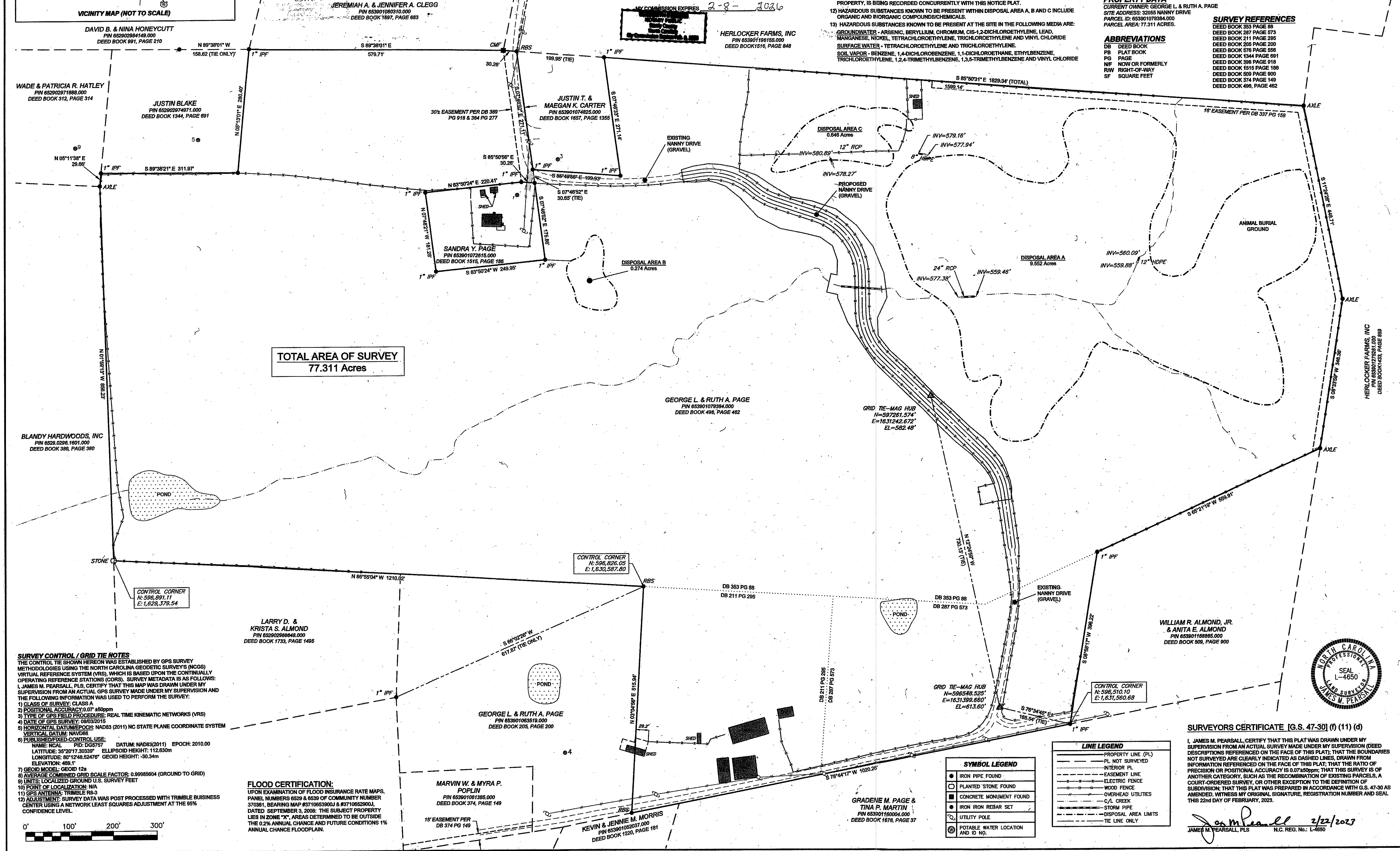
CURRENT OWNER: GEORGE L. & RUTH A. PAGE
SITE ADDRESS: 32055 NANNY DRIVE
PARCEL ID: 653901079384.000
PARCEL AREA: 77.311 ACRES.

ABBREVIATIONS

DB	DEED BOOK
PB	PLAT BOOK
PG	PAGE
N/F	NOW OR FORMERLY
R/W	RIGHT-OF-WAY
SF	SQUARE FEET

SURVEY REFERENCES

DEED BOOK 353 PAGE 88
DEED BOOK 287 PAGE 573
DEED BOOK 211 PAGE 295
DEED BOOK 205 PAGE 200
DEED BOOK 576 PAGE 556
DEED BOOK 1344 PAGE 691
DEED BOOK 398 PAGE 918
DEED BOOK 1515 PAGE 186
DEED BOOK 509 PAGE 900
DEED BOOK 374 PAGE 149
DEED BOOK 496, PAGE 462



SURVEY CONTROL / GRID TIE NOTES

THE CONTROL TIE SHOWN HEREON WAS ESTABLISHED BY GPS SURVEY METHODOLOGIES USING THE NORTH CAROLINA GEODETIC SURVEY'S (NCGS) VIRTUAL REFERENCE SYSTEM (VRS), WHICH IS BASED UPON THE CONTINUALLY OPERATING REFERENCE STATIONS (CORS). SURVEY METADATA IS AS FOLLOWS: I, JAMES M. PEARSALL, PLS, CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

1) CLASS OF SURVEY: CLASS A
2) POSITIONAL ACCURACY: 0.07' ±50ppm
3) TYPE OF GPS FIELD PROCEDURE: REAL TIME KINEMATIC NETWORKS (VRS)
4) DATE OF GPS SURVEY: 08/03/2015
5) HORIZONTAL DATUM/EPOCH: NAD83 (2011) NC STATE PLANE COORDINATE SYSTEM
VERTICAL DATUM: NAVD88
6) PUBLISHED/FIXED-CONTROL USE:
NAME: NCAL PID: DG5757 DATUM: NAD83(2011) EPOCH: 2010.00
LATITUDE: 35°20'17.30339" ELLIPSOID HEIGHT: 112.630m
LONGITUDE: 80°12'48.52476" GEOID HEIGHT: -30.34m
ELEVATION: 469.1'
7) GEOID MODEL: GEOID 12a
8) AVERAGE COMBINED GRID SCALE FACTOR: 0.99985604 (GROUND TO GRID)
9) UNITS: LOCALIZED GROUND U.S. SURVEY FEET
10) POINT OF LOCALIZATION: N/A
11) GPS ANTENNA: TRIMBLE R8-3
12) ADJUSTMENT: SURVEY DATA WAS POST PROCESSED WITH TRIMBLE BUISINESS CENTER USING A NETWORK LEAST SQUARES ADJUSTMENT AT THE 95% CONFIDENCE LEVEL.

0' 100' 200' 300'

FLOOD CERTIFICATION:

UPON EXAMINATION OF FLOOD INSURANCE RATE MAPS, PANEL NUMBERS 6529 & 6539 OF COMMUNITY NUMBER 370361, BEARING MAP #3710653900J & #3710652900J, DATED SEPTEMBER 3, 2008: THE SUBJECT PROPERTY LIES IN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN.

SYMBOL LEGEND

- IRON PIPE FOUND
- PLANTED STONE FOUND
- CONCRETE MONUMENT FOUND
- IRON IRON REBAR SET
- UTILITY POLE
- POTABLE WATER LOCATION AND ID NO.

LINE LEGEND

- PROPERTY LINE (PL)
- PL NOT SURVEYED
- INTERIOR PL
- EASEMENT LINE
- ELECTRIC FENCE
- WOOD FENCE
- OVERHEAD UTILITIES
- C/L CREEK
- STORM PIPE
- DISPOSAL AREA LIMITS
- TIE LINE ONLY

SEAL L-4650 NORTH CAROLINA PROFESSIONAL LAND SURVEYOR JAMES M. PEARSALL

SURVEYORS CERTIFICATE [G.S. 47-30] (f) (11) (d)

I, JAMES M. PEARSALL, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTIONS REFERENCED ON THE FACE OF THIS PLAT); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DASHED LINES, DRAWN FROM INFORMATION REFERENCED ON THE FACE OF THIS PLAT; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY IS 0.07'±50ppm; THAT THIS SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 22nd DAY OF FEBRUARY, 2023.

JAMES M. PEARSALL, PLS 2/22/2023 N.C. REG. No.: L-4650

NOTICE OF ENVIRONMENTAL CONTAMINATION
GEORGE LEE PAGE AND WIFE, RUTH A PAGE
ALBEMARLE DUMP - NONCD0000571
STANLY COUNTY - NORTH ALBEMARLE #3, NC

SURVEY PERFORMED BY:

TAYLOR WISEMAN & TAYLOR
ENGINEERS | SURVEYORS | SCIENTISTS
SUBSURFACE UTILITY ENGINEERS
700 FOREST POINT CIRCLE, SUITE 116
CHARLOTTE, NC 28273
PHONE (704) 527-2535 FAX (704) 527-2537
NORTH CAROLINA LICENSE NUMBER: F-0362

SURVEY PREPARED FOR: AECOM

REVISIONS:
12/28/2020 - REVISIONS PER AECOM COMMENTS - JMP

DATE OF SURVEY:	09/14/2015
SCALE:	1" = 100'
DRAWN BY:	V.WALKER
CHECKED BY:	J.PEARSALL, PLS
PROJECT:	03221.6009.00
SHEET:	1 / 1

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Filed: 05/03/2023 02:31:53 PM
Suzanne W. Lowder, Register of Deeds
Stanly County, NC