Savannah River
NUCLEAR SOLUTIONS℠
FLUOR • NEWPORT NEWS NUCLEAR • HONEYWELL

Record of Decision
Remedial Alternative Selection for the Stormwater Outfall A-013 (NBN) Operable Unit (U)

SEMS Number: 62

SRNS-RP-2020-00904

Revision 1

April 2021

SAVANNAH RIVER SITE • AIKEN, SOUTH CAROLINA

DISCLAIMER

Printed in the United States of America

Prepared for
U.S. Department of Energy
by
Savannah River Nuclear Solutions, LLC
Aiken, South Carolina

RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION (U)

Stormwater Outfall A-013 (NBN) Operable Unit (U)

SEMS Number: 62

SRNS-RP-2020-00904
Revision 1

April 2021

Savannah River Site
Aiken, South Carolina

Prepared by
Savannah River Nuclear Solutions, LLC
for the
U.S. Department of Energy under Contract DE-AC09-08SR22470
Savannah River Operations Office
Aiken, South Carolina

This page was intentionally left blank.

DECLARATION FOR THE RECORD OF DECISION

Unit Name and Location

Stormwater Outfall A-013 (no building number [NBN]) Operable Unit (OU)

Superfund Enterprise Management System (SEMS) Identification Number: OU-SEMS 62

Savannah River Site (SRS)

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Identification Number: SC1 890 008 989

Aiken, South Carolina

United States Department of Energy (USDOE)

The Stormwater Outfall A-013 OU is listed as a CERCLA unit in Appendix C of the Federal Facility Agreement (FFA) for the SRS. The Stormwater Outfall A-013 OU is not a solid waste management unit under the Resource Conservation and Recovery Act (RCRA) 3004(u).

The FFA is a legally binding agreement between regulatory agencies (United States Environmental Protection Agency [USEPA] and South Carolina Department of Health and Environmental Control [SCDHEC] and regulated entities USDOE) that establishes the responsibilities and schedules for the comprehensive remediation of SRS. The media associated with this OU is soil.

Statement of Basis and Purpose

This decision document presents the selected remedial action for the Stormwater Outfall A-013 OU, located at the SRS in Aiken County, which was chosen in accordance with CERCLA, as amended by the Superfund Amendments Reauthorization Act, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the information contained in the Administrative Record File for this site.

The USEPA, SCDHEC and USDOE concur with the selected remedy.

Assessment of the Site

A remedial action is not needed at the Stormwater Outfall A-013 OU because there are no problems that require remedial action and land use controls are not required. The preferred remedial alternative for the Stormwater Outfall A-013 OU is No Action. As part of the selected remedy, the future land use for the Stormwater Outfall A-013 OU will be unrestricted. There is no current or potential threat to public health, welfare, or the environment from the Stormwater Outfall A-013 OU.

Description of the Selected Remedy

The selected remedy for the Stormwater Outfall A-013 OU is No Action. As part of the selected remedy, the future land use for the Stormwater Outfall A-013 OU will be unrestricted. The Stormwater Outfall A-013 OU poses no unacceptable risk based on an unlimited exposure and unrestricted land use scenario.

Statutory Determinations

Based on the unit RCRA Facility Investigation/Remedial Investigation with Baseline Risk Assessment (BRA) report and the revised evaluation presented in the Proposed Plan, the Stormwater Outfall A-013 OU poses no threat to human health and the environment. Therefore, the No Action alternative has been selected as the final remedy for the Stormwater Outfall A-013 OU. As part of the selected remedy, the future land use of the Stormwater Outfall A-013 OU will be unrestricted.

Because this remedy will not result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a five-year review will not be required for this remedial action.

Data Certification Checklist

This Record of Decision (ROD) provides the following information:

- Constituents of concern (COCs) and their respective concentrations (Section V);

- Baseline risk represented by the COCs (Section VII);
- Cleanup levels established for the COCs and the basis for the levels (Section VIII);
- Current and reasonably anticipated future land and groundwater use assumptions used in the BRA and ROD (Section VI);
- Potential land and groundwater use that will be available at the site as a result of the selected remedy (Section (VI);
- Estimated capital, operation and maintenance, and total present worth cost; discount rate; and the number of years over which the remedy cost estimates are projected (Section IX); and
- Key decision factor(s) that led to selecting the remedy (i.e., describe how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria) (Section X).

Jimmy E. McMillian Digitally signed by Jimmy E. McMillian
Date: 2021.08.19 12:58:09 -04'00'

Date

Jimmy E. McMillian
Assistant Manager
Infrastructure and Environmental Stewardship
U.S. Department of Energy
Savannah River Operations Office

Date

Henry J. Porter
Chief
Bureau of Land and Waste Management
S.C. Department of Health and Environmental Control

Date

Randall Chaffins
Acting Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency – Region 4

DECISION SUMMARY
REMEDIAL ALTERNATIVE SELECTION (U)

Stormwater Outfall A-013 (NBN) Operable Unit (U)

SEMS Number: 62

SRNS-RP-2020-00904
Revision 1

April 2021

Savannah River Site
Aiken, South Carolina

Prepared by
Savannah River Nuclear Solutions, LLC
for the
U.S. Department of Energy under Contract DE-AC09-08SR22470
Savannah River Operations Office
Aiken, South Carolina

This page was intentionally left blank.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

This page was intentionally left blank.

LIST OF ABBREVIATIONS AND ACRONYMS

~	approximate, approximately
AAP	A-Ash Pile (788-A)
ARAR	applicable or relevant and appropriate requirement
ARF	Administrative Record File
bgs	below ground surface
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CM	contaminant migration
COC	constituent of concern
CPRB	Coal Pile Runoff Basin (788-3A)
CSM	Conceptual Site Model
ERA	ecological risk assessment
FFA	Federal Facility Agreement
ft	feet
HHRA	human health risk assessment
IOU	Integrator Operable Unit
km	kilometers
km^2	square kilometers
LLC	Limited Liability Company
m	meters
mi	miles
mi^2	square miles
NBN	no building number
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PP	Proposed Plan
PTSM	principal threat source material
RCOC	refined constituent of concern
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Level
SCDHEC	South Carolina Department of Health and Environmental Control
SCHWMR	South Carolina Hazardous Waste Management Regulations
SEMS	Superfund Enterprise Management System
SRNS	Savannah River Nuclear Solutions, LLC
SRS	Savannah River Site

LIST OF ABBREVIATION AND ACRONYMS *(Continued/End)*

TCL	target compound list
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WSRC	Washington Savannah River Company, LLC

I. SAVANNAH RIVER SITE AND OPERABLE UNIT NAME, LOCATION, AND DESCRIPTION

Unit Name, Location, and Brief Description

Stormwater Outfall A-013 (no building number [NBN]) Operable Unit (OU)

Superfund Enterprise Management System (SEMS) Identification Number: OU-SEMS 62

Savannah River Site (SRS)

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Identification Number: SC1 890 008 989

Aiken, South Carolina

United States Department of Energy (USDOE)

SRS occupies approximately (~) 802.9 square kilometers (km^2 [310 square miles {mi^2}]) of land adjacent to the Savannah River, principally in Aiken and Barnwell counties of South Carolina (Figure 1). SRS is located ~40.2-km (25-mi) southeast of Augusta, Georgia, and 32.1-km (20-mi) south of Aiken, South Carolina.

The USDOE owns SRS, which historically produced tritium, plutonium, and other special nuclear materials for national defense and the space program. Chemical and radioactive wastes are by-products of nuclear material production processes. Hazardous substances, as defined by the CERCLA, are currently present in the environment at SRS.

The Federal Facility Agreement (FFA) (FFA 1993) for SRS lists the Stormwater Outfall A-013 (NBN) OU as a CERCLA unit requiring further evaluation. The Stormwater Outfall A-013 OU is not a solid waste management unit under the Resource Conservation and Recovery Act (RCRA) 3004(u).

The Stormwater Outfall A-013 OU was evaluated through an investigation process that implements the CERCLA remedial process to determine the actual or potential impact to human health and the environment of releases of hazardous substances to the environment.

II. SITE AND OPERABLE UNIT COMPLIANCE HISTORY

SRS Operational and Compliance History

The primary mission of SRS has been to produce tritium, plutonium, and other special nuclear materials for our nation's defense programs. Production of nuclear materials for the defense program was discontinued in 1988. SRS has provided nuclear materials for the space program, as well as for medical, industrial, and research efforts up to the present. Chemical and radioactive wastes are by-products of nuclear material production processes. These wastes have been treated, stored, and in some cases, disposed at SRS. Past disposal practices have resulted in soil and groundwater contamination.

Hazardous waste materials handled at SRS are managed under RCRA, a comprehensive law requiring responsible management of hazardous waste. Certain SRS activities require South Carolina Department of Health and Environmental Control (SCDHEC) operating or post-closure permits under RCRA. SRS received a RCRA hazardous waste permit from the SCDHEC, which was most recently renewed on February 11, 2014. Module VIII of the Hazardous and Solid Waste Amendments portion of the RCRA permit mandates corrective action requirements for non-regulated solid waste management units subject to RCRA 3004(u). Because the Stormwater Outfall A-013 OU is not a RCRA 3004(u) solid waste management unit, a RCRA permit modification is not required.

On December 21, 1989, SRS was included on the National Priorities List. The inclusion created a need to integrate the established RCRA facility investigation (RFI) program with CERCLA requirements to provide for a focused environmental program. In accordance with Section 120 of CERCLA 42 United States Code Section 9620, USDOE has negotiated a FFA (FFA 1993) with the United States Environmental Protection Agency (USEPA) and the SCDHEC to coordinate remedial activities at SRS into one comprehensive strategy which fulfills these dual regulatory requirements. USDOE functions as the lead agency for remedial activities at SRS, with concurrence by the USEPA - Region 4 and the SCDHEC.

Operable Unit Operational and Compliance History

The Stormwater Outfall A-013 was formerly a subunit of the A-Area Ash Pile (AAP) (788-A), A-Area Coal Pile Runoff Basin (CPRB) (788-3A), and Stormwater Outfall A-013 OU. The USDOE decided to pursue a comprehensive evaluation for disposition of the remaining coal ash waste units at SRS, including the AAP/CPRB. In addition, the Stormwater Outfall A-013 did not receive any discharge or runoff from the AAP/CPRB but was only included as a subunit due to geographic proximity. For this reason, the AAP (788-A) and CPRB (788-3A) subunits were decoupled from the Stormwater Outfall A-013 subunit, and the milestones associated with the AAP/CPRB OU delayed in order for the USDOE to evaluate and discuss ash disposal options with the regulatory agencies. The Stormwater Outfall A-013 subunit was officially placed on a separate administrative pathway as a single OU in the FFA (Appendix E) in January 2020.

The Stormwater Outfall A-013 OU is located in A Area, which is part of the larger A/M Area in the northwest portion of SRS. It is located in the southern portion of A Area (Figure 2); the AAP and CPRB are also shown on the figure for reference.

Outfall A-013 is a stormwater outfall that drains a small area along a section of abandoned railroad track on the southern end of A Area. A shallow open ditch, ~122-meters (m [400-feet {ft}]) long, follows the railroad track and feeds into a drainpipe and to the outfall. There is a drop in elevation of ~5 m (15 ft) from the inlet drain to the outfall. The outfall and drainage ditch are normally dry; the only flow through the drainage is stormwater during rain events. A photograph of the outfall in 2010 is shown in Figure 3. Potential past releases to this outfall include runoff from the former 716-A Motor Shop and adjacent parking areas located north/northwest of the drainage ditch and outfall, and the Motor Shop Seepage Basin located north of the outfall pipe (Figure 2). The 716-A Motor Shop Seepage Basin was closed under a 1998 No Action Record of Decision (ROD) (WSRC 1998).

Characterization of the Stormwater Outfall A-013 consisted of two sampling phases. The initial phase was conducted in 2010 along a ditch leading to and including Stormwater Outfall A-013. Review of the initial sampling results identified elevated polycyclic

aromatic hydrocarbon (PAH) concentrations at one location, prompting a second phase of soil sampling in 2011 from three additional soil sampling stations. The 2011 sampling results and an evaluation of the nature and extent of contamination confirmed that the elevated PAH concentrations were related to a nearby access road and not Stormwater Outfall A-013 OU or any SRS-related process or operations. Elevated PAHs are common near roads due to asphalt, tar, vehicle exhaust, motor oil, etc.

All of the data and supporting information for Stormwater Outfall A-013 are provided in the *RCRA Facility Investigation/Remedial Investigation (RFI/RI) Work Plan and RFI/RI Report with Baseline Risk Assessment and Corrective Measures Study/ Feasibility Study for the A-Area Ash Pile (788-A), A-Area Coal Pile Runoff Basin (788-3A), and Stormwater Outfall A-013 (NBN) Operable Unit (U)* (SRNS 2012). The *Proposed Plan for the Stormwater Outfall A-013 (NBN) Operable Unit (U)* provides an updated risk evaluation and identifies the No Action alternative as the preferred alternative for this OU (SRNS 2020).

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

Both RCRA and CERCLA require the public to be given an opportunity to review and comment on the draft permit modification and proposed remedial alternative. Public participation requirements are listed in South Carolina Hazardous Waste Management Regulation (SCHWMR) R.61-79.124 and Sections 113 and 117 of CERCLA (42 United States Code Sections 9613 and 9617). These requirements include establishment of an Administrative Record File (ARF) that documents the investigation and selection of the remedial alternative for addressing the Stormwater Outfall A-013 OU soils. The ARF must be established at or near the facility at issue.

The SRS FFA Community Involvement Plan (WSRC 2011) is designed to facilitate public involvement in the decision-making process for permitting, closure, and the selection of remedial alternatives. The plan addresses the requirements of RCRA, CERCLA, and the National Environmental Policy Act, 1969. SCHWMR R.61-79.124 and Section 117(a) of

CERCLA, as amended, require the advertisement of the draft permit modification, and notice of any proposed remedial action and provide the public an opportunity to participate in the selection of the remedial action. Because the Stormwater Outfall A-013 OU is not a RCRA 3004(u) solid waste management unit, a RCRA permit modification is not required. The *Proposed Plan for the Stormwater Outfall A-013 (NBN) Operable Unit (U)* (SRNS 2020), a part of the ARF, highlights key aspects of the investigation and identifies the preferred action for addressing the Stormwater Outfall A-013 OU.

The FFA ARF, which contains the information pertaining to the selection of the response action, is available at the following locations:

U.S. Department of Energy
Public Reading Room
Gregg-Graniteville Library
University of South Carolina Aiken Campus
471 University Parkway
Aiken, South Carolina 29803
(803) 641-3504

Thomas Cooper Library
Government Information and Maps Department
University of South Carolina
1322 Green Street
Columbia, South Carolina 29208
(803) 777-4841

The public was notified of the Proposed Plan (PP) public comment period through mailings of the *SRS Environmental Bulletin*, a newsletter sent to citizens in South Carolina and Georgia, and through notices in the *Aiken Standard*, *The Augusta Chronicle*, *The People-Sentinel*, and *The State* newspapers.

The PP 30-day public comment period began on October 21, 2020, and ended on November 20, 2020. A Responsiveness Summary, prepared to address any comments received during the public comment period, is provided in Appendix A of this ROD. No comments or requests for a meeting were received from the public.

IV. SCOPE AND ROLE OF THE OPERABLE UNIT

Due to the complexity and size of multiple waste units in different areas, the SRS is divided into watersheds for the purpose of managing a comprehensive cleanup strategy. The SRS is segregated into six watersheds: Upper Three Runs, Lower Three Runs, Fourmile Branch,

Steel Creek, Pen Branch, and the Savannah River. In addition, the SRS also identifies six Integrator Operable Units (IOUs) which are the surface water bodies and associated wetlands that correspond to the six respective watersheds. Waste units within a watershed may be evaluated and remediated individually or grouped with other waste units and evaluated as part of a larger Area OU. Upon disposition of all the waste units within a watershed, a final comprehensive ROD for the corresponding IOU (i.e., surface water and associated wetlands) will be pursued with additional public involvement. The Stormwater Outfall A-013 OU is located within the Upper Three Runs watershed (Figure 1).

V. OPERABLE UNIT CHARACTERISTICS

Conceptual Site Model

The conceptual site model (CSM) is an objective framework for assessing data pertinent to the investigation. The CSM identifies and evaluates suspected sources of contamination, contaminant release mechanisms, potentially affected media (secondary sources of contamination), potential exposure pathways, and potential human and ecological receptors.

Potentially complete exposure pathways at the Outfall A-013 OU were evaluated in the risk assessment as depicted in the CSM (Figure 4). A potentially complete exposure pathway existed for a future resident and future industrial worker for surface soil (0 to 0.3 m [0 to 1 ft]). These pathways were evaluated in the human health risk assessment (HHRA). All-depth soil offered a potential exposure pathway for a future industrial worker under an excavation scenario. This pathway was evaluated in the principal threat source material (PTSM) analysis. Leaching of contaminants from the contaminated medium (e.g., soil) to groundwater constitutes a secondary contaminant release mechanism. The potential for contaminants to leach from soil to groundwater was evaluated in the contaminant migration (CM) analysis. In addition, soil (0 to 0.3 m [0 to 1 ft] and 0.3 to 1.2 m [1 to 4 ft]) in Outfall A-013 offered a potential exposure pathway for terrestrial receptors and was evaluated in the ecological risk assessment (ERA).

Groundwater samples were collected to support the CM analyses. However, groundwater is not considered within the scope of the Stormwater Outfall A-013 OU. Groundwater is addressed separately under the RCRA Permit Renewal for the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities.

Media Assessment

A brief description of the media assessment is provided in the following sections.

Soil Investigation

Characterization of the Stormwater Outfall A-013 consisted of two (2) phases of sampling. The initial phase of soil sampling was conducted in January 2010 along a ditch leading to and including Stormwater Outfall A-013. This phase of sampling included four (4) sample locations (A013-01 through A013-04) as shown in Figure 5. Samples were collected from the 0- to 0.3-m (0- to 1-ft) and 0.3- to 1.2-m (1- to 4-ft) below ground surface (bgs) intervals at each location for a total of eight (8) soil samples. In addition, one (1) field duplicate sample was collected from the 0- to 0.3-m (0- to 1-ft) bgs interval. Samples for each interval were analyzed for target compound list (TCL) volatile organic compounds, TCL semi-volatile organic compounds, TCL pesticides/polychlorinated biphenyls, target analyte list inorganics, mercury, cyanide, gross alpha, non-volatile beta, and gamma pulse height analysis. One (1) sample also was analyzed for alpha spectroscopy (uranium and thorium isotopes).

Following review of the initial sampling results, soil samples were collected in April and May 2011 from three additional soil sampling stations (A013-05 through A013-07) to confirm elevated PAH detections (primarily benzo(a)pyrene) that were apparent in samples that were collected near, and potentially impacted by, an access road (Figure 5). During this second phase of sampling, soil samples were collected from the 0- to 0.3-m (0- to 1-ft) bgs interval at the three (3) locations. In addition, one (1) field duplicate sample and one (1) split sample were collected from the 0- to 0.3-m (0- to 1-ft) bgs. During the second confirmatory stage of sampling, soil samples were analyzed for PAHs only. The

Phase 2 data and all of the supporting information for Stormwater Outfall A-013 are provided in the *RCRA Facility Investigation/Remedial Investigation (RFI/RI) Work Plan and RFI/RI Report with Baseline Risk Assessment and Corrective Measures Study/ Feasibility Study for the A-Area Ash Pile (788-A), A-Area Coal Pile Runoff Basin (788-3A), and Stormwater Outfall A-013 (NBN) Operable Unit (U)* (SRNS 2012).

Groundwater Investigation

Groundwater samples were collected in 2009 to support the CM analyses. However, groundwater is not considered within the scope of the Stormwater Outfall A-013 OU. Groundwater is addressed separately under the RCRA Permit Renewal for the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities.

Media Assessment Results

There are no principal or low-level threat wastes at the site. No human health, ecological, or CM constituents of concern are identified for the Stormwater Outfall A-013 OU. There are no problems warranting a remedial action response.

Soil

There are no contaminants present at the Stormwater Outfall A-013 OU at concentrations that pose an unacceptable threat to human health and the environment.

Groundwater

Groundwater is addressed separately under the RCRA Permit Renewal for the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities.

Site-Specific Factors

No site-specific factors requiring special consideration that might affect the remedial action for the Stormwater Outfall A-013 OU are present at the site.

Contaminant Transport Analysis

There are no contaminants present at the Stormwater Outfall A-013 OU at concentrations that would leach to groundwater at concentrations greater than drinking water standards within 1,000 years.

VI. CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

Land Uses

According to the SRS Future Use Project Report (USDOE 1996), residential uses of SRS land should be prohibited. The Land Use Control Assurance Plan for the SRS (WSRC 1999) designates the Stormwater Outfall A-013 OU as being within an industrial area. The future land use is reasonably anticipated to remain industrial with USDOE maintaining control of the land.

Groundwater Uses/Surface Water Uses

There is no current or projected future use of groundwater as a drinking water source. Groundwater is not part of the Stormwater Outfall A-013 OU and is addressed separately under the RCRA Permit Renewal for the M-Area and Metallurgical Laboratory Hazardous Waste Management Facilities.

The outfall and drainage ditch are normally dry; the only flow through the drainage is stormwater during rain events. The stormwater does not provide potential beneficial uses (e.g., potential drinking water, irrigation, recreational) for future use assumptions.

VII. SUMMARY OF OPERABLE UNIT RISKS

Baseline Risk Assessment

As a component of the RFI/RI process, a baseline risk assessment (BRA) was performed to evaluate risks associated with the Stormwater Outfall A-013 OU. The BRA estimates the risks the site would pose if no action were taken. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by any remedial action. The BRA includes human health and ERAs, CM analysis, and PTSM evaluation. This section of the ROD summarizes the results of the BRA for this OU (SRNS 2012) as well as an updated risk evaluation presented in the PP (SRNS 2020).

Summary of Human Health Risk Assessment

The HHRA evaluates the potential for adverse effects associated with exposure to constituents present at the Stormwater Outfall A-013 OU. The assessment estimates the risk potential in the absence of any remedial action and provides a basis for determining whether or not remedial action is necessary.

The Stormwater Outfall A-013 OU is located in an area currently designated for industrial land use. However, in order to support risk management decision making, both unrestricted (i.e., residential) and industrial land use scenarios were evaluated in the HHRA.

The primary pathways for evaluation relative to human receptors include exposure to surface soil (0 to 0.3 m [0 to 1 ft]) via incidental ingestion, dermal contact, inhalation of windblown dust, inhalation of volatile constituents, and external exposure from radionuclides. At Stormwater Outfall A-013, the medium of concern is surface soil. Human health refined constituents of concern (RCOCs) are defined as those constituents that are considered for remedial action.

The initial HHRA (SRNS 2012) identified five (5) PAHs as RCOCs for the residential scenario with a total cumulative risk of 1.9E-04. The primary risk driver was

benzo(a)pyrene (risk = 1.3E-04). There were no human health RCOCs identified for the industrial worker scenario. However, the initial HHRA considered sample locations that were near an access road, a potential source of elevated PAH concentrations (due to asphalt road materials, vehicle exhaust, motor oil, tar, etc.). At the June 27, 2012, scoping meeting for the AAP/CPRB OU Statement of Basis/Proposed Plan, the USEPA, SCDHEC, and USDOE concluded that the data from sample locations near the access road (i.e., locations A013-04, -05, -06, and -07) were not related to the Stormwater Outfall A-013 and the initial HHRA was biased high. For this reason, the HHRA was revised to include only data from the sample locations determined to be directly related to the outfall (i.e., locations A013-01 through A013-03). Appendix A of the *Proposed Plan for the Stormwater Outfall A-013 (NBN) Operable Unit (U)* (SRNS 2020) provides the revised human health risk estimates. In June 2017 the USEPA regional screening levels (RSLs) for the PAHs were updated based on a new toxicological profile. The RSLs increased by an order of magnitude for both the residential and industrial worker scenarios. No constituents had a risk greater than 1E-06 for either the residential or industrial worker scenario. The November 2019 RSLs were used to calculate risk. Based on the revised risk assessment, there are no human health RCOCs and there are no problems warranting action at Stormwater Outfall A-013 OU that require remedial action.

Ecological Risk Characterization

The ERA consists of steps designed to provide a scientifically based and defensible evaluation of exposure and hazard to ecological resources that will support a risk management decision regarding site remediation. This OU is located in an industrially developed area and does not provide prime wildlife habitat but may be occasionally visited by terrestrial receptors. Terrestrial receptors evaluated in the ERA include earthworm (soil invertebrate), old-field mouse (herbivorous mammal), short-tailed shrew (insectivorous mammal), raccoon (omnivorous mammal), American robin (insectivorous bird), and red-tailed hawk (carnivorous bird).

The primary pathways for evaluation relative to terrestrial receptors include exposure to surface soil (0 to 0.3 m [0 to 1 ft]) and subsurface soil (0.3 to 1.2 m [1 to 4 ft]) via incidental ingestion, dermal contact, inhalation of windblown dust, inhalation of volatile constituents, ingestion of biota, and external exposure from radionuclides. At Stormwater Outfall A-013, the medium of concern is surface and subsurface soil. Ecological RCOCs are defined as those constituents that are considered for remedial action.

The ERA concluded that contaminants are not present in the soil media that would pose a hazard to ecological receptors (SRNS 2012). Therefore, no ecological RCOCs are identified for the Stormwater Outfall A-013 OU.

Summary of the Fate and Transport Analysis

To determine the potential for groundwater contamination, a CM analysis was performed to assess the migration potential of residual vadose zone contaminants. It was concluded that contaminants are not present in the OU soils that would leach to groundwater at concentrations greater than drinking water standards within 1,000 years (SRNS 2012). Therefore, no CM RCOCs are identified for the Stormwater Outfall A-013 OU.

Discussion of Principal Threat Source Material

The concept of principal threat waste and low-level threat waste, as developed by the USEPA in the National Contingency Plan (40 Code of Federal Regulations 300.430(a)(1)(iii)), is to be applied on a site-specific basis when characterizing source material. Source materials are those materials that include or contain hazardous substances, pollutants, or contaminants that can act as a reservoir for migration to groundwater, surface water, or air, or that can act as a source for direct exposure (USEPA 1991). The determination of whether or not the source materials present at a waste unit would be classified as PTSM is based principally on the USEPA guidance document (USEPA 1991).

The source material from all depth intervals is preliminarily considered to be PTSM if the cumulative risk exceeds one of the following toxicity threshold criteria:

- Carcinogens: greater than 1E-03 industrial worker risk, and
- Non-carcinogens: industrial worker hazard index greater than 10.

No constituents exceed these threshold criteria and no PTSM RCOCs are identified for the Stormwater Outfall A-013 OU.

Risk Assessment Summary

No human health, ecological, CM or PTSM RCOCs are identified at the Stormwater Outfall A-013 OU. The CSM illustrating this conclusion is presented in Figure 4.

Conclusions

The Stormwater Outfall A-013 OU poses no unacceptable risk to human health or the environment; therefore, it warrants unrestricted land use.

VIII. REMEDIAL ACTION OBJECTIVES AND CLEANUP LEVELS

There is no current or potential threat to public health, welfare, or the environment from the Stormwater Outfall A-013 OU. There are no potential applicable or relevant and appropriate requirements (ARARs) for this OU. Therefore, no remedial action objectives are required, and no final cleanup levels are established.

IX. DESCRIPTION OF ALTERNATIVES

No Action

Under this alternative, no efforts would be made to control access, limit exposure, or reduce contaminant toxicity, mobility, or volume at the Stormwater Outfall A-013 OU. This

alternative would leave the OU in its current condition with no additional controls. This alternative would not require five-year remedy reviews.

The Stormwater Outfall A-013 OU poses no unacceptable risk based on an unlimited exposure and unrestricted land use scenario. For this reason, the No Action alternative has been identified as the selected remedy. The OU poses no risk to human health and the environment based on unrestricted land use; therefore, no land use controls are required.

X. COMPARATIVE ANALYSIS OF ALTERNATIVES

According to USEPA guidance, if there is no current or potential threat to human health and the environment and no action is warranted, the CERCLA 121 requirements are not triggered. If the requirements are not triggered, there is no need to evaluate other cleanup alternatives or to evaluate the No Action alternative against the nine remedy selection criteria under CERCLA. These nine criteria are used as a basis for selecting cleanup remedies that are protective of human health and the environment, implementable, cost-effective, and acceptable to the regulatory agencies. The No Action alternative will be the final action for the Stormwater Outfall A-013 OU. This alternative will provide protection to human health and the environment at the Stormwater Outfall A-013.

XI. THE SELECTED REMEDY

Detailed Description of the Selected Remedy

The No Action alternative is the selected remedy for the Stormwater Outfall A-013 OU. There is no waste to treat, no institutional or engineering controls are required, and there are no ARARs. Because there are no problems warranting action at the Stormwater Outfall A-013 OU, no action will be taken. The Stormwater Outfall A-013 OU poses no unacceptable risk to human health or the environment and warrants unrestricted land use.

Cost Estimate for the Selected Remedy

There are no costs associated with the No Action remedy.

Estimated Outcomes of Selected Remedy

As part of the No Action remedy, the future land use for the Stormwater Outfall A-013 OU will be unrestricted. This remedy will provide protection to human health and the environment.

Waste Disposal and Transport

There is no waste to manage associated with the No Action remedy.

XII. STATUTORY DETERMINATIONS

Based on the unit RFI/RI/BRA report and the revised evaluation presented in the PP, the Stormwater Outfall A-013 OU poses no threat to human health and the environment. Therefore, the No Action alternative has been selected as the final remedy for the Stormwater Outfall A-013 OU. As part of the selected remedy, the future land use of the Stormwater Outfall A-013 OU will be unrestricted.

Because this remedy will not result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a five-year review will not be required.

XIII. EXPLANATION OF SIGNIFICANT CHANGES

The remedy selected in this ROD does not contain any significant changes from the preferred alternative(s) presented in the PP. No comments were received during the public comment period (Appendix A).

XIV. RESPONSIVENESS SUMMARY

The Responsiveness Summary is included as Appendix A of this document. No comments were received during the public comment period.

XV. POST-ROD DOCUMENT SCHEDULE AND DESCRIPTION

No remedial action is selected for the Stormwater Outfall A-013 OU; therefore, no schedule for post-ROD activities is provided. Per the FFA, the milestone for issuing the ROD to the public is November 29, 2021.

XVI. REFERENCES

FFA, 1993. *Federal Facility Agreement for the Savannah River Site,* Administrative Docket No. 89-05-FF (Effective Date: August 16, 1993)

SRNS, 2012. *RCRA Facility Investigation/ Remedial Investigation (RFI/RI) Work Plan and RFI/RI Report with Baseline Risk Assessment and Corrective Measures Study/Feasibility Study for the A-Area Ash Pile (788-A), A-Area Coal Pile Runoff Basin (788-3A), and Stormwater Outfall A-013 (NBN) Operable Unit (U),* Revision 1, SRNS-RP-2010-01457, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC (July)

SRNS, 2020. *Proposed Plan for the Stormwater Outfall A-013 (NBN) Operable Unit (U),* Revision 1, SRNS-RP-2020-00135, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken SC (September)

USDOE, 1996. *SRS Future Use Project Report, Stakeholder Preferred Recommendations for SRS Land Use Facilities*, United States Department of Energy, Savannah River Operations Office, Aiken, SC

USEPA, 1991. *A Guide to Principal Threat and Low Level Threat Wastes*, U.S. Environmental Protection Agency OSWER Superfund Publication 9380.3-06FS. November 1991

WSRC, 1998. *Record of Decision Remedial Alternative Selection for the Motor Shops Seepage Basin (716-A) (U),* Revision 0, WSRC-RP-97-840, Westinghouse Savannah River Company, LLC, Savannah River Site, Aiken SC (April)

WSRC, 1999. *Land Use Control Assurance Plan for the Savannah River Site*, Revision 1.1, WSRC-RP-98-4125, August 1999, latest update, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC

WSRC, 2011. *Savannah River Site Federal Facility Agreement Community Involvement Plan (U),* Revision 7, WSRC-RP-96-120, Savannah River Nuclear Solutions, LLC, Savannah River Site, Aiken, SC (February)

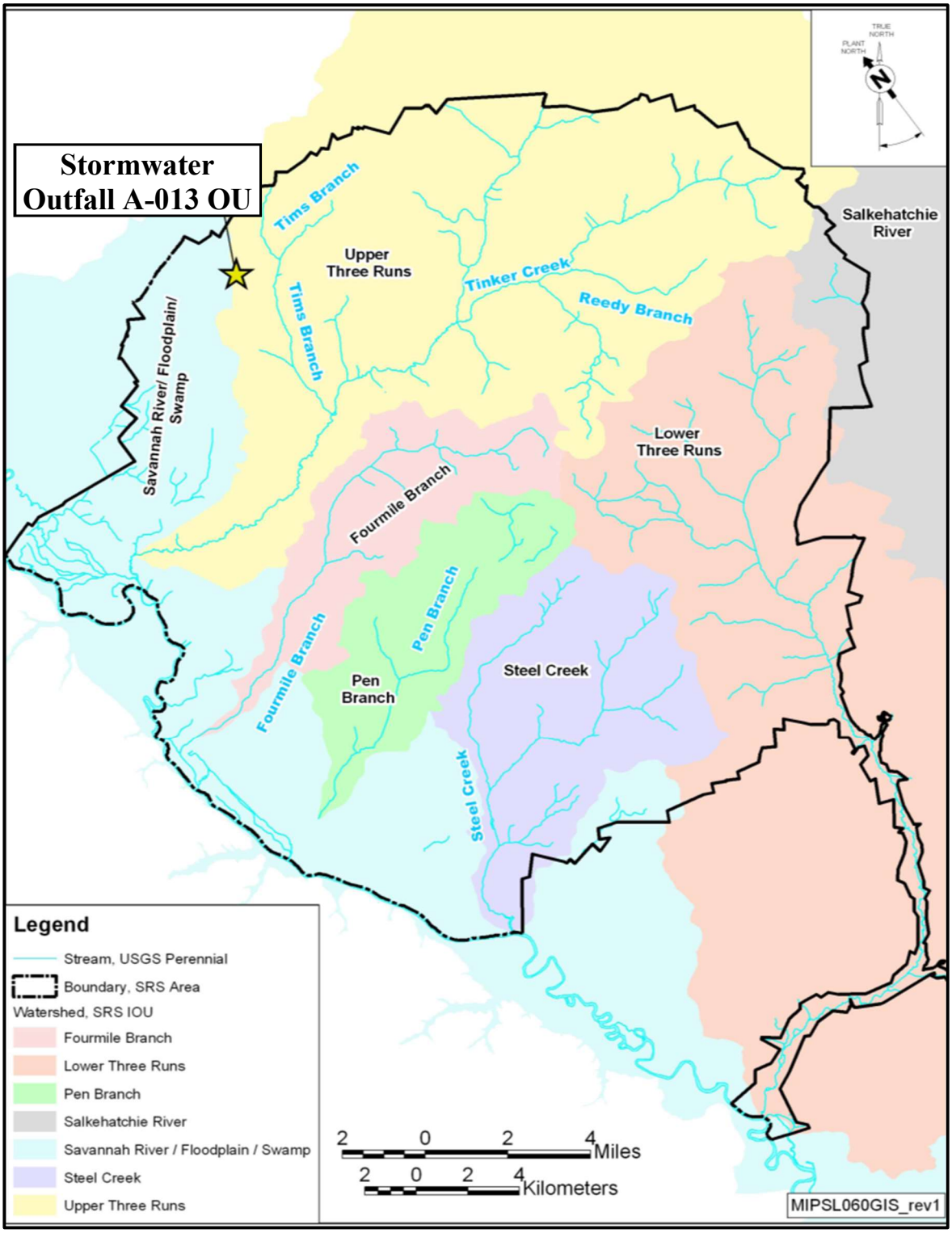

Figure 1. Location of the Stormwater Outfall A-013 OU within the Savannah River Site and Upper Three Runs Watershed

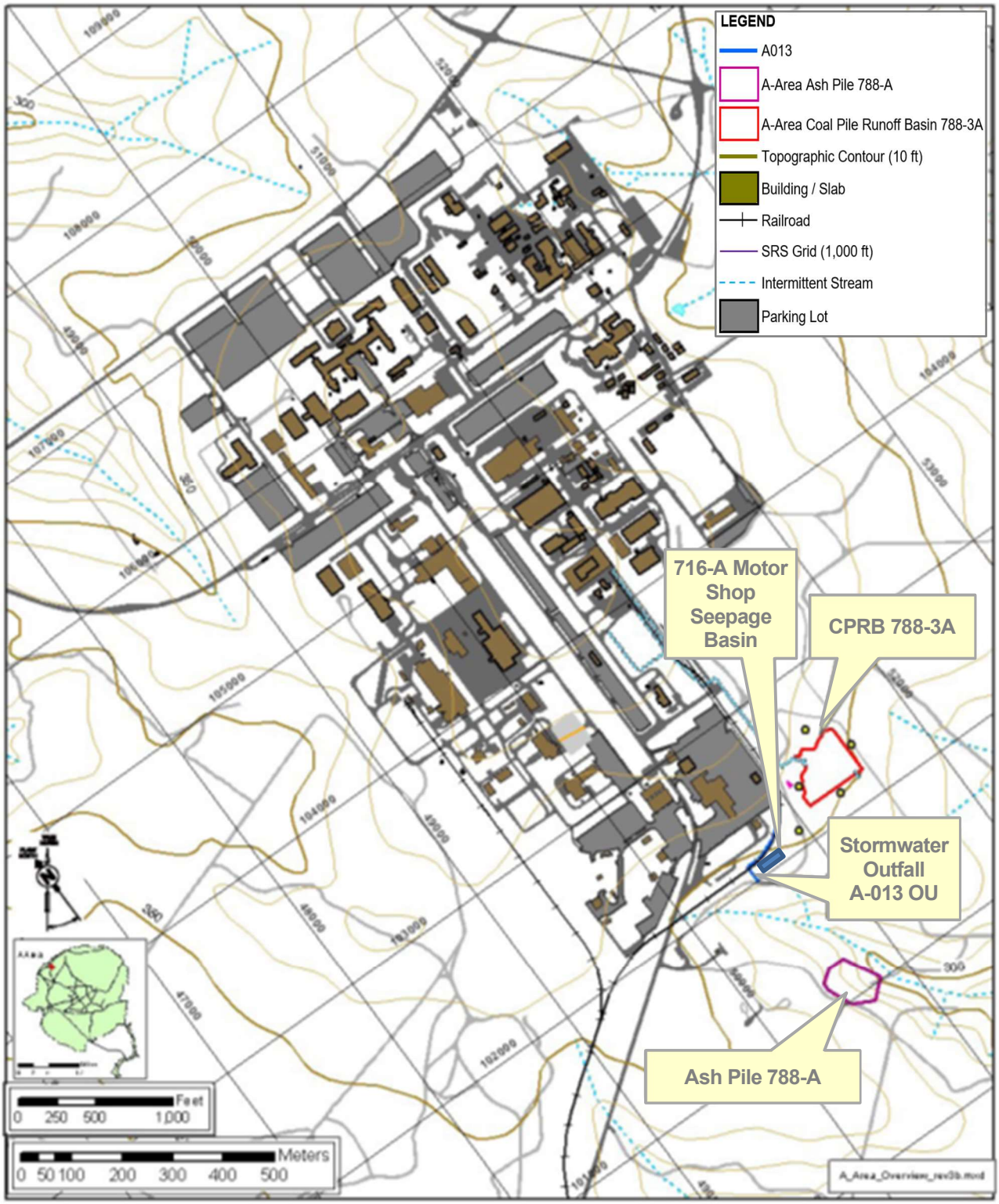

Figure 2. Location of the Stormwater Outfall A-013 OU in Relation to the AAP (788-A) and the CPRB (788-3A) within A-Area

Figure 3. Photo of Stormwater Outfall A-013 (2010)

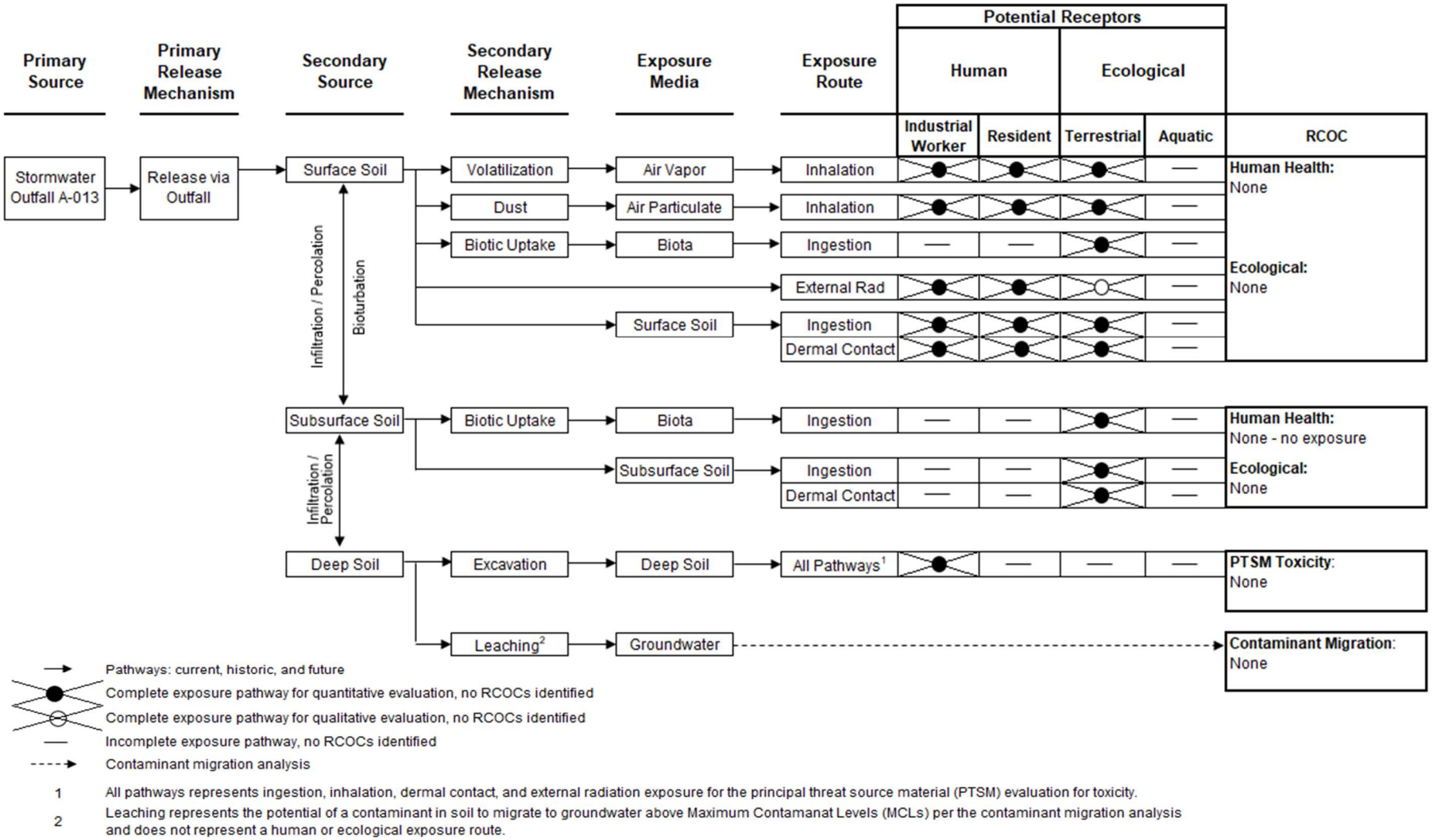

Figure 4. Conceptual Site Model for the Stormwater Outfall A-013 OU

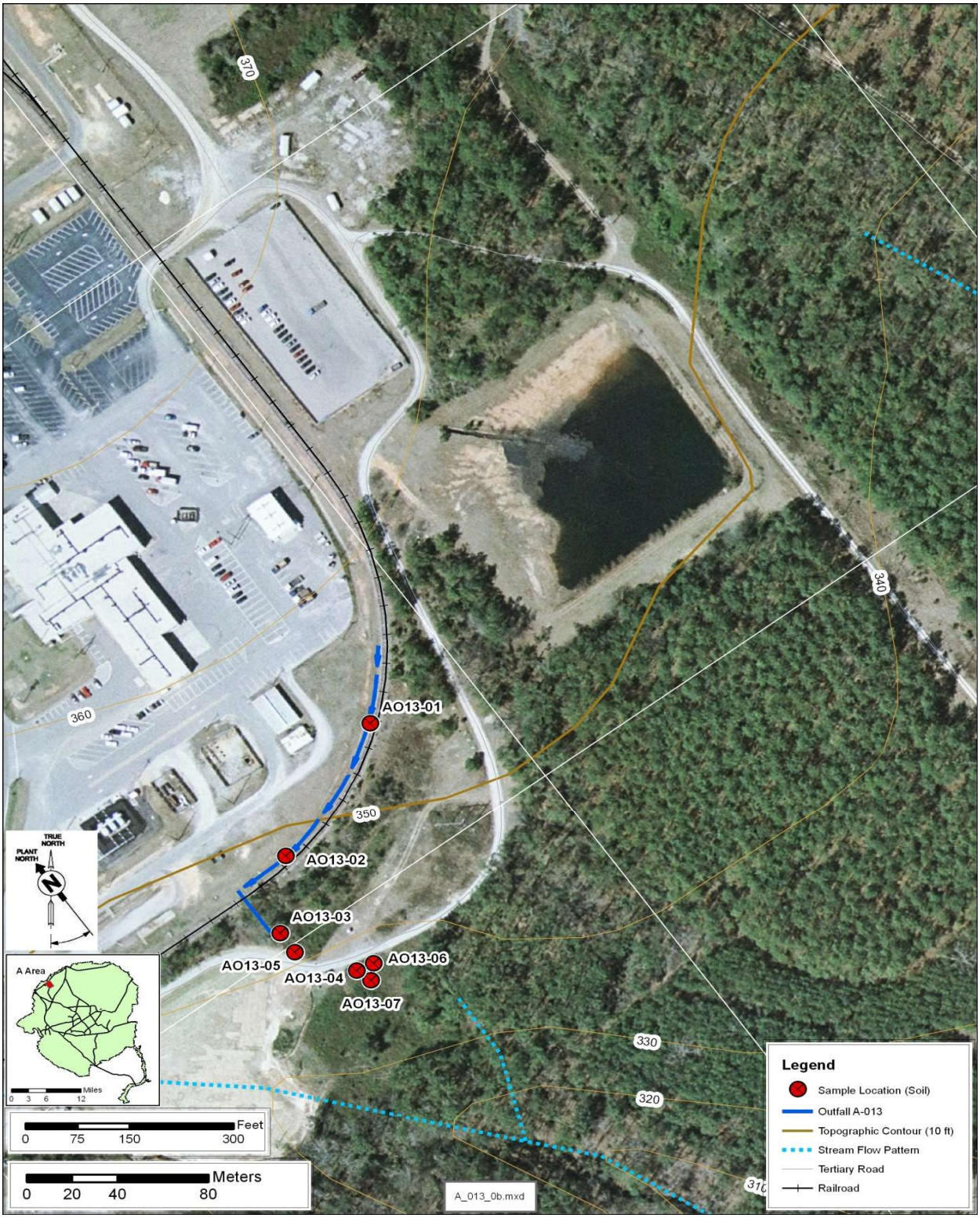

Figure 5. Phase 1 and Phase 2 Sample Locations at Stormwater Outfall A-013 OU

This page was intentionally left blank.

– APPENDIX A – RESPONSIVENESS SUMMARY

Responsiveness Summary

The 30-day public comment period for the Proposed Plan for the Stormwater Outfall A-013 OU began on October 21, 2020 and ended on November 20, 2020.

Public Comments

No comments were received from the public.

This page was intentionally left blank.