LUCIP for the
Miscellaneous Chemical Basin/Metals Burning Pit, 731-4A and 731-5A

Appendix A of Interim Post-Construction Report for the Miscellaneous Chemical Basin/Metals Burning Pit, 731-4A and 731-5A

WSRC-RP-2002-4038, Revision.1.1, December 2002

NOTE: The Westinghouse Savannah River Company (WSRC) and Department of Energy (DOE) organizations responsible for environmental restoration at the Savannah River Site underwent name changes in 2003, as shown below. The responsibilities as outlined in the following document did not change.

Organization	**Previous Name**	**Current Name**
WSRC	Environmental Restoration Division (ERD)	Soils and Groundwater Closure Projects (SGCP)
DOE	Environmental Restoration Division (ERD)	Soil and Groundwater Project (SGP)

This page was intentionally left blank.

Appendix A

Unit-Specific Land Use Control Implementation Plan

for the Miscellaneous Chemical Basin/Metals Burning Pit (731-4A/5A)

UNIT-SPECIFIC LAND USE CONTROL IMPLEMENTATION PLAN FOR THE MISCELLANEOUS CHEMICAL BASIN/METALS BURNING PIT

The Miscellaneous Chemical Basin/Metals Burning Pit (MCB/MBP) Land Use Control Implementation Plan (LUCIP) will be appended to the Savannah River Site (SRS) Land Use Control Assurance Plan (LUCAP). SRS is responsible for implementing the land use controls (LUCs) (e.g., inspections, maintenance, etc.) outlined in this unit-specific LUCIP.

1.0 REMEDY SELECTION

The MCB received liquid chemical wastes and is located in an old borrow pit. It was approximately 6 m (20 ft) wide by 6 m (20 ft) long and approximately 0.3 m (1 ft) deep, although exact basin boundaries have not been determined. No construction records exist for the borrow pit. No records of specific materials disposed were kept although its presumed use was for the disposal of waste solvent and used oil.

The MBP is irregular in shape with approximate dimensions of 122 by 122 m (400 by 400 ft). Waste materials were piled 0.9 to 2.7 m (3 to 6 ft) high within the MBP. A review of file material does not indicate the existence of an excavation as the word "pit" implies. The MBP is actually a cleared area that was used for burning lithium-aluminum alloys, scrap, and cuttings from A&M Area operations. Unit photographs show what is thought to be typical disposal of metal shavings, pieces of aluminum, plastic pipe, metal drums, and other miscellaneous scrap. Wastes were primarily contained in two discrete areas, one large pile and a series of small piles oriented in a semi-circular arc. The pit was reportedly placed in service in 1960 and taken out of service in 1974. At that time, the waste piles were regraded and the area was allowed to revegetate. Weeds, grasses, and pine trees currently grow at the unit. The western half of the unit has a slope of approximately 6 percent, and the eastern half of the unit has a slope of approximately 2.5 percent.

The Interim Action Proposed Plan (IAPP) was submitted in accordance with the Federal Facility Agreement (FFA) and the approved implementation schedule and was approved by the United States Environmental Protection Agency (USEPA) on January 14, 1999, and the South Carolina Department of Health and Environmental Control (SCDHEC) on January 18, 1999. The IROD documented the selected remedial action and was approved by USEPA on January 6, 2000, and SCDHEC on November 18, 1999.

In summary, the MBP surface and subsurface soils contaminated with aluminum and the MCB surface soils contaminated with polychlorinated biphenyls (PCBs) will be excavated and disposed of in an appropriate Offsite Rule compliant facility. Soil vapor extraction (SVE) will be performed in the MCB vadose zone, while the groundwater at that unit will be treated by in situ air stripping. The combination of alternatives for soil removal, vadose zone remediation via active/passive SVE, groundwater remediation, and institutional controls is intended to be an interim action for the MCB/MBP operable unit (OU) as a whole to reduce risk to human health and the environment. However, the selected alternatives for the soils and vadose zone represent final actions because they will meet the final remedial action objectives (RAOs) and final remedial goals (RGs) established in the IROD. An interim action for this OU was chosen because of the uncertainty of the groundwater remediation within the overall unit remediation strategy. The uncertainty in the groundwater remediation strategy is based on two volatile organic compounds (VOCs) groundwater plumes located upgradient from the MCB/MBP. The groundwater plumes are associated with the M-Area Hazardous Waste Management Facility (a facility closed under RCRA and undergoing corrective action for the contaminated groundwater associated with that unit) and the A-Area Burning/Rubble Pits and Rubble Pit (ABRP) (a Resource Conservation and Recovery Act (RCRA)/ Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) unit). Since these plumes are moving in the general direction of the MCB/MBP, it is not clear whether these plumes may represent a future VOC source relative to the MCB/MBP groundwater. An interim action at the MCB/MBP OU will allow an early start for remedial activities and will generate additional data on the nature and extent of the

groundwater interactions between the MCB/MBP, the ABRP, and A&M Area. These data will allow development of the final groundwater RGs. The rationale for the proposed groundwater interim action is centered on 1) controlling the source of groundwater contamination, i.e. vadose zone contamination; and 2) remediating the "hot spot" portions of the groundwater plume.

The MCB/MBP OU is in an area that has been recommended for multiple land uses, with the specific exclusion of residential land use. Although the remediation decisions for this unit were based on the industrial use scenario, the groundwater remedy is anticipated to achieve the more protective residential use scenario based on modeling results. The MBP will meet unrestricted land use criteria for soils, sediment, and surface water following the excavation detailed in the Interim Corrective Measures Implementation/Remedial Action Implementation Plan (ICMI/RAIP). The MCB will not meet unrestricted land use criteria for soils. Groundwater beneath both units exceeds the maximum contaminant levels (MCLs). Although institutional controls are included in all of the alternatives, the United States Department of Energy (USDOE) has recommended that residential use of SRS land in the vicinity of MCB/MBP be controlled; therefore, prohibition of future residential use and potential residential water usage and other controls will be taken to ensure long-term protectiveness in this area.

A post-construction conceptual site model (CSM) for the MCB, which illustrates the broken pathways after implementation of the remedy, is included as Figure A-1. A post-construction CSM for the MBP is included as Figure A-2.

2.0 LAND USE CONTROLS

Institutional controls are intended to be an alternative that maintains control of the area and that is protective of human health and the environment. Implementation of this alternative will require some near-term actions.

For the MCB, the following LUC objectives are necessary to ensure protectiveness of the preferred alternative:

- Prevent direct contact with PCB- and octachlorodibenzo-p-dioxin (OCDD)-contaminated surface/subsurface soils such that the constituents of concern (COCs) are not a continued significant risk to human health. Contaminated soils remain at the MCB to an estimated depth of 4 ft.

- Prevent direct contact with the vadose zone and groundwater during the groundwater interim remedial action.

For the MBP, the following LUC objective is necessary to ensure protectiveness of the preferred alternative:

- Prevent direct contact with the vadose zone and groundwater during the groundwater interim remedial action. Note that no contaminated soils remain at the MBP that are a continued significant risk to human health or the environment.

The following institutional controls are required to prevent unauthorized exposure to the contaminated media at the MCB/MBP:

- Controlled access to the MCB/MBP through existing SRS security gates and perimeter fences and the site use/site clearance programs.

- Signs posted in the area to indicate that waste remains in the vicinity of the MCB above levels allowing for unrestricted land use and to contact the waste unit custodian prior to entry.

- Notification of residual hazardous waste to any future landowner through deed notification, as required under CERCLA Section 120(h).

Figure A-3 shows the location of the MCB/MBP OU and the SRS coordinates of the MCB/MBP OU.

In the long term, if the MCB/MBP OU is transferred to non-federal ownership, the need for deed restriction will be evaluated and performed through an amended ROD with USEPA and SCDHEC approval and actions taken pursuant to CERCLA 120(h). The actions will include a deed notification disclosing former waste management and disposal activities, as well as any remedial actions taken at the waste unit. The deed notification will, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of waste and other materials, including hazardous substances. At this time, RCRA deed notification requirements are not required for this waste unit since this is an interim action. The deed, if necessary, would include restrictions precluding residential use of the property. The need for deed restrictions may be re-evaluated at the time of transfer in the event exposure assumptions differ and/or contamination no longer poses an unacceptable risk under residential use. Proposed changes in deed restrictions will require USEPA and SCDHEC review and approval. The survey plat will be reviewed and updated, as necessary, at the time the site is transferred and will be recorded with the Aiken County recording agency. This proposal is consistent with USEPA guidance and is an effective use of risk management principles.

The elements of the institutional control corrective action, which consists of land restrictions without any engineering controls, are composed of deed notifications when the parcel is transferred from USDOE ownership, access controls that include posting of identification signs, and field walkdowns for general site conditions. These land use controls will be implemented in perpetuity for this OU.

Each element of the institutional controls corrective action is discussed below.

2.1 Deed Notification

A deed notification shall be filed in the appropriate county records in accordance with CERCLA 120(h), which requires the government to create a deed when land on which any hazardous substance was stored, released, or disposed of is transferred to non-federal ownership. The transference of the MCB/MBP OU is unlikely. In the event the property is transferred, a deed notification will be filed with Aiken County. Per CERCLA 120(h)(3)(A), the deed shall contain, to the extent practical, such information as is available based on the complete search of agency files, including the following:

- A notice of the type and quantity of such hazardous substances;
- Notice of the time at which such storage, release, or disposal took place; and
- A description of the remedial action taken, if any.

Per CERCLA 120(h)(3)(B), the deed shall also contain a covenant warranting that

- All remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer;
- Any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States Government; and

- A clause granting the United States Government access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

At this time, RCRA permit requirements are not applicable for this waste unit since this is an interim action.

2.2 Access Controls

2.2.1 On-Site Workers

In accordance with WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, *Site Real Property Configuration Control*, use of all lands and waters on the SRS shall be coordinated via the Site Use Program. No use of land (i.e., excavation or any other land use) shall be undertaken without prior approval documented by a Site Use Permit. Also, in accordance with Procedure 3.02, all work at SRS that adds to or modifies features or facilities portrayed on the SRS development maps (i.e. plot plans of facilities/utilities at SRS) is authorized by a Site Clearance Permit before any excavation activities. All Site Clearance requests are reviewed to verify that either an approved Site Use Permit has been obtained or that an existing Site Use Permit has sanctioned the request. Verification of USDOE approval for intended land use must be obtained before issuance of a Site Clearance Permit. The Site Use and Site Clearance processes are applicable to all activities and personnel on site (including subcontractors). The processes are controlled within the SRS Quality Assurance Program.

The SRS identifies all buildings and facilities on maps used in the Site Use/Site Clearance Program and includes a 200-foot buffer zone around each facility. This waste unit is identified on these maps as a CERCLA facility.

Any work proposed in these areas will be strictly controlled and workers will be appropriately trained and briefed about health and safety requirements if work is deemed necessary for maintenance. Any changes in the use or disturbance of the MCB/MBP will be cleared with the USEPA and SCDHEC before disturbance occurs. To prevent unknowing entry and to ensure that unrestricted use of the waste unit does not occur while under ownership of the government, identification signs will be posted. The signs will be legible from a distance of at least 25 feet and are located at the MCB/MBP as shown on the Miscellaneous Chemical Basin and Metals Burning Pit Soil and Groundwater Remediation Soil Removal and Replacement Plan and Detail (U) (C-CT-A-0027, Attachment 2 of this LUCIP).

The signs at the MCB read:

> Miscellaneous Chemical Basin (731-4A)
> "Danger – Unauthorized Personnel Keep Out. This unit contains hazardous substances. Do not dig or excavate. Do not enter without contacting the waste site custodian."
> Custodian: Manager, Post-Closure Maintenance
> Phone: (803) 952-6882

The signs at the MBP read:

> Metals Burning Pit (731-5A)
> "Danger – Unauthorized Personnel Keep Out. This unit contains hazardous substances. Do not dig or excavate. Do not enter without contacting the waste site custodian."
> Custodian: Manager, Post-Closure Maintenance
> Phone: (803) 952-6882

Site-specific controls (i.e., fences) are not required for MCB/MBP OU since the exposure to the casual worker or trespasser does not warrant this level of protection.

2.2.2 Trespassers

Additionally, while under the ownership of the USDOE, access control of the entire SRS will continue to be maintained in accordance with the 1992 RCRA Part B Permit Renewal Application, Volume I, Section F.1. This section describes the 24-hour surveillance system (R.61-79.264.14(b)(1)), artificial or natural barriers (R.61-79.264.14(b)(2)(i)), control entry systems (R.61-79.264.14(b)(2)(ii)), and warning signs (R.61-79.264.14(c)) in place at the SRS boundary to comply with the security requirements for a RCRA-permitted facility.

2.3 Field Walkdowns and Maintenance for Institutional Controls

"Monitoring" will be performed to verify that LUCIP requirements are met. Semi-annual monitoring of the MCB/MBP OU, 731-4A/5A, will be conducted for items such as accuracy and legibility of signs, visible subsidence or erosion of the waste unit, proper vegetative growth, condition of fence, mowing, etc. Subsidence or erosion will be corrected by backfilling the affected area with clean soil and seeding the area to prevent further erosion. The results of any events and/or action that could indicate some potential compromise of institutional controls will be documented in the Federal Facility Agreement Annual Progress Report. All other routine maintenance activities (i.e., mowing, etc.) will be documented and maintained in files that are subject to USEPA and SCDHEC review and audit. A copy of the completed inspection form is maintained in the Environmental Restoration Division administrative record files.

Inspections at the MCB/MBP will be performed to ensure that institutional controls remain protective and consistent with all RAOs. Semi-annual inspections will be conducted. The MCB/MBP (731-4A/5A) Inspection Sheet is included as Attachment 1 of this LUCIP.

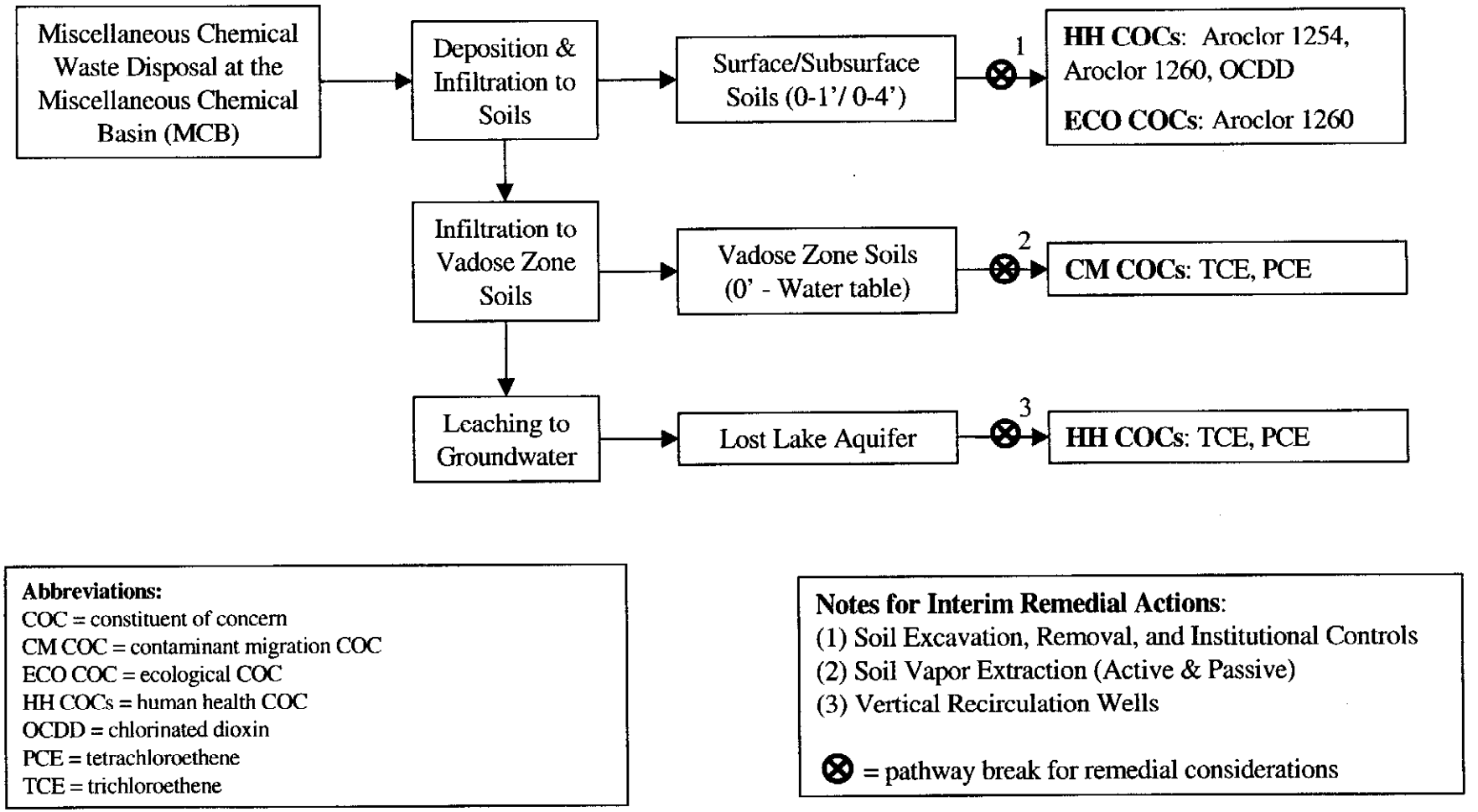
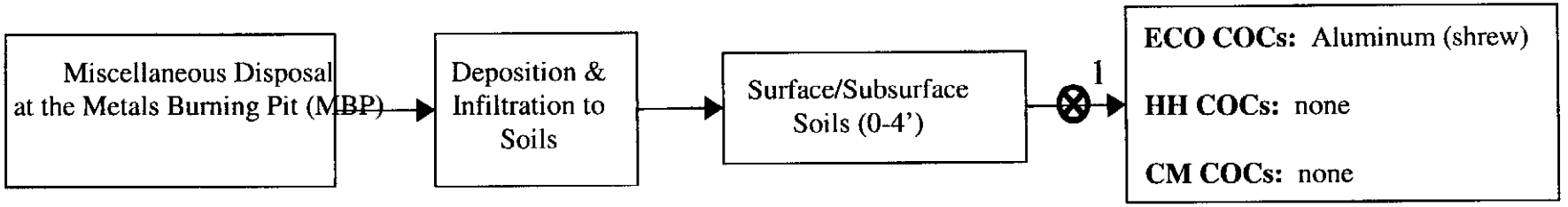


Figure A-1. Conceptual Site Model for MCB

THIS PAGE INTENTIONALLY LEFT BLANK



Abbreviations:
COC = constituent of concern
CM COC = contaminant migration COC
ECO COC = ecological COC
HH COC = human health COC

Notes for Interim Remedial Actions:
(1) Soil Excavation & Offsite Disposal

⊗ = pathway break for remedial considerations

Figure A-2. Conceptual Site Model for MBP

THIS PAGE INTENTIONALLY LEFT BLANK

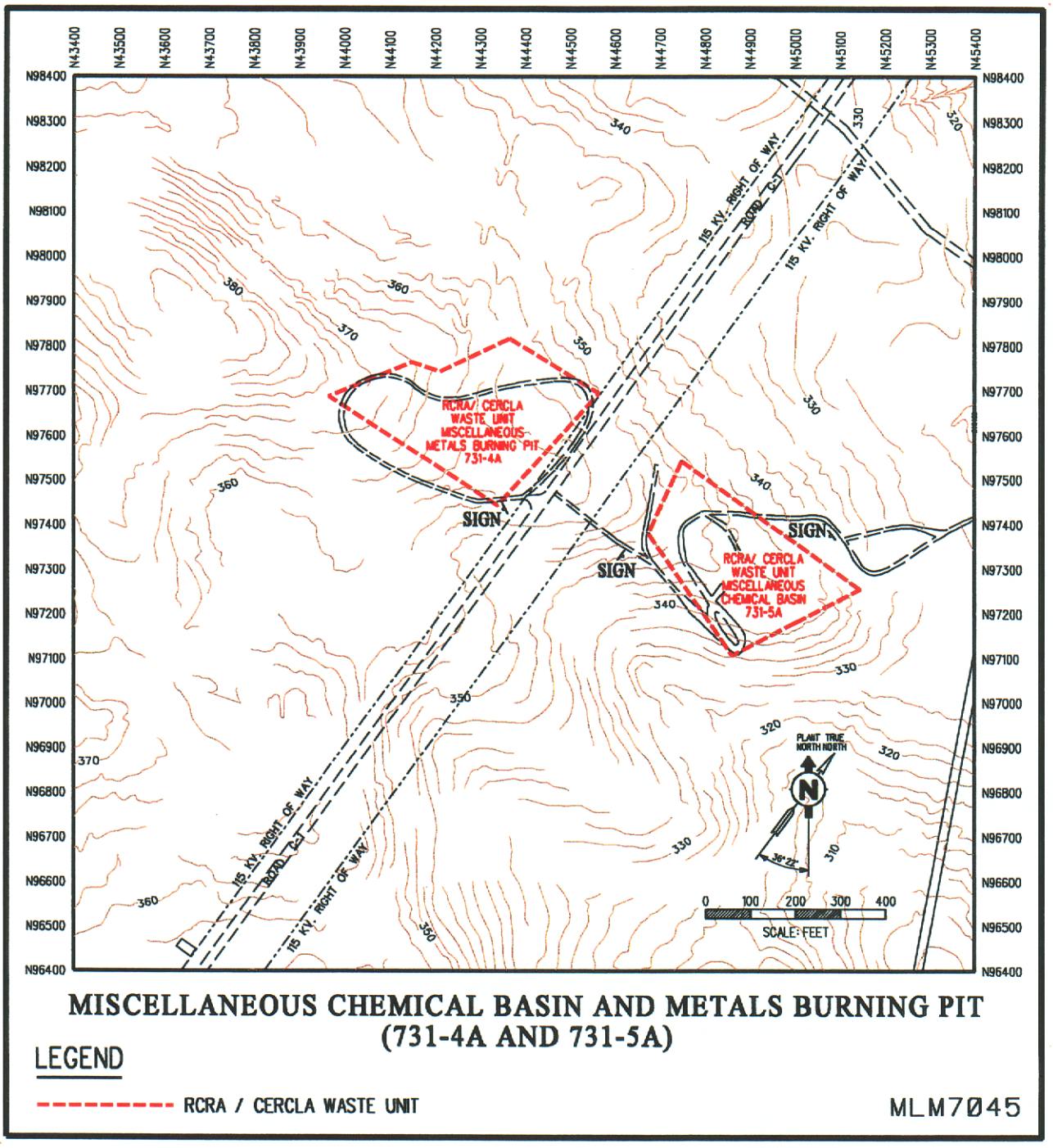


Figure A-3. Miscellaneous Chemical Basin/Metals Burning Pit Operable Unit

THIS PAGE INTENTIONALLY LEFT BLANK

ATTACHMENT 1

MCB/MBP (731-4A/5A) INSPECTION SHEET

A = Satisfactory X = Unsatisfactory (Comments Required)	A or X	Comments or Corrective Action Taken (See Maintenance Register for Corrected Items)
Check for potential encroachments (Ensure that there is no building on the site)		
Does the site have brush or woody vegetation that needs cutting and disposal?		
Does the site need to have the grass cut?		
Verify that the roads are accessible.		
Does the site show signs of erosion or subsidence? Are there any signs of burrowing animals (holes)?		
Does the site have adequate vegetative cover?		
Verify that the signs (three total) are correct and legible.		
Does the site need general cleanup (housekeeping)?		

Inspected By:_____/_____**Date/Time:**_____/_____
(Print Name) **(Signature)**

Accompanied By:_____/_____**Date/Time:**_____/_____
(Print Name) **(Signature)**

Post Closure Manager:_____/_____**Date/Time:**_____/_____
(Print Name) **(Signature)**

Note: USEPA and SCDHEC must be notified within 30 days of identification of any area where any breach or compromise of restrictions placed on this institutional control operable unit has occurred.

THIS PAGE INTENTIONALLY LEFT BLANK

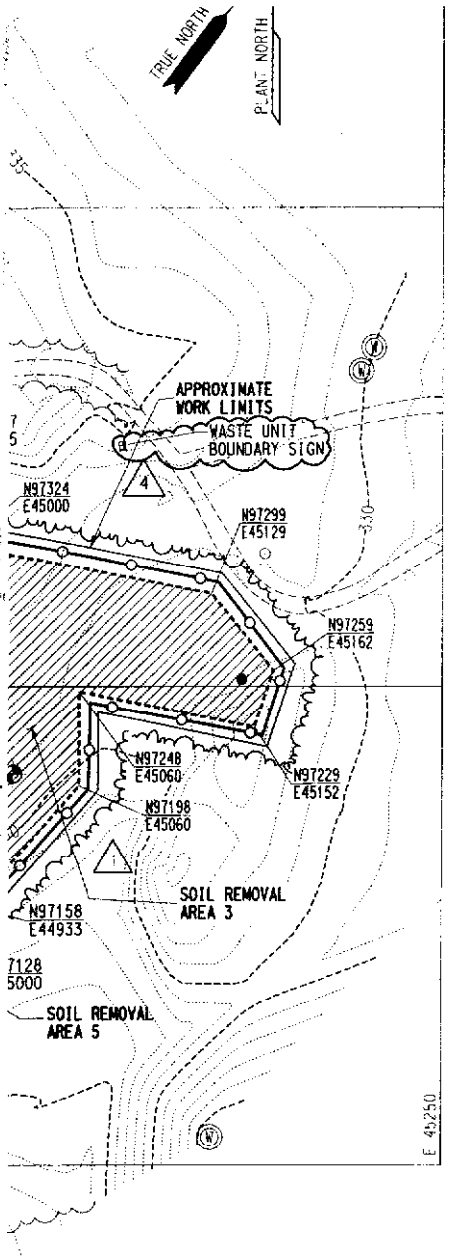
ATTACHMENT 2

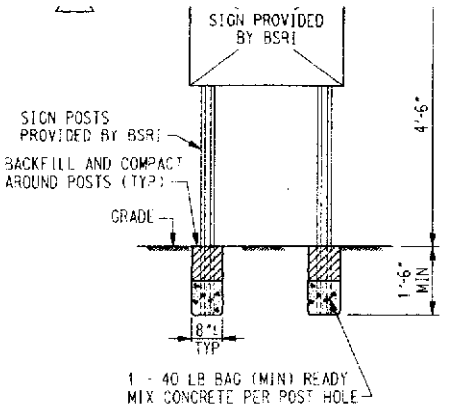
MISCELLANEOUS CHEMICAL BASIN/METALS BURNING PIT SOIL AND GROUNDWATER REMEDIATION

SOIL REMOVAL AND REPLACEMENT PLAN AND DETAIL (U)

(DRAWING NUMBER C-CT-A-0027)

THIS PAGE INTENTIONALLY LEFT BLANK





DETAIL 1 — NOT TO SCALE

WASTE UNIT BOUNDARY SIGN

DAMAGE TO THESE WELLS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE CRITERIA PROVIDED BY BSRI.

8. HAND EXCAVATION IS REQUIRED AROUND THE GROUNDING CABLE, FIBER OPTIC CABLE AND SCADA CABLES IN SOIL REMOVAL AREA 2.

9. SEE DRAWING NUMBER C-CT-G-0716 FOR THE LOCATION PLAN, GENERAL NOTES, AND ADDITIONAL LEGEND.

10. SEE NOTES ON DRAWING NUMBER C-CT-A-0023 FOR ADDITIONAL EROSION REDUCTION MEASURES REQUIREMENTS.

11. THE LOCATION OF THE SILT FENCING SHOWN ON THIS DRAWING IS APPROXIMATE. THE ACTUAL INSTALLATION SHALL BE PLACED PARALLEL TO THE SITE CONTOURS WHERE POSSIBLE. THE ENDS OF THE SILT FENCE SHALL BE TURNED UPSLOPE APPROXIMATELY 2 FEET IN ELEVATION TO PREVENT RUNOFF FROM FLOWING AROUND THE ENDS OF THE SILT FENCE. WHERE IT IS NOT POSSIBLE TO INSTALL THE SILT FENCE PARALLEL TO THE CONTOUR, IT SHALL BE INSTALLED IN A SERIES OF "J" SHAPES DOWN THE SLOPE, WITH THE BOTTOM LOOPS OF THE "J" TURNING UPSLOPE APPROXIMATELY 2 FEET IN ELEVATION.

12. THE WORK LIMITS SHOWN FOR THE SOIL REMOVAL AREAS ARE 10 FEET BEYOND THE LIMITS OF THE SOIL REMOVAL AREAS. THIS TERM REFERS TO THE LIMIT OF THE AREA AVAILABLE FOR CONSTRUCTION EQUIPMENT ACCESS. ANY ADDITIONAL LAND DISTURBANCE AREA WILL REQUIRE REVISION TO THE SMSRP/PPP.

△3 13. AFTER THE SOIL AND GRAVEL REMOVAL IS COMPLETED IN THE SOIL REMOVAL AREA NUMBER 3, REPLACE THE REMOVED GRAVEL ROAD WITH A NEW 12' WIDE BY 6" DEEP GRAVEL ROAD TO THE LIMITS SHOWN ON DRAWING C-CT-A-0019.

14. INSTALL A WASTE UNIT BOUNDARY SIGN AS PROVIDED BY BSRI AT THE APPROXIMATE CENTER OF EACH SIDE OF THE INDIVIDUAL WASTE UNITS PER DETAIL 1, THIS SHEET.

△2

LEGEND

LIMITS OF SOIL REMOVAL AND REPLACEMENT

INFORMATION ONLY

SOIL REMOVAL AND REPLACEMENT PLAN

0 50 100 150
1" = 50'

C CT A 0027 — LATEST REVISION 4

ENGINEERING DOC. CONTROL-SRS
00572896

N	PREP'D	LEAD ENG	CHK'D	APRV'D	APRV'D	APRV'D
		SIGNATURES ON MICROFILM				
5 PER DCF # C-DCF-A-00094		SIGNATURES ON MICROFILM				
RY SIGN DETAIL		SIGNATURES ON MICROFILM				
REVISED SOIL REMOVAL AREAS						
		SIGNATURES ON MICROFILM				
BCD/ER)						

THIS DRAWING HAS BEEN FURNISHED BY THE SAVANNAH RIVER SITE. THE INFORMATION AND KNOW HOW THEREON MAY NOT BE USED NOR THE DRAWING REPRODUCED WITHOUT WRITTEN PERMISSION OF THE PRIME CONTRACTOR. ALL REPRODUCTIONS IN WHOLE OR IN PART, INCLUDING VENDOR'S SHOP DRAWINGS, SHALL BEAR OR REFER TO THIS STAMP.

REFERENCE DRAWINGS

C-CT-A-0019	ENLARGED SITE PLAN
C-CT-A-0023	SEDIMENT/EC NOTES AND DETAILS
C-CT-G-0716	LOCATION, DOC INDEX, GEN NOTES
C-CT-G-0717	SITE UTILITIES PLAN SHT 1

REFERENCE STANDARDS

UNITED STATES DEPARTMENT OF ENERGY

SAVANNAH RIVER SITE

BLDG. NO.	SITE CLEARANCE NO.	DESIGN AREA NO.	DESIGN GROUP
N/A	SC 4554.1	N/A	PE&CD/ER

TITLE

MISCELLANEOUS CHEMICAL BASIN AND METALS BURNING PIT SOIL AND GROUNDWATER REMEDIATION

SOIL REMOVAL AND REPLACEMENT PLAN AND DETAIL (U)

SCALE

LEVELS | PSC= | DRAWN BY (ORIG): M. FINLEY | PLOT DATE 03/12/02 | TIME

Soil Removal and Placement Plan and Detail (U) (C-CT-A-0027)