

LUCIP for the
Central Shops Burning/Rubble Pits, 631-1G and 631-3G
Appendix A of Corrective Measures Implementation/Remedial Action Implementation
Plan for Central Shops Burning/Rubble Pits, 631-1G and 631-3G
(WSRC-RP-2003-4018, Revision 1, August 2003)

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APPENDIX F

LAND USE CONTROL IMPLEMENTATION PLAN (LUCIP) FOR THE CENTRAL SHOPS BURNING/RUBBLE PITS OPERABLE UNIT

The CSBRP LUCIP that was originally submitted with the CSBRP CMI/RAIP (WSRC 2003a) has been revised to update the format to the current template approved by USEPA and SCDHEC in March 2004.

1.0 INTRODUCTION

This Land Use Control Implementation Plan (LUCIP) has been prepared for the Central Shops Burning/Rubble Pits (CSBRP) Operable Unit (OU) at the Savannah River Site (SRS). The purpose of the LUCIP is to describe how the land use controls (LUCs) selected in the CSBRP OU Record of Decision (ROD) (WSRC 2002) will be implemented and maintained. The following LUCs have been selected for this OU:

- Access Controls
- Deed Notification
- Field Inspections and Maintenance for the Institutional Controls

The selected remedy leaves hazardous substances in place that pose a potential future risk and will require land use restrictions for an indefinite period of time. As agreed on March 30, 2000, among the United States Department of Energy (USDOE), the United States Environmental Protection Agency (USEPA), and the South Carolina Department of Health and Environmental Control (SCDHEC), SRS is implementing a Land Use Control Action Plan (LUCAP) to ensure that the LUCs required by numerous remedial decisions at SRS are properly maintained and periodically verified. The requirements of that LUCAP also apply to the LUCs that were selected as part of the remedial action for CSBRP OU. This additional document, the CSBRP OU LUCIP, contains the detailed and specific measures required to implement and maintain the LUCs selected as part of this particular remedial decision. The LUCs shall be maintained until the OU is suitable for unlimited exposure and unrestricted use. Approval by USEPA and SCDHEC is required for any modification or termination of the institutional controls.

USDOE is responsible for implementing, maintaining, monitoring, reporting, and enforcing the LUCs in accordance with the approved LUCIP. Upon final approval, the

LUCIP will be appended to the LUCAP and should be considered incorporated by reference into the CSBRP OU ROD, establishing implementation and maintenance requirements for the LUCs under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the SRS Federal Facility Agreement (FFA) (1993). The LUCIP will remain in effect unless and until modifications are approved by USEPA and SCDHEC as necessary for protection of human health and the environment. This LUCIP will be evaluated for accuracy during the five-year remedy review, and any approved LUCIP modification will be appropriately documented for incorporation by reference into the CSBRP OU ROD.

1.1 Format of LUCIP

The format of this LUCIP is consistent with the FFA protocol format approved by USEPA and SCDHEC in March 2004.

2.0 OVERVIEW OF CSBRP OU REMEDIAL ACTION

2.1 Description of CSBRP OU

The CSBRP OU, located in the central portion of the SRS, is approximately 10.5 km (6.5 mi) from the nearest site boundary. It is in the northern part of N Area (also known as Central Shops), approximately 0.9 km (0.6 mi) south of the intersection of SRS Roads 5 and C.

Initially, the CSBRP OU comprised two inactive burning/rubble pits, Pit 631-1G and 631-3G, located along the northern and western sides of the Active Burning Area (631-2G). However, trenching performed during characterization activities identified that Pit 631-3G was composed of two adjacent pits (631-3G and 631-3GA). These pits are jointly addressed as Pits 631-3G/3GA.

Prior to 1951, the CSBRP OU area was farmland, an area of moderate relief. The pits are located in cleared areas adjacent to wooded lands. Drainage ditches and the flow paths of stormwater runoff have changed over time. During the disposal activities, each pit had at least one drainage ditch to receive water directly from that pit.

Pit 631-1G

Waste disposal activities at Pit 631-1G are estimated to have begun in late 1951. Historically, the pit had dimensions of approximately 61.0 by 9.1 by 1.8 m (200 by 30 by 6 ft).

During the Phase II investigation, trenching and ground penetrating radar (GPR) activities conducted at Pit 631-1G indicated a pit approximately 79.2 m (260 ft) long and 9.1 m (30 ft) wide. This pit contained debris from 0.6 to 2.7 m (2 to 9 ft) below land surface (bls), with an average waste thickness of 1.2 m (4 ft). The waste consisted of burned trash, including wood, glass, and stainless steel shavings.

The actual volume of waste disposed of in the pit was not recorded. However, estimates from the Phase II characterization indicate approximately 884 m³ (31,200 ft³) of waste was disposed of in the pit.

Pits 631-3G/3GA

According to the historical records, Pit 631-3G originally had dimensions of 122 by 15.2 by 2.1 m (400 by 50 by 7 ft). The pit began receiving waste some time after 1975. In 1998, boreholes were drilled through Pit 631-3G, revealing a depth of at least 8.2 m (27 ft) bls, with the trash rising to within 2.4 m (8 ft) bls and overlain by clay fill. The pit was used to dispose of dry, inert rubble. It may have received asbestos, empty paint cans, fluorescent light fixtures, paper, cans, lumber, barrels, metal pipes, metal shavings, and electrical switch gear. The Phase II investigation of trenching activities within Pit 631-3G identified stainless steel metal shavings, sheet metal, burned wood, and one

crushed 208-L (55-gal) drum. In 1983, dumping ceased and the pit was covered with 2.1 to 3 m (7 to 10 ft) of soil, creating a mounded profile. Historically, the volume of waste in the pit was unknown. However, estimates from the Phase II characterization activities indicate that the volume of the waste in Pit 631-3G is approximately 10,224 m³ (361,000 ft³).

Subsequent activities performed during Phase II characterization revealed that Pit 631-3G is actually divided into two separate pits, designated as Pit 631-3G and a southern Pit 631-3GA. During the Phase II investigation, trenching conducted across Pit 631-3GA revealed unburned materials including metal, large concrete slabs, and transite. In addition, burned materials identified in the pit included sheet metal, stainless steel shavings, wire, glass, and wood. Boreholes drilled through Pit 631-3GA indicated the depth to be at least 4.6 m (15 ft) bls, with the top of the trash varying from 1.1 to 2.4 m (3.5 to 8 ft) bls and overlain by clay fill. The estimated volume of trash in Pit 631-3GA is 1,487 m³ (52,000 ft³).

2.2 Nature and Extent of Contamination in CSBRP OU

The RFI/RI/BRA investigation found no refined constituents of concern (COCs) in any subunit of the CSBRP OU, including groundwater. Further, there is no potential threat source material (PTSM) at the CSBRP OU; however, it has been determined that perched/trapped water associated with existing drainage conditions requires mitigation to reduce the uncertainty of future contaminant migration. For this reason, an action is required to maintain restricted (industrial) land use at the CSBRP OU, thereby ensuring protection of human health and the environment. The selected remedy has been identified as institutional controls (in conjunction with improved stormwater management).

2.3 Remedial Action Selected

In accordance with the ROD, the selected remedy includes the following:

- Institutional controls in accordance with the LUCAP for SRS. Controls will include erecting warning signs to mitigate the impact of the ongoing operations at the Active Burning Area (631-2G), conducting periodic field inspections, and maintaining the site for restricted (industrial) land use.
- Improved stormwater management, including
 - Implementing surface water runoff controls such as reconfiguring surface areas of the pit and the surrounding areas
 - Routing the surface water flow away from the pits to minimize infiltration in Pit 631-1G and Pits 631-3G/3GA
 - Covering the surface area of the pit with vegetative covers

Monitoring the effectiveness of the above improvements during periodic site inspections included under institutional controls.

The water level in Pit 631-3G will be measured quarterly and evaluated by a hydrogeologist to determine if the pit surface area improvements are reducing water level in the pit as designed. The water level measurement will be discontinued only when the trapped water shows a declining trend for three consecutive years.

Additionally, five-year remedy reviews will be performed to ensure that the remedy continues to provide adequate protection to human health and the environment.

The selected remedy is a permanent solution, is protective of both human health and the environment, and is effective in meeting the remedial action objective (RAO). The

selected remedy will comply with applicable or relevant and appropriate requirements (ARARs) and will not pose any short-term risks to remedial workers, the community, or the environment.

3.0 LAND-USE CONTROL OBJECTIVES

To meet the remedial goal, the following LUC objectives have been established:

- minimize the perched water in the Pit 631-3G
- maintain the use of the OU for industrial activities only to prevent residential exposure, and
- prevent unauthorized access to the closed CSBRP OU as long as the waste remains a potential threat to human health or the environment in order to protect the industrial worker
- provide public notices for disclosing former waste management and disposal activities and remedial actions taken on the site in order to protect the future residents, trespassers, and industrial workers.
- maintain vegetation cover to eliminate erosion and prevent disturbance of the soil in the pit.

4.0 IMPLEMENTATION OF LAND-USE CONTROLS

This section describes the LUCs selected in the ROD to achieve the LUC objectives described in Section 3.0. The information provided in this section is summarized in Table F-1.

Table F-1. Land Use Controls for the CSBRP OU

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas ¹
1. Property Record Notices ^b	Provide notice to anyone searching records about the existence and location of contaminated areas	Until the concentrations of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use	Notice recorded by USDOE in accordance with state laws at the County Register of Deeds office if the property or any portion thereof is ever transferred to non-federal ownership	All waste management areas and other areas where hazardous substances are left in place at levels that require land use
2. Property record restrictions ^c : A. Land Use	Restrict use of property by imposing limitations	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use	Drafted and implemented by USDOE upon transfer of affected areas; recorded by USDOE in accordance with state law at the County Register of Deeds office	All waste management areas and other areas where hazardous substances are left in place at levels that require land use
3. Other Public Notices ^d	Provide notice to county/city about the existence and location of waste disposal and residual contamination areas for zoning/planning purposes	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use	Notice recorded by USDOE in accordance with state laws at the County Register of Deeds office if the property or any portion thereof is ever transferred to non-federal ownership	All waste management areas and other areas where hazardous substances are left in place at levels that require land use
4. Site Use Program ^e	Provide notice to worker/developer, i.e., permit requestor, on extent of contamination and prohibit or limit excavation/penetration activity	As long as property remains under USDOE control	Implemented by USDOE and site contractors; initiated by permit request	Remediation systems, all waste management areas, and areas where hazardous substances are left in place at levels that require land use

Table F-1. Land Use Controls for the CSBRP OU (Continued)

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas ^a
5. Warning Signs ^e	Provide notice or warning to prevent unauthorized uses	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use	Signage maintained by USDOE	At select locations throughout SRS
6. Security Surveillance Measures	Control and monitor access by workers/public	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use	Established and maintained by USDOE; necessity of patrols evaluated upon completion of remedial actions	Patrol of selected area throughout SRS, as necessary

^aAffected areas – Specific locations identified in the SRS LUCIP or subsequent post-ROD documents.

^bProperty Record Notices – Refers to any non-enforceable, purely informational document recorded along with the original property acquisition records of USDOE and its predecessor agencies that alerts anyone searching property records to important information about residual contamination or waste disposal areas in the property.

^cProperty Record Restrictions – Includes conditions and/or covenants that restrict or prohibit certain uses of real property and are recoded along with original property acquisition records of USDOE and its predecessor agencies.

^dOther Notices – Includes information on the location of waste disposal areas and residual contamination depicted on a survey plat provided to a zoning authority (i.e., city planning commission) for consideration in appropriate zoning decisions for non-DOE property.

^eSite Use Program – Refers to the internal USDOE/USDOE contractor administrative program(s) that requires the permit requestor to obtain authorization, usually in the form of a permit, before beginning any excavation/penetration activity (e.g., well drilling) for the purpose of ensuring that the proposed activity will not affect underground utilities/structures or, in the case of contaminated soil or groundwater, will not disturb the affected areas without the appropriate precautions and safeguards.

^fPhysical Access Controls – Physical barriers or restrictions to entry.

^gSigns – Posted command, warning, or direction.

4.1 Property Record Notices

In the long term, if the property is ever transferred to non-federal ownership, the U.S. Government will take those actions necessary pursuant to Section 120(h) of CERCLA.

Those actions will include a deed notification disclosing former waste management and disposal activities as well as remedial actions taken on the site. The contract for sale and the deed will contain the notification required by CERCLA Section 120(h).

The deed notification shall, in perpetuity, notify any potential purchaser that the property has been used to manage and dispose of waste. This requirement is consistent with the intent of the Resource Conservation and Recovery Act (RCRA) deed notification requirements at final closure of a RCRA facility if contamination will remain at the unit.

4.2 Property Record Restrictions

The deed shall also include restrictions precluding residential use of the property and/or any other property record restrictions necessary to achieve the LUC objectives. The deed shall contain provisions to ensure that appropriate LUCs remain with the affected area upon any and all transfers. USDOE shall provide a copy of the executed deeds to the regulatory agencies as soon as practicable after the transfer of fee title, but no later than 30 days. However, the need for these deed restrictions may be re-evaluated at the time of transfer in the event that exposure assumptions differ and/or the residual contamination no longer poses an unacceptable risk under residential use. Any re-evaluation of the need for the deed restrictions will be done through an amended ROD. USDOE shall provide six months' notice to USEPA and SCDHEC prior to deed transfer to allow the parties time to ensure appropriate provisions are included in the transfer terms or conveyance documents to maintain effective institutional controls. If it is not possible for the facility to notify USEPA and SCDHEC at least six months prior to any transfer or sale, then the facility will notify USEPA and SCDHEC as soon as possible but no later than 60 days

prior to the transfer or sale of any property subject to institutional controls. In addition to the land transfer notice and discussion provisions above, DOE further agrees to provide USEPA and SCDHEC with similar notice, within the same time frames, as to federal-to-federal transfer of property.

4.3 Other Public Notices

The LUCIP provides the as-built arrangement of the institutional controls and identifies the area under land use restriction via an as-built drawing. **Note:** As-built drawing (Attachment A-2) and the line marked "AREA SUBJECT TO LAND USE CONTROLS."

In addition, if the site is ever transferred to non-federal ownership, a professional land surveyor-certified survey plat of the OU will be prepared at or near the time of conveyance to support the LUCIP-required restrictive covenants on land use and will be recorded with the appropriate county recording agency.

4.4 Site Use Program

Under DOE Order 430.1A, *Life Cycle Management* (USDOE 1998), SRS is required to implement an asset management program for the use, maintenance, and disposal of physical assets, including real estate. SRS complies with this Order through its Site Use Program, which is conducted in accordance with WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, "Site Real Property Configuration Control" (WSRC 2003a). All employees, contractors, and visitors at SRS are required to adhere to the Site Use Program. This program ensures authorization of any work performed at SRS if the work adds, modifies, or removes features portrayed on the SRS development maps. No land use (e.g., excavation) shall be undertaken without prior approval documented by a Site Use Permit. To obtain this authorization, a Site Clearance Request Form must be completed. In accordance with WSRC 1D, Procedure 3.02, all work at SRS that adds to or modifies features or facilities portrayed on SRS development maps (i.e., plot plans of

facilities/utilities at SRS) will be authorized by a Site Clearance Permit before any activities are conducted. All Site Clearance Requests will be reviewed to verify that either an approved Site Use Permit has been obtained or that the request is sanctioned by an existing Site Use Permit. All land use requirements applicable for the OU will be provided to the Site Use Program for use in determining issuance of Site Clearance permits. In addition, the Site Use permit must be amended when the geographic configuration or buffer zone used to establish the permit boundary changes or there is a change to the permitted land use.

SRS is responsible for updating, maintaining, and reviewing site maps, including Federal Facility Agreement (FFA) (1993) OU identifications. If a Site Clearance Request potentially impacts an FFA OU, the Site Clearance Request form is sent to the appropriate FFA OU reviewer for approval. The roles and responsibilities of each individual are detailed in WSRC 1D, Procedure 3.02. Before a Site Clearance Permit is issued, verification of USDOE approval for intended land use must be obtained. The site use and site clearance processes are applicable to all activities and personnel on site (including subcontractors). USEPA and SCDHEC will be notified within 30 days of any changes to the Site Use Program that impacts actual land use requirements by USDOE via a revision to the LUCAP. The processes are controlled within the SRS Quality Assurance (QA) Program in accordance with WSRC 1Q Manual, *Quality Assurance* (WSRC 2003b). The SRS QA program governs all SRS activities.

SRS identifies all buildings and facilities on maps used in the Site Use Program. 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. No change in land use or excavation at the CSBRP OU shall be undertaken without USEPA and SCDHEC approval. USDOE shall seek prior

concurrence of USEPA and SCDHEC before any anticipated action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

4.5 Warning Signs

To prevent unknowing entry and to ensure that unrestricted use of the waste unit does not occur while the unit is under ownership of the government, access control warning signs will be posted at the unit. The signs will be legible for a distance of at least 25 feet. Figure A-1 depicts a typical access control warning sign.

Custodial responsibilities for maintenance and inspection of the CSBRP OU will be maintained by the Post-Closure Maintenance Group.

4.6 Other Access Controls and Security/Surveillance Measures

While under the ownership of USDOE, access control of the entire SRS will 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 access control 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.

4.7 Field Inspection and Maintenance for Institutional Controls

After remediation of the CSBRP OU, only maintenance activities will be required by this remedial action. No operations will be required.

The CSBRP OU will be inspected semi-annually using the Field Inspection Checklist provided as an attachment (Attachment A-1). USEPA and SCDHEC will be notified by USDOE of any events and/or actions that indicate potential compromise of the institutional controls and the proposed action to address the potential compromise within

30 days of identification. The FFA Annual Progress Report, submitted to the regulatory agencies by USDOE, will provide the status of the institutional controls and describe how any institutional control deficiencies or inconsistent uses have been addressed. In the event of property transfer or lease, the Annual Report will cite findings on the following: whether the use of the property is affected by the deed or lease restrictions and controls; whether property use conforms with the deed or lease restrictions and controls; and whether the owners and state/local agencies have been notified regarding the deed or lease restrictions and controls.

All other routine maintenance activities will be documented and maintained in files subject to USEPA and SCDHEC review and audit. A copy of the completed inspection form is maintained in the SGCP Document Control Center. The waste unit inspectors are to be trained in Hazardous Waste Operations and Emergency Response (HAZWOPER), RCRA Well Inspections (SGCP-specific training), SGCP RCRA Waste Unit Inspections, Radiological Worker Training, etc., as applicable for the specific inspection. They will also be trained based on the individual requirements of the regulatory approved closure documents for each waste unit. In addition, the inspectors are to attend yearly refresher courses. Over the years, different personnel may conduct the inspections and grass cutting operations.

This unit-specific LUCIP, including the checklist (Attachment A-1), will be appended to the SRS LUCAP upon final regulatory approval.

5.0 REFERENCES

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

USDOE, 1998. DOE Order 430.1A, *Life Cycle Management* (Approved October 14, 1998)

WSRC, 2001. *RCRA Facility Investigation/Remedial Investigation (RFI-RI) with BRA for the Central Shops Burning/Rubble Pits Operable Unit (U)*, WSRC-RP-98-4043, Rev 1.2, June, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2002. *Record of Decision Remedial Alternative Selection for the Central Shops Burning/Rubble Pits, 631-1G, and 631-3G/3GA (U), Operable Unit (OU)*, WSRC-RP-2001-4265, Rev. 1.1, October, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2003a. WSRC Procedure Manual 1D, *Site Infrastructure and Services Manual (U)*, Procedure 3.02, "Site Real Property Configuration Control," Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

WSRC, 2003b. WSRC Procedure Manual 1Q, *Quality Assurance (U)*, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

ATTACHMENT A-1

FIELD INSPECTION CHECKLIST
FOR THE CENTRAL SHOPS BURNING/RUBBLE PITS

☐ SCHEDULED

☐ UNSCHEDULED

A= Satisfactory X= Unsatisfactory (Explanation required)	A or X	Observation of Corrective Action Taken
1. Verify that the roads are accessible.		
2. Verify that the waste unit signs (#13) are in acceptable condition, have the correct information, and are legible from a distance of 25 feet.		
3. Verify that the water measuring devices (piezometers) are accessible and not damaged.		
4. Verify that there are no excavation, digging, or construction activities on the soil cover.		
5. Verify that the integrity of the drainage ditches, and required land grading for proper drainage is being maintained and that they are free of excessive erosion, sediment buildup, and any debris restricting water flow.		
6. Verify that no woody vegetation is growing on the soil cover. Remove or identify as needed.		
7. Verify that the grass density of the vegetative cover has no bare spots more than 3 by 3 feet in area. The height of the vegetative cover should not impair the visual inspection of the soil cover. This verification will be determined by the inspector.		
8. Verify that the soil cover has no signs of unacceptable erosion or depression (subsidence.)		

ATTACHMENT A-1

FIELD INSPECTION CHECKLIST
FOR THE CENTRAL SHOPS BURNING/RUBBLE PITS (Continued)

☐ SCHEDULED

☐ UNSCHEDULED

A= Satisfactory X= Unsatisfactory (Explanation required)	A or X	Observation of Corrective Action Taken
9. Verify that signs of burrowing or mounding animals are not present.		
10. Other		

Inspected by:

_____/_____
(Print Name) (Signature) Date: _____

Post-Closure Manager:

_____/_____
(Print Name) (Signature) Date: _____

CAUTION: The inspector shall notify the Post-Closure Manager (PCM) and Environmental Compliance Authority (ECA) **IMMEDIATELY** if there has been a breach or compromise of the institutional controls at this waste unit. The notification shall be in accordance with SRS post-closure inspection procedures.

NOTE: Monitoring wells associated with this waste unit are maintained in accordance with SGCP Monitoring Well Procedures.

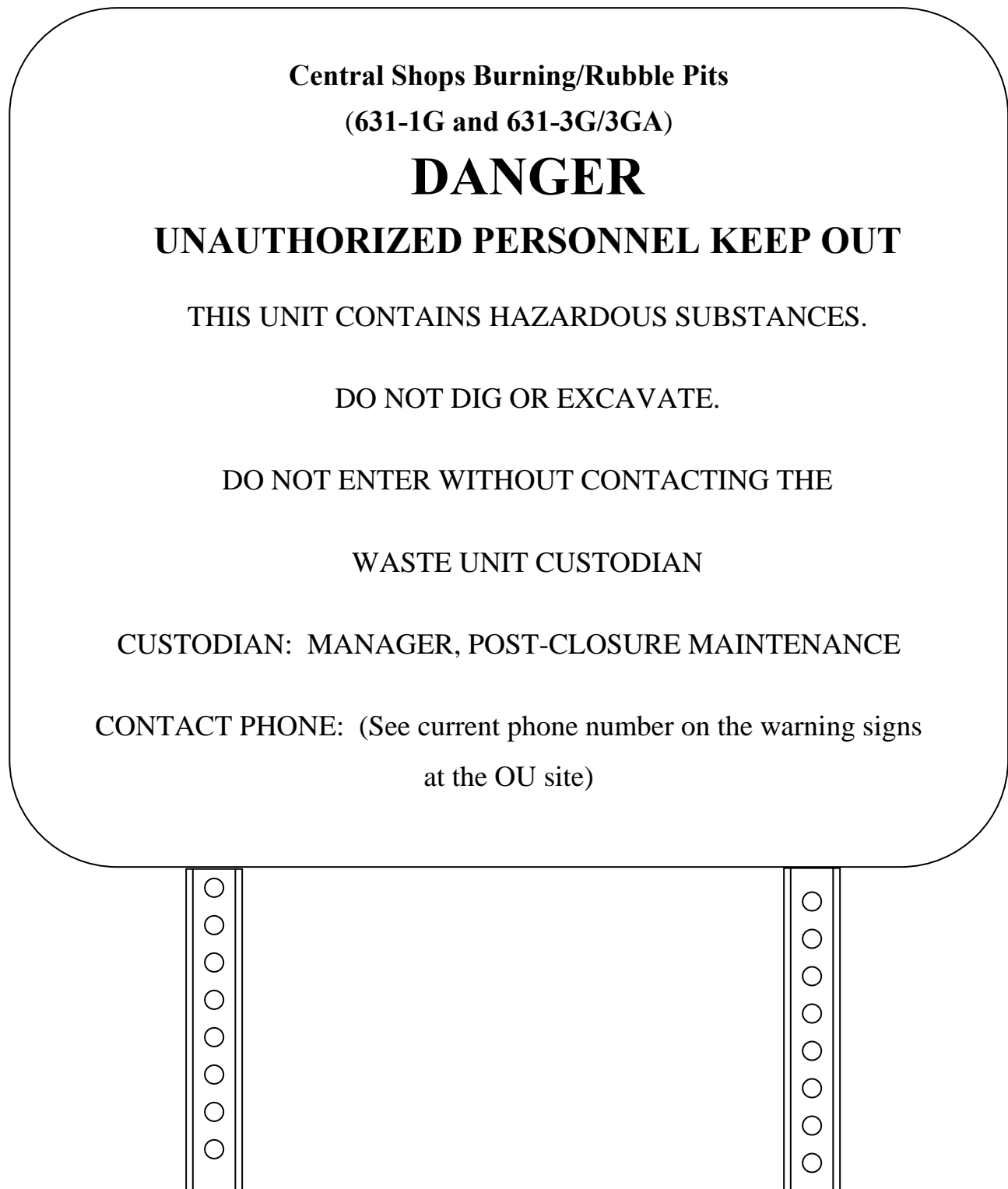


Figure A-1. Access Control Warning Sign

ATTACHMENT A-2

**LUCIP SURVEY PLAN
FOR
CENTRAL SHOPS BURNING/RUBBLE PIT CLOSURE**

Land use control implementation plan survey for Central Shops Burning/Rubble Pits 631-1G/3G/3GA (certified by the professional land surveyor), job 03140-Bound, dated April 22, 2004.

LAND USE CONTROLS

364.25'

0.6 MILE+/- TO
ROAD

MON. 1116

MON. 1115

S77°04'22"W 107.63'

LAND USE CONTROL IMPLEMENTATION
PLAN SURVEY PLAT

OF

CENTRAL SHOPS BURNING RUBBLE PITS 631-1G/3G/3GA

PROPERTY LOCATED AT SAVANNAH RIVER SITE

PREPARED FOR

U. S. DEPARTMENT OF ENERGY

SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA 29802

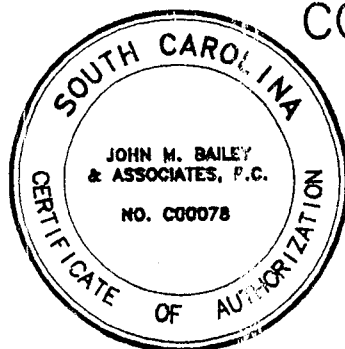
COUNTY OF: AIKEN STATE OF: S. CAROLINA

SCALE: 1" = 50' DWN. BY: JMB DATE: 22 APRIL 2004

PREPARED BY

John M. Bailey & Associates, P.C.

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