LUCIP for the
Gunsite 012 Operable Unit
(consists of Gunsite 012 Rubble Pile, NBN, Rubble Pile Across from Gunsite 012, NBN, and ECODS G-3 (Adjacent to Gunsite 012), NBN)[17]
Land Use Control Implementation Plan for the Gunsite 012 Operable Unit
(SRNS-RP-2011-00293, Revision 1, August 2011)

[17] Rubble Pile Across from Gunsite 012, NBN and ECODS G-3 (Adjacent to Gunsite 012), NBN are No Action/No Further Action Operable Units.

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United States Department of Energy

Savannah River Site

Land Use Control Implementation Plan (LUCIP) for the Gunsite 012 Operable Unit (OU) (NBN) (U)

CERCLIS Number: 78

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Revision 1

August 2011

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ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMIR	Corrective Measures Implementation Report
COC	constituent of concern
ECA	Environmental Compliance Authority
ECODS	Early Construction Operation Disposal Site
FFA	Federal Facility Agreement
HAZWOPER	Hazardous Waste Operations and Emergency Response
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
LUCAP	Land Use Control Assurance Plan
NBN	no building number
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NTC	non-time critical
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PTSM	principal threat source material
QA	Quality Assurance
RA	remedial action
RACR	Remedial Action Completion Report
RACR	Remedial Action Completion Report
RCRA	Resource Conservation and Recovery Act
RFI/RI	RCRA Facility Investigation/Remedial Investigation
ROD	Record of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SDC	Site Development Control
SRNS	Savannah River Nuclear Solutions, LLC
SRS	Savannah River Site
USDOE	United States Department of Energy
UST	Underground Storage Tank
USEPA	United States Environmental Protection Agency
WSRC	Washington Savannah River Company, LLC

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1.0 INTRODUCTION

This Land Use Control Implementation Plan (LUCIP) has been prepared for Gunsite 012 (no building number [NBN]) (OU) at the Savannah River Site (SRS). The Gunsite 012 Operable Unit (OU) is inclusive of three Resource Conservation and Recovery Act/ Comprehensive Environmental Response, Compensation, and Liability Act (RCRA/CERCLA) units which are listed in the SRS Federal Facility Agreement (FFA) Appendix C RCRA/CERCLA Units as follows:

- Gunsite 012 Rubble Pile (NBN)
- Rubble Pile across from Gunsite 012 (NBN)
- Early Construction Operation Disposal Site (ECODS) G-3 (Adjacent to Gunsite 012) (NBN)

The three RCRA/CERCLA units, collectively, are referred to as the Gunsite 012 OU.

The purpose of this LUCIP is to describe how the land use controls (LUCs) selected in the Gunsite 012 OU Record of Decision (ROD) (SRNS, 2011) as the final remedy will be implemented and maintained. The LUC objectives have been documented in the Gunsite 012 OU ROD and are listed in Section 3.0.

The selected remedy leaves hazardous substances in place that pose a potential future risk and requires land use restrictions until the concentrations of hazardous substances in the OU are at levels that allow for unrestricted use. 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 Assurance Plan (LUCAP) (WSRC, 2009) to ensure that the LUCs required by numerous remedial decisions at SRS are properly maintained and periodically verified. The requirements of the LUCAP also apply to the LUCs that were selected as part of the remedial action (RA) for the Gunsite 012 OU. This LUCIP for the Gunsite 012 OU contains the detailed and specific measures required to implement and maintain the LUCs required by 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 LUCs.

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 Gunsite 012 OU ROD, establishing implementation and maintenance requirements for the LUCs under the CERCLA and the SRS FFA (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. In accordance with Section 121(c) of CERCLA and National Oil and Hazardous Substances Pollution Contingency Plan (NCP) §300.430(f)(5)(iii)(c), a statutory review will be conducted within 5 years of initiation of the remedial action, and every 5 years thereafter, to ensure that the remedy continues to be protective of human health and the environment. Any approved LUCIP modification will be appropriately documented for incorporation by reference into the Gunsite 012 OU ROD.

1.1 Format of LUCIP

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

2.0 OVERVIEW OF GUNSITE 012 OU REMEDIAL ACTION

2.1 General Description and History of the Operable Unit

SRS occupies approximately 804 km^2 (310 mi^2) of land adjacent to the Savannah River, principally in Aiken and Barnwell counties of South Carolina (Figure 1). SRS is located approximately 40.2 km (25 mi) southeast of Augusta, Georgia, and 32.2 km (20 mi) south of Aiken, South Carolina.

Gunsite 012 OU is located northeast of the geographical center of the SRS and about 4.75 km (3 mi) from the nearest site boundary (Figure 1). The Gunsite 012 OU is located within the Lower

Three Runs watershed, approximately 274 m (300 yd) southeast of Pond B (Figure 1). The area is flat to gently rolling and approximately 85.3 m (280 ft) above mean sea level. A detailed discussion of the operational and compliance history of Gunsite 012 OU was provided in the ROD. Subsequent paragraphs and sub-sections in this document provide a summary of this information.

Gunsites were anti-aircraft gun emplacements that operated from 1955 to 1957 to provide physical protection for SRS against possible enemy attack. The Gunsite 012 was one of five central gunsites that featured 90-mm anti-aircraft guns as well as extensive administrative support facilities, including barracks, mess halls, office buildings, and motor pools.

For RCRA/CERCLA investigation purposes, the Gunsite 012 OU was partitioned into four (4) soil subunits entitled the Building Pad Subunit, Parking Area Subunit, Gun Emplacement Area Subunit, and ECODS G-3 Subunit and one (1) Groundwater Subunit. The Building Pad and the Parking Area Subunits are contained within the Gunsite 012 Rubble Pile (NBN) RCRA/CERCLA unit. The Gun Emplacement Area Subunit is located in the Rubble Pile across from Gunsite 012 (NBN) RCRA/CERCLA unit. Finally, the ECODS G-3 Subunit is contained within the ECODS G-3 (Adjacent to Gunsite 012) (NBN) RCRA/CERCLA unit. Figure 2 provides an illustration of the surface subunits and their features. Figure 3 provides an aerial photograph of the Gunsite 012 OU during its operational years.

Descriptions of the RCRA/CERCLA units and their corresponding surface subunits are presented in further detail below.

Gunsite 012 Rubble Pile (NBN)

The Gunsite 012 Rubble Pile (NBN) RCRA/CERCLA unit is approximately 3.6 ha (9 acres) and contains the Building Pad Subunit and the Parking Area Subunit (Figure 2). A brief description of both subunits is provided as follows:

Building Pad Subunit

The buildings in the Building Pad Subunit (as shown in Figure 2) of the Gunsite 012 Rubble Pile (NBN) were dismantled in 1961. Currently the subunit consists of the concrete slab foundations from the four barracks, the mess hall, the two administrative buildings, and the remaining sidewalks and driveways; an abandoned drinking water well and associated concrete pad; and the former locations of seven underground storage tanks. The storage tanks contained fuel and were associated with each building (barracks, mess hall, administrative buildings). The 7,571 L (2,000 gal) storage tanks were buried 2.4 m (8 ft) below surface level and located between 6.1 and 12.2 m (20 and 40 ft) from the building each supported. The exact date when the tanks were removed is unknown; however, based on historical information, this event most likely occurred prior to 1990. Neither a 1997 ground penetrating radar analysis nor the RCRA Facility Investigation/Remedial Investigation (RFI/RI) characterization borings found any underground tanks at these seven locations.

The drinking water well was disconnected and capped after dismantlement of the Gunsite buildings to prevent use. To ensure no pathway exists into the subsurface, the drinking water well was abandoned and grouted to surface in April 2010.

An underground septic system, leading away from the Building Pad subunit, consisted of approximately 944.9 m (3,100 ft) of 20.3 cm (8 in) diameter vitrified pipe and a 37,854 L (10,000 gal) septic tank. Septic lines extended from each of the administrative buildings and barracks and joined at a point to empty into the septic tank located to the west of Gunsite 012 OU. From the septic tank, the septic lines ran about 487.7 m (1,600 ft) to the southwest to discharge near an unnamed tributary flowing into Pond C. Soil and groundwater samples in relation to the septic system were obtained during characterization activities and no contaminants were identified. Monitoring of any potential impact from discharge of the septic system into the tributary is beyond the scope of this OU's remedial action and will be included in the ongoing investigation of the Lower Three Runs Integrator Operable Unit (IOU).

Soil characterization conducted in May 2007 showed that polycyclic aromatic hydrocarbons (PAHs) existed in the 0 to 0.3 m (0 to 1 ft) soil interval at the Building Pad Subunit. In addition, asbestos contained in asphalt floor tiles placed in piles on the ground and adhesive and tar material remaining on the building pads was determined to pose a potential risk to human health.

During 2010, a non-time critical removal (NTCR) action and a maintenance action were conducted at the Building Pad Subunit. The NTCR action was specific for the removal of asbestos-containing floor tiles within the soil surrounding the building pads and is documented in the *Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for Asphalt Floor Tile Piles at Gunsite 012 Operable Unit* (SRNS 2009). SRS also performed a maintenance action to remove the remaining floor tiles adhering to the building pads including the associated adhesive and tar material located on the building pads and expansion joints (SRNS 2009). The results of the removal action and the maintenance action are documented in the *Removal Action Report for Asbestos Removal at Gunsite 012 OU (NBN)* (SRNS, 2010).

Parking Area Subunit

The Parking Area Subunit (Figure 2) of the Gunsite 012 Rubble Pile (NBN) is adjacent to the Building Pad Subunit. The Parking Area Subunit consists of the remains of the old gravel parking lot and the disposal trench that is located within the trees to the northeast of the parking lot. The parking lot was periodically sprayed with an asphalt emulsion to suppress dust. From 1992 to 1997, the parking lot was used as a storage area for creosote-treated railroad crossties and utility poles. The railroad crossties and utility poles were removed in January 1997.

Soil characterization conducted in May 2007 determined the presence of PAHs at low levels consistent with parking lot material. Because of these low levels of PAHs, it was determined that no remedial action was needed to address the PAH constituents. However, antimony was found to exist in the top 0 to 0.3 m (0 to 1 ft) of surface soil in a disposal trench located within the Parking Area Subunit above levels acceptable for unrestricted use. The existence of antimony in the ditch appears to have originated from the scraps of metal and/or cans and buckets deposited within the disposal trench from past uses.

Rubble Pile Across From Gunsite 012 (NBN)

The Rubble Pile across from the Gunsite 012 (NBN) RCRA/CERCLA unit is approximately 1.6 ha (4 acres) and contains the Gun Emplacement Area Subunit (Figure 2), briefly described below.

Gun Emplacement Area Subunit

The Gun Emplacement Area Subunit characterization encompassed the four circular gun emplacements and the Rubble Pile across from Gunsite 012 (NBN). The building pad is located between the gun emplacements and the Gunsite 012 Rubble Pile (NBN). The generator building was located at the building pad footprint. The building pad might have also been used for limited chemical storage. The generator building also had an Underground Storage Tank (UST) for generator fuel which was removed prior to 1990.

The results of the soil characterization conducted in May 2007 identified one PAH and trace amounts of petroleum analytes. All concentrations were below action levels for both industrial and unrestricted use and no remedial action was needed at the Gun Emplacement Area Subunit.

ECODS G-3 (Adjacent to Gunsite 012) (NBN)

The ECODS G-3 (Adjacent to Gunsite 012) (NBN) RCRA/CERCLA unit (refer to Figure 2) is approximately 0.3 ha (0.75 acres) and contains the ECODS G-3 Subunit, briefly described below.

ECODS G-3 Subunit

The ECODS G-3 Subunit is located in the southwest corner of the OU approximately 61 m (200 ft) southwest of the Gunsite 012 Rubble Pile (NBN). During construction of Gunsite 012, construction waste seems to have been disposed in the ECODS G-3 facility. The results of the soil characterization conducted in May 2007 identified trace amounts of petroleum analytes,

solvents, pesticides, polychlorinated biphenyls and metals. All concentrations were below action levels for industrial or unrestricted use and no response action was needed.

Groundwater

Groundwater Subunit

Although the groundwater is not a unit listed on the FFA, the groundwater underlying the Gunsite 012 OU was included as part of the RCRA/CERCLA investigation process and identified as the Groundwater Subunit.

The water table at the Gunsite 012 is 10.6 to 13.7 m (35 to 45 ft) below land surface. Due to the presence of the nearby impoundments (e.g., Pond B) and knowledge of the variability of the groundwater in the Gunsite 012 area from work plan characterization, it is expected that groundwater flows radially from the OU towards the east, south, and southwest. Results of the groundwater sampling conducted in May 2007 determined that there were no exceedences in groundwater. In addition, a contaminant migration analysis of the soil subunits did not identify any problems associated with the transport of soil contaminants to groundwater.

2.2 Nature and Extent of Contamination

Gunsite 012 OU was investigated to determine the nature and extent of contamination, the risk to future industrial workers and hypothetical future residents (i.e., unrestricted land use), risk to the environment, the presence of principal threat source material (PTSM), and if there are any contaminant migration concerns. Soil and groundwater samples were collected, evaluated, and screened against appropriate regulatory thresholds and technical protocols to identify constituents of concern (COCs) that would warrant further remedial action.

The results of these evaluations are documented in the ROD and are summarized below to support the selected remedy:

- There are no ecological COCs, contaminant migration COCs, or PTSM for any of the Gunsite 012 OU subunits.

- No human health COCs was identified for the Gun Emplacement Area Subunit, ECODS G-3 Subunit, or the Groundwater Subunit.

- Human health COCs were identified at the Building Pad Subunit (i.e., PAHs in surface soil) and the Parking Area Subunit (i.e., antimony in surface soil) at levels that do not allow for unrestricted use.

The selected remedy for the Gunsite 012 OU leaves hazardous substances in place that pose a potential future risk and will require land use restrictions until the concentrations of hazardous substances in the soil and groundwater are at levels that allow for unrestricted use and exposure. If LUCs are not implemented, actual or threatened releases of hazardous substances from the Building Pad Subunit and the Parking Area subunit may present a current or potential threat to public health, welfare, or the environment.

2.3 Remedial Action Selected

Following successful completion of the NTCR action and the maintenance action, residual hazardous substances remain at the Gunsite 012 OU at levels that do not allow for unrestricted use. The selected remedy for the Gunsite 012 Rubble Pile (NBN), as established in the ROD (SRNS 2011), are LUCs for the Building Area Subunit and the Parking Area Subunit to prevent unrestricted use. LUCs will include institutional controls (i.e., administrative measures) as managed through the SRS Site Use/Site clearance Program to require authorization before beginning an excavation activity at the site. This authorization is usually in the form of an internal permit. Other administrative measures include property record notices and property record restrictions. LUCs will also include signage at the Gunsite 012 OU to alert on site workers to the presence of hazardous substances and to prevent unknowing entry and unrestricted use. As shown in Figure 4, the LUCs apply to the Building Pad Subunit and the Parking Area Subunit and not the entire Gunsite 012 OU.

The post-RA conceptual site model (Figure 5) for the Building Pad Subunit and the Parking Area Subunit demonstrate that the exposure pathways are incomplete following implementation of the

RA. According to the *Savannah River Site Future Use Project Report* (USDOE 1996), residential use of SRS land is prohibited and future land use is neither intended nor reasonably anticipated to be unrestricted.

3.0 LAND USE CONTROL OBJECTIVES

The following Gunsite 012 OU LUC objectives have been developed to ensure the protectiveness of the remedy described above:

- Prevent unrestricted use of the Building Pad Subunit and the Parking Area Subunit.
- Prohibit the development and use of property for residential housing, elementary and secondary schools, child care facilities and playgrounds.

Current access controls and land transfer requirements needed to maintain the future land use are described in the following sections of this LUCIP.

4.0 IMPLEMENTATION OF LAND USE CONTROLS

This section describes the LUCs selected in the ROD to achieve the LUC objectives stated in Section 3.0. A summary of the types of LUCs controls is provided in Table 1. USDOE is responsible for implementing, maintaining, reporting on and enforcing the LUCs required for the Gunsite 012 OU. The LUCIP will become enforceable and will be implemented when approved by USEPA and SCDHEC following the completion of the RA prescribed by the Gunsite 012 OU ROD. USDOE shall notify USEPA and SCDHEC 60 days in advance of any proposed land use changes that are inconsistent with LUC objectives or the selected remedy.

The Gunsite 012 OU will be maintained as an industrial use area by implementation of the property record notices and restrictions (Section 4.1) and the LUC boundary map (Section 4.2).

The Site Use Program (Section 4.3) will be implemented to prevent onsite worker exposure to contamination left in place at the Gunsite 012 OU. Other existing measures (i.e. Site Clearance Program, worker training, health and safety requirements, work controls) will also be used to ensure worker safety at the Gunsite 012 OU. Physical access controls (Section 4.4) are

implemented at the SRS boundary to control and restrict public and trespasser access to the Gunsite 012 OU.

Warning Signs (Section 4.5) at the Gunsite 012 OU will be maintained to alert onsite workers to the presence of hazardous substances. The signs will also convey the restrictions of unauthorized personnel. Access control warning signs will be placed and maintained around the Gunsite 012 OU to prevent unknowing entry and unrestricted use.

4.1 Property Record Notices and Restrictions

In the long term, if the property, or any portion thereof, is ever transferred from DOE, the U.S. Government and/or DOE will take those actions necessary pursuant to Section 120(h)(1) of CERCLA. Those actions will include in any contract, deed, or other transfer document, notice of the type and quantity of any hazardous substances that were known to have been stored (for more than one year), released, or disposed of on the property. The notice will also include the time at which the storage, release, or disposal took place to the extent such information is available.

In addition, if the property, or any portion thereof, is ever transferred by deed, the U.S. Government will also satisfy the requirements of CERCLA 120(h)(3). The requirements include: a description of the remedial action taken, a covenant, and an access class. These requirements are also consistent with the intent of the RCRA deed notification requirements at final closure of a RCRA facility if contamination will remain at the unit.

LUCs will be implemented through the following:

- The contract, deed, or other transfer document shall also include restrictions precluding residential use of the property. However, the need for these restrictions may be reevaluated 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 reevaluation of the LUCs will be done through an amended ROD with USEPA and SCDHEC review and approval.

- In addition, if the site is ever transferred to nonfederal ownership, a survey plat of the OU will be prepared, certified by a professional land surveyor, and recorded with the appropriate county recording agency.

In the event of a property lease or interagency agreement, the equivalent restrictions will be implemented as required by CERCLA Section 120(h).

USDOE shall provide the USEPA and SCDHEC at least six months notice prior to transfer or sale of property subject to LUCs to ensure that USEPA and SCDHEC can be involved in discussions to ensure that appropriate provisions are included in the transfer documents to maintain effective LUCs. If it is not possible for the USDOE to notify the USEPA and SCDHEC at least six months prior to the transfer or sale, then the facility will notify the USEPA and SCDHEC as soon as possible but no later than 60 days prior to the transfer or sale of any property subject to LUCs. In addition to the land transfer notice and discussion provisions above, USDOE further agrees to provide the USEPA and SCDHEC with similar notice within the same time frames as to federal-to-federal transfer of property.

4.2 LUC Boundary Maps

This LUCIP identifies the proposed area under land use restrictions in Figure 4 for the Gunsite 012 OU. Following field implementation of the remedial action, a final (as-built) survey plat is developed and certified by a professional land surveyor registered in the State of South Carolina. The final survey plat will include the boundary coordinates for the area subject to land use restrictions and general locations of access control warning signs. The final as-built survey plat will be submitted to USEPA and SCDHEC in the Corrective Measures Implementation Report (CMIR)/Remedial Action Completion Report (RACR).

In addition, if the site is ever transferred to non-federal ownership, a 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.

4.3 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 DOE Order through the Site Use Program which is administered by Site Development Control (SDC) in accordance with SRS Manual 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, "Site Real Property Configuration Control" (SRS 2006). Use of all lands and waters on the SRS are coordinated via the Site Use Program. No use of land (i.e., excavation or any other land use) shall be undertaken without prior approval by the USDOE and documented by a Site Use Permit.

SRS identifies all buildings, facilities, and FFA waste units on SRS site development maps that are maintained by SDC in accordance with SRS Manual 1D. If LUCs are required for an FFA waste unit, the unit-specific LUC boundaries are identified on the SRS site development maps. SDC must verify that any proposed work to be performed on a site is sanctioned by a Site Use Permit and verify that the proposed activity does not conflict with any previously approved land use.

In addition to the management of the use of SRS lands and waters through the Site Use Program, the SDC also administers the Site Clearance Program to control the construction, alteration, or demolition activities at SRS. Before any work that adds or modifies features or facilities portrayed on the SRS site development maps is conducted, a Site Clearance Permit is required. USDOE approval of the intended land via a Site Use Permit must be verified before a Site Clearance Permit is issued. If a Site Clearance Request potentially impacts a FFA waste unit, the Site Clearance Request Form is sent to the appropriate FFA reviewer for approval. The FFA reviewer will evaluate the proposed activity to identify any conflicts with the waste unit and to verify that waste unit specific LUCs are not compromised. The roles and responsibilities of the individuals responsible for review and approval of Site Use and Site Clearance permits are detailed in SRS 1D, Procedure 3.02. All employees, contractors, and visitors at SRS are required to adhere to the Site Use Program and the Site Clearance Program.

The USDOE will notify USEPA and SCDHEC in advance of any change to any internal procedure, including the Site Use Program, which would affect implementing or maintaining the LUCs. Approval by USEPA and SCDHEC is required for any modification or termination of the LUCs and implementation actions, and the USDOE must obtain prior approval from USEPA and SCDHEC before taking any anticipated action that may disrupt the effectiveness of the LUCs or alter or negate the need for LUCs. The Site Use Permit and site development maps must be amended when the geographic configuration or buffer zone used to establish the permit boundary changes or there is a change to the land use. The processes are controlled within the SRS Quality Assurance (QA) Program in accordance with SRS 1Q Manual, *Quality Assurance* (SRS 2007). The SRS QA program governs all SRS activities.

4.4 Physical Access Controls

There are no physical access controls required at the Gunsite 012 OU; however, physical access controls are provided at the SRS boundary as mentioned in Table 1, Item 5.

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 USDOE, access control warning signs, as shown in Appendix A will be posted at the unit. Warning signs will be installed in accordance with the implementation schedule presented in the Gunsite 012 OU ROD (SRNS, 2011) and will be completed by November 2011. In addition, the final placement of the signage will be documented in the final survey plat submitted with the CMIR/RACR (see Section 4.2). The signs will be legible for a distance of at least 25 ft.

Custodial responsibilities for maintenance and inspection of the Gunsite 012 OU will be maintained by the SRS 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 2000 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 Land Use Controls

After remediation of the Gunsite 012 OU, only inspection and maintenance activities will be required by this RA.

The Gunsite 012 OU will be inspected per the Field Inspection Checklist in Appendix B. Field inspections will be performed annually. Additional inspections may be necessary in the event of unusual weather or any other condition warranting inspection. For the Gunsite 012 OU, inspections will be performed to ensure that access control signs are in place and maintained. Necessary maintenance (including general housekeeping and repairs) will be performed for items noted in the Field Inspection Checklist in Appendix B, which are found to be in unsatisfactory condition.

Any activity that is inconsistent with the LUC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUCs will be addressed by the USDOE as soon as practicable, but in no case will the process be initiated later than 10 days after the USDOE becomes aware of the breach. The USDOE will notify USEPA and SCDHEC as soon as practicable but no longer than 10 days after discovery of any activity that is inconsistent with the LUC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUCs. The USDOE will notify USEPA and SCDHEC regarding how the USDOE has addressed or will address the breach within 10 days of sending USEPA and SCDHEC notification of the breach.

The FFA Annual Progress Report, submitted to the regulatory agencies by USDOE, will provide the status of the LUCs and describe how any LUC 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 restrictions and controls referenced above were communicated in the deed(s) or lease restrictions; 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. The FFA Annual Progress Report(s) will be used in the preparation of the Five-Year Remedy Review Report.

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 ACP Document Control. The LUCs shall be maintained until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use.

The waste unit inspectors are to be trained in Hazardous Waste Operations and Emergency Response (HAZWOPER), RCRA Well Inspections (ACP-specific training), ACP 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 maintenance activities.

This unit-specific LUCIP, including the checklist (Appendix B), will be appended to the SRS LUCAP upon final regulatory approval. After completion of the CMIR/RACR the preliminary checklist in the LUCAP will be replaced with the final approved checklist.

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5.0 REFERENCES

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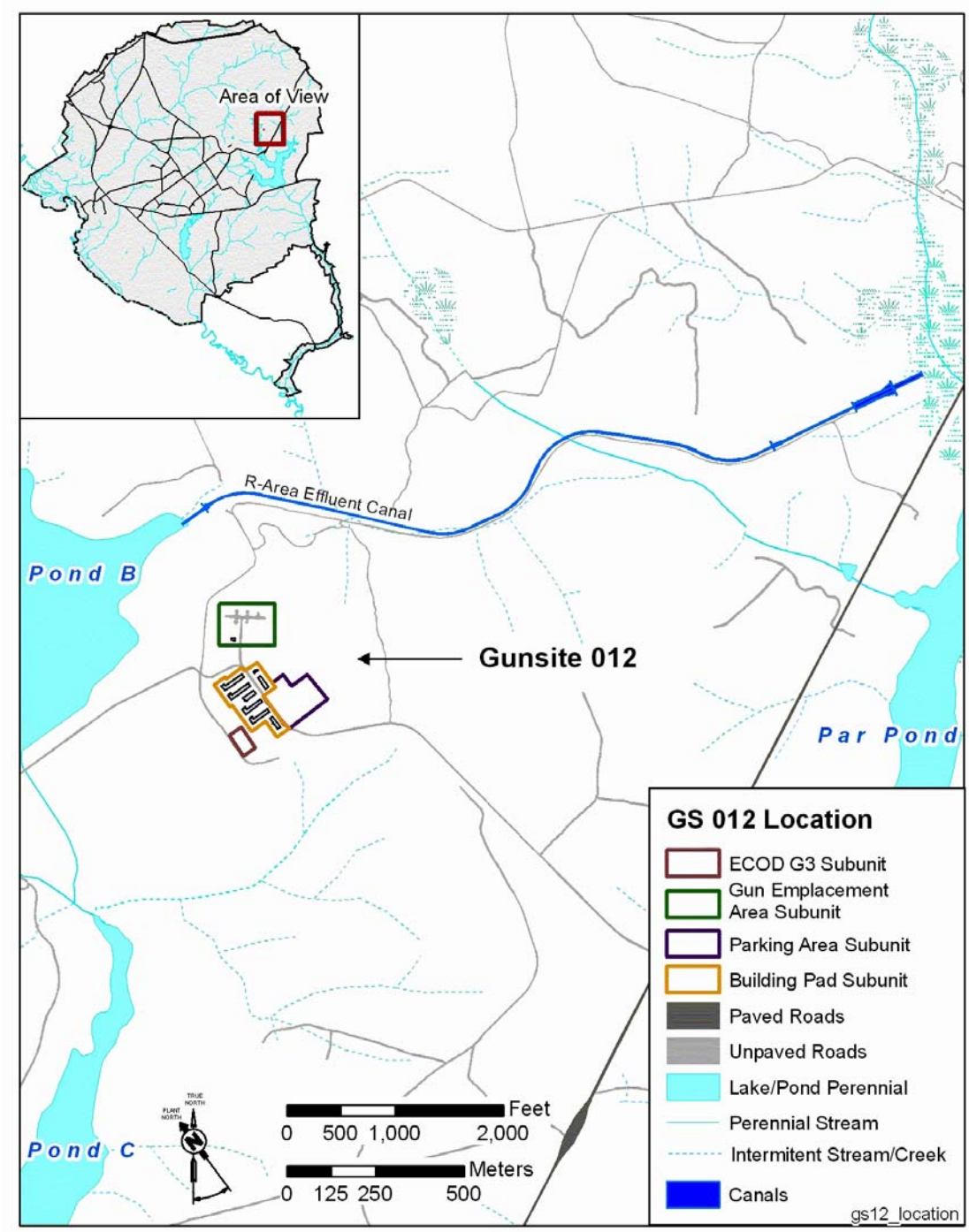

Figure 1. Location of the Gunsite 012 OU Within the Savannah River Site

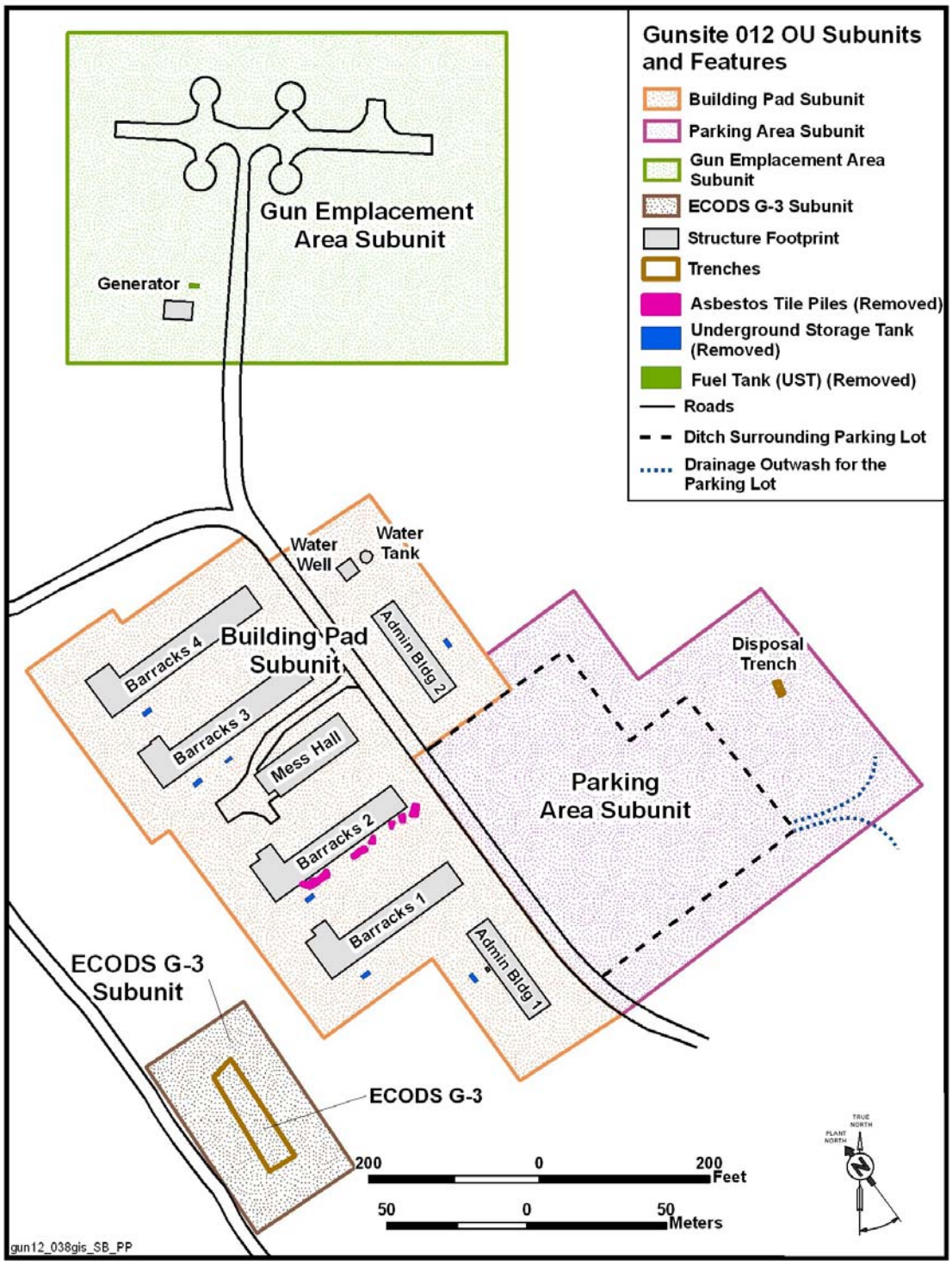

Figure 2. Gunsite 012 OU Subunits and Features

Figure 3. Aerial Photograph of Gunsite 012 During Operation

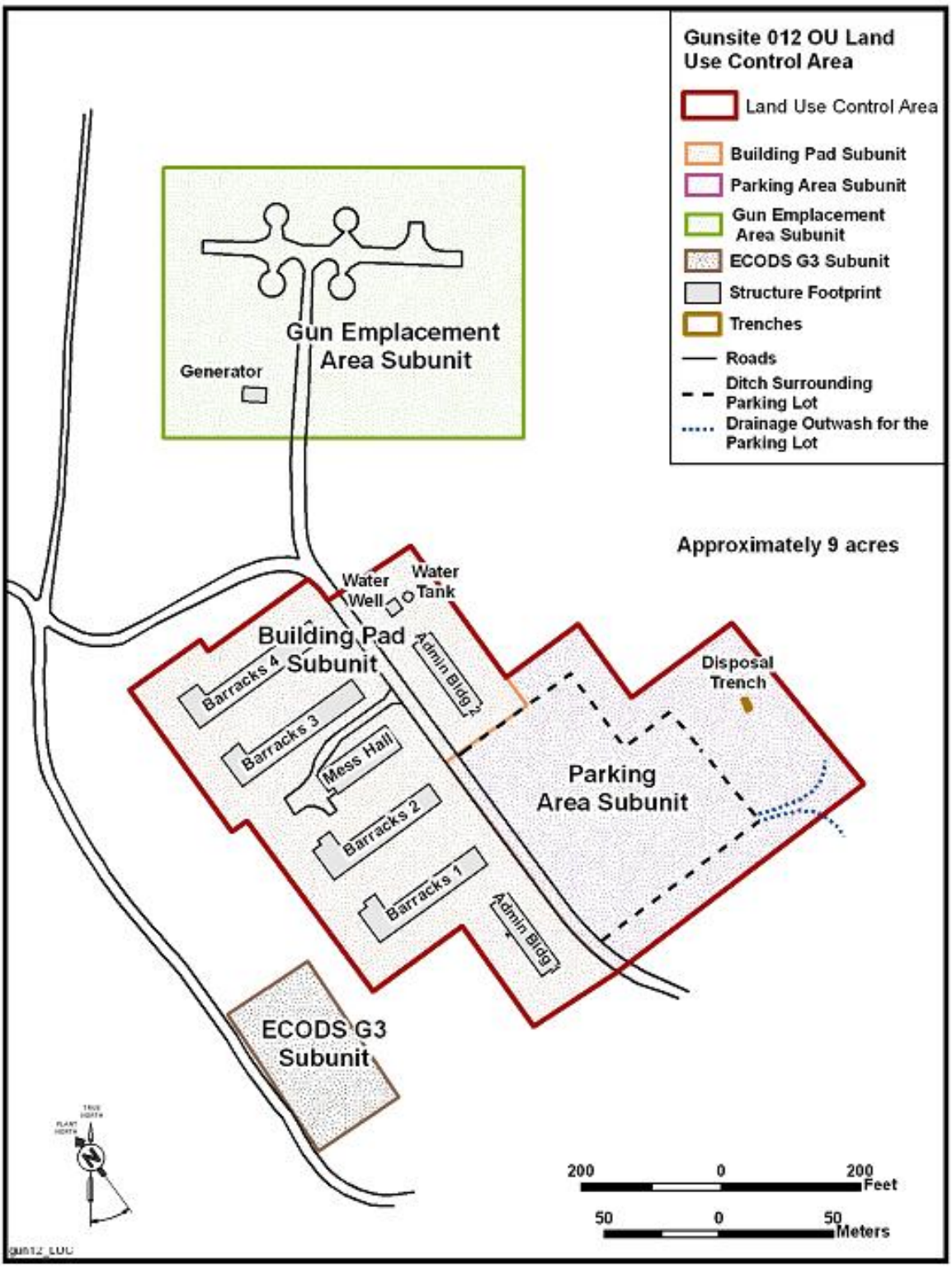

Figure 4. Land Use Control Boundary for the Gunsite 012 OU

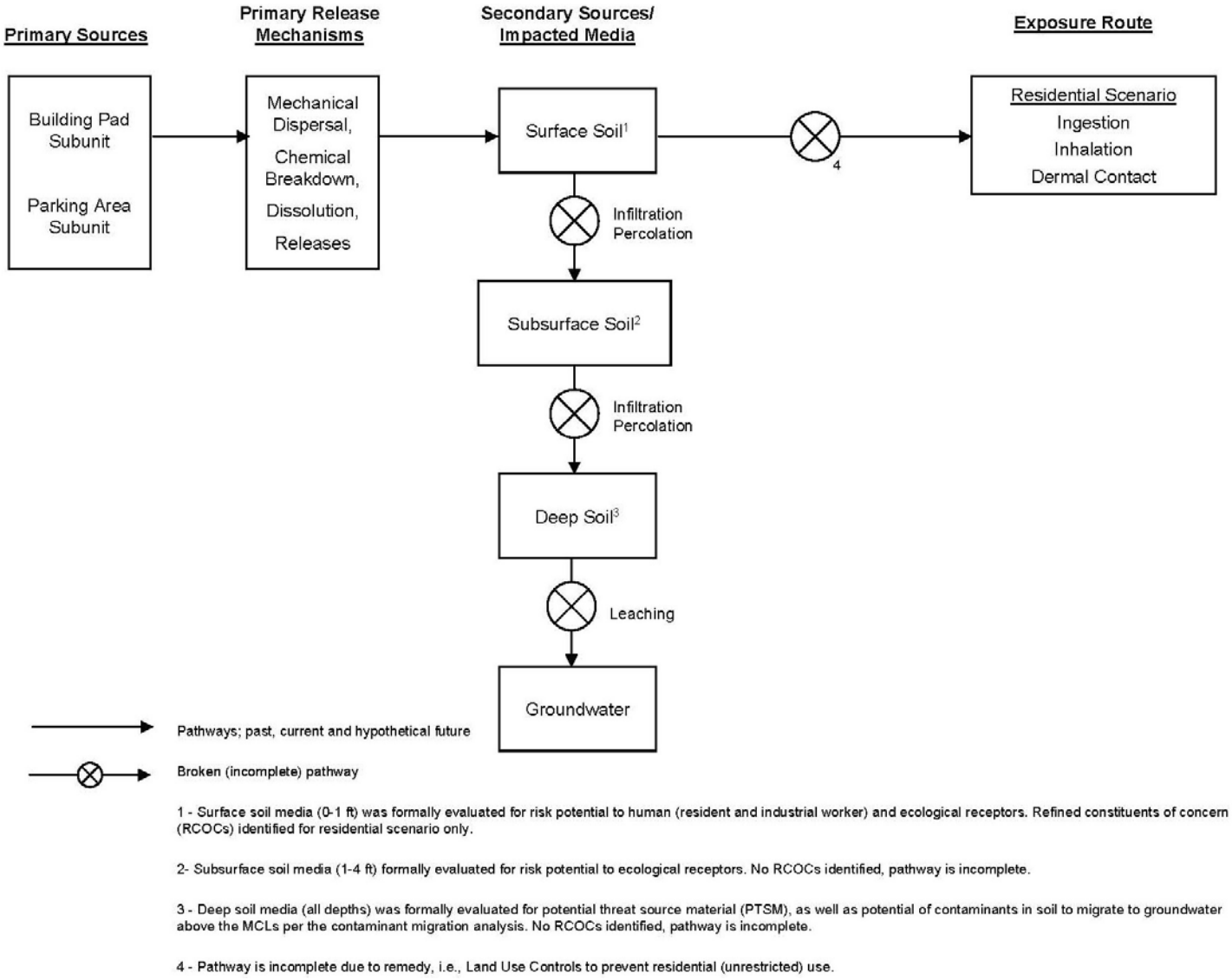

Figure 5. Post-RA Conceptual Site Model for the Building Pad Subunit and the Parking Area Subunit

Table 1. Land Use Controls for the Gunsite 012 OU

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas[a]
1. Property Record Notices[b]	Provide notice to anyone searching records about the existence and location of contaminated areas.	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 County Register of Deeds office if the property or any portion thereof is ever transferred to non-federal ownership.	Waste management areas under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
2. Property record restrictions[c]: A. Land Use B. Groundwater	Restrict use of property by imposing limitations. Prohibit the use of groundwater.	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 any transfer of affected areas. Recorded by USDOE in accordance with state law at County Register of Deeds office.	Waste management areas under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
3. Other 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 County Register of Deeds office if the property or any portion thereof is ever transferred to non-federal ownership.	Waste management areas under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
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.	Waste management areas and remediation systems under this LUCIP where hazardous substances are left in place at levels requiring land use restrictions.
5. Physical Access Controls[f] (e.g., fences, gates, portals)	Control and restrict access to the public to prevent unauthorized access.	Until the hazardous substances associated with the unit no longer pose an unacceptable risk under unlimited exposure and unrestricted use.	Controls maintained by USDOE.	Waste management areas under this LUCIP.

Table 1. Land Use Controls for **the Gunsite 012 OU** *(Continued/End)*

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas[a]
6. Warning Signs[g]	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	Warning signs will be posted in accordance with applicable site procedures and will be placed in appropriate areas at the Gunsite 012 OU.
7. 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 remedial actions or property transfer.	Security Surveillance of waste management areas under this LUCIP, as necessary.

[a]Affected Areas – Specific locations identified in the OU-specific LUCIP or subsequent post-ROD documents.

[b]Property 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; waste disposal areas in the property.

[c]Property Record Restrictions – Includes conditions and/or covenants that restrict or prohibit certain uses of real property and are recorded along with original property acquisition records of USDOE and its predecessor agencies.

[d]Other Notices – Includes information on the location of waste disposal areas and residual contamination depicted on as survey plat, which is provided to a zoning authority (i.e., city planning commission) for consideration in appropriate zoning decisions for non-USDOE property.

[e]Site 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 contaminated soil or groundwater, will not disturb the affected areas without the appropriate precautions and safeguards.

[f]Physical Access Controls – Physical barriers or restrictions to entry.

[g]Signs – Posted command, warning or direction.

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APPENDIX A

ACCESS CONTROL WARNING SIGNS

Figure A-1. Access Control Warning Sign

APPENDIX B

FIELD INSPECTION CHECKLIST

FOR GUNSITE 012 OU

FIELD INSPECTION CHECKLIST

FOR GUNSITE 012 OU

☐ **SCHEDULED** ☐ **UNSCHEDULED**

A= Satisfactory X= Unsatisfactory (Explanation Required)	**A or X**	**Observation of Corrective Action Taken**
1. Verify that the area is accessible for authorized maintenance and inspections.		
2. Verify that the waste unit signs are in acceptable condition, have the correct information, and are legible from a distance of 25 feet.		
3. Verify that there are no excavation, digging, or construction activities within the LUC boundaries.		
4. Verify that signs of burrowing or mounding animals are not present.		
5. Verify that signs of unauthorized human access/ trespassing (i.e., litter or other indications of unauthorized occupancy) are not present.		

Notes: **1)** No inspection and maintenance of existing items (e.g., pads, abandoned wells, curbs, etc.) are required.

2) The LUC requirements do not apply to the main access road.

FIELD INSPECTION CHECKLIST

FOR GUNSITE 012 OU *(Continued/End)*

Inspected by:

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

Post-Closure Manager:

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

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

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