LUCIP for the
Ford Building Seepage Basin, 904-91G
Appendix A of *Post-Construction Report/Corrective Measures Implementation Report/Final Remediation Report for the Ford Building Seepage Basin, 904-91G*
(WSRC-RP-2003-4038, Revision 1, October 2003)

On August 20, 2014, the DOE submitted a letter (IACD-14-186, ARF #019770) to the EPA and SCDHEC to perform the inspections for this operable unit on an annual basis. The EPA and SCDHEC approved the request in letters dated October 2, 2014 (ARF #019837) and September 17, 2014 (ARF #019816), respectively.

This page was intentionally left blank.

APPENDIX A

LAND USE CONTROL IMPLEMENTATION PLAN (LUCIP)

FOR THE

FORD BUILDING SEEPAGE BASIN OPERABLE UNIT

APPENDIX A

LAND USE CONTROL IMPLEMENTATION PLAN (LUCIP)

FOR THE

FORD BUILDING SEEPAGE BASIN OPERABLE UNIT

LAND USE CONTROL IMPLEMENTATION PLAN

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 negotiated with the United States Environmental Protection Agency (USEPA) and in accordance with USEPA Region IV policy (Johnston 1998), the Savannah River Site (SRS) has developed a Land Use Control Assurance Plan (LUCAP) (WSRC 2002) to ensure that land use restrictions are maintained and periodically verified. The Land Use Control Implementation Plan (LUCIP) provides detailed and specific measures required for the land use controls selected as part of this remedy. The United States Department of Energy (USDOE) is responsible for implementing, maintaining, monitoring, reporting upon, and enforcing the land use controls described herein. Upon final approval, the LUCIP will be appended to the LUCAP and is considered incorporated by reference into the Post-Construction Report/Final Remediation Report (PCR/FRR), establishing land use controls implementation and maintenance requirements enforceable under the Comprehensive Environmental Response, Compensation, and Recovery Act (CERCLA). The approved LUCIP will establish implementation, monitoring, maintenance, reporting and enforcement requirements for the unit. The LUCIP will remain in effect until modified as needed to be protective of human health and the environment. LUCIP modification will only occur through another CERCLA document.

This LUCIP for the Ford Building Seepage Basin will be appended to the SRS LUCAP.

Remedy Selection

Located in N Area in the central portion of the Savannah River Site (SRS), the Ford Building Seepage Basin (FBSB) Operable Unit (OU) lies approximately 610 m (2,000 ft) northwest of the intersection of Roads C and 6 (see Figure 1 in the main text). The FBSB and its associated components were constructed in 1964 to receive wastewater from the Ford Building. At the Ford Building, wastewater was generated during the reconfiguration, repair, and scrapping of reactor heat exchangers and the process equipment. The seepage basin operated until 1984. The retention tank, pumping station, and process piping line were removed in 1998. As a result of the removal action of 1998, approximately 2.1 m^3 (2.8 yd^3) of radiologically contaminated soil was containerized in two B-12 boxes and one 55-gal drum. The containerized soil is included in the remedial action for the FBSB OU.

The FBSB OU (as shown in Figures 3 and 4 included in the main text) included the following eight components:

- a 5-cm (2 in) diameter, 18.3-m (60-ft) long, steel underground pipeline (Ford Building process sewer line) that carried wastewater from the Ford Building to the underground retention tank (removed in 1998)

- a 22,710 L (6,000 gal), underground, steel retention tank containing sludge and wastewater (removed in 1998)

- a 5-cm (2 in) diameter, 32.9-m (108 ft) long, steel underground pipeline (Ford Building process sewer line removed in 1998) that carried wastewater from the underground retention tank to the seepage basin

- a pumping station (removed in 1998) to remove fluids from the retention tank

- an unlined, 568,000-L (150,000 gal) seepage basin (approximately 37 by 24 m [120 by 80 ft] at ground level and approximately 18 by 7.8 [60 by 25 ft] at the floor level and approximately 3 m [10 ft] deep)

- a delisted National Pollutant Discharge Elimination System (NPDES) outfall CS-008 and associated riprap-lined earthen drainage ditch

- an underground 20-cm (8 in) diameter, abandoned fire hydrant line that was cut during construction of the seepage basin

- groundwater associated with the unit (the groundwater flow direction is indicated in Figure 4)

There is no record that the basin ever overflowed.

The RFI/RI/BRA report (WSRC 2000) (see Section 6.0 in the main test for references) contains the detailed information and analytical data for all the investigations conducted and samples taken during the media assessment of the FBSB OU. For the purpose of remedial investigation and risk assessment, the eight FBSB OU components were grouped into the following five subunits:

- FBSB and its surrounding area (Seepage Basin Area)

- Tank/Process Sewer Line Area

- Fire Hydrant Line

- NPDES Ditch

- Groundwater

Based on the results of the RFI/RI/BRA report, only soils associated with two of the five subunits needed remedial action namely, Seepage Basin Area (surface soil 0 to 0.3 m [0 to 1 ft] below land surface (bls) and subsurface soils (0.3 to 2.1 m [1 to 7 ft bls]; and Tank/Process Sewer Line Area (soil limited to 1.3-m [4-ft] depth).

Five refined COCs were identified for the Seepage Basin Area subunit. The refined COCs included arsenic, aroclor-1254, cesium-137, cobalt-60, and europium-154. Out of five refined COCs, four were human health COCs (arsenic, cesium-137, cobalt-60, and europium-154) and were identified for the future industrial workers exposed to surface and subsurface soils. One refined COC (aroclor-1254) was identified as an ecological COC for the Seepage Basin Area surface soil.

Only two human health refined COCs (cesium-137 and cobalt-60) were identified for the Tank/Process Sewer Line Area soil limited to 1.3-m (4-ft) depth.

There was no principal threat source material (PTSM) at the FBSB OU.

The selected remedy for the FBSB OU was excavation, dispositioning, backfilling, vegetative cover, and institutional controls. This selected remedial action entailed excavating the contaminated soil at the Tank/Process Sewer Line Area and dispositioning the excavated soil into the basin along with the vegetation existing in the basin; removing the containerized soil and dispositioning the soil into the seepage basin; backfilling the remaining volume of the seepage basin and the excavated area of the Tank/Process Sewer Area with clean soil from an SRS borrow pit; and covering the backfilled area with vegetative covers. Additionally, implementing the institutional controls and five-year remedy reviews are included.

Time to complete construction was estimated to be six months.

The selected remedy is protective of both human health and the environment, is effective in meeting remedial action objectives (RAOs), and is a permanent solution. The selected remedy will comply with applicable or relevant and appropriate requirements (ARARs)

and will not pose short-term risks to remedial workers, the community, or the environment.

A post-remedial action conceptual site model (CSM) (Figure B-1) illustrates how implementation of the remedial action breaks the exposure pathways.

According to the Savannah River Site Future Use Project Report (USDOE 1996); (see Section 6.0 in the main text for reference), residential use of SRS land should be prohibited.

Land Use Controls

Considering the residual risks mentioned above, the land-use control objectives are to:

- maintain the use of the OU for industrial activities only,
- prevent unauthorized access to the closed FBSB OU as long as the waste remains a threat to human health and environment, and
- preserve the cover and prevent disturbance of the dispositioned soil.

Current access controls and a deed notification needed to maintain the future land use controls are described in the following sections of this LUCIP. The area subject to land use control is identified in Drawing SK-C-53107 in Appendix F.

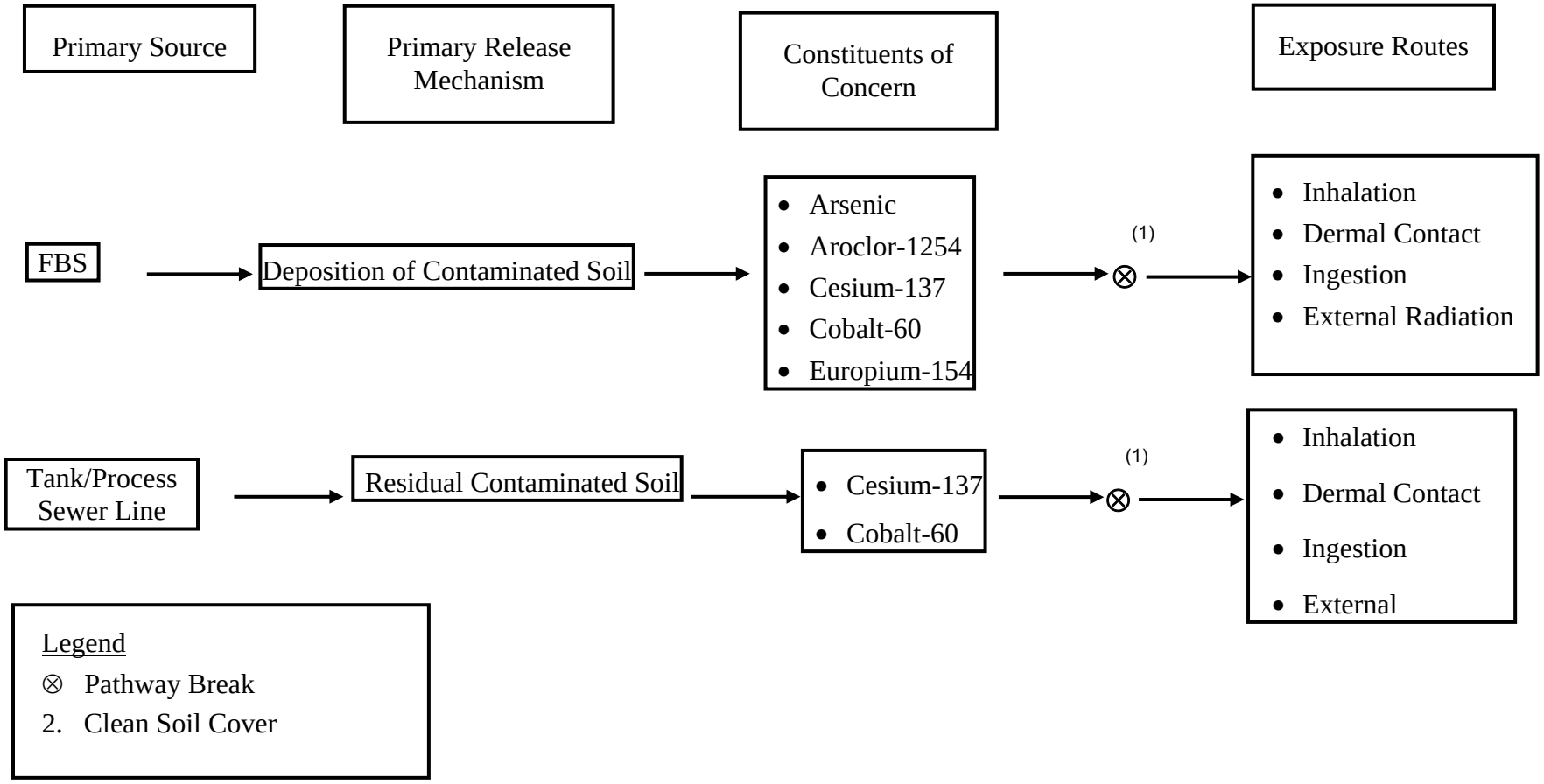

Figure A-1 Conceptual Site Model for FBSB OU with Selected Remedy Applied

Deed Notification

In the long term, if the property is ever transferred to nonfederal 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 deed notification shall, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of waste. 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.

The deed shall also include deed restrictions precluding residential use of the property. However, the need for these deed 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 need for the deed restrictions will be done through an amended ROD with USEPA and SCDHEC review and approval.

In addition, if the OU is ever transferred to non-federal ownership, a survey plat of the area will be prepared by a certified professional land surveyor and recorded with the county recording agency. The FBSB OU is located in Barnwell County.

Note: Survey Plat included in Appendix F and the line marked, Area Subject to Land Use Controls in Sketch SK-C-53107, define the area subject to Land Use Controls.

Access Controls

<u>On-Site Workers</u>

In accordance with procedures in place and maintained at SRS (WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, Site Real Property Configuration

Control) use of all lands and waters on SRS shall be coordinated via the Site Use Program. No major change in use of land (i.e., excavation or disturbance) shall be undertaken without prior approval from USEPA and SCDHEC.

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 are posted at the unit. The signs are legible from a distance of at least 25 feet. The signs read as follows:

Ford Building Seepage Basin (904-91G)

"Danger – Unauthorized Personnel Keep Out. This unit contains hazardous substances. Do not dig or excavate. Do not enter without contacting the waste unit custodian."

Custodian: Manager, Post-Closure Maintenance

Contact Phone: (See current phone number on the warning signs at the OU Site)

Trespassers

While under the ownership of US DOE, 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.

Field Walkdowns and Maintenance for Institutional Controls

After the remediation of the FBSB, only maintenance activities will be required per this remedial action. No operations will be required.

The results of any events and or actions that indicate some potential compromise of institutional controls will be documented in the FFA Annual Progress 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 Soil and Groundwater Closure Projects (SGCP) Administrative Record Files. The land-use controls will be implemented as long as the waste remains a threat to human health or the environment.

The following steps will be implemented to maintain the soil covers for as long as it is necessary to prevent unacceptable exposure to future industrial workers:

- Perform periodic (semi-annual) visual inspections for evidence of damage to the soil cover due to subsidence, erosion or intrusion by burrowing animals. The inspection will also address upkeep of the vegetative cover and access control barriers (e.g., the warning signs). The field inspection checklist for FBSB OU is provided as an attachment (Attachment A-1).

- Perform necessary repairs (when required as identified during inspection) to maintain the functional integrity of the soil cover and the warning signs.

- Enforce SRS institutional controls through access controls by restricting access to the closed waste unit. Institutional controls will be maintained as long as the waste remains a threat to human health or the environment.

- As required by the National Oil and Hazardous Substance Contingency Plan (NCP), a five-year review of the ROD for the FBSB OU unit will be performed as long as the waste remains a threat to human health or the environment.

The waste site inspectors are to be trained in Hazardous Waste Operations and Emergency Response (i.e., HAZWOPER), RCRA Well Inspections (ERD-specific training), ERD RCRA Waste Unit Inspections, Radiological Workers, 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 will conduct the inspections and grass cutting operations.

The unit-specific LUCIP, including the inspection data sheet, will be revised as needed (e.g., after completion and construction activities and in response to the result of five-year reviews of the remedy) and appended to the SRS LUCAP.

Per Section 3.6 of the LUCAP, the post-construction revision of the LUCIP identifies the area under land-use restriction via a survey plat certified by a professional land surveyor. A copy of the Boundary Survey of the Ford Building Seepage Basin is included in Appendix F.

ATTACHMENT A-1

FIELD INSPECTION CHECKLIST FOR THE FORD BUILDING SEEPAGE BASIN OPERABLE UNIT

A = Satisfactory **X = Unsatisfactory (Explanation required)**	**A or X**	**Observation or Corrective Action Taken**
1. Verify that there is no excavation, digging, or construction activities on the soil cover		
2. Verify that no woody vegetation is growing on the soil cover. Remove or identify, as needed.		
3. Visually check vegetative cover for grass density, with no bare spots more than 3 feet by 3 feet in area. The height of the vegetative cover should not impair the visual inspection of the soil cover. This will be determined by the inspector.		
4. Verify that the roads are accessible.		
5. Verify that the waste unit signs, (4) are in acceptable condition, have correct information, and are legible from a distance of 25 feet.		
6. Check the soil cover for signs of erosion or depressions (subsidence).		
7. Check for signs of burrowing animals (holes)		
8. Other:		

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 of this waste unit. Refer to the post-closure inspection procedure SOP-019.
NOTE: All monitoring wells associated with this waste unit are inspected using SGCP Monitoring Well Inspection Procedure in compliance with South Carolina Hazardous Waste Management Regulation R.61-79, Subpart F, Groundwater Monitoring.

Inspected By:_____/_____Date: _____
(Print Name) (Signature)

Post-Closure Manager:_____/_____Date:_____
(Print Name) (Signature)