

**LUCIP for the
CMP Pits, 80-70G, -171G, -180G, -181G, -182G, -183G, and -190G**
*Land Use Control Implementation Plan for the Chemical, Metals, and Pesticides Pits
Operable Unit, 080-170G, 080-180G, 080-181G, 080-182G, 080-183G, and 080-190G)*
(WSRC-RP-2005-4078, Revision 1.2, July 2007)

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United States Department of Energy

Savannah River Site

**Land Use Control Implementation Plan (LUCIP)
for the Chemicals, Metals, and Pesticides Pits Operable Unit
(080-170G, 080-171G, 080-180G, 080-181G, 080-182G,
080-183G and 080-190G) (U)**

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LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMP	Chemicals, Metals, and Pesticides
CMCOC	contaminant migration constituent of concern
COC	constituent of concern
CMI	Corrective Measures Implementation
DCM	dichloromethane
DNAPL	Dense Non-Aqueous Phase Liquid
ECA	Environmental Compliance Authority
ERH	electrical resistance heating
FFA	Federal Facility Agreement
ft	feet
HAZWOPER	Hazardous Waste Operations and Emergency Response
km	kilometer
LAZ	lower aquifer zone
lb	pound
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
LUCAP	Land Use Control Assurance Plan
OU	operable unit
m	meter
MAZ	middle aquifer zone
MCL	maximum contaminant level
μg/kilogram	microgram per kilogram
mg/kg	milligram per kilogram
mi	mile
MNA	Monitored natural attenuation
msl	mean sea level
OU	operable unit
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PCM	Post-Closure Manager

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

QA	Quality Assurance
RAIP	Remedial Action Implementation Plan
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RG	remedial goal
ROD	Record of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SGCP	Soil and Groundwater Closure Projects
SRS	Savannah River Site
SVE	soil vapor extraction
TCE	trichloroethylene
TZ	transmissive zone
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
WSRC	Washington Savannah River Company, LLC

1.0 INTRODUCTION

This Land Use Control Implementation Plan (LUCIP) has been prepared for the Chemicals, Metals, and Pesticides (CMP) Pits 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 CMP Pits Record of Decision (ROD) (WSRC 2004) will be implemented and maintained. The anticipated future land use for the CMP Pits is industrial. As specified in the ROD, the following LUC objectives have been selected for this OU:

- Prevent contact, removal, or excavation of Ballast Area and Vadose Zone contaminated soil.
- Maintain the integrity of the existing cover.
- Maintain the use of the site for industrial activities only in order to prevent residential exposure.
- Prevent unauthorized access to the closed waste unit as long as the waste remains a threat to human health or the environment in order to protect the industrial worker.

The selected remedy leaves hazardous substances in place that pose a potential future risk and will require land use restrictions until the concentrations of hazardous substances in soil and groundwater are at such levels to 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 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 CMP Pits. This additional document, the CMP Pits 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 (WSRC 1999) and should be considered incorporated by reference into the CMP Pits 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). 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 CMP Pits 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 CMP PITS REMEDIAL ACTION

2.1 Description of CMP Pits

The CMP Pits OU is located in the central portion of SRS, about one mile north of L Area. The CMP Pits OU is located within the Pen Branch watershed, approximately 380 m (1,250 ft) southeast of Pen Branch. The nearest plant boundary is approximately 11.9 km (7.4 mi) from the center of the OU.

The CMP Pits consist of seven unlined pits, placed in two rows, which occupy the top of a knoll at an approximate elevation of 310 feet mean sea level (msl). The pits received nonradioactive waste between 1971 and 1979. During that time, chemicals, metals, pesticides, and fluorescent lighting ballasts containing polychlorinated biphenyls (PCBs) were disposed of in the pits. In

1984, drums and other contaminated media were excavated from the pits. In a portion of the northwest pit, contaminated soils were excavated to depths of 7.6 m (25 ft) and 1.5 m (5 ft) below the bottom of the pit. These “over-excavation” areas were backfilled with coarse aggregate. The entire length of the pits was filled with approximately 0.6 m (2 ft) of coarse aggregate.

In 1999 the Interim ROD was issued for the residual volatile organic compounds (VOC) contamination present in the CMP Pits vadose zone. Two soil vapor extraction (SVE) systems, Field A and Field B, were constructed “to treat the soils beneath the pits where the combined tetrachloroethylene (PCE) and trichloroethylene (TCE) concentrations exceed 2,000 $\mu\text{g/kg}$ with active treatment techniques as long as effective with an overall objective to reduce the potential migration of solvents to the water table that result in contamination exceeding the maximum contaminant level (MCL).” Field B SVE was operated from April 2001 to May 2002 and is now in a passive operation using BaroballsTM that were installed in 2002 SVE operation began in Field A in January 2002 but reached the point of diminishing returns and was shut down in August 2005. Although 9,300 lb of VOCs have been extracted from the Field A system, 2003 soil sampling indicated that PCE contamination remains in the less permeable soil horizons at concentrations indicative of dense non-aqueous phase liquid (DNAPL).

Fluorescent lighting ballasts and pesticides were found at or near ground surface to the west of the pits in what is now referred to as the “Ballast Area.” The presence of the PCB- and pesticide-contaminated soil is attributed to stockpiling material recovered from the pits during the 1984 excavation activities. In 2004 and 2005, this soil was excavated, staged in windrows, and remediated via the addition and mixing of biological amendments. Once the amended soil samples were shown to be below remedial goals (RGs), the soil was placed back on the Ballast Area and seeded.

2.2 Nature and Extent of Contamination in CMP Pits

The CMP Pits OU comprises the following subunits:

- Ballast Area Soils
- CMP Pits and associated vadose zone (Field A)
- Vadose Zone (Field B)
- Groundwater
- Surface Water and Sediment

The nature and extent of surface soil contamination in the Ballast Area is described in greater detail in the Interim Corrective Measures Implementation (CMI)/Remedial Action Implementation Plan (RAIP) (WSRC 2000). The selected remedy for the CMP Pits 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 such levels to allow for unrestricted use and exposure.

2.2.1 CMP Pits Field A Vadose Zone

PCE and dichloromethane (DCM) have been identified as contaminant migration constituents of concern (CMCOCs) and are identified as principal threat source material (PTSM) for leachability in the vadose zone beneath the CMP Pits. No constituents of concern (COCs) were identified in the surface soils in the CMP Pits subunit.

The VOC contamination is highest in the northwest pit (Pit 080-183G) at depths between 6.0 and 18.0 m (20 and 60 ft) below ground surface (bgs). PCE is the most abundant contaminant at CMP Pits. The maximum concentration detected was 8,800 mg/kg in boring WS0303 at a depth of 11.6 m (38 ft) bgs. Sample locations that had PCE concentrations above 60 mg/kg, the threshold concentration indicative of DNAPL, were found adjacent to Pit 080-183G. PCE concentrations above 1,000 mg/kg were detected beneath Pit 080-183G in 1994 during the Resource Conservation and Recover Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI). Data collected during the 1984 removal action indicated that VOC contamination was

highest near this pit. Residual VOC contamination remained in the vadose zone beneath the 1984 excavation area.

2.2.2 *CMP Pits Groundwater*

The following VOCs and pesticides have been detected in groundwater monitoring wells above Safe Drinking Water Act MCLs: PCE, TCE, DCM, 1,1,2-trichloroethane, carbon tetrachloride, and lindane. Alpha-benzene hexachloride, beta-benzene hexachloride, delta-benzene hexachloride, dieldrin, lindane, bis (2-ethylhexyl) phthalate, bromodichloromethane, carbon tetrachloride, chloroform, DCM, PCE, and TCE have been identified as human health COCs for the future industrial worker and resident.

Two VOC groundwater plumes exist at the CMP Pits, designated as the main plume and the northeast plume. These plumes are moving northward toward Pen Branch sediment and surface water. Groundwater modeling indicates that the CMP Pits are the source for the main plume. Particle tracking toward and from the northeast plume suggests that this plume is from a different source than that of the main plume. The source of the northeast plume is depleted.

The vertical extent of the VOC plume includes the transmissive zone (TZ), middle aquifer zone (MAZ), and the lower aquifer zone (LAZ).

2.3 Remedial Action Selected

This section addresses the remedies described in the CMP Pits ROD (WSRC 2004).

Ballast Area Soils

Institutional controls after completion of the enhanced bioremediation interim action for pesticide- and PCB-contaminated surface soils

CMP Pits and Associated Vadose Zone (Field A)

Combination of electrical resistance heating (ERH) to remove DNAPL and continued operation of the SVE system

Vadose Zone (Field B)

Passive SVE (Baroballs™)

Groundwater

Monitored natural attenuation (MNA) and institutional controls

The post-remedial action conceptual site model (see Appendix C-1 to this LUCIP) shows the broken pathways and the remaining residual risk to the future industrial worker.

According to the *Savannah River Site Future Use Project Report* (USDOE 1996), residential use of SRS land is prohibited.

3.0 LAND USE CONTROL OBJECTIVES

Considering the residual risk, the LUC objectives are to

- prevent contact, removal, or excavation of Ballast Area and Vadose Zone contaminated soil. This LUC objective attains the remedial action objective (RAO) to prevent current, remedial and future industrial workers from exposure to the contaminated media at the CMP Pits.
- maintain the integrity of the existing cover. This LUC supports RAOs by reducing rainwater infiltration into the contaminated vadose zone to prevent leachate generation above MCLs.
- maintain the use of the site for industrial activities only in order to prevent residential exposure. This LUC supports RAOs by prohibiting development and use of the area for residential properties, elementary and secondary schools, child care and playgrounds.
- prevent unauthorized access to the closed waste unit as long as the waste remains a threat to human health or the environment in order to protect the industrial worker. This LUC objective attains the RAO to prevent current, remedial and future industrial workers from exposure to the contaminated media at the CMP Pits.

- provide public notices for disclosing former waste management and disposal activities and remedial actions taken on the site in order to protect future residents, trespassers and industrial workers. This LUC supports RAOs that protect industrial workers, residents, trespassers, and inadvertent intruders from exposure to the contaminated media at the CMP Pits.
- prevent unauthorized residential or agricultural access to groundwater in the area. This LUC supports RAOs to protect industrial workers, residents, trespassers, and inadvertent intruders from exposure to the contaminated media at the CMP Pits OU and helps prevent the spread of groundwater contamination.
- maintain the integrity of any current or future remedial or monitoring system

4.0 IMPLEMENTATION OF LAND USE CONTROLS

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

The CMP Pits OU will be maintained as an industrial use area by implementation of the property record notices (Section 4.1) and restrictions (Section 4.2), and the use of a certified LUC survey plat (Section 4.3).

The Site Use Program (Section 4.4) will be implemented to prevent onsite worker exposure to contamination left in place at the CMP Pits 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 CMP Pits OU.

4.1 Property Record Notices

In the long term, if the property is ever transferred to non-federal ownership, the United States 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 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 USEPA and SCDHEC six months' notice prior to transfer to ensure that USEPA and SCDHEC can be involved in discussions to ensure that appropriate provisions are

Table 1. Land Use Controls for the CMP Pits 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 nonfederal ownership	Ballast Area and Vadose Zone where hazardous substances are left in place at levels requiring land use and/or groundwater 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	Ballast Area, Vadose Zone, and Groundwater (until RAOs are achieved) where hazardous substances are left in place at levels requiring land use and/or groundwater 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	Ballast Area, Vadose Zone, and Groundwater (until RAOs are achieved) where hazardous substances are left in place at levels requiring land use and/or groundwater 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	Ballast Area, Vadose Zone, and Groundwater (until RAOs are achieved) where hazardous substances are left in place at levels requiring land use and/or groundwater restrictions

Table 1. Land Use Controls for the CMP Pits OU (Continued)

Type of Control	Purpose of Control	Duration	Implementation	Affected Areas ^a
5. Physical Access Controls ^f (e.g., fences, gates, portals)	Control and restrict access to workers and the public to prevent unauthorized entry	Until the concentration of hazardous substances associated with the unit have been reduced to levels that allow for unlimited exposure and unrestricted use	Controls maintained by USDOE	Fence at the SRS boundary
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	Signs around soil areas requiring LUC at the CMP Pits
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 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; 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, which is provided to a zoning authority (i.e., city planning commission) for consideration in appropriate zoning decisions for non-USDOE 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 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.

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, USDOE 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

This LUCIP identifies the area under land use restriction via a design sketch in Appendix A (CMP-0017-GIS). The sketch provides a plan view of the site with a line marked depicting the surface area subject to LUCs and a line marked depicting the current estimated location of the groundwater plume subject to LUCs. Preparation of a certified survey plat will be deferred until the site is transferred to non-federal ownership. Preparing the survey plat coincident with land transfer will maximize the accuracy of the groundwater area under the restrictive covenant. The deferred survey plat will be appended to this LUCIP when it is completed.

After operation completion, an as-built drawing showing the as-built arrangement of the institutional controls will be submitted to USEPA and SCDHEC to replace the sketch in the Post-Construction Report (PCR)/Corrective Measures Implementation Report (CMIR)/Remedial Action Completion Report (RACR).

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. 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 WSRC 1D, Procedure 3.02, all work at SRS that adds or modifies features or facilities portrayed on the 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 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). USDOE will notify USEPA and SCDHEC in advance of any change to any internal procedure, including the Site Use Program, that would affect implementing or maintaining the LUCs. 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 CMP Pits OU shall be undertaken without USEPA and SCDHEC approval. Approval by USEPA and SCDHEC is required for any modification or termination of the institutional controls and implementation actions, and DOE must obtain approval from USEPA and SCDHEC that a proposed new land use is sufficiently protective.

4.5 Physical Access Controls

There are no physical access controls required at the CMP Pits OU; however, physical access controls are provided at the SRS boundary as mentioned in Table 1, item 5.

4.6 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 7.6 m (25 ft). The signs will read as indicated in Appendix D.

Custodial responsibilities for maintenance and inspection of the CMP Pits OU will be maintained by the Operations & Maintenance Post-Closure Maintenance Group within the Operating Services Department.

4.7 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.

4.8 Field Inspection and Maintenance for Institutional Controls

After remediation of the CMP Pits OU, only maintenance activities will be required by this remedial action.

Field inspections will be performed annually. Additional inspections may be necessary in the event of unusual weather or any other condition warranting inspection. The CMP Pits will be inspected per the Field Inspection Checklist in Appendix B. Necessary repairs will be performed for items in Appendix B that are found to be in unsatisfactory condition. Necessary upkeep of the access control signs for CMP Pits will be performed. USEPA and SCDHEC will be notified within 30 days of identification by USDOE of any events and/or actions that indicate potential compromise of the institutional controls including any activity that is inconsistent with the IC objectives or use restrictions or any other action that may interfere with the effectiveness of the ICs and the proposed action to address the potential compromise. The FFA Annual Progress Report, submitted to the regulatory agencies by the USDOE, will provide the status of the institutional controls and 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 restrictions and controls referenced above were communicated in the deed(s), 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 LUCs (including inspections and repairs associated with the items in Appendix B) 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 (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 (Appendix B), will be appended to the SRS LUCAP upon final regulatory approval.

5.0 REFERENCES

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WSRC, 2004. Record of Decision Remedial Alternative Selection for the Chemicals, Metals, and Pesticides Pits Operable Unit (U), WSRC-RP-2004-4090, Rev. 1, December, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC

APPENDIX A

DESIGN SKETCH

CMP-0017-GIS LAND USE CONTROL IMPLEMENTATION PLAN SKETCH

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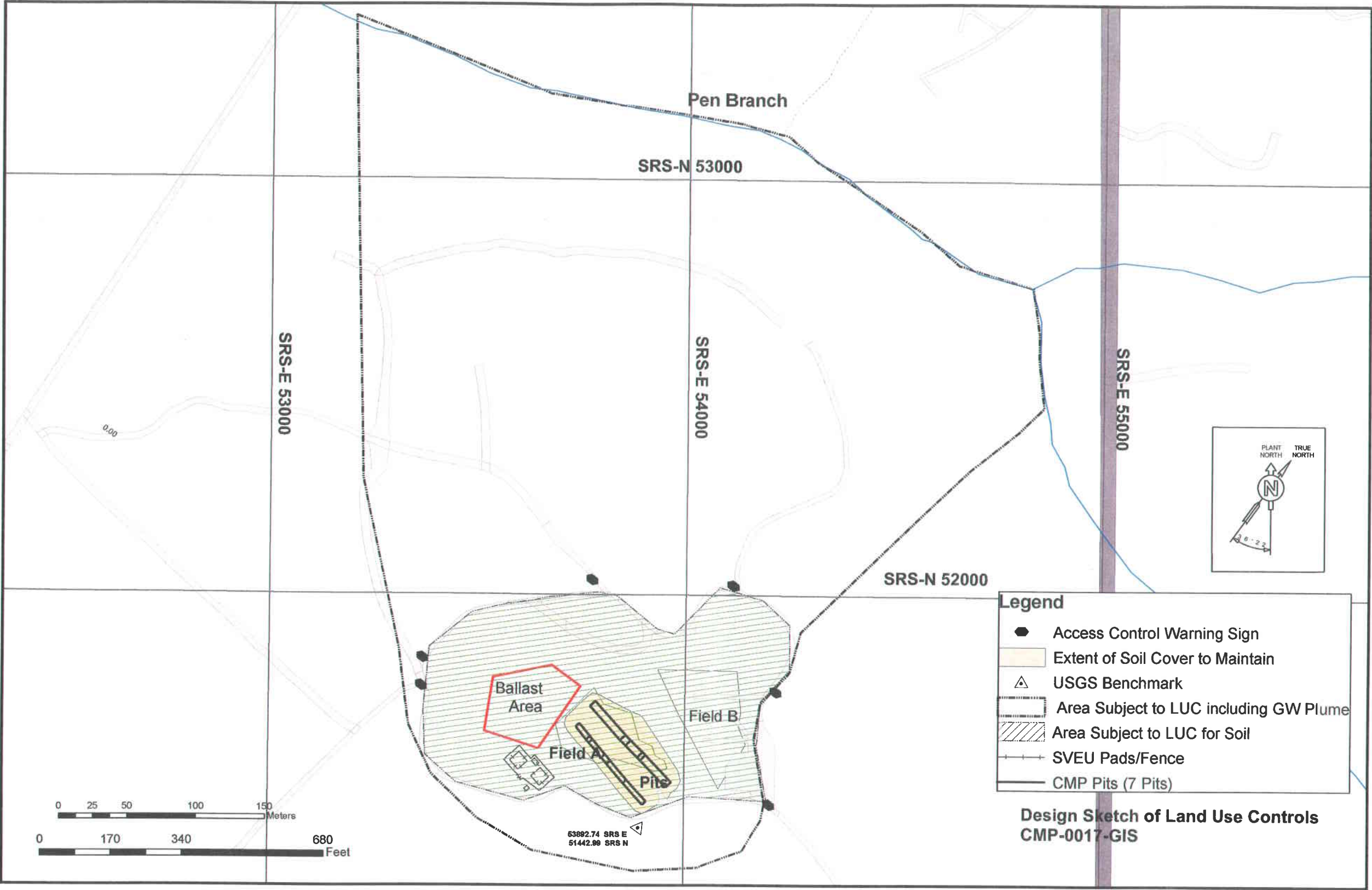


Figure A-1. GIS Land Use Control Implementation Plan Sketch

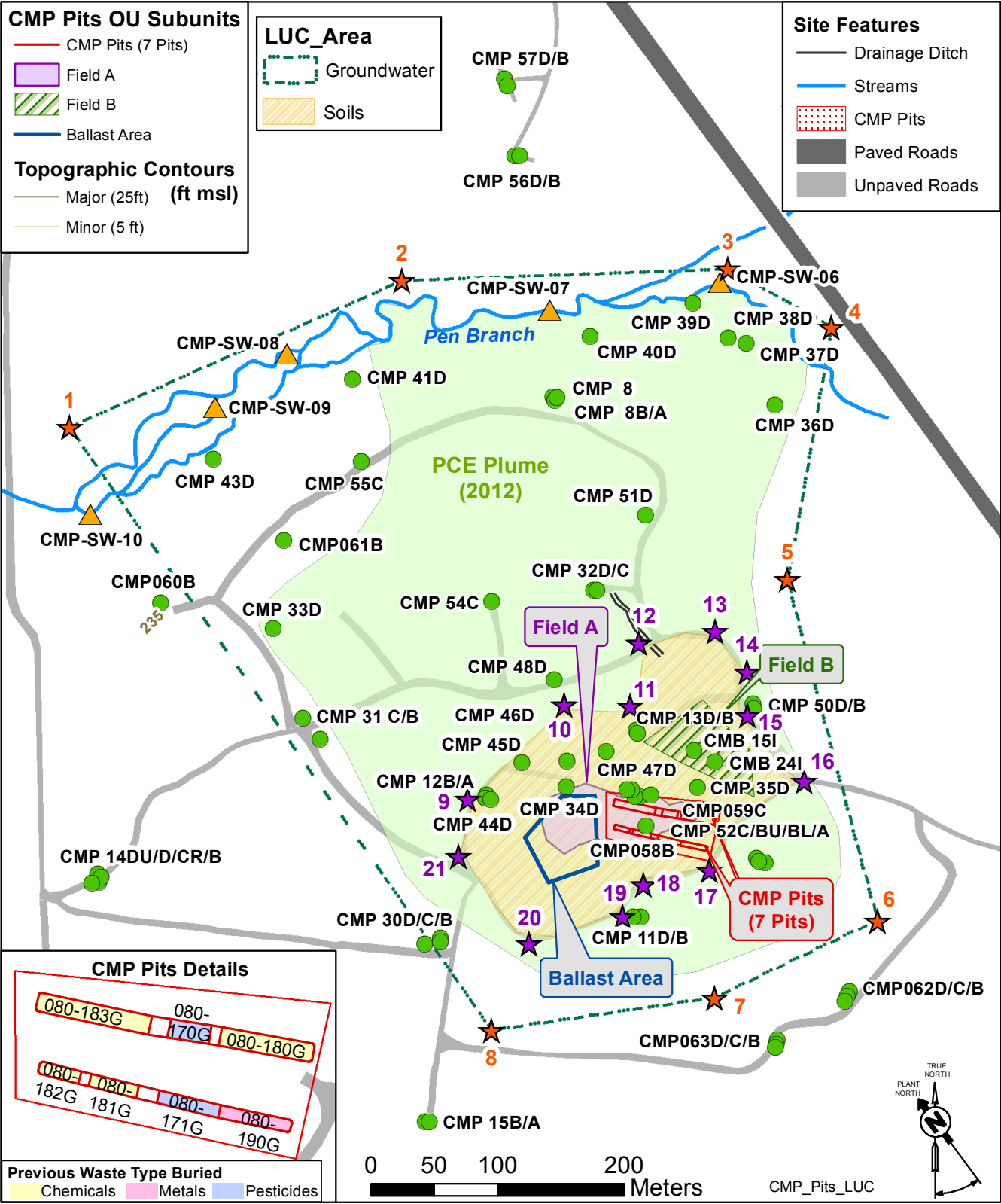
CMP Pits OU Subunits

- CMP Pits (7 Pits)
 - Field A
 - Field B
 - Ballast Area
- Topographic Contours (ft msl)**
- Major (25ft)
 - Minor (5 ft)

LUC_Area

- Groundwater
- Soils

- Site Features**
- Drainage Ditch
 - Streams
 - CMP Pits
 - Paved Roads
 - Unpaved Roads



Point_Numb	Area Type	SRS Coordinate System (feet (us))	SRS Coordinate System (feet (us))
1	Groundwater	53210.33981	53358.6298
2	Groundwater	54133.09067	53158.10759
3	Groundwater	54834.75663	52684.26138
4	Groundwater	54963.28888	52403.53989
5	Groundwater	54484.94645	51941.55395
6	Groundwater	54151.84933	51086.87165
7	Groundwater	53692.73569	51174.88481
8	Groundwater	53174.25335	51447.68354
9	Soil	53478.50625	51969.68573
10	Soil	53824.42434	52019.01882
11	Soil	53961.68316	51915.55677
12	Soil	54075.98312	52036.0687
13	Soil	54254.62791	51943.22287
14	Soil	54258.25302	51809.49584
15	Soil	54193.66576	51718.33895
16	Soil	54211.78019	51492.57707
17	Soil	53876.92159	51451.13621
18	Soil	53717.21985	51521.33502
19	Soil	53624.33334	51486.20816
20	Soil	53386.19381	51572.76311
21	Soil	53371.1623	51863.59617

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APPENDIX B

FIELD INSPECTION CHECKLIST
FOR CHEMICALS, METALS, AND PESTICIDES PITS

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FIELD INSPECTION CHECKLIST**FOR CHEMICALS, METALS, AND PESTICIDES PITS OPERABLE UNIT****(080-170G, 080-171G, 080-180G, 080-181G, 080-182G, 080-183G and 080-190G)**☐ **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 six 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 on the soil cover.		
4. Verify that the integrity of any drainage ditches, sediment basins and required land grading for proper drainage is maintained and they are free of excessive erosion, sediment buildup, and any debris restricting water flow.		
5. Verify that no woody vegetation is growing on the soil cover. Remove or identify as needed.		
6. Verify that the grass density 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.		

FIELD INSPECTION CHECKLIST

FOR CHEMICALS, METALS, AND PESTICIDES PITS OPERABLE UNIT (Continued)

☐ **SCHEDULED**

☐ **UNSCHEDULED**

A= Satisfactory X= Unsatisfactory (Explanation required)	A or X	Observation of Corrective Action Taken
7. Verify that the soil cover has no signs of unacceptable erosion or depressions (subsidence).		
8. Verify that signs of burrowing or mounding animals are not present.		

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 of 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.

APPENDIX C

POST-REMEDIAL ACTION CONCEPTUAL SITE MODEL FOR THE CMP PITS POST-REMEDIAL ACTION

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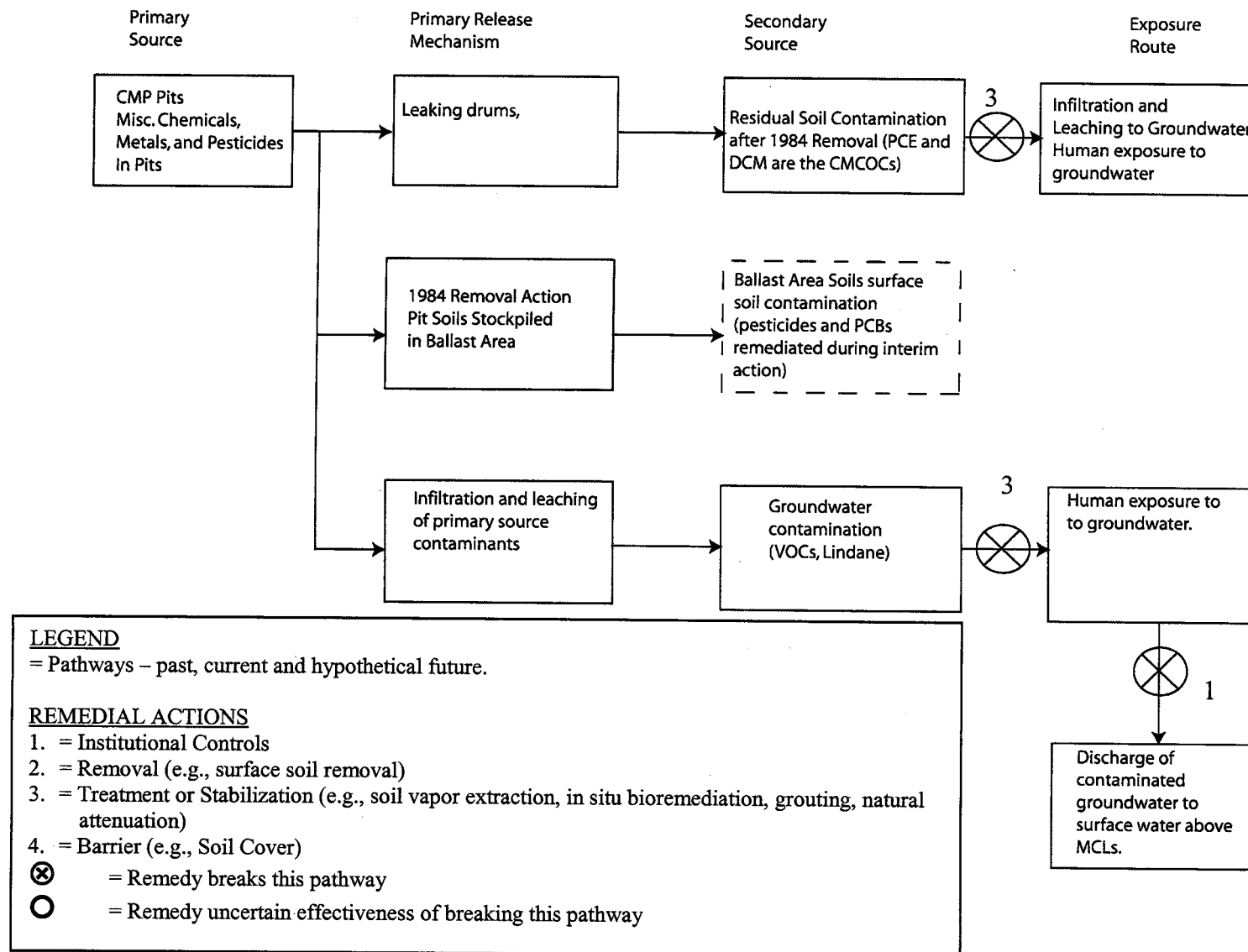


Figure C-1. Post-Remedial Action Conceptual Site Model for CMP Pits

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APPENDIX D

ACCESS CONTROL WARNING SIGN

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CHEMICALS, METALS, AND PESTICIDES PITS OPERABLE UNIT

(080-170G, 080-171G, 080-180G, 080-181G, 080-182G, 080-183G and 080-190G)

DANGER

UNAUTHORIZED PERSONNEL KEEP OUT

THIS UNIT CONTAINS (HAZARDOUS, RADIOLOGICAL OR
MIXED HAZARDOUS, AS APPLICABLE) SUBSTANCES.

DO NOT DIG OR EXCAVATE.

DO NOT ENTER WITHOUT CONTACTING THE

WASTE UNIT CUSTODIAN.

CUSTODIAN: MANAGER, POST-CLOSURE MAINTENANCE

PHONE: See current phone number on the warning sign at the CMP
Pits OU site



Figure D-1. Access Control Warning Sign