LUCIP for the D-Area Burning/Rubble Pits (431-D and 431-lD)
Section 2.0 of *Final Remediation Report for the*
D-Area Burning/Rubble Pits (431-D and 431-lD)
(WSRC-RP-97-406, Revision 1.1, March 1998)

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United States Department of Energy

Savannah River Site

Final Remediation Report for the D-Area Burning/Rubble Pits (431-D and 431-1D) (U)

WSRC-RP-97-406
Revision 1.1
March 1998

Westinghouse Savannah River Company
Savannah River Site
Aiken, SC 29808

Prepared for the U. S. Department of Energy under Contract No. DE-AC09-96-SR18500

CERTIFICATION

FINAL REMEDIATION REPORT FOR THE
D-AREA BURNING/RUBBLE PITS
(431-D AND 431-1D)
Revision.1.1,WSRC-RP-97-406

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Date: 6MAY98 Signature:

Richard R. Harbert
Vice President & General Manager
Environmental Restoration Division
Westinghouse Savannah River Company
Co-operator for the U.S. Dept. of Energy
Savannah River Operations

Date: 5/13/98 Signature:

Cynthia V. Anderson,
Director
Environmental Restoration Division
U.S. Department of Energy
Savannah River Field Office
Owner and Co-operator

DISCLAIMER

Printed in the United States of America

Prepared for
U. S. Department of Energy
and
Westinghouse Savannah River Company
Aiken, South Carolina

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ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act, 1980
SCDHEC	South Carolina Department of Health and Environmental Control
DOE	United States Department of Energy
EPA	Environmental Protection Agency
DBRP	D-Area Burning Rubble/Pits
FFA	Federal Facility Agreement
MCL	Maximum Contaminant Level
RCRA	Resource Conservation and Recovery Act, 1976
ROD	Record of Decision
SRS	Savannah River Site
WSRC	Westinghouse Savannah River Company

1.0 GENERAL DESCRIPTION OF THE D-AREA BURNING/RUBBLE PITS (DBRP)

The D-Area Burning/Rubble Pits (431-D and 431-1D) (DBRP) comprise a RCRA/CERCLA source unit located within the Savannah River Site (SRS), approximately 2,600 feet west of D-Area and 1.6 miles west of State Highway 125 (Figure 1). The Savannah River is located about 0.6 miles west of the DBRP. The local topography of the area is flat and the pits are at an elevation of 130 feet above mean sea level and 45 feet above the Savannah River. The water table is approximately 10 feet below ground surface in the area of DBRP. Surface drainage is to the west-southwest toward an ephemeral tributary of the Savannah River.

The two parallel burning/rubble pits (Figure 2), which cover a total area of 0.54 acre, are designated as 431-D and 431-1D; a 15 foot wide berm of undisturbed soil separates these two pits. The approximate dimensions of 431-D are 257 feet by 46 feet by 10 feet deep, and the dimensions of 431-1D are 229 feet by 36 feet by 10 feet deep.

Between 1951 and 1973, burning pits were used at Savannah River Site to burn a variety of hazardous and non-hazardous waste (Figure 1). The chemical composition and volumes of the disposed waste are unknown. Combustible materials, which were burned monthly, included paper, plastics, wood, rubber, rags, cardboard, oil, degreasers, and spent organic liquids. No known or suspected radioactive materials were allowed in the burning pits.

Burning of waste in the SRS pits was discontinued by October, 1973. A layer of soil was then placed over the residue in the pits, and they were subsequently used as rubble pits. Materials allowed in the rubble pits generally included concrete, bricks, tile, asphalt, plastic, metal, empty drums, wood products, and rubber. When the DBRPs were filled to capacity in 1983 or were no longer needed, a 1 to 3 foot layer of clayey soil was placed over the contents and the surface was compacted and mounded above the surrounding terrain, which is essentially level, to enhance drainage. Vegetation was established to reduce erosion.

Contact information for DBRP is as follows:

Westinghouse Savannah River Company
Manager, Post Closure Maintenance
Aiken, SC 29808
(803) 952-6882

2.0 DESCRIPTION OF SELECTED REMEDY

The selected remedy for the DBRP source operable unit soils is Institutional Controls which will prohibit residential use of this area. Additional groundwater monitoring, as discussed in Section 2.5, will also be conducted. Based on the groundwater monitoring history, it has been determined that no significant groundwater contamination has originated from the DBRP. Thus, no remedial action and a period of continued monitoring for confirmation is judged as the most reasonable action for the groundwater at the DBRP. In the event that the condition of the local groundwater declines, the Department of Energy (DOE), the EPA, and the SCDHEC, will reevaluate the need for remedial action.

Implementation of this alternative will require both near- and long-term actions. For the near-term, signs will be posted indicating that this area was used to manage hazardous materials. In addition, existing SRS access controls will be used to prohibit residential use.

In the long-term, if the property is ever transferred from non-Federal ownership, the U. S. Government will create a deed for the new property owner in compliance with Section 120(h) of CERCLA. The deed will include notification disclosing former waste management and disposal activities, results from groundwater monitoring, and remedial actions taken on the site. The deed notification will, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of non-hazardous, inert construction debris, and that wastes containing hazardous substances, such as degreasers and organic liquids, were also managed and burned on the site. These requirements are also consistent with the RCRA deed notification required at final closure of the RCRA facility if contamination will remain on site. The deed will 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 contamination no longer poses an unacceptable risk under the residential use scenario. The Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) will have to concur with this reevaluation before the deed restrictions are altered.

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

The SCDHEC has modified the SRS RCRA permit to incorporate the selected remedy.

This proposal is consistent with EPA guidance and is an effective use of risk management principles.

2.1 Deed Notification

A deed notification shall be filed in Barnwell County Records in accordance with CERCLA 120(h), which requires the government to create a deed when the land on which any hazardous substance was stored, released, or disposed is transferred to non-Federal ownership. Per CERCLA 120(h)(3)(A), the deed shall contain, to the extent practical, such information as is available based on the complete search of agency files:

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

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

- all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer;
- any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States Government;
- a clause granting the United States Government access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

This proposal is also consistent with the RCRA permit requirements to insure protection of human health and the environment by maintaining documentation of property restrictions and institutional control requirements by use of deed notification.

2.2 Access Controls

2.2.1 On-Site Workers

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

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

Any work proposed in these areas will be strictly controlled and workers will be appropriately trained and briefed about health and safety requirements if work is deemed necessary for maintenance. Any changes in the use or disturbance of the DBRP will be cleared with the EPA and SCDHEC before the disturbance occurs. To prevent unknowing entry and to ensure that unrestricted use of the waste unit does not occur while under ownership of the government, identification signs will be posted at the waste unit access points (Figure 2). The signs will be legible from a distance of at least 25 feet. The signs will read:

Waste Unit Name, Building Number(s)

"Danger - Unauthorized Personnel Keep Out.
This waste unit was used to manage hazardous substances.
Do not dig or excavate. Do not enter without contacting the
the waste site custodian."
Custodian: Manager, Post Closure Maintenance

Phone: (803) 952-6882

Site specific access controls (i.e., fences) are not required for the DBRPs, since exposure to the casual worker or trespasser as calculated in the Baseline Risk Assessment does not justify this level of protection.

Figure 1
Location of D-Area
Burning/Rubble Pits

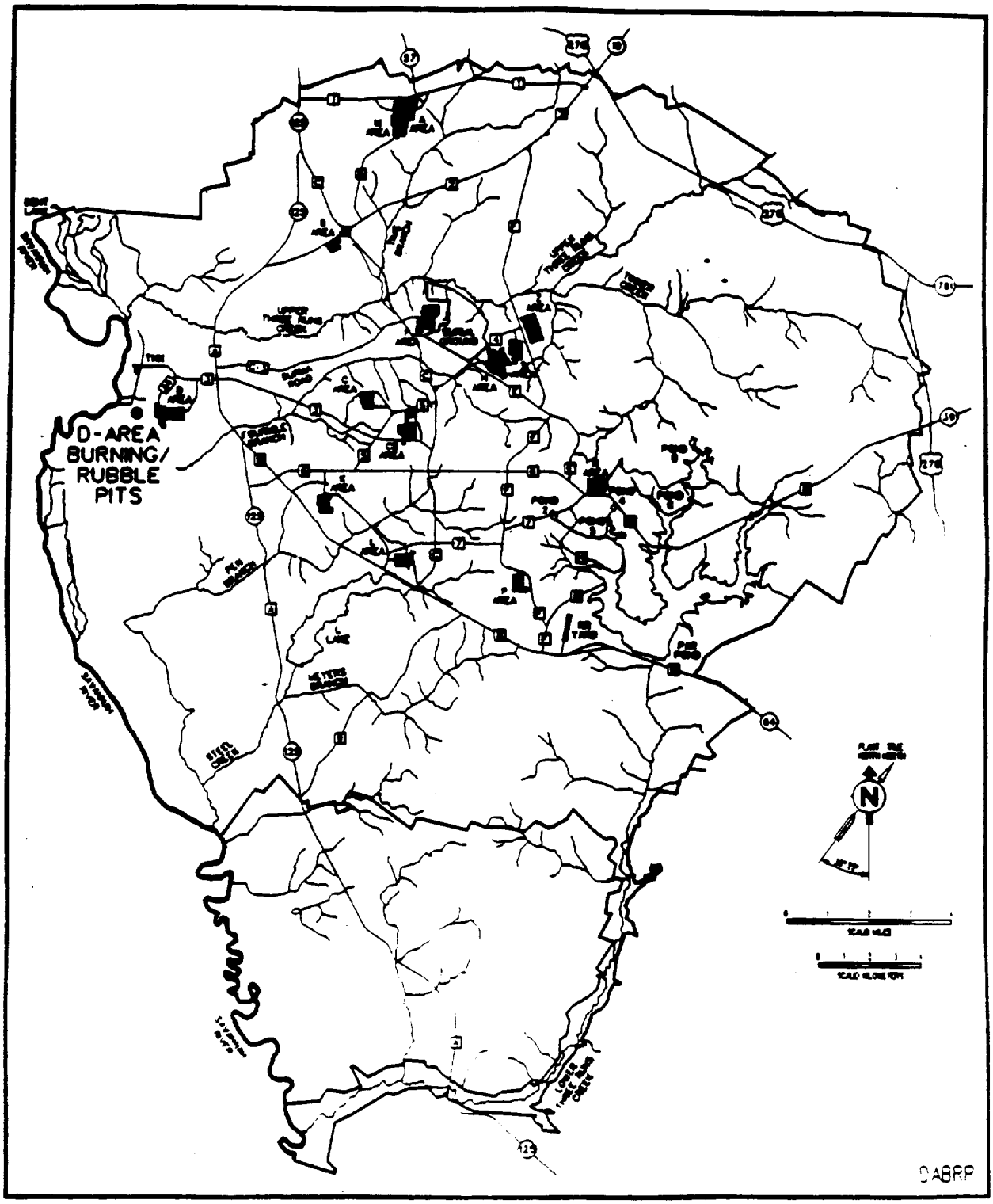
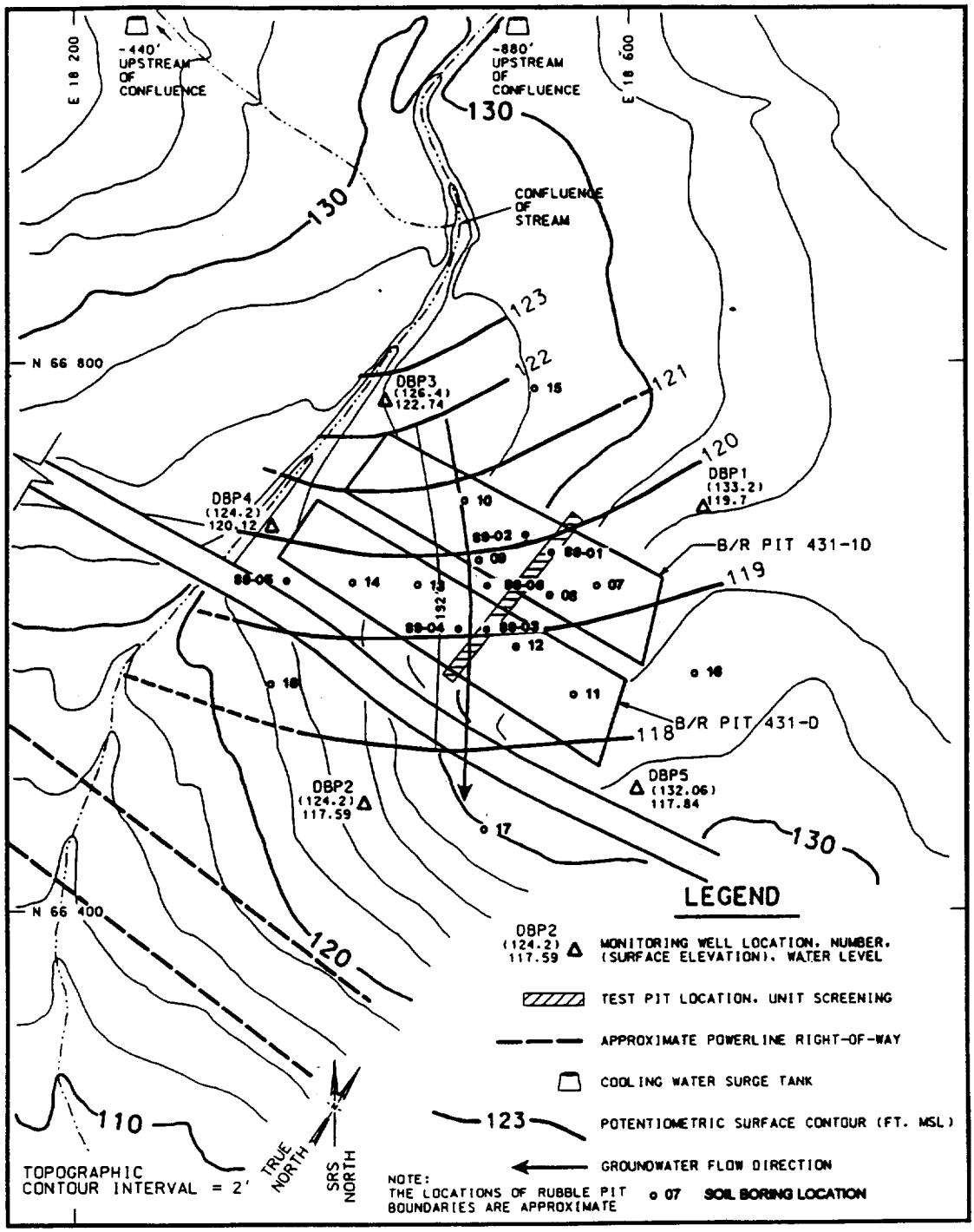
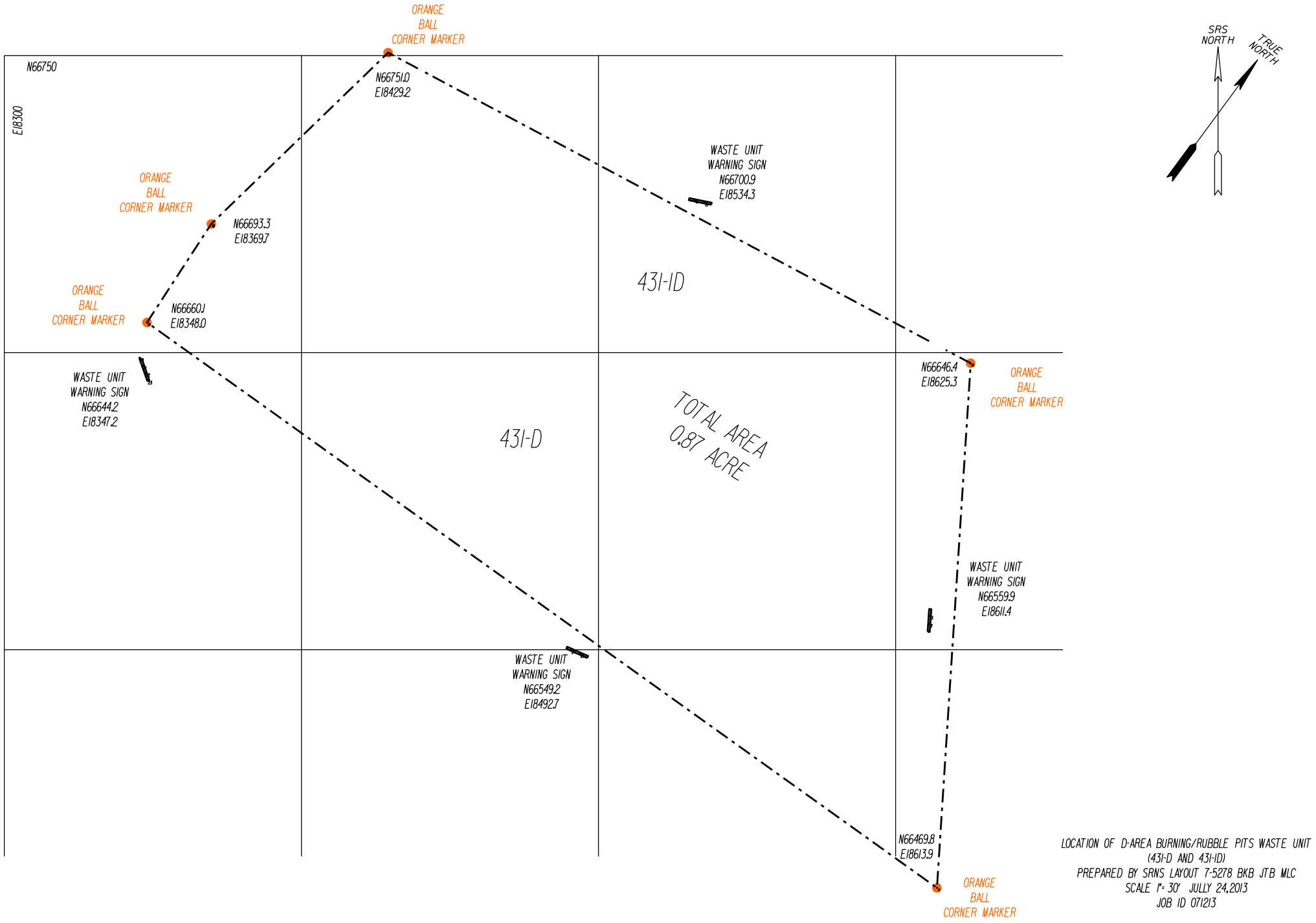


Figure 2
DBRP
Monitoring Well Location Map



120 0 120
SCALE IN FEET

HYDRAULIC GRADIENT = VERTICAL CHANGE IN HEAD (dh) / HORIZONTAL DISTANCE (d) = 4 FT. / 192 FT. = .02 FT./FT.



LOCATION OF D-AREA BURNING/RUBBLE PITS WASTE UNIT
(431-D AND 431-ID)
PREPARED BY SRNS LAYOUT 7-5278 BKB JTB MLC
SCALE 1"= 30' JULLY 24,2013
JOB ID 071213

2.2.2 *Trespassers*

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

2.3 Field Walkdowns

Field walkdowns of the DBRPs will be conducted annually for items such as accuracy and legibility of identification signs, visible subsidence or erosion of the waste unit, evidence of water above ground surface, proper vegetation growth, mowing, etc. Subsidence or erosion will be corrected by backfilling the affected area with clean soil and seeding the area to prevent direct exposure of the waste or creation of an exposure pathway. The results of any events and/or actions that would indicate some potential compromise of institutional controls will be documented in the Federal Facility Agreement (FFA) Annual Progress Report. All other routine maintenance activities (i.e., mowing, etc.) will be documented and maintained on files which are subject to EPA and SCDHEC review and audit. Attachment A provides the typical field inspection checklist.

2.4 Certification Mechanism

The Vice-President and General Manager of the Environmental Restoration Division, Westinghouse Savannah River Company, and the Director of the Environmental Restoration Division, U.S. Department of Energy, shall certify on an annual basis that the DBRP is currently being restricted per the institutional controls corrective action described in the approved DBRP Record of Decision (*Record of Decision, Remedial Alternative Selection for the D-Area Burning/Rubble Pits (431-D and 431-1D) (U)*, WSRC-RP-96-867, Rev. 1, February, 1997). This certification shall be included in the FFA Annual Progress Report.

2.5 Groundwater Monitoring and Reporting

Groundwater monitoring will be performed as identified in the DBRP ROD (WSRC, 1997). The post-ROD groundwater monitoring reports, which will be located in the FFA Annual Progress Report, will discuss the analytical results and any trends in the data.

During the second calendar quarter of each year (starting in CY 1998), samples will be collected annually using the submersible pumps which have been installed in the five DBRP wells (DB1, DB2, DB3, DB4, and DB5) (Figure 2). The samples will be handled in accordance with SRS procedures and EPA established protocols and test methods.

The samples will be analyzed for the chemicals which were evaluated to be significant risk and hazard drivers in the Basline Risk Assessment or were identified in the fate and transport modeling as potential offenders. The list of analytes is provided in Table 1 below.

The analytical results will also be included in *The Savannah River Site's Groundwater Monitoring Program* report for the second calendar quarter of each year. Any of these analytes, which are not detected during a five calendar year monitoring and review cycle, will be dropped

from the list for subsequent cycles with concurrence by EPA and SCDHEC. If there are no exceedances of MCLs by any of the risk and hazard drivers during the preceding five year period, indicating no appreciable leaching to groundwater of these chemicals, SRS will request EPA and SCDHEC concurrence for the termination of groundwater monitoring. The request for concurrence/approval of the removal of analytes shall be submitted under separate cover. In addition, a full evaluation of all the groundwater data collected during a five year monitoring and review cycle will be performed as part of the Five-Year ROD Review.

Table 1
Monitoring and Reporting

Constituents	Wells to be Monitored	Sampling Frequency	Reporting Frequency
arsenic	DB1, DB2, DB3, DB4, DB5	Annual	Annual
benzene	DB1, DB2, DB3, DB4, DB5	Annual	Annual
benzo(a)anthracene	DB1, DB2, DB3, DB4, DB5	Annual	Annual
benzo(a)pyrene	DB1, DB2, DB3, DB4, DB5	Annual	Annual
benzo(b)fluoranthene	DB1, DB2, DB3, DB4, DB5	Annual	Annual
benzo(k)fluoranthene	DB1, DB2, DB3, DB4, DB5	Annual	Annual
chromium	DB1, DB2, DB3, DB4, DB5	Annual	Annual
chrysene	DB1, DB2, DB3, DB4, DB5	Annual	Annual
1,2-dichloroethane	DB1, DB2, DB3, DB4, DB5	Annual	Annual
dichloromethane	DB1, DB2, DB3, DB4, DB5	Annual	Annual
endrin	DB1, DB2, DB3, DB4, DB5	Annual	Annual
manganese	DB1, DB2, DB3, DB4, DB5	Annual	Annual
octachlorodibenzo-p-dioxin	DB1, DB2, DB3, DB4, DB5	Annual	Annual
PCB-1260	DB1, DB2, DB3, DB4, DB5	Annual	Annual
total radium	DB1, DB2, DB3, DB4, DB5	Annual	Annual
1,1,2-trichloroethane	DB1, DB2, DB3, DB4, DB5	Annual	Annual
tritium	DB1, DB2, DB3, DB4, DB5	Annual	Annual

3.0 SCHEDULE

The post-ROD document schedule is listed below:

1. Signs, described in Section 2.2.1, will be installed during the second calendar quarter of 1998.

2. Groundwater monitoring will begin in the second calendar quarter of 1998.

3. An annual groundwater monitoring report will be provided in the last calendar quarter of 1998.

4.0 REFERENCES

WSRC, 1997. *Record of Decision, Remedial Alternative Selection for the D-Area Burning/Rubble Pits (431-D and 431-1D) (U)*, WSRC-RP-96-867, Revision 1, Westinghouse Savannah River Company, Aiken, SC (February)

WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, *Site Real Property Configuration Control*, Westinghouse Savannah River Company, Aiken, SC (February 1996)

ATTACHMENT A

TYPICAL FIELD INSPECTION CHECKLIST

TYPICAL ER INSPECTION SHEET FOR WATES SITES
Page 1 of 3

Waste Site:_____ **A** = Satisfactory **X** = Unsatisfactory (Comments Required)	**A** or **X**	Comments or Corrective Action Taken
Check for potential encroachments (Ensure there is no building on the site).		
Does site have brush or woody vegetation that needs cutting and disposal?		
Does site need grass cut?		
Verify wells and roads are accessible.		
Are the wells properly locked per R. 61-71.11.C.6?		

TYPICAL ER INSPECTION DATA SHEET FOR WASTE SITES
Page 2 of 3

A = Satisfactory **X** = Unsatisfactory (Comments Required)	**A** or **X**	Comments or Corrective Action Taken (See Maintenance Register for Corrected Items)
Is the concrete pad cracked or broken? Is the pad undercut or silted over?		
Is the well properly identified per R.61-71.6H?		
Verify the wells posts and protective covers are in place.		
Verify waste units signs have correct and legible information.		
Does site show signs of erosion or subsidence Are there any signs of burrowing animals (holes)?		
Verify that the orange ball markers are in place		

TYPICAL ER INSPECTION DATA SHEET FOR WASTE SITES
Page 3 of 3

A = Satisfactory **X** = Unsatisfactory (Comments Required)	**A** or **X**	Comments or Corrective Action Taken (See Maintenance Register for Correct Items)
Verify the fence is locked and in good condition (if applicable)		
Check integrity of drainage ditches (if any) for presence of excessive erosion, sediment buildup, and any debris restricting water flow		
Does site need general clean up (housekeeping)?		
Comments:		

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

Reviewed By:_____/_____Date:_____Time:_____
PM or Designee (Print Name) (Signature)

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