

**Statement of Basis/Proposed Plan for the Central Shops
Burning/Rubble Pit (631-6G)**

by

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**United States Department of Energy
Savannah River Site**

**Statement of Basis/Proposed Plan for the Central Shops
Burning/Rubble Pit
(631-6G) (U)**

**WSRC-RP-96-142
Revision 1
October 24, 1996**

Prepared by:
Westinghouse Savannah River Company
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Aiken, SC 29808

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



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DOCUMENT APPROVAL PAGE

Revision 1

Statement of Basis/Proposed Plan
Central Shops Burning Rubble Pit (631-6G) (U)

The attached document was completed under the direction of the Environmental Restoration Project Team at the Westinghouse Savannah River Company. We have reviewed the document, and to the best of our knowledge, it is true, accurate, and correct. All comments made by the Team members have been resolved to the Team's satisfaction.

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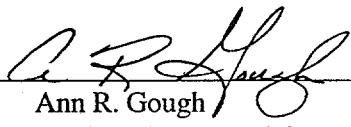
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CERTIFICATION PAGE

Revision 1

Statement of Basis/Proposed Plan
for the
Central Shops Burning Rubble Pit (631-6G) (U)

"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."

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DOCUMENT APPROVAL SUMMARY

**Central Shops Burning/ Rubble Pit (631-6G)
Statement of Basis/Proposed Plan (U)
WSRC-RP-96-142, Rev. 1**

FACT SHEET

October 24, 1996

DOE FIELD OFFICE

Savannah River Operations Office.

DOCUMENT

Central Shops Burning/ Rubble Pit (631-6G) Statement of Basis/Proposed Plan, WSRC-RP-96-142, Revision 1, October 24, 1996.

REGULATORY SUMMARY

The Central Shops Burning/Rubble Pit (631-6G) is subject to Resource Conservation and recovery Act, 1976 (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act, 1980 (CERCLA) requirements. The Central Shops Burning/Rubble Pit (631-6G) Statement of Basis/Proposed Plan provides for involvement with the community through a document review process and a public comment period. The preferred alternative stated in the Statement of Basis/Proposed Plan is No Action based on the low levels of risk presented in the RFI/RI/BRA. EPA, SCDHEC, and DOE agreed that no Feasibility Study was necessary for this operable unit due to the low levels of contamination present and the minimal calculated risks obtained.

The Central Shops Burning/Rubble Pit (631-6G) RFI/RI With BRA, Revision 1.1, WSRC-RP-95-1539, was delivered to SCDHEC on May 30, 1996.

BACKGROUND

The Central Shops Burning/Rubble Pit 631-6G (BRP6G) was constructed in 1951. From 1951 until 1955, the pit received wastes such as waste oil, rags, paper, cardboard, plastics, degreasers, wood, rubber, and drummed organic solvents which were disposed of in the pit and periodically burned. Radioactive wastes were not permitted in the pit. The BRP6G was closed in 1955 by covering it with soil.

The BRA showed that the risks for BRP6G were very low. The only credible risk was for soil ingestion due to PCB-1254. Levels of PCB-1254 were high enough to cause a calculated risk over 1×10^{-6} for a future resident, however, the maximum level is approximately only one-tenth of the action level for residential use. Therefore, no action is required to remediate this site.

DOCUMENT APPROVAL

Revision 0 of the SB/PP was reviewed by both the EPA (15 comments) and SCDHEC (two comments). All comments were agreed to and changes were made in Revision 1.

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Acronyms

ARAR	Applicable, or Relevant and Appropriate Requirements
BRA	Baseline Risk Assessment
BRP6G	Central Shops Burning/Rubble Pit (631-6G)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, 1980
COPCs	Chemicals Of Potential Concern
DOE	U. S. Department Of Energy
EPA	U. S. Environmental Protection Agency
FFA	Federal Facility Agreement
HI	Hazard Index
NPL	National Priorities List
OCDD	Octachlorodibenzo-p-dioxin isomers
PCB-1254	Polychlorinated Biphenyl, 1254
RCRA	Resource Conservation and Recovery Act, 1976
RFI	RCRA Facility Investigation
RI	Remedial Investigation (CERCLA)
ROD	Record Of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SRS	Savannah River Site
SCHWMR	South Carolina Hazardous Waste Management Regulations
SWMU	Solid Waste Management Unit
TSCA	Toxic Substances Control Act, 1976
WSRC	Westinghouse Savannah River Company

EXECUTIVE SUMMARY

This Statement of Basis/Proposed Plan is being issued by the U. S. Department of Energy (DOE), which is the lead agency for remedial activities at the Savannah River Site (SRS), with concurrence by the U. S. Environmental Protection Agency (EPA) - Region IV and the South Carolina Department Of Health and Environmental Control (SCDHEC).

The purpose of this plan is to describe the preferred alternative for addressing the Central Shops Burning/Rubble Pit 631-6G (BRP6G) located at SRS, in northwestern Barnwell County, South Carolina and to provide an opportunity for public input into the remedial action selection process. R.611-79.124 of the South Carolina Hazardous Waste Management Regulations (SCHWMR) and Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) require advertisement of the draft Resource Conservation & Recovery Act (RCRA) permit modification and notice of proposed remedial actions (i.e., the Statement of Basis/Proposed Plan).

By agreement between EPA, SCDHEC, and DOE, it was determined that a Corrective Measures Study/Feasibility Study, evaluating cleanup alternatives, would not be needed for BRP6G. This agreement was based on the fact that similar operable units at SRS had already been thoroughly evaluated and the screening of potential remedial actions was completed within other Corrective Measures Study/Feasibility Studies. (Reference F-Area Burning/Rubble Pit CMS/FS, WSRC 1996a).

The majority of soil and groundwater sampling data demonstrated that BRP6G did not contribute significant levels of the chemicals of interest to the soil or groundwater. The risk calculations done using this data indicate that future risks from this unit are not threatening to human health or the environment when compared to EPA's target risk range of one in ten thousand (1×10^{-4}) to one in one million (1×10^{-6}) potential adverse health effects. The

calculations in the BRA concluded that the risk associated with all future soil related pathways was one in one hundred thousand (1×10^{-5}) health effects, and the risk associated with the groundwater pathway is six in one hundred thousand (6×10^{-5}). Therefore, since the risks are within the EPA risk range, and EPA guidance states that no action may be warranted if the cumulative carcinogenic risks to an individual based on reasonable exposure for both current and future land use is less than 1×10^{-4} , the no action alternative is proposed for BRP6G. SCDHEC requires that a risk management decision be made for any risks falling within EPA's target risk range. After analyzing the risk data, it was determined that the only credible risk was from ingestion of soil from PCB-1254. The maximum concentration for PCB-1254 is approximately one-tenth of the action level for cleanup for unrestricted residential land use. Therefore, the risk decision was made that no action was justified for BRP6G.

Soil contamination in the pit was found to be principally below 1.2 meters (4 feet). The soil related risks for hypothetical future residents (with the primary risk drivers in parentheses) are as follows: 1) soil inhalation is 2×10^{-6} (arsenic); 2) soil ingestion is 8×10^{-6} (arsenic); 3) ingestion of homegrown fruit is 4×10^{-6} (octachloro-dibenzo-p-dioxin isomers [OCDD], 46% and polychlorinated biphenyl [PCB]-1254, 30%); and 4) ingestion of homegrown vegetables (tubers) is 7×10^{-6} (OCDD, 46% and PCB-1254, 30%). All of the risk drivers, except PCB-1254, were consistent with levels found in background samples.

Arsenic, beryllium, iron, and OCDD concentrations in the pit soil are at levels consistent with those found in the background, as discussed in the Uncertainty section. Therefore, the only contamination attributable to actions in BRP6G is PCB-1254. After the risk contributions of these chemicals are eliminated, the only remaining risk attributable to the pit soil is from PCB-1254 (about 2×10^{-6} via ingestion of vegetables grown on-site). The maximum concentration of PCB-1254 detected in the pit was

0.115 mg/kg, approximately 10% of the residential action level for PCBs of 1 mg/kg.

In general, contaminants were randomly located throughout the pit at low concentrations which would make treatment very difficult. While the risk calculations for the maximum contamination of PCB-1254 show a risk slightly above 1×10^{-6} , it would require treatment of a very large volume of soil to obtain a small reduction in risk. The maximum level of PCB-1254 is also below the residential action level. For these reasons, it is believed that soil remediation of the PCB-1254 contamination is not justified at BRP6G.

The risk for groundwater ingestion is based on one detection in a bailed sample. This risk is highly suspect since only one of 27 groundwater samples detected arsenic. Bailed samples often recover water which contains suspended solids and concentrated levels of contaminants which may not be representative of the actual groundwater. To verify this anomaly, an additional sample was taken from this same well two weeks later and arsenic was not detected. It is therefore believed that the calculated risk for ingestion of groundwater has been overestimated and no groundwater remedial action is needed. Single exceedances of primary groundwater drinking standards were not reproducible.

Based on the results of the remedial investigation and the BRA, it is proposed that No Action be performed for the BRP6G. Considering the low levels of residual contamination present principally below 1.2 meters (4 feet) within the pit and the associated risks (about 2×10^{-6}) within the lower level of EPA's target risk range, action is not warranted for this unit.

Under the No Action alternative, if the property is ever transferred to non-federal ownership, the U. S. Government will create a deed for the new property owner which will contain information in compliance with CERCLA 120 (h). The deed shall include notification disclosing former waste management and disposal activities as well as remedial actions taken at the site. The deed notification shall, in

perpetuity, notify any potential purchaser that the property has been used for the management and disposal of construction debris and other materials, including hazardous substances. 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 agency.

Community involvement in the remedial alternative selection process for the BRP6G is strongly encouraged. Section II includes SRS and SCDHEC contact information to request a public meeting, to obtain additional information about this Statement of Basis/Proposed Plan, or to submit comments. All submitted comments will be reviewed and considered prior to final selection of an alternative. A Responsiveness Summary will be prepared to address significant issues raised during the public comment period and it will be made available with the final RCRA permit and the ROD. The final RCRA permit and the ROD document the final decision for the unit.

SECTION I

Introduction and Background

Introduction

This Statement of Basis/Proposed Plan is issued by DOE, which is the lead agency for SRS remedial activities, with concurrence by EPA and SCDHEC. The purpose of the plan is to describe the preferred alternative for addressing BRP6G located in northwestern Barnwell County, South Carolina and to solicit public comment on the preferred alternative.

SRS manages certain waste materials which are regulated under RCRA, a comprehensive law, requiring responsible management of hazardous waste. RCRA 3004(u) requires that releases from solid waste management units be investigated and remediated as necessary. BRP6G is a solid waste management unit regulated (SWMU) under RCRA 3004(u).

On December 21, 1989, SRS was included on the National Priorities List (NPL). This inclusion created a need to integrate the established RCRA Facility Investigation (RFI) Program with CERCLA requirements to provide for a focused environmental program. In accordance with Section 120 of CERCLA, DOE has negotiated a Federal Facility Agreement (FFA, 1993) with EPA and SCDHEC to coordinate remedial activities at SRS into one comprehensive strategy which fulfills these dual regulatory requirements.

Both RCRA and CERCLA require that the public be given the opportunity to review and comment on the draft permit modification and proposed remedial alternative. Public participation requirements are listed in SCHWMR R.61-79.124 and Sections 113 and 117 of CERCLA. These requirements include establishment of an Administrative Record File that documents the selection of remedial alternatives and allows for review and comment by the public regarding those alternatives (see Section II). The Administrative Record File must be established "at or near the facility at issue." The SRS Public Involvement Plan (DOE, 1994) is designed to facilitate public

involvement in the decision-making process for permitting, closure, and the selection of remedial alternatives. SCHWMR R.61-79.124 and Section 117(a) of CERCLA require advertisement of the draft permit modification and proposed remedial action and provide the public an opportunity to participate in the selection of a remedial action.

SRS occupies approximately 310 square miles of land adjacent to the Savannah River, principally in Aiken and Barnwell Counties of South Carolina. SRS is a secured U. S. Government facility with no permanent residents. SRS is located approximately 25 miles southeast of Augusta, Georgia and 20 miles south of Aiken, South Carolina.

BRP6G, located in the Central Shops area of SRS, was constructed as an unlined earthen pit and was utilized for disposal and burning of waste materials from 1951 through 1955. **During this period the pit was filled with various waste materials. In 1955, the pit was backfilled and removed from service.** The FFA lists BRP6G as a RCRA/CERCLA unit, requiring further evaluation using an investigation/ assessment process that integrates and combines the RFI process with the CERCLA Remedial Investigation (RI) to determine the actual or potential impact to human health and the environment.

This Statement of Basis/Proposed Plan is a summary of the Administrative Record File leading to selection of the preferred alternative. The plan presents the preferred alternative and the rationale for selecting that alternative. Community involvement in consideration of this evaluation of alternatives for BRP6G is strongly encouraged. SCHWMR R.61-79.124 requires that a brief description and response to all significant comments be made available to the public as part of the public record. All submitted comments will be reviewed and considered. Following the public comment period, a Responsiveness Summary will be prepared to address significant issues raised during the comment period. The Responsiveness Summary will be made available with the final RCRA permit and the ROD. In order to gain a better understanding of RCRA and CERCLA activities as they pertain to BRP6G, the public is

encouraged to review the Administrative Record File for this unit. Refer to Section II of this document for information regarding availability and access.

RCRA also provides opportunities for the public to comment on draft permit modifications. The preferred alternative proposed in this Statement of Basis/Proposed Plan is also being proposed as a draft permit modification under RCRA. Therefore, any comments received on this Statement of Basis/Proposed Plan will also be applicable to the draft RCRA permit modification, proposing the same remedy for this waste unit.

The final selection of the remedial alternative under RCRA will be in the form of a final permit modification decision which is made by SCDHEC. The final selection of the remedial alternative, that will satisfy the FFA requirements, will be made by DOE, in consultation with EPA and SCDHEC, only after the public comment period has ended and all comments submitted have been reviewed and considered. It is important to note that the final action may be different from the preferred alternative discussed in this plan, depending on new information or public comments. The alternative chosen will be protective of human health and the environment and will comply with all Federal and state environmental laws.

SECTION II

Community Involvement

This Statement of Basis/Proposed Plan summarizes information from the documents listed in the REFERENCES Section of this plan. These unabridged documents are part of the FFA Administrative Record File, which is available for review by the public at the following locations:

U. S. Department of Energy
Public Reading Room
Gregg-Graniteville Library
University of South Carolina-Aiken
171 University Parkway
Aiken, South Carolina 29801
(803) 641-3465

Thomas Cooper Library
Government Documents Department
University of South Carolina
Columbia, South Carolina 29208
(803) 777-4866

Similar information is available through the repositories listed below:

Reese Library
Augusta State University
2500 Walton Way
Augusta, Georgia 30910
(706) 737-1744

Asa H. Gordon Library
Savannah State University
Thompkins Road
Savannah, Georgia 31404
(912) 356-2183

The RCRA Administrative Record file for SCDHEC is available for review by the public at the following locations:

The South Carolina Department of Health and Environmental Control
Bureau of Solid and Hazardous Waste Management
8901 Farrow Road
Columbia, South Carolina 29203
(803)896-4000

Lower Savannah District
Environmental Quality Control Office
215 Beaufort St., N. E.
Aiken, South Carolina 29802
(803)641-7670

The public will be notified of a public comment period through mailing of the *SRS Environmental Bulletin*, a newsletter sent to approximately 3500 citizens in South Carolina and Georgia, and through the *Aiken Standard*, the *Allendale Citizen Leader*, the *Barnwell People Sentinel*, *The State*, and the *Augusta Chronicle* newspapers. The public comment period will also be announced on local radio stations.

DOE will provide an opportunity for a public meeting during the public comment period if significant interest is expressed. The public will be notified of the date, time, and location. At the meeting, the proposed action will be discussed and questions about the action will be answered. To request a public hearing during the public comment period, to obtain more information concerning this Statement of Basis/Proposed Plan, or to submit written comments contact one of the following:

M. A. Flora
Public Involvement
Westinghouse Savannah River Company
Savannah River Site
Building 730-2B
Aiken, South Carolina 29808
(803) 952-6852

The South Carolina Department of Health and Environmental Control
Attn.: G. Randall Thompson, P. E., Director
Division of Hazardous and Infectious Waste
Bureau of Solid and Hazardous Waste Management
2600 Bull Street
Columbia, South Carolina 29201
(803) 896-4000

Following the public comment period, a ROD will be signed and a final decision for the RCRA permit will be issued. The ROD and RCRA permit will detail the remedial alternative chosen for the site and will include responses to oral and written comments received during the public comment period in the Responsiveness Summary. SCDHEC will issue a permit modification incorporating this remedy into the SRS RCRA permit.

SECTION III

Scope and Role of Operable Unit or Response Action Within the Site Strategy

The BRP6G is a source control and groundwater operable unit which is included in the Pen Branch

watershed. The proposed action for BRP6G is a final action. The BRP6G is located to the south and is immediately adjacent to the construction laydown area. In addition, the BRP6G is located approximately 300 feet southeast of the Ford Building Seepage Basin and is also located southeast and downgradient of the Ford Building Waste Site. The Federal Facility Agreement (FFA) field start for the RFI/RI for the Ford Seepage Basin is scheduled for 10/20/97. The Ford Building Waste Site is scheduled for a time-critical removal action on 1/8/97.

SECTION IV

Media Specific Operable Unit - BRP6G

Section IV. A. Unit Description, History, and Media Assessment

Unit Description and Location

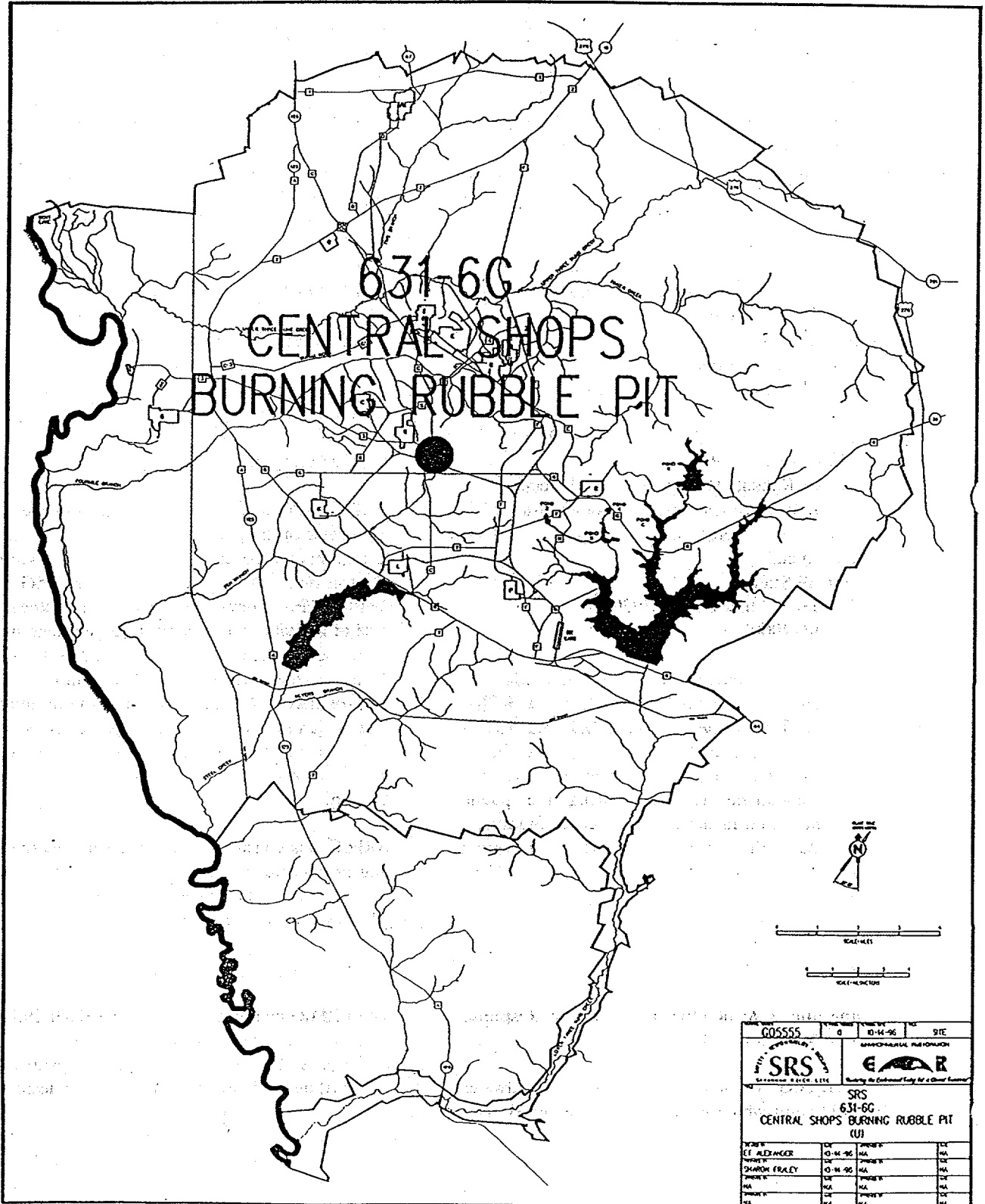
BRP6G is located in the Central Shops Area near the center of the SRS (Figure 1). Figure 2 shows the relative location of BRP6G with respect to Central Shops Area facilities. The BRP6G Solid Waste Management Unit is on the southeastern side of a divide that separates the drainage basins of the Pen Branch Creek [approximately 1.6 km (1 mile) to the southeast] and Fourmile Branch [approximately 4 km (2.5 mile) to the northwest]. The ground elevation is approximately 88.4 m [290 feet] above mean sea level. Surface drainage is southward to an unnamed tributary of Pen Branch.

BRP6G was constructed as an unlined earthen pit dug into surficial sediments that were then filled with various waste materials. The region around BRP6G is shown on Figure 2.

History of the Unit

The BRP6G operated from 1951 through 1955 for disposal and burning of waste materials. The unit consisted of a shallow excavation, approximately 3 m (10 ft) deep. Materials believed to be disposed

Figure 1 Location of BRP6G at the Savannah River Site



G05555		0	10-14-96	01	SITE
SRS		ENVIRONMENTAL PERFORMANCE			
SAVANNAH RIVER SITE		Meeting the Environmental Goals for a Clean Future			
SRS 631-6G CENTRAL SHOPS BURNING RUBBLE PIT (U)					
NAME	DATE	PROJECT #	STATUS	BY	DATE
EE ALEXANDER	10-14-96	N/A	NA		
SHARON FRISLEY	10-14-96	N/A	NA		
NAME	DATE	PROJECT #	STATUS	BY	DATE
N/A	N/A	N/A	NA		
NAME	DATE	PROJECT #	STATUS	BY	DATE
N/A	N/A	N/A	NA		

of in the pit included waste oils, rags, paper, cardboard, plastics, degreasers, wood, rubber, and drummed organic solvents. These materials were periodically burned in the pit, usually on a monthly basis. The volume of waste disposed of at BRP6G was not recorded. The materials burned in the burning/rubble pit included potentially hazardous substances, such as organic solvents. After disposal activities ceased, the area was covered with soil. Due to the potential that hazardous substances, if present, could have migrated into the surrounding soil and/or groundwater, BRP6G was designated as a SWMU subject to the RCRA/ CERCLA process.

Media Assessment

The Data Summary Report (WSRC, 1995) and RFI/RI/BRA (WSRC, 1996) contain detailed analytical data for all of the environmental media samples taken in the characterization of BRP6G. These documents are available in the Administrative Record (See Section II).

SOILS

Low levels of metals, volatile organics, and semi-volatile organics were detected throughout BRP6G. The constituents were detected in greatest concentrations in samples located at the bottom of the pit in the soils. The maximum depth of metal detection in the pit is 5.2 meters (17 feet) except for boring CS6G-10 where, in the 8.75 to 9.4 meter (28.7 to 30.7 foot) interval, arsenic, chromium, lead, mercury, and silver all exceeded two times the average background concentrations.

A total of 74 soil samples were collected and analyzed. Low levels of metal, semi-volatile, volatile, pesticide, PCB, dioxin/furan, and radionuclide contamination were detected in the soil samples from soil borings in this unit.

None of the maximum concentrations for any contaminants exceeded Applicable, or Relevant and Appropriate Requirements (ARARs). The only ARAR identified for soil contamination at BRP6G was for PCB-1254 from the Toxic Substances Control Act (TSCA). This ARAR restricts soil with PCB levels exceeding 10 mg/kg.

The EPA (EPA, 1990) provides additional to-be-considered guidance. The recommended soil action level for PCBs is 1 mg/kg for residential scenarios and 10-25 mg/kg for industrial scenarios. The maximum concentration detected for PCB-1254 was 0.115 mg/kg, well below the ARAR and the to-be-considered guidance levels. There were no location-specific or action-specific ARARs identified relevant to establishing remedial action objectives for BRP6G.

SEDIMENT/SURFACE WATER

There are no surface water impoundments in the vicinity of BRP6G. Drainage water samples were collected in the downgradient ditch at five locations. The source of the drainage water is not entirely from BRP6G. Upgradient surface water runoff originates from a large construction materials lay-down yard and the Ford Building area. These samples indicated the presence of metals, semi-volatile organics, volatile organics, and radionuclides.

Sediment samples indicated the presence of various metals, small amounts of volatiles organics, semi-volatile organics, gross alpha radionuclides, and OCDD.

Because of the uncertainty of the origin of the analytes detected in the surface water and sediment, the data collected cannot be utilized to effectively characterize the BRP6G site. **Regardless of their origin, the levels of contaminants detected would pose insignificant human health risk based on typical exposure assumptions. The potential environmental impact of these contaminants will be addressed on a larger scale in the Pen Branch watershed assessment.**

GROUNDWATER

A total of 27 groundwater samples were collected. Compounds that were intermittently detected more than once in wells downgradient from the pits include: aluminum, bis(2-ethylhexyl)phthalate, bromo-dichloromethane, chloroform, and dibromo-chloromethane.

Considering the presence of groundwater contaminants and the age of the unit, any contaminants which are mobile can be expected to have already leached from the soil to the groundwater. Immobile contaminants are likely bound to soils and have very little likelihood of migrating to the water table and impacting future groundwater quality. Analytical modeling of the groundwater contaminants and fate was conducted that supported this conclusion.

Lead was detected at a concentration above the action level (15 µg/L) and the groundwater protection standard (50 µg/L) in well CBR-4 with a detection of 89.1 µg/L (turbid sample, collected with bailer). Bis(2-ethylhexyl)phthalate, a semi-volatile, exceeded the Primary Drinking Water Standard concentration of 6.0 µg/L in well CBR-4 with a value of 6.11 µg/L.

Section IV. B. Operable Unit Risks

Human Health Risk Assessment

As part of the investigation/assessment process for BRP6G, a BRA was performed using data generated during the assessment phase. The BRA is described in the RFI/RI/BRA report (WSRC, 1996).

The BRA designates the Chemicals Of Potential Concern (COPCs) based on consideration of background concentrations, frequency of detection, and the relative potential of the chemicals to cause toxic or carcinogenic effects.

An exposure assessment was performed to provide an indication of the potential exposures which could occur based on the chemical concentrations detected during sampling activities. The only current exposure scenario identified for BRP6G was for on-site visitors. Conservative future exposure scenarios identified for BRP6G included future industrial workers and future resident adults and children. The reasonable maximum exposure (RME) concentration value was used as the exposure point concentration.

Carcinogenic risks are estimated as the incremental probability of an individual developing cancer over a lifetime as a result of pathway-specific exposure to cancer-causing contaminants. The risk to an individual resulting from exposure to non-radioactive chemical carcinogens is expressed as the increased probability of cancer occurring over the course of a 70 year lifetime. Cancer risks are related to the EPA target risk range of one in ten thousand (1×10^{-4}) to one in one million (1×10^{-6}) for incremental cancer risk at NPL sites. Risk levels at or above 1×10^{-4} are considered significant and specific actions to reduce risk are generally required; risk levels in the 1×10^{-4} to 1×10^{-6} range require a risk management decision where specific actions to reduce risk may be considered; and cancer risk levels below 1×10^{-6} are considered to be insignificant.

Non-carcinogenic effects are also evaluated to identify a level at which there may be concern for potential non-carcinogenic health effects. The hazard quotient, which is the ratio of the exposure dose to the reference dose (RfD), is calculated for each contaminant. Hazard quotients are summed for each exposure pathway to determine the specific hazard index (HI) for each exposure scenario. If the HI exceeds unity (1.0), the potential exists that adverse health effects might occur.

Current Land Use - Noncarcinogenic Hazards

The BRA shows that potential adverse noncarcinogenic health effects are not likely to occur, because none of the HIs exceeded a value of one.

Current Land Use - Carcinogenic Risks

Under the current land use scenario, human health risks were calculated for both the current material yard worker and the current groundwater sampler. The only pathway that exceeded 1×10^{-6} was inhalation of groundwater which was 2×10^{-6} from chloroform. The risk for inhalation from groundwater was calculated using very conservative methods which assumed that all of the chloroform in the water instantly vaporized

and was inhaled during the groundwater sampling. Thus the total risks to current workers are considered to be insignificant.

Future Industrial Land Use - Noncarcinogenic Hazards

The only HI value for the hypothetical future industrial worker that exceeds 1.0 is for ingestion of groundwater. The 2.5 value for ingestion of water is driven by iron which is due to a high concentration of iron reported in a bailed sample. This is believed to not be representative of the actual iron concentration in the groundwater and is supported by the results in other wells near the BRP.

Future Industrial Land Use - Carcinogenic Risks

For the hypothetical future worker, only the total carcinogenic risk, by pathway, from ingestion of groundwater (1×10^{-5}) exceeds 1×10^{-6} . This risk is driven by arsenic and beryllium.

Future Residential Land Use - Noncarcinogenic Hazards

Two HIs for hypothetical future resident adults exceeded a value of 1.0. These were: 1.1 for ingestion of soil, driven by iron and arsenic; and 23 for ingestion of groundwater, driven by iron. Both iron and arsenic are present in background soils at levels consistent with levels found on the site (the range for iron in the 0 - 5 foot soil samples was 2,300 to 49,000 mg/kg with the background ranging from 2,100 to 36,000 mg/kg over the 0 - 5 foot depth range. The range for arsenic in the 0 - 5 foot soil samples was 1.47 to 9.28 mg/kg while the background over the same depth range was 1.52 to 7.23 mg/kg). One HI exceeded 1.0 for a hypothetical future resident child. This was 16 for ingestion of groundwater, driven by iron (from the bailed sample).

Future Residential Land Use - Carcinogenic Risks

The total carcinogenic risk for the hypothetical future resident adult is 8×10^{-5} . The following carcinogenic risks equaled or exceeded 1×10^{-6} : 2×10^{-6} for inhalation of soil from arsenic, 8×10^{-6} from ingestion of soil from arsenic, 1×10^{-6} for inhalation of groundwater driven by bis(2-ethylhexyl)phthalate and bromodichloro-methane, 6×10^{-5} for ingestion of groundwater due to arsenic and beryllium, 4×10^{-6} for ingestion of homegrown tuberous produce due to OCDD and PCB-1254, and 7×10^{-6} for ingestion of homegrown fruit due to OCDD and PCB-1254.

The total carcinogenic risk for the hypothetical future child resident is 3×10^{-5} . Several carcinogenic risks equaled or exceeded 1×10^{-6} : 1×10^{-6} for inhalation of soil driven by arsenic, 6×10^{-6} for ingestion of soil driven by arsenic and beryllium, 2×10^{-5} for ingestion of groundwater driven by arsenic and beryllium, 1×10^{-6} from ingestion of homegrown tuberous produce due to OCDD and PCB-1254, and 2×10^{-6} from ingestion of homegrown fruit due to OCDD and PCB-1254.

Uncertainty

Risks from arsenic, beryllium, iron, and OCDD in the pit soil were calculated since a conservative screening method indicated that they were elevated above background levels. However, the observed concentration ranges for both on-site and background samples are very similar. It should be noted that background levels of organic compounds are not considered in the risk assessment. OCDD was detected in both surface and shallow subsurface background samples. A statistical comparison between site samples and background samples indicated with 90 percent confidence that the site and background samples are part of the same distribution. In addition, the reasonable maximum exposure concentration used in the risk assessment for OCDD in the site samples is less than the background concentration. A similar conclusion was also reached for beryllium based on statistical comparisons.

The concentrations of arsenic ranged from nondetect to 8.6 mg/kg (0.832 mg/kg average).

The arsenic concentrations in the top five feet of soil ranged from 1.47 to 9.28 mg/kg (2.64 mg/kg average). The average background concentration of beryllium is 0.0762 mg/kg. The beryllium concentrations in the top five feet of soil ranged from 0.0595 mg/kg to 0.366 mg/kg (0.138 mg/kg average). The average background concentration of iron is 13,318 mg/kg. The iron concentrations in the top five feet of soil ranged from 2,300 mg/kg to 49,000 mg/kg. The average background concentration of OCDD is 0.00096 µg/kg and ranged from nondetect to 0.0068 µg/kg. The OCDD concentration in the top five feet of soil ranged from 0.0946 to 7.6 µg/kg. OCDD has been found randomly distributed in SRS background samples and is believed to be produced by incomplete combustion of pine forest litter.

The risk for groundwater ingestion is based on one detection in a bailed sample. This risk is highly suspect since only one of 27 groundwater samples detected arsenic and this was from a bailed sample. Bailed samples often remove water which contains suspended solids and concentrated levels of contaminants which may not be representative of the actual groundwater. To verify this anomaly, an additional sample was taken from this same well two weeks later and arsenic was not detected. It is therefore, believed that the calculated risk for ingestion of groundwater has been overestimated.

The only groundwater detection of lead in excess of the MCL was from a bailed sample which resulted in high levels of suspended solids and a reported concentration that is likely overestimated and higher than actual conditions. Exclusion of this value would allow lead to be screened out.

Ecological Risk Assessment

Based on characterization of the environmental setting at BRP6G and identification of potential receptor organisms (plants and animals), a conceptual site model was developed to determine how plants and animals could be exposed to COPCs.

Preliminary estimates indicated that lead, copper, PCB-1254, and cadmium potentially posed a risk to the ecological community at BRP6G. However, further evaluation of the contaminants, concentrations, their toxicity, and the limited habitat provided by BRP6G result in insignificant risk to the ecological community.

SECTION V

Preferred Alternative

The preferred alternative for BRP6G is No Action. While the Baseline Risk Assessment for this unit identified some risks exceeding the one in one million (1×10^{-6}) cancer threshold, all of the soil related risks are less than 1×10^{-5} in the future residential land use scenario. In the future industrial land use scenario, all of the soil related risks are below 1×10^{-6} .

After the risk contributions of arsenic, beryllium, iron, and OCDD, which were found at levels consistent with background levels and thus not caused by operations at BRP6G, are eliminated, the only remaining risk attributed to the pit soil is 1.2×10^{-6} to 2.1×10^{-6} due to PCB-1254 via ingestion of produce grown on-site. The levels and distribution of soil related risk-drivers do not justify remedial action and consideration of other remedial alternatives for this unit was deemed unnecessary. The maximum concentration of PCB-1254 detected in the pit was 0.115 mg/kg, approximately 10% of the residential action level for PCBs of 1 mg/kg. The contamination of PCB-1254 is at very low levels and is spread throughout a large volume of soil. While risk calculations are slightly above 1×10^{-6} , it would require treatment of a very large volume of soil to obtain a small reduction in risk. For these reasons, it is believed that soil remediation of the PCB-1254 contamination is not justified at BRP6G.

Under the No Action alternative, if the property is ever transferred to non-federal ownership, the U.S. Government will create a deed for the new property owner which will contain

information in compliance with CERCLA 120 (h). The deed shall include notification disclosing former waste management and disposal activities as well as remedial actions taken at the site. The deed notification shall, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of construction debris and other materials, including hazardous substances. 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 agency.

This proposal is consistent with EPA guidance and is an effective use of risk management principles. This Statement of Basis/Proposed Plan provides for involvement with the community through a document review process and a public comment period. Public input will be documented in the responsiveness summary, as previously discussed. To submit written or oral comments, please refer to Section II.

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

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GLOSSARY

Administrative Record File: A file that is maintained and contains all information used to make a decision on the selection of a response action under the Comprehensive Environmental Response, Compensation & Liability Act. This file is to be available for public review, and a copy is to be established at or near the Site, usually at one of the information repositories. Also a duplicate file is held in a central location, such as a regional or state office.

ARARs: Applicable, or Relevant and Appropriate Requirements. Refers to the federal and state requirements that a selected remedy will attain. These requirements may vary from site to site.

Baseline Risk Assessment: Analysis of the potential adverse health effects (current or future) caused by hazardous substance release from a site in the absence of any actions to control or mitigate these releases.

Characterization: The compilation of all available data about the waste units to determine the rate and extent of contaminant migration resulting from the waste site, and the concentration of any contaminants that may be present.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 1980: A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Acts created a special tax that goes into a Trust Fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Corrective Action: An EPA requirement to conduct remedial procedures under RCRA 3998(h) at a facility when there has been a release of hazardous waste or constituents into the environment. Corrective action may be required beyond the facility boundary and can be required regardless of when the waste was placed at the facility.

Exposure: Contact of an organism with a chemical or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries of the organism (e.g., skin, lungs, digestive tract, etc.) and available for absorption.

Federal Facility Agreement (FFA): The legally binding agreement between regulatory agencies (EPA and SCDHEC) and regulated entities (DOE) that sets the standards and schedules for the comprehensive remediation of the SRS.

Media: A pathway through which contaminants are transferred. Five media by which contaminants may be transferred are groundwater, soil, surface water, sediments, and air.

National Priorities List (NPL): EPA's formal list of the nation's most serious uncontrolled or abandoned waste sites, identified for possible long-term remedial response, as established by CERCLA.

Operable Unit (OU): A discrete action taken as one part of an overall site cleanup. The term is also used in EPA guidance documents to refer to distinct geographic areas or media-specific units within a site. A number of operable units can be used in the course of a cleanup.

Operation and Maintenance (O&M): Activities conducted at a site after a response action occurs to ensure that the cleanup and/or systems are functioning properly.

Overall Protection of Human Health and the Environment: The assessment against this criterion describes how the alternative, as a whole, achieves and maintains protection of human health and the environment.

Proposed Plan: A legal document that provides a brief analysis of remedial alternatives under consideration for the site/operable unit and proposes the preferred alternative. It actively solicits public review and comment on all alternatives under consideration.

Reasonable Maximum Exposure (RME): This is the value that the average concentration will fall below 95 percent of the time.

Record Of Decision (ROD): A legal document that explains to the public which alternative will be used at a site/operable unit. The record of decision is based on information and technical analysis generated during the remedial investigation/ feasibility study and consideration of public comments and community concerns.

Resource Conservation and Recovery Act (RCRA), 1976: A Federal law that established a regulatory system to track hazardous substances from their generation to disposal. The law requires safe and secure procedures to be used in

treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent the creation of new, uncontrolled hazardous waste sites.

Responsiveness Summary: A summary of oral and/or written comments received during the proposed plan comment period and includes responses to those comments. The responsiveness summary is a key part of the ROD, highlighting community concerns.

Statement of Basis: A report describing the corrective measures/remedial actions being conducted pursuant to South Carolina Hazardous Waste Management Regulations, as amended.

Superfund: The common name used for CERCLA; also referred to as the Trust Fund. The Superfund program was established to help fund cleanup of hazardous waste sites. It also allows for legal action to force those responsible for the sites to clean them up.

Target Risk Range: EPA guidance for carcinogenic risk due to exposure to a known or suspected carcinogen between one excess cancer in an exposed population of ten thousand (1.0×10^{-4}) and one excess cancer in an exposed population of one million (1.0×10^{-6}). Risks within this range require risk management evaluation of remedial action alternatives to determine if risks can be reduced below one excess cancer in million (1.0×10^{-6}). Risks greater than 1.0×10^{-4} indicate that remedial action is generally warranted.

**United States Department of Energy
Savannah River Site**

**SCDHEC and EPA Comments and SRS Responses on the
Statement of Basis/Proposed Plan for the
Central Shops Burning/Rubble Pit (631-6G) (U)
WSRC-RP-96-142, Revision 0, August 12, 1996
Received: September 23 & 24, 1996**

To accompany the
Statement of Basis/Proposed Plan for the
Central Shops Burning/Rubble Pit (631-6G) (U)

**WSRC-RP-96-142
Revision 1
October 1996**

Prepared by:
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



**SCDHEC Comments on the
Statement of Basis/Proposed Plan for the
Central Shops Burning/Rubble Pit (631-6G) (U)
WSRC-RP-96-142, Revision 0, August 12, 1996**

Cover letter: Keith A. Collinsworth to Brian T. Hennessey
Received: September 23, 1996

1. Section II, Community Involvement, p. 2, second column: The zip code for 8901 Farrow Road is 29203 not 29223.

Response 1. Agreed. This correction has been made.

2. Please note that the "RCRA permit modification package" (RPMP) is scheduled to go on public notice 14 days after approval of the proposed plan. The approval of the Proposed Plan may be contingent on approval of the RPMP. In the future the RPMP should be submitted with Revision 0 of the Proposed Plan.

Response 2. Agreed. In the future, the RPMP will be included with the Revision 0 Proposed Plan.

**EPA Comments on the
Statement of Basis/Proposed Plan for the
Central Shops Burning/Rubble Pit (631-6G) (U)
WSRC-RP-96-142, Revision 0, August 12, 1996**

Cover letter: Carl R. Froede Jr. to Brian T. Hennessey
Received: September 24, 1996

General Comments

1. The Statement of Basis and Proposed Plan are intended for general public review. As part of the Administrative Record they serve to document the process and justification for a specific remedial decision. This document is written for a highly educated person with considerable environmental experience. Hence, it fails to convey to the general public why "no action" is appropriate. It is suggested that the U. S. Department Of Energy review this document and determine the appropriate language necessary to convey the "risk (s)" associated with this operable unit and present it in a simpler manner. In many cases fewer words are necessary in understanding the concepts of risk associated with this site. However, in some places additional wording will be necessary.

Response 1. Agreed. The document was reviewed and areas mentioned with a specific comment were rewritten to make it more easily understood by the general public. Emphasis was placed on simplifying the Executive Summary.

2. The document is confusing in that it states that risks are present at the site exceeding 1×10^{-6} cancer threshold, but no simple explanation is provided to help the reader understand why no action is needed or required. This should be clearly presented to the general public reader.

Response 2. Agreed. The following paragraphs were modified from the original Executive Summary:

The majority of soil and groundwater sampling data demonstrated that BRP6G did not contribute significant levels of the chemicals of interest to the soil or groundwater. The risk calculations done using this data indicate that future risks from this unit are not threatening to human health or the environment when compared to EPA's target risk range of one in ten thousand (1×10^{-4}) to one in one million (1×10^{-6}) potential adverse health effects. The calculations in the BRA concluded that the risk associated with all soil related pathways in the future was one in one hundred thousand (1×10^{-5}) health effects, and the risk associated with the groundwater pathway is 6 in one hundred thousand (6×10^{-5}). Therefore, since the risks are within the EPA risk range, and EPA guidance states that no action may be warranted if the cumulative carcinogenic risks to an individual based on reasonable exposure for both current and future land use is less than 1×10^{-4} , the no action alternative is proposed for BRP6G. SCDHEC requires that a risk management decision be made for any risks falling within EPA's target risk range. After analyzing the risk data, it was determined that the only credible risk was from ingestion of soil from PCB-1254. The maximum concentration for PCB-1254 is approximately one-tenth of the action level for cleanup for unrestricted residential land use. Therefore, the risk decision was made that no action was justified for BRP6G.

Specific Comments

1. Page v of vi, Executive Summary, left column, third paragraph: The statement is made "By agreement between..." Additional explanation should be added to clarify why this was agreed to between the three parties. The second and third sentences in the paragraph also fail to explain the first or even what "risk" is defined by at this operable unit.

Response 1. Agreed. The referenced paragraph was changed to the following:

By agreement between EPA, SCDHEC, and DOE, it was determined that a Corrective Measures Study/Feasibility Study, evaluating cleanup alternatives, would not be needed for BRP6G. This agreement was based on the fact that similar operable units at SRS had already been thoroughly evaluated and the screening of potential remedial actions completed within other Corrective Measures Study/Feasibility Studies. (Reference F-Area Burning/Rubble Pit CMS/FS, WSRC 1996a).

2. Page v of vi, Executive Summary, right column, second paragraph: The paragraph should be rewritten in a much simpler manner. Presently there are too many words to convey the simple concept (i.e., small concentrations below action levels spread out over large areas).

Response 2. Agreed. The referenced paragraph was changed to the following:

In general, contaminants were randomly located throughout the pit at low concentrations which would not make treatment a viable alternative. While the risk calculations for the maximum contamination of PCB-1254 show a risk slightly above 1×10^{-6} , it would require treatment of a very large volume of soil to obtain a small reduction in risk. The maximum level of PCB-1254 is also below the residential action level. For these reasons, the soil remediation of the PCB-1254 contamination is not justified at BRP6G.

3. Page v of vi, Executive Summary, right column, last sentence: This is an incorrect statement. CERCLA 120 (h) does not require the creation of a deed for land transferal, rather it requires that certain items be included within the deed to reflect the environmental restoration activities associated with the specific site. Please correct this sentence (and paragraph) to either direct the reader back to CERCLA 120 (h) for specific requirements of include all of those items listed under that section here in this paragraph.

Response 3. Agreed. The referenced paragraph was changed to the following:

Under the No Action alternative, if the property is ever transferred to non-federal ownership, the U. S. Government will create a deed for the new property owner which will contain information in compliance with CERCLA 120 (h). The deed shall include notification disclosing former waste management and disposal activities as well as remedial actions taken at the site. The deed notification shall, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of construction debris and other materials, including hazardous substances. 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 agency.

4. Page 1 of 11, Section I, Introduction, right column, third paragraph: It appears that the pit was "closed" in 1955. However, the following sentence can be read to suggest that it might have received waste materials after 1955. Please clarify these sentences as to when and how this unit was used and closed.

Response 4. Agreed. The referenced paragraph was modified as follows:

BRP6G, located in the Central Shops area of SRS, was constructed as an unlined earthen pit and was utilized for disposal and burning of waste materials from 1951 through 1955. During this period the pit was filled with various waste materials. In 1955, the pit was backfilled and removed from service.

5. Page 3 of 11, Section III, Scope and Role of Operable Unit..., left column, last paragraph, last sentence: This sentence should be rewritten because it is not clear whether the construction laydown area and/or the Ford Building is scheduled for investigation. Additionally, the phrase "close proximity" is too vague to be useful. Please supply the reader with a distance in feet.

Response 5. Agreed. The referenced paragraph was changed to the following:

The BRP6G is located to the south and is immediately adjacent to the construction laydown area. In addition, the BRP6G is located approximately 300 feet southeast of the Ford Building Seepage Basin and southeast and downgradient of the Ford Building Waste Site. The Federal Facility Agreement (FFA) field start for the RFI/RI for the Ford Seepage Basin is scheduled for 10/20/97. The Ford Building Waste Site is scheduled for a time-critical removal action on 1/8/97.

6. Page 4 of 11, Figure 1: It is unclear from the figure where this operable unit is located. Please make this operable unit location clearer to the reader.

Response 6. Agreed. A better label and arrow will be added to the drawing to clarify the location of the operable unit.

7. Page 6 of 12: Starting on this page the numbering system used changes from 11 pages to 12 pages. Please renumber your document and ensure that the pages are consistent in that numbering system.

Response 7. Agreed. The document pages will be renumbered using a consistent numbering system.

8. Page 6 of 12, right column, Sediment/surface water section: This entire section appears to read that contamination is present but the DOE/SRS will overlook it. If these contaminants are from another source then the other source should be closed out first so as to prevent offsite contamination impacting this operable unit. Please rewrite this section and clarify what the contamination means and why it does not require an action.

Response 8. Agreed. The referenced paragraph was changed to the following:

Because of the uncertainty of the origin of the analytes detected in the surface water and sediment, the data collected cannot be utilized to effectively characterize the BRP6G site. Regardless of their origin, the levels of contaminants detected would pose insignificant human health risk based on typical exposure assumptions. The potential environmental impact of these contaminants will be addressed on a larger scale in the Pen Branch watershed assessment.

9. Page 6 of 12, right column, Groundwater, second sentence: Has computer modeling been conducted to document the mobility of the contaminants? This is a major assumption and should be documented within the administrative record and be cited by reference here.

Response 9. Agreed. The referenced paragraph was changed to the following:

A total of 27 groundwater samples were collected. Compounds that were intermittently detected more than once in wells downgradient from the pits include: aluminum, bis(2-ethylhexyl)phthalate, bromo-dichloromethane, chloroform, and dibromo-chloromethane. Considering the presence of groundwater contaminants and the age of the unit, any contaminants which are mobile can be expected to have already leached from the soil to the groundwater. Immobile contaminants are likely bound to soils and have very little likelihood of migrating to the water table and impacting future groundwater quality. Analytical modeling of the groundwater contaminants and fate was conducted that supported this conclusion.

10. Page 8 of 12, left column, Future Residential Land Use - Noncarcinogenic section: The sentence reads... "Both iron and arsenic are present in the background soils." While this is a true statement it does not accurately portray the actual levels of these metals present at the locale or even the range found across the site. Please clarify this sentence to reflect the point of this assumption.

Response 10. Agreed. The referenced paragraph was changed to the following:

Two HIs for hypothetical future resident adults exceeded a value of 1.0. These were: 1.1 for ingestion of soil, driven by iron and arsenic; and 2.3 for ingestion of groundwater, driven by iron. Both iron and arsenic are present in background soils at levels consistent with levels found on the site (the range for iron in the 0 - 5 foot soil samples was 2,300 to 49,000 mg/kg with the background ranging from 2,100 to 36,000 mg/kg over the 0 - 5 foot depth range. The range for arsenic in the 0 - 5 foot soil samples was 1.47 to 9.28 mg/kg while the background over the same depth range was 1.52 to 7.23 mg/kg). One HI exceeded 1.0 for a hypothetical future resident child. This was 1.6 for ingestion of groundwater, driven by iron (from the bailed sample).

11. Page 8 of 12, right column, Uncertainty section: The first sentence does not make sense. Please rewrite this sentence and explain why these three risk drivers do not require an action. The argument for "background soil levels" must be better presented to allow the public to understand why no remedial action is required. This entire paragraph could be read to suggest the DOE is attempting to avoid remedial action using statistics and non-comparison (e.g., no background for organic compounds). Please clarify this paragraph for the general public reader.

Response 11. Agreed. The referenced paragraph was changed to the following:

Risks from arsenic, beryllium, iron, and OCDD in the pit soil were calculated since a conservative screening method indicated that they were elevated above background levels. However, the observed concentration ranges for both on-site and background samples are very similar. It should be noted that background levels of organic compounds are not considered in the risk assessment. OCDD was detected in both surface and shallow subsurface background samples. A statistical comparison between site samples and background samples indicated with 90 percent confidence that the site and background samples are part of the same distribution. In addition, the reasonable maximum exposure concentration used in the risk assessment for OCDD in the site samples is less than the background concentration. A similar conclusion was also reached for beryllium based on statistical comparisons.

12. Page 9 of 12, left column, Uncertainty section, last paragraph: again it appears the DOE/SRS is throwing out data which suggests contamination. The value of Pb (lead) was exceeded in one sample. Why should it be excluded?

Response 12. Agreed. The referenced paragraph was changed to the following:

The only groundwater detection of lead in excess of the MCL was from a bailed sample which resulted in high levels of suspended solids and a reported concentration that is likely overestimated and higher than actual conditions. Exclusion of this value would allow lead to be screened out.

13. Page 9 of 12, left column, Ecological Risk Assessment section: This section uses too much ecological jargon (e.g., receptors, exposure pathways, endpoints). Before jumping into this jargon the reader should be presented with what these "things" are (e.g., plants and animals). Please clarify this section and make it easier to read for the general public.

Response 13. Agreed. The referenced section was modified as follows:

Based on characterization of the environmental setting at BRP6G and identification of potential receptor organisms (plants and animals), a conceptual site model was developed to determine how plants and animals could be exposed to COPCs.

Preliminary estimates indicated that lead, copper, PCB-1254, and cadmium potentially posed a risk to the ecological community at BRP6G. However, further evaluation of the contaminants, concentrations, their toxicity, and the limited habitat provided by BRP6G result in insignificant risk to the ecological community.

14. Page 9 of 12, right column, Preferred Alternative section, second paragraph: It reads as if the DOE/SRS is attempting to use a "background" value/range (not clearly presented to the reader) to eliminate the values found at this operable unit. Hence, the "No Action" recommendation. The background values used to eliminate concern for environmental impact or this operable unit should be clearly presented to the general public to allow them the opportunity to understand the reasoning behind the suggested recommendation of No Action. Presently this is not the case.

Response 14. Agreed. The referenced paragraph was changed to the following:

After the risk contributions of arsenic, beryllium, iron, and OCDD, which were found at levels consistent with background levels and thus not caused by operations at BRP6G, are eliminated, the only remaining risk attributed to the pit soil is 1.2×10^{-6} to 2.1×10^{-6} due to PCB-1254 via ingestion of produce grown on-site. The levels and distribution of soil related risk-drivers do not justify remedial action and consideration of other remedial alternatives for this unit was deemed unnecessary. The maximum concentration of PCB-1254 detected in the pit was 0.115 mg/kg, approximately 10% of the residential action level for PCBs of 1 mg/kg. The contamination of PCB-1254 is at very low levels and is spread throughout a large volume of soil. While risk calculations are slightly above 1×10^{-6} , it would require treatment of a very large volume of soil to obtain a small reduction in risk. For these reasons, it is believed that soil remediation of the PCB-1254 contamination is not justified at BRP6G.

15. Page 9 of 12, right column, Preferred Alternative section, third paragraph: CERCLA 120 (h) does not create a deed, rather it stipulates what is required reporting within the deed. Please make this correction (see specific comment 3).

Response 15. Agreed. The referenced paragraph was changed to the following:

Under the No Action alternative, if the property is ever transferred to non-federal ownership, the U.S. Government will create a deed for the new property owner which will contain information in compliance with CERCLA 120 (h). The deed shall include notification disclosing former waste management and disposal activities as well as remedial actions taken at the site. The deed notification shall, in perpetuity, notify any potential purchaser that the property has been used for

the management and disposal of construction debris and other materials, including hazardous substances. 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 agency.