APPENDIX L

COMMENTS AND DOE RESPONSES ON DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR WASTE MANAGEMENT ACTIVITIES FOR GROUNDWATER PROTECTION

During the 53-day public comment period from May 8 through June 30, 1987, the U.S. Department of Energy (DOE) received 23 comment letters and statements on the Draft version of this Environmental Impact Statement (DEIS). One of these letters was received after June 30, 1987. Of the total of 23 letters and statements, 4 were from Federal agencies and 4 were from agencies and offices of the States of Georgia and South Carolina. Eleven statements were presented at public meetings conducted by DOE at Savannah, Georgia, and Aiken, South Carolina, during the week of June 1, 1987. Approximately 500 comments have been addressed by DOE in this EIS.

This appendix presents each comment letter and statement and DOE's responses. If a comment or statement has led to a revision to the text of this EIS, the revision is identified by a vertical line in the margin in the appropriate section with a comment letter-number designation. Table L-1 lists the sources of comments received, and Table L-2 lists the individual comments and DOE responses.

The comments and statements reflected a number of specific and general issues. The following sections summarize the major issues and DOE's responses.

COMMERCIAL REACTOR/NUCLEAR REGULATORY COMMISSION (NRC) REGULATIONS

Comments generally reflected the need or desirability of employing NRC regulations at DOE production facilities. This comment was also associated with the need for independent peer review or oversight. See below.

DOE's responses generally indicated that their operations were governed by the Atomic Energy Act and specifically that commercial (NRC) reactor operations rules and regulations (NUREGS) do not apply.

COMPLIANCE WITH RCRA/HSWA AND CERCLA/SARA

Comments in these areas frequently dealt with DOE's perceived lack of adherence to and compliance with the hazardous waste/substance acts and their amendments. Issues included citations of the LEAF vs. Hodel case; solid waste management unit (SWMU) requirements; definition of solid/hazardous waste terms as used in the EIS; groundwater corrective/remedial actions; maximum contaminant levels/alternate concentration levels (MCLs/ACLs) or background levels and lack of site-specific information; emerging regulations, technologies and standards; permitting of facilities; and continuing releases [S 3004(u)] of RCRA.

DOE's responses generally indicate their active compliance with RCRA and HSWA at the SRP. Numerous examples of compliance are given (i.e., Sitewide Part A and site-specific Part B permit applications; closure of M-Area Settling Basin and F- and H-Area Seepage Basins; and groundwater (recovery) remedial action

at M-Area wells). Chapter 6 of the EIS summarizes DOE compliance with RCRA and other groundwater assessment activities. The responses to definitions of terminology in the EIS note that the terms are used to indicate the potential contents of existing waste sites, largely for convenience in the EIS. DOE responses to comments on background levels vs. MCL and ACL note that these levels are largely health-based standards that provide a uniform numerical basis for groundwater transport modeling and estimation of human health and environmental risks. The response to comments on MCLs for certain organic compounds notes that they were proposed in November 1985 and finalized in July 1987. Only 2 or 3 of these compounds were appreciably changed in proposed vs. final MCL concentrations.

DOE's general response to comments on emerging technologies, regulations, and standards is that they will be considered by DOE as appropriate when they become available to the public. Comments on permitting of facilities bring DOE to reply that such activities are part of ongoing and future interactions with regulatory agencies following the Record of Decision (ROD) on this EIS.

The subject of continuing release sites has been adequately considered by DOE. Letters to EPA Region IV and site inspections (i.e., RCRA Facility Assessments) have covered this area thoroughly, and any apparent discrepancies in EIS lists vs. DOE letters will be resolved in the future. Tables noting the current status of all sites within the scope of the EIS (i.e., "criteria waste sites") are included in this final EIS.

OVERSIGHT/PEER REVIEW

These comments call for independent outside peer review and oversight of a variety of activities beyond waste management at the SRP.

Noting that the scope of this EIS is to assess the environmental impacts of waste management modification, comments on oversight or peer review of other activities are considered by DOE to be out of scope. DOE also replied that adequate peer review of the EIS and its supporting documents is made available and possible through the mandated NEPA process (i.e., public hearings, cognizant Federal agency involvement, news media advertisement, public reading rooms, extensive scientific data, and other forums).

GROUNDWATER MONITORING

Comments on this topic ranged widely, from adequacy and locations of wells, length of monitoring programs, and sample treatment, to the lack of level of data detail presented in the EIS, and standards.

DOE has responded generally to these comments by noting that it is negotiating with SCDHEC and EPA to identify groundwater monitoring requirements for solid waste management units. The comments on standards were answered above. DOE notes that detailed and updated groundwater monitoring data are presented in the Environmental Information Documents (EIDs) prepared for this EIS and in SRP annual environmental reports. DOE has also responded that extensive

groundwater monitoring programs have been implemented since 1981 or earlier at some sites. Data reliability, methodologies, QA/QC, and related topics are also covered in the site EIDs and related documents.

CONTAMINATION OF DEEP AQUIFERS/HEAD REVERSAL AND OTHER RELATED HYDROGEOLOGIC TOPICS

Comments in these areas were wide-ranging, dealing with groundwater flow velocities and directions; movement of groundwater offsite; vertical hydraulic gradients; contamination of the "Tuscaloosa" aquifer; continuity of clay aquitards; and construction of new disposal facilities in groundwater recharge zones.

DOE's responses to these comments reflect inclusion of current, updated information. New tables and figures showing new head reversal information have been incorporated in the EIS. Information related to groundwater flow and directions has been revised as appropriate. Information on the possible transient contamination of the "Tuscaloosa" aquifer with organic compounds is presented. DOE has emphasized that there is no likelihood of offsite groundwater contamination as a result of SRP operations. Recovery wells operating in the M-Area have removed significant amounts of volatile compounds from groundwater since beginning pilot and full-scale operations and have successfully contained the contaminant plume. New disposal facilities, as currently conceived, will be established in areas meeting siting requirements and criteria of EPA and SCDHEC.

VALIDITY AND ACCURACY OF GROUNDWATER CONTAMINANT TRANSPORT MODELS

Many comments dealt with groundwater contaminant transport model issues and questioned the relationship of the PATHRAE model (originally a radionuclide transport model) as suitable for chemical constituents, criteria for selection of modeled constituents, background vs. MCL levels (see above) used in modeling, and results of modeling and their applicability to site-specific actions.

DOE has responded generally and specifically to comments on PATHRAE, noting that the model was used both for radionuclide and chemical transport (after modification) in a comparative manner to assess the alternative waste management strategies developed in the EIS. DOE has emphasized that site-specific decisions will not be based on modeling results, as they are preliminary and only future regulatory interaction will affirm the site cleanup decisions that are made. Specific issues of the comments usually are resolved by details in the supporting EIDs referenced in Appendix H of the EIS. External independent peer review of PATHRAE has been documented; its validity and accuracy are stated in revisions to the Summary and Appendix H of this final EIS.

NEW DISPOSAL/STORAGE FACILITY SITING CRITERIA

Comments on siting new disposal/storage facilities were directed toward the methodology used by DOE in the final choice of candidate sites and concerns

over geohydrologic characteristics (i.e., "vulnerable hydrogeology," such as recharge zones and hydraulic barriers). Comments noted emerging EPA criteria based on these concerns.

DOE has responded by noting that interactions will be effected with regulatory agencies prior to final disposal site selection and by noting the need for additional site-specific hydrogeologic studies. DOE has also noted that the Sitewide Baseline Hydrogeologic Investigation was completed in 1987. DOE has cited SCDHEC and NRC siting and waste management regulations as protective of groundwater and noted that new facilities will include engineered technologies to assure essentially zero releases.

Responses on methodology of site selection have been made as well as revisions to Appendix E of the Draft EIS. Tables and figures have been incorporated to provide further information concerning site selection.

ALTERNATIVE STRATEGIES AND TECHNOLOGIES

Comments on these topics dealt with several aspects of the programmatic/project-specific actions assessed in the EIS. Public preference for the Elimination strategy was evident. Disproportionate distribution of costs and occupational risks of the Elimination strategy in the radioactive burial grounds obscured similar effects of remaining existing waste-site cleanup for some reviewers. The linkage of the three waste management actions (i.e., removal of waste with closure and remedial actions, establishment of new disposal/storage facilities, and discharge of disassembly basin purge water) was cited as a concern. The number of sites selected to receive waste removal actions also caused frequent comment.

DOE responses noted particularly that no waste management strategy will be selected until after the ROD and subsequent regulatory interactions are completed. Costs of waste management actions have been revised in Appendix E and Chapter 2. Radioactive burial ground costs have been revised to show breakouts of segments of the facility and are shown separately in several tables. DOE enlarged its discussions on the association of the waste management strategies and responded that the exact number of sites selected for removal actions under the Combination strategy will be decided after the ROD, further site characterizations, and regulatory agency interactions.

WEAPONS PRODUCTION AND DEPLOYMENT

These topics were commented on by several reviewers. DOE's response is that for this EIS, such comments are considered out of scope.

CURRENCY OF ENVIRONMENTAL DATA

Several reviewers noted that data in some tables appeared to be out of date. DOE has made extensive revisions of data tables based on the final EIDs and the most current SRP Environmental Report.

DISCHARGE OF DISASSEMBLY BASIN PURGE WATER

Reviewers commented on the DOE preferred alternative to continue to discharge the tritium-containing stream to active reactor seepage basins as being less than desirable or unacceptable. DOE responded that alternatives for management of disassembly basin purge water have an extremely high cost-benefit when compared to current guidelines. Implementation of detritiation would result in a cost of over $3 million per person-rem averted; evaporation to the atmosphere would cost about $0.5 million per person-rem. Guidelines cited by DOE indicated that $1000 per person-rem is an acceptable cost-benefit level. The radioactive decay advantages of seepage basin discharge were noted, as were the very low off-site population doses resulting from drinking water. These off-site doses are below DOE guidelines and primary drinking water standards.

COST OF CLEANUP AND NEW DISPOSAL FACILITIES

Costs were noted to be high by some reviewers. DOE has responded that costs have been revised (Moyer, 1987*), that they are preliminary study estimates, and that they would be revised in conceptual design stages of projects following selection of site-specific remedies and new facility designs.

AVAILABILITY OF REFERENCES AND SUPPORTING DOCUMENTS

DOE responded that all references (over 250) cited in this EIS are available in the public reading rooms set up for the purpose of public review. References to these documents are made in the EIS as appropriate.

*Moyer, R. A., 1987. Venture Guidance Appraisal Cost Estimates For Groundwater Protection Environmental Impact Statement, DPSP-87-1008, E.I. du Pont de Nemours and Company, Savannah River Laboratory, Aiken, South Carolina.

Table L-1. Comments and Statements Received on the Sitewide Waste Management Draft Environmental Impact Statement

Designation	Individual or Organization	Presented Oral Statement at Public Hearing
A.	U.S. Representative Lindsay Thomas	Mr. Derby Waters
B.	G. D. Crome, Contamination Control Services	Ms. Teresa Miller
C.	Energy Research Foundation (ERF) and Natural Resources Defense Council (NRDC)	Mr. James Chandler
D.	Greenpeace	Mr. James E. Beard
E.	W. F. Lawless (self)	Mr. W. F. Lawless
F.	Mr. R. Lewis Shaw (SCDHEC)	Mr. James Ferguson
G.	USGS Columbia Mr. Gary Speiran	--
H.	Ms. Barbara Gerth	--
I.	Synergistics Dynamics, Inc.	Mr. James Snedeker
J.	USEPA Region IV Mr. Joseph R. Franzmathes	--
K.	U.S. Dept. of Health and Human Services Mr. John C. Villforth	--
L.	Ms. Beatrice Jones	--
M.	League of Women Voters of South Carolina Mary T. Keller, Ph.D.	--
N.	League of Women Voters of North Beaufort County Dr. Zoe G. Tsagos	--
O.	Environmentalists, Inc. Ms. Ruth S. Thomas	--
P.	William A. Lochstet, Ph.D. (University of Pittsburgh, Johnstown)*	--

Table L-1. Comments and Statements Received on the Sitewide Waste Management Draft Environmental Impact Statement (continued)

Designation	Individual or Organization	Presented Oral Statement at Public Hearing
Q.	State of South Carolina Office of the Governor	--
R.	Georgia Department of Natural Resources	--
S.	Georgia Department of Natural Resources (July 28, 1987 - Transmitted to R. Lewis Shaw, retransmitted to S. R. Wright)	--
T.	--	Mr. Hans Neuhauser Georgia Conservancy
U.	--	Mr. Neil Dulohery Students for Environmental Awareness, University of Georgia
V.	--	Mr. Ken Matthews Savannah Area Chamber of Commerce
W.	--	Ms. Amy Estelle (self)

*For affiliation information only; Dr. Lochstet does not officially represent the University of Pittsburgh.

Comment number	Comments	Responses

TESTIMONY ON THE DRAFT EIS
OF THE DEPARTMENT OF ENERGY'S GROUNDWATER
PROTECTION PLAN FOR THE SAVANNAH RIVER PLANT

U.S. REP. LINDSAY THOMAS

June 2, 1987

I regret that the Congress is in session today, and I must therefore be in Washington in order to maintain my 100 percent voting attendance record. However, I appreciate this opportunity to present my views at this public hearing on the Department of Energy's draft environmental impact statement on the groundwater protection plan for the Savannah River Plant.

The Savannah River Plant in Aiken, South Carolina, is not, of course, in my Congressional District. However, my district does lie adjacent and downriver from the plant, and I maintain a strong involvement in developments concerning the SRP because of the potential health and environmental hazards which could impact on my District. I have made two lengthy personal visits to the SRP, and on one occasion was accompanied at my request by officials of the Georgia Department of Natural Resources in order to have the benefit of their expertise.

Comment number	Comments	Responses
A-1	We are forced today to live with contaminated water resources at the SRP that are the legacy of the neglect and ignorance of the past! The weakness of the technology and level of environmental concern of the 1950's has given us a groundwater problem that is both dangerous and costly to resolve. We know that the old disposal techniques for hazardous and low-level radioactive and mixed wastes have contaminated two aquifers beneath the plant. It is possible that more problems will develop in the future which we do not anticipate today. What we have learned is that the environmental wonder of the natural recharging of our freshwater aquifers is a complex process about which our scientific knowledge is limited. Scientists though 30 years ago that natural processes would cleanse the waste of the SRP before it reached the aquifers. They were wrong.	The Summary, page S-1, has been revised to state that some aquifers have been contaminated as a result of previously acceptable waste management practices, which predated the environmental regulations derived from RCRA, CERCLA and SDWA.
A-2	What we do know with great certainty is that in this part of the country, we depend on the aquifers for life itself. They provide our drinking water, our industrial water, and water for agriculture. We also know that it takes much time and abuse to contaminate an aquifer. What we do not know is precisely how or if we can cleanse an aquifer once it has been contaminated.	Chapter 3, Section 3.4, of the EIS discusses offsite groundwater quality and uses by industry, the public, and agriculture. Over 50 percent of public drinking water supplies in the Southeast come from groundwater sources. Over 70 percent of the population drink groundwater.

Table L-2. DOE Responses to Comments on Draft EIS
(Page 3 of 210)

Comment number	Comments	Responses
A-3	What we now need is a blueprint on how to proceed with the closure and cleanup of the waste management facilities at the SRP that are unsafe to our health and environment. We also must determine how we will take care of these wastes in the future.	Chapter 1 of the EIS presents the purpose and need of the proposed actions to modify waste management activities for the protection of groundwater, human health, and the environment at the SRP. The alternative waste management strategies being considered are discussed fully in Chapter 2.
	I am very pleased that Du Pont and the Department of Energy have recognized their obligation to the communities surrounding the SRP by developing the draft EIS. This statement lays out the possible alternatives to attempt to contain and eliminate the present groundwater contamination and to take actions to prevent further aggravation of this situation.	
	I am not a scientist, and so I cannot say which plan in the EIS may be the best technical plan to correct the current problems. I do know, however, that Du Pont and the Federal government cannot spare any expense in providing the most effective plan. We cannot compromise with public health and safety.	
A-4	Every effort must be made to contain the present contamination on site, and to clean the presently contaminated aquifers until the water is determined safe and drinkable under all Federal and state regulations.	Section 2.2 discusses the alternative waste management strategies being considered to remove contamination, close existing waste sites, and take groundwater remedial actions as required.

Comment number	Comments	Responses
	In the past, there has been a tendency to spare no expense to build the nuclear weapons which we need for our national defense. But there has been a tendency to cut corners and take chances in the area of environmental protection.	
A-5	In hindsight, we may be able to forgive those shortcuts of the past because we were ignorant of the dangers of our actions. But today there is no excuse. We must ensure that there is no further contamination of either the upper or lower aquifers. I think Department of Energy and the members of this panel for their work in conducting this hearing and working to resolve this problem. I assure the Department and my constituents that I will monitor this process, and I will accept no compromise of public safety and the final regulations. Thank you again for this opportunity. My staff representative will remain at the hearing to report to me the comments of the other participants.	DOE plans to establish new disposal/storage facilities that will be designed for essentially zero releases of hazardous constituents to the environment, or as low as reasonably achievable (ALARA) for radioactivity.

Comment number	Comments	Responses
	PRESENTATION BY TERESA MILLER FOR MR. G. D. CROWE OF CONTAMINATION CONTROL SERVICES, INC. My name is G. D. Crowe, President and Owner of Contamination Control Services, Inc. As we all know, the toxic waste industry is currently in somewhat of a quandry. While millions of pounds of toxic and radioactive wastes have been buried in temporary burial sites around the country, millions of pounds more remain above ground, awaiting governmental decisions regarding permanent disposal techniques. DOE, DHEC, and DEPA are searching for solutions for permanent disposals, but such solutions are viewed as political suicide to those personally involved in the selection process. The culprit of the bureaucratic quagmire is the ability of existing disposal procedures to prevent contamination of groundwater supplies for a long enough period of time to allow complete decay of toxic wastes; that is, current contaminant equipment does not offer long-term groundwater control.	

Comment number	Comments	Responses
	All of us here are here because we are well aware and concerned about the problems I have just described as being most critical at the Savannah River Plant. My main objective is to make DOE, DHEC, EPA, and the public aware of the fact that I have developed a product from which a leach proof container with a combination of retrievable storage and above ground or below ground disposal units can be built and sealed. Savannah River Laboratory, along with Clemson University Ceramic Engineering Department in Clemson, South Carolina, has tested and approved this material as providing groundwater control for permanent radioactive waste burial which can offer the rad waste and toxic waste industry permanent groundwater control. Being able to provide groundwater control for toxic waste burial will allow governmental agencies the world over to eliminate temporary burial sites and assign permanent toxic waste burial sites as is now being called for. As permanent burial sites are made available, more toxic waste will be able to be handled. I feel sure most of you here read the article which was published on Friday, May 1, 1987, with the headlines, Cleanup May Cost $3.1 Billions. Of course, the article was referring to the Savannah River Plant.	

Comment number	Comments	Responses
	With sufficient funding, I will be able to build a state of the art manufacturing facility that will solve the problems here at the Savannah River Plant as well as any other locations with the same toxic or radioactive waste disposal problems, and I can assure you as well that the cost involved will be significantly less than the #3.1 billion as quoted earlier in May of this year.	
B-1	According to DHEC, all liquid toxic and rad waste chemicals in the state, other than federal sites, must be solidified before burial. With the use of the leach-proof container, it would not be considered as a safety hazard for the liquid toxic chemicals and rad waste to be buried in a liquid format, which would result in a significant savings in money and time. Also, the cost of approximately $700 million dollars for the excavating of monitoring wells and purchase of monitoring equipment would be eliminated except for periodic safety checks. In addition, this would be a permanent burial instead of only a temporary burial. Other savings to be realized: 1. $50 million for pumping contaminants out of the ground 2. Deleting the cost of $500 million to $2 billion for future cleanups which does not even include life-time monitoring.	Groundwater monitoring is required by waste management regulations at all waste dispsoal sites for a period of 30 years after closure.

Comment number	Comments	Responses

3. Delete $100 million to $800 million to cleanup and close current waste sites in the future.

4. Delete the cost that the Savannah River Plant is currently spending at a rate of about $50 million annually to clean up chemical waste.

I obviously need the financial support of DHEC and DOE as well as their encouragement and backing.

My background includes the fact that I am 59 years old and have spent 25 years in the construction field. I was also the owner of an industrial electrical distributorship. From 1952 - 1953, I was employed at the Savannah River Plant (DOE facility for the manufacture of weapons grade nuclear fuel), Aiken, South Carolina. From 1954 - 1956, I was employed at the government's nuclear installation at Oak Ridge, Tennessee. Is served 7 years as President of Resources, Inc. The primary purpose of Resources, Inc. was that of mining and marketing of naturally occurring radioactive materials. During all of the previous years, I have always been interested and kept myself up-to-date on radioactive materials and geology.

I have brought a sample model along with me today so that you can see the material after it is processed. Obviously, additional engineering and design studies will be necessary.

Comment number	Comments	Responses
	I appreciate your time and attention; and, hopefully, what I have discussed with you today will prove to be beneficial to us all. Thank you! GD:dh	

Comment number	Comments	Responses

STATEMENT OF
MR. JAMES CHANDLER

DRAFT ENVIRONMENTAL IMPACT STATEMENT
WASTE MANAGEMENT ACTIVITIES FOR
GROUNDWATER PROTECTION
SAVANNAH RIVER PLANT, AIKEN, SOUTH CAROLINA

Comments
June 4, 1987

Energy Research Foundation
1916 Barnwell Street
Columbia, South Carolina 29201

Natural Resources Defense Council
1350 New York Avenue, NW
Washington, D.C. 20005

This statement is presented on behalf of the Energy Research Foundation of Columbia, S.C., and the Natural Resources Defense Council of Washington, D.C. We appreciate this opportunity to comment on the draft Environmental Impact Statement for Waste Management Activities for Groundwater Protection at the Savannah River Plant. The documents comprising the draft EIS represent a tremendous amount of information. We commend the Department of Energy for preparing it and for the commitment to public participation and long-range, comprehensive planning implied.

Table L-2. DOE Responses to Comments on Draft EIS
(Page 11 of 210)

Comment number	Comments	Responses
	The draft EIS, which took two years to prepare, was released only about a month ago, and we have not had time to go over it as thoroughly as we would like. The following testimony is of a general nature. We will submit more detailed comments closer to the end of the comment period. In today's statement we express misgivings about four aspects of the draft EIS. First, we are concerned that it does not take federal hazardous waste laws into account in a meaningful way. Second, we are concerned about some of the data used. Third, we feel that the assessment of the Elimination Strategy is skewed to make waste removal appear undesirable. These weaknesses in the analysis may undermine the rationale for DOE's preferred alternative, the Combination Strategy. Finally, we feel that the document itself is presented in a very confusing way.	
C-1	The single largest problem with the draft EIS is the lack of integration of the various proposed options with the regulatory requirements of the Resource Conservation and Recovery Act (RCRA). Of the 160 scoping comments identified by DOE, 39 expressed concern over assuring that the regulatory process be accounted for in the EIS. Throughout this document, statements are made that all activities will be carried out as per the pertinent regulations. But this is not equivalent to actually evaluating the impacts of the regulations. As written, the draft almost totally ignores the RCRA permitting process and the consequences of that process.	DOE has frequently stated its commitment to comply with applicable regulations, and this commitment is repeated in several places in the EIS. It is not the intent of the EIS to evaluate the impacts associated with regulatory compliance actions, but rather to assess the environmental impacts of implementation of the four alternative waste management strategies and project-specific actions.

Table L-2. DOE Responses to Comments on Draft EIS
(Page 12 of 210)

Comment number	Comments	Responses
C-2	Chapter Six purports to discuss the impact of the regulations on possible strategies. We believe this chapter to be simplistic. It contains errors, and ignores, except for a single comment, perhaps the most important provision of the Hazardous and Solid Waste Amendments of 1984 (HSWA) which requires corrective action at all solid waste management units (SWMUs) identified to be releasing hazardous waste constituents to the environment.	Chapter 6 summarizes the applicable regulatory requirements and describes them generally and specifically. Potential corrective actions (groundwater remedial actions) are included in all three "action" waste management strategies.
C-3	The purpose of the EIS is to compare the impacts and costs associated with various waste management options at SRP. This cannot be accomplished unless the regulatory status of each unit is clearly identified, and the regulatory consequences of each option discussed. All solid waste management units at SRP are subject to regulation under RCRA as amended by HSWA. This is a simple fact of law. The actions to be undertaken at specific waste sites will only be determined following the development of a RCRA Facility Assessment - which we understand is being prepared now - and the implementation of a RCRA Facility Investigation.	The status of existing waste sites at the SRP has been or is being negotiated. Potential categories of waste type and current regulatory action or status are described in Tables 2-2, 2-3, and 6-2.
C-4	The permit eventually issued to SRP must and will contain specific requirements for monitoring and corrective action at every solid waste management unit determined to be releasing hazardous constituents to the environment. Items such as groundwater corrective action can add orders of	The specification of a monitoring program to be implemented at each site, based on regulatory requirements, is by definition beyond the scope of this EIS since it is a NEPA document (since alternatives are involved). These details are being

Comment number	Comments	Responses
	magnitude to costs. DOE cannot make meaningful cost comparisons without taking specific regulatory demands into account.	determined through the permitting process. Solid waste management units (SWMU) are discussed. Groundwater monitoring regulations for SWMUs have not yet been developed under either Federal or State statutes. As part of the permitting process, the SRP is currently negotiating with SCDHEC and EPA to identify groundwater monitoring requirements for SWMU. The cost comparisons presented in this EIS are identified as preliminary and are subject to revision. Future regulatory actions may require added expenditures.
C-5	Another example of this deficiency is the use of non-regulatory-based standards for groundwater assessment. The draft EIS consistently uses Minimum Concentration Limits (MCLs), Alternative Concentration Limits (ACLs), and other criteria for making major decisions regarding groundwater impacts. These so-called standards for most of the organic compounds have no legal or regulatory basis and should not have been used. MCLs are established in the regulations promulgated by the Safe Drinking Water Act, but these MCLs do not include the vast majority of chemicals present as contaminants at SRP.	Maximum Contaminant Levels (MCLs) and Alternate Concentration Levels are presented in RCRA groundwater regulations at 40 CFR 264.94 as alternates acceptable to, and that may be specified by the Regional Administrator in a facility permit. (See page 4-2 of the FEIS.) Moreover, MCLs, as enforceable health-based standards, provide a numerical basis for estimating, through multipathway transport modeling, the human health and environmental risks that were done for the EIS. MCLs are generally identical to the Primary Drinking Water Standards cited in 40 CFR 265, Appendix III. MCLs for some organic compounds were proposed by EPA and were finalized in July 1987 (52 FR 25690).

Comment number	Comments	Responses
C-6	At RCRA sites the appropriate reference criteria for constituents without primary drinking water standards are background levels. At Solid Waste Management Units for which corrective action will be required the standard, until another is set by regulation, is also background. Although the Environmental Protection Agency is considering adopting other standards, these levels have not been codified. As the draft EIS clearly points out in response to scoping comments, consideration of future regulations is outside the scope of the EIS.	All groundwater monitoring systems installed at SRP have background (upgradient) wells. See the response to comment C-5.
C-7	Therefore, all models and decisions based upon comparing contamination levels to MCLs or other non-regulatory standards must reevaluated to compare to site-specific background levels. Once again, because the draft ignores the applicable regulations, many projections and decisions are useless.	See the response to comment C-5. MCLs were used partially because they provide a uniform standard basis for comparison of alternatives, while background concentrations vary from site to site. The EPA has indicated that background levels may be technically or economically impossible to achieve.
C-8	The draft indicates that current SRP storage and disposal capacity for mixed and hazardous waste will be reached in a short time. New facilities will have to be available. No new facility may be built or operated without first receiving a permit, but it is likely to take years for such permits to be issued. The draft does not consider the exigencies of storage and disposal capacity, so we are left to suppose that once again regulatory issues have been ignored.	The draft EIS considers the need to construct and establish new disposal/storage facilities for low-level radioactive, mixed, and hazardous wastes. The length of time required for permitting is not estimated in this EIS; however, all storage facilities will be operated in compliance with regulatory requirements. See Section 2.3.

Table L-2. DOE Responses to Comments on Draft EIS
(Page 15 of 210)

Comment number	Comments	Responses
C-9	Because the controversy over the byproduct rule concerning mixed wastes was only recently resolved administratively, it is understandable that the present draft does not include a discussion of the implications for SRP. It will certainly now have to be taken into account, however.	Chapter 6 (page 6-3) includes a revised statement on the byproduct decision and acknowledges EPA/SCDHEC jurisdiction over mixed wastes.
C-10	A second major problem relates to the data used throughout the draft. It appears that few data collection activities were performed for the EIS; existing SRP data were used. A review of the reference section for each chapter indicates that the majority of references are taken from in-house DOE or Du Pont reports which have not been subjected to peer review. This leads to concern, given numerous documented problems with SRP data collection and analysis methods. Wherever SRP data is used in the EIS, or in the Environmental Information Document on which the draft is based, a thorough discussion of exactly which data were used; what Quality Assurance/Quality Control procedures were followed; and what, if any, data were excluded and why, must be provided.	Extensive periodic groundwater monitoring and soil/sediment analysis programs have been conducted at the SRP since 1981 or earlier. Separate documents dealing with methodology, QA/QC procedures, data reliability, and related matters are referenced in this EIS and discussed in detail in its support documentation prepared for this EIS. The support documents tabulate these data-related programs, the PATHRAE modeling results, and assess the alternative waste management actions.
C-11	Beyond questions about the accuracy of SRP's data, it appears that existing data is not utilized. The draft EIS contains the puzzling statement that, although two monitoring wells were installed at the 716-A Motor Shop Seepage Basin and well sampling began in February 1984, "no evaluation of the sampling data has been made available."	Existing data were used in this EIS. The statement relative to 716-A Motor Shop has been revised in this FEIS, Appendix B, page B-5.
C-12	Application of a generalized model for decision-making where site specific data are available is unacceptable. The model presented in Volume Two, Appendix H of the draft is demonstrated to be accurate to within a factor of ten, 73 percent of the time; thus the model is in error by more than 1000 percent, more than one-fourth of the	Site-specific data such as groundwater monitoring results, soil/sediment analyses, waste inventories, or estimated waste disposal volumes were used as input to the PATHRAE model. The accuracy of the model is described in revisions to Appendix H and in its references. See paragraph 1, page S-13.

Comment number	Comments	Responses
	time. Where site-specific data is available, use it rather than a seriously flawed model. Where no site-specific data is available, another more applicable model should be used. Because SRP is located in an area of very complex hydrogeology, a three-dimensional model should be considered.	The modeling results are used in a comparative, not absolute sense. Some three-dimensional flow modeling has been performed.
C-13	The Council on Environmental Quality regulations state that the EIS "shall be supported by evidence that the agency has made the necessary environmental analyses." We are not convinced of this from the draft.	Thirty-four supporting documents (EIDs) were specially prepared for this EIS as required by NEPA. Approximately 220 other documents were also referenced. The reference documents have been placed in public reading rooms.
C-14	In fact, the draft may not even include all sites at SRP which have received hazardous waste or hazardous constituents. DOE's letter of February 11, 1987, from R. L. Morgan to J. E. Ravan (EPA Region IV Administrator) which accompanies the latest information on continuing releases of hazardous waste or constituents includes sites not listed in the draft EIS. There are other discrepancies concerning sites found both in the draft EIS and in the continuing releases document. The EIS must include all waste sites, and discrepancies between it and other documents must be resolved.	DOE has undertaken an extensive verification effort for the sites for the EIS. It has been stated in the DOE/EPA interactions that there may be discrepancies. Ongoing and future regulatory processes are expected to resolve these differences. Much of the documentation of continuing release sites was not available at the time of earlier waste site assessments. The rationale for selection of waste sites in the EIS is presented in Appendix B in Tables B-1 and B-2.
C-15	Our third major concern relates to the assessment of the Elimination Strategy. We believe that DOE's presentation of this strategy is manipulated so that the option of removing the waste looks either too costly or environmentally unacceptable. DOE skews the waste removal and closure costs by including the Radioactive and Mixed Waste Burial Ground, which accounts for over 90 percent of the total cost for this option. DOE is thus able to dismiss it as too expensive.	Cost and high occupational risks for removal of wastes from the Burial Ground are discussed in the Elimination strategy. DOE has not dismissed the strategy; the final decision on strategies will be made in the Record of Decision. In the FEIS, Appendix E and Chapters 2 and 4 give revised costs for all waste management strategies and, in particular, break out the costs for a Low Level Waste Disposal Facility and its major components.

Table L-2. DOE Responses to Comments on Draft EIS
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Comment number	Comments	Responses
C-16	DOE then makes the Elimination Strategy look environmentally unacceptable by calling for direct discharge of undecayed disassembly basin purge water to surface streams. Under the Combination Strategy, DOE will investigate the uses of a moderator-detritiation plant (MDP) which will reduce tritium discharges at the source. This appears a more appropriate "elimination" strategy.	Direct discharge of disassembly basin purge water increases tritium doses to onsite streams; however, offsite doses would continue to be below guidelines and standards. Seepage basins would continue to be used except under the Elimination strategy. Under direct discharge or evaporation, reactor seepage basins could be eliminated, hence these actions are appropriate for the Elimination strategy.
C-17	While DOE does include detritiation and other possible mitigation in the Combination Strategy, it plans to continue discharges to reactor seepage basins while studying these options. There is no commitment to phase out the basins. There is also no commitment in the draft to complete closure of the F- and H-area seepage basins by November, 1988, as required by law.	Other tritium mitigation measures are discussed in Section 4.8. The DEIS considers continued discharge to reactor seepage basins as part of the "preferred" alternative waste management strategy. Closure plans for the F- and H-Area seepage basins have been prepared and submitted to SCDHEC.
C-18	Neither the Combination nor Elimination Strategies, as presented, are the best from an environmental or economic standpoint. DOE should consider removal/closure at a far greater number of sites than is planned in the Combination Strategy. This could be accomplished at less than 10 percent of the presently-projected Elimination Strategy costs if the burial ground wastes are left in place. While we do not necessarily advocate that option, it certainly would be worth study. DOE should also consider immediate phase-out of the purge basins, use of an MDP, and if necessary, evaporation to remove the remaining tritium.	The seven sites included in the Combination strategy were selected based on multipathway transport modeling and are considered preliminary choices for purposes of comparison and strategy selection in this EIS. The final number of sites at which waste will be removed will be made following DOE's Record of Decision, subsequent regulatory agency interactions, ongoing and future monitoring, modeling, and site-specific characterizations.
C-19	Finally, the draft EIS, especially Chapter Two where the different strategies and their costs are explained, is extremely confusing. The Council on Environmental Quality regulations, which DOE has adopted, state: "Statements shall be concise, clear, and to the point....NEPA (National Environmental Policy Act) documents must	Chapter 2 is a discussion of the proposed actions, i.e., modificaton of waste management activities at the SRP, and the development of alternative waste management strategies. It deals with programmatic and project-specific actions for three kinds of waste at 77 existing sites, three new

Comment number	Comments	Responses
	concentrate on the issues that are truly significant to the action in question rather than amassing needless detail. Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork - even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." Thank you. June 30, 1987	disposal/storage facilities for three kinds of waste, and six active reactor seepage basins and one containment basin for the management of disassembly basin purge water. Revisions to the DEIS have been made.
	Mr. S. R. Wright Director, Environmental Division U.S. Department of Energy Savannah River Operations Office P. O. Box A Aiken, SC 29802 RE: Waste Management EIS Dear Mr. Wright: At the public hearing on June 4, 1987, Energy Research Foundation and Natural Resources Defense Council, Inc. submitted general comments on the draft Environmental Impact Statement, "Waste Management Activities for Groundwater Protection at the Savannah River Plant, Aiken, South Carolina." We noted at the time that our comments would be supplemented with more detail prior to the end of the comment period.	

Comment number	Comments	Responses

Enclosed please find an additional copy of our public hearing comments, along with the more detailed comments on the draft EIS. Please let me know if you have any questions.

Yours very truly,

James S. Chandler, Jr.

JSC/dhe
Enclosure

cc: Frances Close Hart
Dan W. Reicher, Esquire
John Croom

ADDITIONAL COMMENTS BY MR. JAMES CHANDLER

Specific Comments
on the
DRAFT ENVIRONMENTAL IMPACT STATEMENT

WASTE MANAGEMENT ACTIVITIES FOR
GROUNDWATER PROTECTION
SAVANNAH RIVER PLANT
AIKEN, SOUTH CAROLINA

June 30, 1987

Energy Research Foundation
1916 Barnwell Street
Columbia, South Carolina 29201

Natural Resources Defense Council
1350 New York Avenue, N.W.
Washington, D.C. 20005

Comment number	Comments	Responses
C-20	The EIS purports to assess "broadly defined strategies" that DOE could select to implement at specific sites in the future. The document then proceeds to make recommendations etc. regarding specific sites. Such decisions are beyond the scope of the EIS. (Page V, Par. 3)	The EIS is both a programmatic and project-specific document. See page v, paragraph 2. The recommendations are made to allow comparative analyses of the environmental effects of alternative waste management strategies. DOE's Record of Decision will specify actions proposed to be implemented based on discussions and analyses in the EIS. Future regulatory decisions will determine actions undertaken at specific sites.
C-21	Using terms such as "hazardous" etc. which have a very precise regulatory definition in a non-regulatory manner is confusing and unacceptable. To be consistent all terms should be used in the manner defined by regulations. The EIS purports to consider the regulatory aspect of each item, yet by refusing to accept the established regulatory meaning of these terms it appears doubtful that a commitment to the regulations exists. All places where terms such as "hazardous," "mixed waste" etc. are used should be revised to indicate their regulatory status or different terms should be used. (Page VI, Par. 1)	Tables 2-3 and 2-4 list the potential categories of waste at particular sites. The terms are used primarily to identify and categorize the wastes without regard to a regulatory definition.
C-22	Use of seepage basins etc. may have been legal but was never wise environmental practice. Please eliminate this statement. (Page S-1, Par. 2)	In the context of NEPA documentation and of the proposed action and alternatives presented in this EIS, DOE considers the statement on seepage basins to be reasonable because of the insignificant environmental and human health effects associated with their continued use. See the response to comment A-1.
C-23	See comment VI-1 above. (Page S-1, Par. 4)	See the response to comment C-21.
C-24	Storage of hazardous waste is contemplated as a short-term activity and is usually measured in months, not years. The concept of storing waste almost indefinitely is not acceptable and should be eliminated from the EIS. Page S-3, Par. 2)	The storage of hazardous and low-level radioactive or mixed wastes assumes that emerging technologies will be developed which will result in the detoxification and/or permanent disposal of these wastes.

Table L-2. DOE Responses to Comments on Draft EIS
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Comment number	Comments	Responses
C-25	The notion of a return of SRP to the public after an institutional control period is simply posturing. Current plans for SRP extend well into the future. All reference to returning areas to public use should be eliminated. (Page S-7, Par. 3)	The 100-year institutional control period is based on plans by DOE for the SRP and is therefore considered appropriate in terms of the EIS scope. See the general statement by EPA Region IV (comments J of this appendix).
C-26	Include as a condition under the combination strategy complying with all applicable state and federal regulations. Eliminate the reference to eight sites. Choosing specific actions at specific waste sites is beyond the scope of the EIS (Reference comment V.3 above). (Page S-8, Par. 5)	The text has been revised accordingly. Seven sites were selected on the basis of modeling results and to provide comparisons among the alternative waste management strategies. See the response to comments C-18 and F-10.
C-27	There is no basis for stating that the no-action strategy will protect the off-site environment. Releases to streams leaving the site are occurring and there is no scientific basis for stating that such releases will never have an effect. (Page S-13, Par. 1)	Waste management actions at the SRP that are currently underway (i.e., M-Area cleanup, construction of effluent treatment facilities, and demonstration programs) will assure offsite environmental protection.
C-28	See comment S-13-1 above. For many of the constituents released by SRP there are no safe levels established after notice- and -comment rule making. In the absence of established levels any release must be considered unacceptable. The use of non-regulatory "safe levels" should be eliminated from the EIS and all analyses based on these criteria redone. (Page 1-1, Par. 3)	Environmental releases do not cause offsite health effects, do not have significant environmental impacts, and are within generally recognized environmental and health protection standards and criteria. See Zeigler et al., 1987, DPSPU-87-30-1. Established levels such as ADIs and UCRs are routinely used by EPA.
C-29	Compliance with groundwater protection standards is only one area of concern. Indicate that compliance with all applicable environmental laws and regulations is both desired and mandated. (Page 1-2, Par. 2)	Text has been revised.

Comment number	Comments	Responses
C-30	The discussion of the continuing release provisions of RCRA is incorrect and must be revised. A site with continuing releases is required to correct both off-site and on-site conditions under RCRA 3004 (U) and 3004 (V). The discussion indicates that removal of on-site wastes eliminates the need for off-site corrective action. This is incorrect. (Page 2-2, Par. 2)	The intent of the discussion in Section 2.1 is to indicate needs for long-term oversight or monitoring and site dedication, not corrective action. If all residues at surface units and waste sites and everything contaminated with waste and leachate can be removed or decontaminated, post-closure monitoring is not required.
C-31	There is no basis for equating the no-action strategy with continued protection of the off-site environment. This and all similar statements should be removed. (Page 2-7, Par. 2)	See the response to comment C-27.
C-32	The concept that land used for waste management practices must undergo long periods of institutional control prior to being used for other purposes is incorrect and should be eliminated here and throughout the EIS. Immediately upon closure a RCRA site can be utilized provided the use does not interfere with the established cap and corrective action plan. Many RCRA sites have parking lots on them which reduces rainwater percolation. Any analysis that assumes an area can not be utilized at all for many years or ever is incorrect and should be redone. The regulations at 40 CFR 264.117 (c) clearly indicate that post-closure use of property is possible. (Page 2-8, Par. 5)	The response to comment C-25 explains the basis for the 100-year control period. The presumption of governmental institutional control is not meant to be preemptive of RCRA requirements; however, institutional control of the SRP for security reasons will likely mean that other land uses which might be available at publicly accessible RCRA facilities will not be available at the SRP.
C-33	Entire paragraph is based on false premise that sites have to undergo long periods of control or be dedicated in perpetuity with no other use possible. Revise this paragraph and all others which suggest this. (Page 2-9, Par. 3)	See the response to comments C-25 and C-32.

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Comment number	Comments	Responses
C-34	Identify what other sites are not appropriate for consideration and the reasons for this. (Page 2-11, Par. 2)	Tables 2-3, 2-4, B-1, and B-2 identify sites considered and not considered in this EIS and the rationale for their characterization.
C-35	As stated earlier the concept of waste areas never being useful is incorrect and such statements should be eliminated from the EIS. (Page 2-17, Par. 3)	See the response to comment C-32.
C-36	No basis exists for stating that the elimination strategy would require fewer groundwater remedial actions. All sites with contaminated groundwater are subject to remediation whether waste is removed from the site or left in place. Either eliminate this sentence or fully explain the rationale which supports it. (Page 2-23, Par. 3)	The rationale for the statement is presented in Chapter 4, considering transport modeling results of waste removal and closure vs. no waste removal and closure.
C-37	The concept of storage for as long as twenty years does not seem consistent with RCRA. Please provide specific references to indicate that this is an acceptable option under RCRA. (Page 2-32, Par. 1)	RCRA regulations define "storage" as "the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere" (40 CFR 260.10). The term "temporary" is not defined by a specific time period, rather it is taken to mean "not permanent" and implies an intention to retrieve the waste for future treatment and/or disposal. Provided the storage facilities proposed under either the Elimination Strategy or the Combination Strategy are permitted and operated in compliance with RCRA regulations (i.e., 40 CFR 270 and 40 CFR 264, respectively), the period of such operation is not an issue. The RCRA Part B permit for permitted storage facilities was prepared in accordance with 40 CFR 264, 265, and 270. This permit, including the operational life of the storage facilities, is being reviewed.

Table L-2. DOE Responses to Comments on Draft EIS
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Comment number	Comments	Responses
C-38	There is no such unit as a RCRA-vault. A unit used for waste disposal would, as described, constitutes a landfill, and as designed would not meet the minimum technology requirements of a landfill and thus could not be permitted. Throughout the EIS all references to units not consistent with the regulatory requirements of RCRA should be eliminated. (Page 2-34, Par. 3)	The concept includes double liners, leachate detection, and dual collection systems. DOE considers these RCRA-type units to be consistent with RCRA requirements.
C-39	The proposed CFM vault would also constitute a RCRA landfill unless all waste disposed there was first delisted. Currently cement flyash solidification does not appear to bind organics effectively. Revise the EIS to consider this unit a RCRA landfill or to consider the real possibility of delisting the proposed wastes. (Page 2-34, Par. 5)	The cement/fly ash matrix vault concept is discussed in the EIS as a facility type which conceptually would comply with the intent of RCRA as well as being a facility which could be built at the SRP. The final design of such a mixed waste facility, including the appropriateness of the vault matrix and the need for liners and a leachate collection system, will be determined through regulatory compliance activities.
C-40	It is inappropriate to predicate compliance with RCRA on receipt of regulatory waivers. It is inconsistent with the premise that all regulations be complied with, to predicate a considered option on receiving waivers. Eliminate this aspect of the strategy and reevaluate it assuming compliance with the regulations. (Page 2-44, Par. 5)	The waivers would apply only to long-term retrievable storage. DOE considers such actions to be within the range of negotiations with SCDHEC. See the response to comment C-37.
C-41	How was it determined what constitutes the "best mix of the disposal and storage technologies." Provide a basis for this major decision. (Page 2-44, Par. 7)	The flexibility of the Combination strategy for new disposal facilities has the advantages of disposal and storage of wastes, optimizing performance, recovering and retrieving waste, minimizing costs, and complying with applicable environmental regulations and standards.

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Comment number	Comments	Responses
C-42	The lower estimate of cost of the no-action alternative cost was $160 million. The lower estimate of the cost of combination strategy cost was $143 million. Please explain fully how a no-action alternative is more expensive than the preferred alternative. (Page 2-45, Par. 1)	The cost shown in the text as $143 million is incorrect; it should have been $170 million. Revisions have been made in the FEIS text and Tables 2-11 and 2-12 to reflect estimated costs, resulting from recalculations performed in May 1987.
C-43	As stated earlier no land must be dedicated in perpetuity. Remove this statement and reevalaute the alternatives. (Page 2-45, Par. 2)	DOE's basis for dedicaton of waste sites is appropriate in terms of the impacts discussed in Chapter 4. The responses to comments C-25 and C-32 explain the basis for the control period.
C-44	Site specific actions are indicated throughout the EIS yet the most expensive and extensive action at the sites, groundwater remediation is ignored. We believe that this invalidates the entire cost analysis. Please provide detailed rationale as to how this activity can be ignored and a valid cost estimate still be generated. We still feel that site-specific recommendations are simply beyond the scope of the EIS and that only the broad scope of proposed activities should be evaluated. (Page 2-63, Par. 3)	DOE considers that groundwater remedial action costs are site-specific and as required would entail additional costs. These will be determined after the EIS Record of Decision has been issued and regulatory interactions completed.
C-45	Removing waste "to the extent practicable" may or may not result in site dedication. Much depends on the regulatory status. Eliminate this premature decision from consideration. (Page 2-64, Par. 4)	The extent practicable will be determined by regulatory actions and site dedication or post-closure care. See the response to comment F-29.
C-46	Paragraph should be modified to reflect that although the green clay exists it does not provide a mechanism for totally separating the formations. They may still be hydraulically interconnected. (Page 3-17, Par.1)	The discontinuity of the green clay is stated.

Comment number	Comments	Responses
C-47	As most of the information presented here is highly speculative please present appropriate references for each conclusion. (Page 3-17, Par. 2-6)	A reference is given in Figure 3-4 and the end of Chapter 3. See also Appendix A.
C-48	Provide a reference for the statement that "any contaminants that would be drawn into the Black Creek by this pumpage would flow to the pumping well and, therefore, would not impact offsite areas." (Page 3-20, Par. 3)	Duffield et al., 1987.
C-49	Please include information on the procedures, decision criteria etc. used to determine the validity and usefulness of all groundwater data used or referenced in Section 3.4.3.2. (Page 3-22, Par.3)	Information on procedures and criteria related to groundwater monitoring is furnished in support documents (EIDs, Environmental Reports, and the Groundwater Protection Plan) referenced in Chapter 3 and Appendixes B and F.
C-50	None of the so-called standards or criteria used here for the chlorinated organic compounds have any legal or regulatory basis under RCRA and should therefore not be used in this or any subsequent table, nor should any decisions based on these criteria be made. Please revise entire EIS accordingly. (Page 3-25)	Table 3-8 (pages 3-25 and 26) summarizes the results of groundwater monitoring in describing the affected environment at the SRP. Comparisons to the standards and criteria are given. The selection of the preferred alternative was not based on these data.
C-51	Entire paragraph is misleading. In most cases contamination at SRP consists of cancer causing chemicals and for these no standard is set for "aesthetic" purposes. Delete the paragraph. (Page 3-26, Par. 1)	"Aesthetic" refers only to iron and secondary drinking water standards (40 CFR 143).
C-52	Please provide reference for an approved metals sampling procedure which requires or condones filtering of samples. (Page 3-26, Par. 2)	EPA protocols and procedures (40 CFR 136, EPA-600 4/79-020) call for field filtration of samples for dissolved metals determinations. Reference has been added to the text, Sections 3.4.3 and 5.2.

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Comment number	Comments	Responses
C-53	Provide a reference for the statement that the Middendorf and Black Creek aquifers are not interconnected under SRP. (Page 3-26, Par. 5)	A reference is given in Figure 3-4 and the end of Chapter 3.
C-54	Given the admission here that contaminated groundwater outcrops into streams that flow off-site, please eliminate all statements in the EIS which indicate that no contamination has been released off-site. (Page 3-51, Par. 1)	The statement of offsite contamination refers to offsite groundwater and not surface streams.
C-55	Basing assessments on inapplicable standards and using computer models which are at best only accurate to an order of magnitude invalidates the entire process. The assessments should be revised to use actual data when available and when not available to thoroughly explain and document all assumptions made. Where there is not an interim primary drinking water standard. Assessments should only compare contamination by constituents to background values. (Page 4-2, Par. 4)	See the response to comment C-12. The PATHRAE model was used for comparative, not absolute, purposes. Background concentration information was factored into the assessment process in some cases. See the response to comment C-5.
C-56	The method used does not include synergistic effects. Please justify this omission. (Page 4-3, Par. 5)	Environmental effects, including cumulative impacts, are considered in Chapter 4 of the FEIS.
C-57	No MCL's have been adopted for these compounds. Delete all references to MCL's and redo the analyses only using background concentrations. (Page 4-4, Par. 3)	See the response to comment C-5.
C-58	Why model if real data are available? Also if the model can't predict correctly the known results the validity of the model is greatly suspect. Please explain. Since it is stated that actual decisions regarding closure etc. will be determined by regulatory interaction delete all site-specific references and decisions. (Page 4-5, Par. 4)	The modeling assumptions are acknowledged to be based on preliminary information and to predict environmental impacts or human health risks now or in the future to compare the alternative waste management strategies and project-specific actions. See paragraph 1 on page S-13 and the response to comment C-12.

Comment number	Comments	Responses
C-59	The reference given in footnote "f" for the "standard" for the three chlorinated organics (EPA 1985b) is to the listing document for these wastes. Standards for these wastes in groundwater have not been established. This is an incorrect and misleading reference and should be deleted in this and all other applicable tables. (Page 4-8)	The reference has been revised in all tables to EPA 1987 (52 FR 25690) to include final MCLs.
C-60	There is no primary drinking water standard for trichloroethylene, and referencing the listing document is misleading. Please check all tables for consistency of references and standards. Which standard was used in the analyses? (Page 4-12)	An MCL for this compound was finalized by EPA in July 1987 (52 FR 25690). Tables have been revised to reflect the change.
C-61	Why quote a calculated drawdown rather than provide data on the actual drawdown since the system is in operation. Please explain. (Page 4-33, Par. 3)	Actual drawdown data are discussed in Zeigler et al., 1987 (DPSPU-87-30-1).
C-62	Delete references to the no-action alternative protecting the off-site environment. This is unsupported speculation. Delete all usage of MCLs for reasons previously stated. (Page 4-34, Par. 3)	See the response to comments C-5 and C-25.
C-63	Provide a reference for the statement that "Groundwater withdrawal with discharge to surface waters would have an insignificant effect on water-table elevation in F and H areas." (Page 4-34, Par. 7)	The reference is Duffield et al., 1987, and has been incorporated in text.

Table L-2. DOE Responses to Comments on Draft EIS
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Comment number	Comments	Responses
C-64	Premise is false since groundwater remediation will occur. Please correct or justify these analyses. (Page 4-46, Par. 5)	While groundwater remediation may be required under the Dedication strategy, the values listed in tables throughout Section 4.2 are modeling predictions based on closure under the Dedication strategy but without further groundwater remediation. This paragraph has been clarified in the FEIS (see first paragraph of Section 4.2.2.4).
C-65	Why is the individual peak dose for H-Area retention basin higher for the dedication strategy than for the no-action (Table 4-11) alternative at some sites? This does not appear reasonable. (Page 4-47)	The doses indicated are predominantly from strontium (Sr-90) in groundwater that could be consumed in the year 2085 (i.e., at the end of the institutional control period). Peak concentrations of Sr-90 are much higher for no action than they are for dedication, but both occur during the period of institutional control in groundwater that is not consumed by the public or plant workers. The closure actions under dedication reduce the concentration and slow down the movement of the contaminants. Modeling indicates that in the year 2085 the Sr-90 plume will have moved beyond the 1-meter well such that the residual dose at the 1-meter well in year 2085 is predicted to be slightly higher under the Dedication strategy.
C-66	Why are risks at the radioactive waste burial grounds higher for the dedication strategy than for the no-action strategy? (Page 4-48)	Risks at the radioactive waste burial grounds are lower for the Dedication strategy than for the No-Action strategy. See Tables 4-27 and 4-12, respectively.

Comment number	Comments	Responses
C-67	Dedication strategy indicated nine groups would require groundwater remediation yet this paragraph says that the number is unchanged for the elimination strategy which indicated only eight groups. Which is right? (Page 4-62, Par. 3)	Nine is correct.
C-68	Why would not the total removal of waste reduce peak groundwater concentrations? (Page 4-72, Par. 1)	Modeling predicts that at many sites constituents have already leached past the areas of practicable excavation. Removal of waste to the extent practicable would not reduce peak groundwater concentrations within the original boundaries of these sites.
C-69	We have already commented on the use of MCLs, but to now further obscure reality by arbitrarily incorporating a factor of three times an MCL is inexcusable. Redo analyses for all sites which either exceed background or are predicted to exceed background, or fully justify another approach. (Page 4-72, Par.4)	Under the Combination strategy, cost-effective remedial actions would be implemented as required. The beginning of Section 4.2.4.1 has been revised to explain the estimate of whether waste removal at a particular site would be a cost-effective remedial action. The paragraph that follows the referenced paragraph explains that waste removal at specific sites was assumed in order to provide a basis for comparison of alternatives and the final decision on waste removal would be determined through regulatory interactions.
C-70	Stating that the no-action alternative continues to protect the off-site environment is unsupported speculation, especially since earlier the EIS states that off-site releases already occur. Please remove all such statements from the EIS. (Page 4-78, Par. 2)	See the response to comment C-27. Offsite releases are below environmental standards.
C-71	The last sentence is unsupported speculation and unless it can be referenced and documented as fact, it should be removed from the EIS. (Page 4-79, Par. 2)	The sentence has been deleted.

Comment number	Comments	Responses
C-72	Unless all waste and contaminated groundwater is removed from a site it may still require a period of institutional control. Thus the statements regarding site dedication impacts under the elimination and combination strategies are incorrect and should be removed or more fully documented. (Page 4-81)	See the response to comment C-30. Site dedication would not occur during the period of institutional control. Under the Dedication, Elimination, or Combination strategies, contaminated groundwater would be cleaned up as required during this period. If the waste is also removed (i.e., all sites under Elimination, selected sites under Combination), site dedication at the end of the institutional control period would not be necessary.

Comment number	Comments	Responses
C-73	Entire paragraph is unclear. Please rephrase in plain English. Are you saying that the models etc. are so inaccurate that they really constitute a guess? (Page 4-85, Par. 2)	The model provides a preliminary comparative estimate of environmental impacts and risks. See the response to comment C-12.
C-74	Please provide a reference for the fact that disposal sites are dedicated in perpetuity or remove this statement and redo the appropriate analyses. Use of a site for disposal purposes does not preclude other controlled uses. (Page 4-88, Par. 3)	See the response to comment C-32.
C-75	Nothing precludes siting new facilities above existing disposal sites provided adequate precautions are used. Thus the impact of constructing new facilities would be less than indicated. (Page 4-92, Par. 4)	If the Elimination strategy is selected in the Record of Decision on this EIS, siting of new storage facilities may include the use of existing waste sites following waste removal and closure.
C-76	Please provide information regarding your assessment of the impacts and costs associated with delisting (as it will be required) the hazardous wastes (e.g., incinerator ash) prepared for disposal in the Cement Flyash matrix. Delisting is a long, often expensive process. Was this time delay consideration included in your assessment of the CFM facility? If it was not, please include it in your analysis and redo it. (Page 4-118, Par. 4)	The time for and costs of delisting CFM waste were not considered in this EIS since this proposed project has not reached the conceptual design phase. See the response to comment C-39.
C-77	No area at SRP has been permitted for the disposal of hazardous waste. All are operating under interim status. Please explain this misleading statement. (Page 4-119, Par. 1)	The text has been revised. The permit issued for Z-Area is an industrial landfill permit (see regulations at R.61 issued pursuant to the South Carolina Pollution Control Act).

Table L-2. DOE Responses to Comments on Draft EIS
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Comment number	Comments	Responses
C-78	The statements regarding Sandoz Inc. are purely speculative. Since this is an actual facility please replace the speculation with actual facts regarding the facility. Such information may be obtained from SCDHEC as public information. (Page 4-122, Par. 4)	The statement has been deleted.
C-79	Speculative statements regarding economic feasibility are not appropriate in the EIS. Either provide a detailed cost benefit analysis or remove the statement. Many of the mitigative measures required by RCRA are expensive, yet they are required. (Page 4-131, Par. 4)	The sentence has been revised.
C-80	The compliance point at a land disposal facility is far from imaginary. It is a very precisely defined location. Please remove this phrase. (Page 5-2, Par. 1)	The text has been revised.
C-81	Please explain further the rationale for filtering samples for metals analysis. Excess particulate matter in the sample may result from poor well development and/or poor construction techniques. Please discuss these possibilities and explain the data selection criteria which allows the use of samples from poorly developed or improperly constructed wells. A properly constructed and developed monitoring well should not have excess particulate matter. (Page 5-5, Par. 1)	See the response to comment C-52 on filtration of samples for dissolved metals determinations.
C-82	"Compliance monitoring" is only performed at a permitted facility. M-Area is not permitted and any monitoring should be done under the interim status regulations. Please revise this section as it demonstrates a lack of understanding of the regulations. (Page 5-7, Par. 6)	Compliance monitoring is required at M-Area under an Administrative Consent Decree, 85-70-SW.

Comment number	Comments	Responses
C-83	Groundwater is part of the environment and there is no need to attempt to differentiate it from the rest of the environment. (Page 6-1, Par. 1)	The EIS emphasizes groundwater protection, but considers all potential environmental impacts.
C-84	In the event of conflicts who decides what standards provide the greatest protection? Is this a decision making process subject to public review? (Page 6-2, Par. 4)	DOE makes the final decision; however, public participation will be encouraged in accordance with regulations.
C-85	Since the government is both "procedurally" and "substantively" subject to compliance with CERCLA, sites on federal facilities are not "equivalent" to CERCLA sites, they in fact are CERCLA sites. Please make this clear. (Page 6-4, Par. 2)	The text has been revised. Federal sites that come under CERCLA purview are not remediated through CERCLA (Superfund) monies as are commercial sites. None of the sites at SRP are currently on the National Priorities List.
C-86	This is such a misleading and simplistic summary of RCRA and the HSWA. HSWA did not ban land disposal of hazardous waste; rather it required DEPA to evaluate wastes for their suitability for land disposal and to ban any wastes not determined suitable. This is vastly different from an outright ban. Please correct this. (Page 6-5, last par.)	The text has been revised; "land ban" is used commonly and popularly; however, "restricted disposal" or "land disposal restrictions," have been used in the FEIS.
C-87	It is inconceivable how a discussion of RCRA and the HSWA can completely ignore the provision of the HSWA which most significantly affects SRP, i.e., the requirement to perform corrective action at solid waste management units (SWMUs) determined to be releasing hazardous waste constituents into the environment. Any permit issued under RCRA and HSWA must contain provisions requiring such corrective action. This is required regardless of when waste was placed into a unit. Thus all of the sites at	The alternative waste management strategies include project- and site-specific actions which include waste removal, closure, and remedial action (groundwater corrective action) as required by regulations. DOE complies with these requirements. See Chapter 2 for an explanation of the waste management strategies. Section 4.2 and Appendix F identify sites that may require groundwater corrective action.

Comment number	Comments	Responses
	SRP which are discussed in the EIS and which are not subject to RCRA permitting requirements are SWMUs subject to the corrective action provisions of HSWA. There will be no CERCLA actions at SRP since all SWMUs are subject to HSWA. Please correct this discussion or provide an explanation of why this aspect of HSWA is not discussed or considered significant. Further please explain how any, reasonable evaluation of waste management strategies could be made while ignoring the single most important requirement of HSWA. (Page 6-5, Par. 1)	
C-88	Closure dates for F and H area seepage basins must be on or before November 8, 1988 or SRP will be in violation of the statute. Since the EIS states that all recommended actions will comply with the law, please revise the table to indicate closure of these basins by the required date.	A closure plan for the F- and H-Area seepage basins has been prepared and submitted to SCDHEC. Dates of closure will be determined through interactions with SCDHEC. DOE and SCDHEC are aware of potential schedule delays.
C-89	No mention of the SWMU requirements of HSWA is included in the table (Table 6-1), please correct this. (Page 6-7)	SWMU requirements are not included in Table 6-1; the table presents Interim Status information. See the response to comment C-91.
C-90	Who decides which regulation provides the greatest protection? Is this decision subject to public review, and if not why not? (Page 6-8, Par. 3)	DOE makes the determination following interactions with the regulatory agencies. These decisions are reviewed in public meetings and are otherwise available for review by the public through the administrative processes of the reviewing agencies. See the response to comment C-84.

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Comment number	Comments	Responses
C-91	This is the only mention of the SWMU provision of HSWA. Please provide a detailed analysis of the effects of the continuing release provision of HSWA at SRP. (Page 6-8, Par. 5)	Some existing waste sites may be closed under Section 3004(u). Addressing SWMU in detail is beyond the scope of this EIS. The SRP has been responsive to the requirements of EPA's National Corrective Action Strategy for SWMU's; RCRA Facility Assessment has been conducted and additional activities for SWMUs are detailed in the Hazardous Waste Management Facility Permit for SRP (Gleason to Wright, 6/29/1987). The need for corrective measures for these sites will be determined in the 3004(u) corrective action process.
C-92	Any facility which closes prior to permitting must meet the requirements for closure and post-closure found in 40 CFR Part 265. The requirements of part 264 only apply to facilities to which a permit has been issued. Please correct this. The failure to discriminate adequately between the 264 and 265 requirements demonstrates the lack of understanding and consideration of the regulations evident throughout the EIS, especially Chapter 6. (Page 6-8, Par. 6)	Text has been corrected to reflect interim status and closure of these and facilities that may be closed under Section 3004(u).
C-93	Although an MOA may recognize the constraints of the federal budgetary process, this does not relieve SRP of the duty to comply with law and regulations. Please make this clear. (Page 6-10, Par. 6)	DOE has stated its commitment to comply with all applicable regulations. Text has been revised.

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Comment number	Comments	Responses
C-94	Mr. Brandt is the only individual identified having specific responsibility for preparing the response to the scoping comments in Appendix K. Please provide more information regarding his qualifications to address adequately the various technical issues raised during the scoping process. (Page L-P-2)	Mr. Brandt, listed as preparer of responses to public scoping comments, had the responsibility of assembling the responses from a large number of professional staff contributors.
C-95	Please provide a reference for this statement. (Page A-3, Par. 2)	Siple, 1967 (see the references to Appendix A).
C-96	Use of any model-generated potentiometric map is fraught with assumptions. Wherever such maps are used, please include an estimate of the error associated with them (i.e., a confidence interval). If not available please refrain from using such materials. (Page A-23, Par. 1)	The statement relative to the source of the model has been deleted from the text.
C-97	Provide a reference and an explanation for the statement that the contaminants would require over a hundred years to reach the river. (Page A-27, Par. 1)	Horizontal flow velocity in the Black Creek aquifer is estimated to be 100 meters per year in the direction of the Savannah River. The distance from the M-Area to the Savannah River is estimated to be 16100 meters. The correct elapsed time for contaminants to reach the river is 16100/100 = 161 years or over a hundred years. The text has been revised. (M-Area Part B Post-Closure Application, 1987).

Comment number	Comments	Responses
C-98	How can contamination by manganese be considered improbable when three wells failed Student's t-test? Further, the interim status groundwater monitoring requirements only address using statistical comparisons for the four indicator parameters pH, specific conductivity, TOC and TOX. Please explain how and why a statistical comparison was made using other parameters. Also please discuss assumptions of the statistical methods and their validity for comparisons of data of this sort. (Page A-45)	1. Manganese is not known to be used in the process, therefore, is not released. 2. Manganese was not detected (<0.005 mg/L) in basin influent. 3. Failure in the context of the EIS means failure to reject sampling variations between wells. Discussions of the tests used and their validity is beyond the scope of Appendix A, but is included in references.
C-99	In DOE's transmittal "Additional Information in Response to the U.S. EPA continuing Release Questionaire" contained in a letter to J. E. Revan (2/11/87) several waste sites were listed that were not included in the EIS. Include the following sites in the EIS or explain their absence. 131-L L-Area Burning/Rubble Pit 231-2F F-Area Rubble Pit 231-4F Burning Road Rubble Pit 731-2A A-Area Rubble Pit. (Section B)	These sites were not included in the EIS because available information did not indicate that they contained "criteria" constituents. Recent data indicate that some "criteria" constituents may exist at some of these sites (possibly lead and acid from batteries). Further efforts are underway to fully characterize these sites. The characterization of these sites as "criteria" sites did not affect the conclusions of the EIS or the selection of the preferred alternative. The L-Area Burning/Rubble Pit is included in this EIS (see Sections 2.2, 4.2, B.10.1.1 and F.9.1). The possibility that batteries may have been disposed of in the other three sites was discovered only recently. The site characterization process, source documentation, and EIS preparation has been ongoing for approximately two years. See the response to comment C-14.

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Comment number	Comments	Responses
C-100	In DOE's transmittal (See Section B Comment above) many dates of waste receipt are different than those listed in the EIS. Correct the EIS to list the accurate date of waste receipt. (Section B)	Corrections have been made to the text, Table 5-2.
C-101	No hazardous waste storage facilities have received permits. All are operating under interim status. Please explain and correct this statement. (Page B-3, Par. 1)	The text has been corrected to reflect interim status.
C-102	Why are date not available? Sampling has been done for over two years. Please explain. (Page B-5, Par. 6)	Data were available from February 1984 on, but were not evaluated at the time of the first draft of Appendix B. The text in the FEIS has been revised to reflect current (1986) assessments (Zeigler et al., 1987).
C-103	This statement is highly speculative and should either be supported by references or by a thorough explanation of the basis upon which it was made. Either delete it or justify it. (Page B-23, Par. 5)	The sentence has been deleted.
C-104	Given that contamination has already been detected below the green clay please justify by references and explanations how you then conclude the green clay is "a significant barrier to vertical contaminant migration." (Page B-46, Par. 5)	The "green clay" is discontinous but does serve as an aquitard in some locations.
C-105	Given the uncertainty surrounding the use of this site, how do you assume that only hydrofluoric acid was spilled here. (Page B-72, Par. 3)	This area is classified as a waste site only because there may have been a spill of hydrofluoric acid. The selection of chemical constituents for environmental assessment was performed for this site in the same manner that it was for all other sites (see Section 4.2). Lead was detected in monitoring wells and selected for assessment. Fluoride was also selected because of the suspected hydrofluoric acid spill. See the reference to Appendix A, Huber and Bledsoe, 1986a.

Comment number	Comments	Responses
C-106	What constitutes a "significant" concentration of organics? (Page B-74, Par. 2)	The expression has been changed to "elevated."
C-107	What MCLs are being used for lead and mercury and please justify their use if they differ from the interim primary drinking water standards. (Page B-74, Par. 3)	The MCLs are the same as IPDWS and are used for comparative purposes only.
C-108	What applicable regulations will be followed? (Page B-84, Par. 6)	Closure of the new TNX basin will be determined following further basin characterization.
C-109	What other lab chemicals were disposed of and in what quantity? (Page B-85, Par. 2)	Details of disposal of chemicals are given in the EID for this basin. (See references to Appendix B, Kingley, et al.)
	Entire paragraph is not supported by references.	References have been furnished in the FEIS (Kingley et al., 1987). Other chemicals selected for environmental assessment were primarily selected because they were found in groundwater and soil samples, not because they were known to be present in the basin influent. They include barium, chromium, phosphate, uranium, and trichloromethane.
C-110	Either provide references or explanations justifying these speculations or eliminate the paragraph. (Page B-92, Par. 2)	Deleted in part.
C-111	If the tan clay is not there, it is not there. Please provide a reference for the last sentence. (Page B-113, Par. 2)	Reference is provided: Scott et al., 1987.
C-112	In situ treatment comprises many other options than that described. Please provide up-to-date information. (Page C-2, Par. 2)	Appendix C presents treatments that are considered applicable to the SRP. See the response to comment C-113.

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Comment number	Comments	Responses
C-113	The references EPA 1982 and 1985 are significantly out of date. SRP is designing waste management operations to continue well into the future. The technology of waste treatment is rapidly expanding and the EIS should consider the very latest technology available. Please update the references and provide information and evaluations of the latest technologies (e.g., plasma torches, in situ vitrification, infrared or microwave destruction etc.). (Page C-1, Par. 4)	DOE will consider state-of-the-art waste management technologies as they become available. The emerging technologies cited in the comment are still in the development stage; their technical and economic feasibility have yet to be demonstrated. Section 4.8 discusses the use of emerging technology at the SRP.
C-114	No matter what level of contamination is involved, leachate from a hazardous waste landfill is defined as being hazardous waste and must be handled as such. Please correct this statement. (Page E-5, Par. 6)	Text has been corrected.
C-115	This is the first indication in the EIS that SRP may accept hazardous waste generated at other government facilities. If SRP contemplates disposal of other than self-generated wastes substantial impacts from transportation etc. are possible and the cost of operation will increase since facilities accepting offsite waste are subject to additional regulatory requirements. None of these impacts are discussed in the EIS. Please do so and more fully explain exactly what other governmental generators SRP will accept waste from and what types and quantities of waste are expected. (Page E-11, Par. 4)	DOE-SR accepts only radioactive waste from offsite: naval hardware, tritiated waste from other DOE facilities (Mound Laboratory and Pinellas), job control waste from Westinghouse-Bettis Atomic Power Laboratory, Shippingport, Knolls Atomic Power Laboratory, and classified wastes from the Naval Reactor Program and DOE facilities. Absolute volume determinations cannot be made; however, offsite waste shipments to the SRP are approximately 5 percent of the onsite-generated volume (about 95,000 ft^3 per month). The types are described in the preceding paragraph. Quantities are described in the Cook reference, DPST-85-862.

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Comment number	Comments	Responses
C-116	Please provide complete documentation for all cost estimates including all assumptions made. Simply providing the bottom-line numbers does not supply enough information for a reviewer to determine the validity of the estimates or the accuracy of the assumptions. (Page E-21, Par. 5)	Costs are documented and referenced in Appendix E, Moyer, 1987 (DPSP-87-1008). Accuracy of study cost estimates and validity of assumptions are given in the cited reference (DPSP-87-1008).
C-117	The cost estimates on Table E-5 for disposal of solid wastes are extraordinarily high. The per cubic yard costs for hazardous waste management under the various options equate to: No-action = $636.00 per cubic meter Dedication = $1340.00 - $1826.00 per cubic meter Elimination = $1763.00 per cubic meter Combination = $1763.00 per cubic meter	As stated in the narrative that accompanies the cost tables in Appendix E, the cost ranges are given to indicate the relative magnitude of cost. They were not intended for comparison to actual costs nor were they represented as such. Cost estimating of complex waste management facilities uses a process of continual refinement at each stage of planning. Since numerous uncertainties which currently exist will be addressed by future planning and regulatory interactions, the assumptions made for costing purposes have been generally conservative and have resulted in the cost error being higher than the probable cost rather than lower. Costs have been updated and revised in the Final EIS to reflect the most recent estimates but will continue to be revised as future planning and regulatory interactions reduce the uncertainties.
C-118	Attached is a price list dated January 1, 1987 from a commercial hazardous waste disposal facility in Emelle, Alabama. The per cubic yard disposal cost of organic, bulk solids is quoted as $115.00. This equates to a cost of $150.65 per cubic meter. Disposal of drummed inorganic solids is given as $98.00 per drum and since approximately five drums are needed per cubic meter even disposing of all wastes in drums is less than $500.00	See the response to comment C-117.

Comment number	Comments	Responses
C-119	There is something grossly wrong when a commercial facility designed according to the RCRA standards and operated for profit, can charge less for disposal than it would cost SRP to do nothing, i.e., the no-action strategy. The same facility could dispose of all SRP hazardous waste for less than 1/3 the cost of SRP operating its own facility. Please note that the costs in Tables E-5 etc. are only for operation of the facilities and do not include any post-closure costs. The price quoted from the commercial facility does include the post-closure costs.	See the response to comment C-117.
C-120	Please fully explain and document why waste management at SRP would be so much more expensive than at a commercial facility. Costs for disposal at a nearby South Carolina commercial facility are a little more expensive than at Emelle (see attached) yet are still much less than at SRP. Thus site location alone can not fully justify the excessive SRP costs.	See the references at the end of Appendix E. Also, see the response to comment C-117.
C-121	Was the option of having a professional hazardous waste management firm construct and operate the SRP facilities explored? Please justify these cost estimates with specific data and references.	Justification of preliminary study estimates is not within the scope of the EIS.
C-122	Costs for mixed waste management are also high. Please provide adequate documentation for these costs. (Page E-23, Par. 5)	References for revised cost estimates are given at the end of Appendix E.

Comment number	Comments	Responses
C-123	Utilizing questionable modeling results, when for many sites actual data are available, is not appropriate. Please eliminate all modeling where data are not available.. Where models are used please include error estimates for each parameter and the upper and lower bounds of any predicated results. Otherwise how can the results be reasonably interpreted? (Page F-1, Par. 1)	Reliability of the model is given in Appendix H and in referenced supporting documents. Appendix F provides assessments.
C-124	As stated earlier MCLs that have not been formerly promulgated have no regulatory basis and should not be used. Please revise all analyses to compare to background values or provide a legal justification for use of MCLs. (Page F-1, Par. 5)	See the response to comment C-5.
C-125	Please identify specifically what compounds were modeled and not reported. Further, in absence of a standard, do you conclude that no matter how high the level of contamination, no impacts will occur? Many highly toxic chemicals do not have established MCLs. Background levels must be used when MCLs are not available. (Page F-2, Par. 4)	Compounds and constituents that were modeled or represented are given in Section 4.2. References to constituent selection are given in Appendix H. See the response to comment C-5.
C-126	If the model used is not field-verified then why should its results be trusted? If you cannot compare the model results to actual results in a reasonable manner then the usefulness of the model is very questionable. Please fully justify use of and reliance on such a model, particularly if actual analytical results are available. (Page F-2, Par. 5)	The model was used to compare the relative impacts of the alternative waste management strategies, to predict future concentrations and health risks in a multi pathway/receptor manner. See Appendix H as revised and the Fjeld, et al., reference document.

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Comment number	Comments	Responses
C-127	Explain how it is possible that no environmental releases of any sort are coming from an open pit. (Page F-6, Par. 1)	Expected environmental releases were not determined since no chemical constituents at or near threshold selection criteria were identified for 716-A Motor Shop Basin. See the revised text in Appendix B.
C-128	There are no drinking water standards for tetrachlorethylene and trichloroethylene. (Page F-8, Par. 1)	Text will be revised to state applicable standard or MCL. See the response to comment C-5.
C-129	Why was trichloroethylene not chosen for modeling? (Page F-30, Par. 5)	There is no record of trichloroethylene disposal at the SRL seepage basins. The source of VOCs in SRL wells is not definitely known.
C-130	There is no guarantee that the air stripper will only operate for thirty years. The regulations require it to operate until complete remediation is obtained. This could exceed thirty years. (Page F-44, Par. 2)	The length of time the air stripper will operate is selected as 30 years for the purpose of the EIS assessments. The actual operation period may exceed 30 years. DOE estimates that 75,000 pounds of VOC have been removed from groundwater (Du Pont DPSP 87-26).
C-131	Correct exponentiation on line 6 of this paragraph. (Page F-72, Par. 5)	The text has been corrected.
C-132	Why would the current cap, if it is sufficient, have to be removed? Why would the office trailer have to be relocated? (Page F-146, Par. 1)	The cap is stated not to meet current regulations. The trailer must be removed to provide complete access to the asphalt, the clay cap, and the underlying waste.

Comment number	Comments	Responses
C-133	It does not seem reasonable that removing a source of contamination would not reduce releases to the groundwater. Please explain. (Page F-147, Par. 4)	In many cases contaminants disposed in the waste have already leached below the area of practicable waste removal; removal of the waste, therefore, does not recover the contaminants.
C-134	This is incorrect, especially since MCLs have not been promulgated for many of these chemicals. The recommended MCLs for benzene and trichloroethylene are zero (ADLFR 141.50). (Page F-188, Par. 3)	The final MCLs for benzene and trichloroethylene are 5 g/L (52 FR 25690).
C-135	RCRA does not contemplate a landfill, designed and operated in accordance with the regulations, but which does not have a low-permeability cap. Eliminate this option from consideration. (Page G-7, Par. 2)	The subject paragraph does not present an alternative or option. Rather, it is describing the results of a modeling effort designed conservatively to evaluate the performance of a low-permeability cap as an integral component of a RCRA facility. The result of this evaluation, Table G-3, clearly shows the contribution of the low-permeability cap, as well as the potential impacts of a failure in the cap.
C-136	A review of this table simply does not support the choice of the combination strategy. There is no significant difference between the dedication and combination strategies and both appear less desirable than the elimination strategy. If this table is thought to justify the choice of the combination strategy, it fails to do so. Please explain. (Page G-31)	The Combination strategy includes storage for low-level radioactive waste (an elimination approach), while the Dedication strategy includes engineered low-level trench disposal which would require dedication at the end of the institutional control period. See Tables G-7 and G-10 for a comparison of the differences in doses.

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Comment number	Comments	Responses
C-137	Explain in detail the modifications made to the model. Include information on testing and validation of the modified model. (Page H-1, Par. 3) None of the four assumptions are satisfied. *Aquifers are not one-dimensional *Contaminant release is neither constant nor exponentially decaying. *pH etc. do affect things *plug flows do not describe the movement of contaminants.	References to the models testing and verfication are cited at the end of Appendix H. For details on modifications to include hazardous constituents, see Rogers, V. C., G. B. Merrell, and M. K. Bollenbacher, 1986.
	How then can the model be adequate? (Page H-4, Par. 2)	See the response to comment C-12.
C-138	Many thousands of data points are available to validate the model at SRP. There is no excuse for not doing so. This is poor scientific technique. Basing much of the EIS on a non-validated model is ridiculous. Validate the model using real data and determine if it is appropriate. (Page H-9, Par. 2)	Appendix H, as revised, discusses the appropriateness and adequacy of the model as a basis for comparative evaluations of alternative strategies.
C-139	This paragraph creates a very convoluted and questionable protocol. (Page I-2, Par. 3)	DOE considers the protocol to be conservative and useable for the purposes of the EIS.
C-140	EP toxicity extractions are not designed for nor suitable for use on organic contaminants. The TCLP is better. There is no justification for a factor of ten dilution (leaching); and finally MCLs are not established for many of these constituents. Please explain why this procedure should be acceptable. (Page I-2, Par. 4)	The TCLP test was a proposed method when the selection criteria were established. The EP toxicity test was the standard protocol. The justification for the factor of 10 dilution is given in EPA 1985a and footnote c of Table I-2. See the response to comment C-5 on MCLs.

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Comment number	Comments	Responses
C-141	Soil concentrations for non-radioactive constituents are not properly described in pCi/g. (Page I-5)	The units cited have been changed to read micrograms/gram (g/g).
C-142	Using Looney et al., 1986, an in-house document not subject to peer review, as a major reference (e.g., on pg. I-2) is unacceptable. Please provide published references for the techniques etc. (Page I-14)	All of the references cited in the EIS are available in public reading rooms.
C-143	As indicated throughout our comments we do not feel the regulatory process was taken into consideration. (Page K-4, Par. A-1)	See the response to comments C-1 and C-2.
C-144	The SARA requirements relate to far more than waste sites. Provide the required disclosures except where national security prevents it. (Page K-6, Par. A-14)	The scope of the EIS applies to waste management. The characteristics and constituents detected in waste sites, monitoring wells, and soil samples are discussed in Appendix B, Chapter 4, Appendix F, and referenced documents.
C-145	Why are existing storage and idle production facilities outside the scope of the EIS? These waste storage sites could impact groundwater. Further, the EIS does not address anything regarding underground tanks. (Page K-6, Par. A-16)	Underground storage tanks containing high-level waste and idle production facilities are not used to dispose of hazardous low-level radioactive or mixed waste and are, therefore, outside the scope of this EIS. The rationale for not assessing the hazardous waste storage buildings is presented in Appendix B, Section B.1.1. Major Federal actions which might affect groundwater resources (as defined at 40 CFR 1508.18) are not anticipated for these facilities. If actions at these facilities are proposed, NEPA documentation will be prepared.

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Comment number	Comments	Responses
C-146	Response does not address question asked. In absence of a treatment and disposal option, storage of wastes banned from land disposal is prohibited. Please address this question. (Page K-7, Par. A-18)	With the exception of no action, all alternative new storage/disposal facilities, including retrievable storage, will comply with RCRA, as amended. Pretreatment technologies are presented in Appendix D.
C-147	The RCRA corrective action provisions do not require the presence of regulated hazardous waste to be triggered. Again response does not address how SRP plans to comply. (Page K-9, Par. A-27)	DOE is complying with RCRA at the SRP on a sitewide (Part A) and an individual facility basis. Since individual Part B closure permits generally exceed, in terms of specificity and volume of information, an EIS, the types of permitting actions are clearly beyond the scope of the closure and remedial action strategies discussed in the EIS.
C-148	This question addresses specific sites and their activities required by RCRA. Chapter 6 does not begin to address this question. (Page K-10, Par. A-30)	See the response to comment C-147. Refer to Section B.1.1 for the rationale for not including the experimental sewage sludge application sites and the coal pile runoff containment basins. See the response to comment C-145 regarding the underground storage tanks.
C-149	Chapter 5 provides no information regarding the questions asked. If this or other questions are felt to be out of the scope of the EIS state that but do not attempt a "smokescreen" answer by implying that a comment is addressed in a section where it obviously is not. (Page K-11, Par. A-31)	EIS Section 6.1 summarizes compliance with RCRA and other applicable groundwater assessment requirements. Further detail is beyond the scope of this EIS. DOE publishes annual and quarterly environmental reports that detail data analysis, quality control, and data intercomparisons.
C-150	See response to A-31. Data quality used in the EIS is a major concern and was never addressed. (Page K-12, Par. A-32)	See the response to comment C-149.

Comment number	Comments	Responses
C-151	This question was not addressed in Chapter 5. See response to A-31. (Page K-13, Par. A-33)	See the response to comment C-149.
C-152	This comment was not addressed in Chapter 6. No place in the EIS is any planning for meeting regulatory requirements done. (Page K-15, Par. A-37)	Chapter 6 identifies Federal and State environmental requirements, including South Carolina hazardous waste management permit regulations (R.61-79.270). This regulation establishes procedures for facilities such as the SRP to follow in order to receive agency approval to construct new hazardous waste management units while the facility is operating under interim status (R.61-79.270.72). The regulation also establishes procedures to be followed once the facility receives its final operating permit but needs agency approval to construct new units (R.61-79.270.10(f)). Before constructing any hazardous waste management units, DOE would obtain applicable agency approvals including hazardous waste management facility permit modifications. To the extent possible, these activities would be carried out concurrently with other preconstruction planning, evaluation, and design activities.
C-153	This response does not address the question of establishing independent monitoring programs. (Page K-40, Par. G-7)	The EIS was prepared to assess the environmental consequences of the implementation of alternative waste management activities at the SRP and to assure compliance with NEPA. The issue of outside oversight of the SRP is not within the scope of the EIS proposed action, and its resolution is not necessary for compliance with NEPA.
C-154	Again the response does not address the question. (Page K-58, Par. K-4)	See the response to comment C-153.