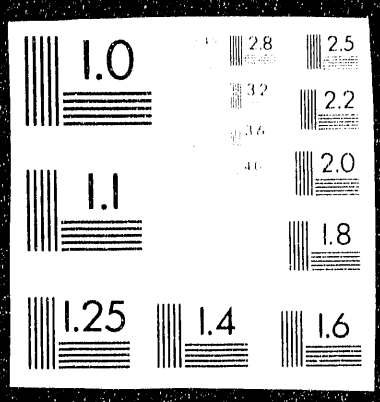


ACTION ITEMS FROM September 26, 1991 MEETING (CONTINUED)

WSRC-MS--92-126

DE92 010681

MEETING RECORD FOR FFA WORKING MEETING OF 11-15-91 (U)

by

WSRC Contact: G. F. Stejskal

Westinghouse Savannah River Company
Savannah River Site
Aiken, South Carolina 29808

A meeting record for the Environmental Protection Agency; South Carolina Department of Health and Environment Control; OSTI, and the general public.

DISCLAIMER

The information contained in this article was developed during the course of work done under Contract No. DE-AC09-89SR18035 with the U.S. Department of Energy.

MEETING RECORD

No.: MR-91-445R
Date: January 3, 1992

IDENTIFICATION TITLE AND NUMBER: Contract No. DE-AC09-87SR15107, Task Assignment 007, Waste Management Support

MEETING DATE AND TIME: November 15, 1991; 9:30 a.m.

MEETING LOCATION: North Augusta Community Center, Rooms C-1 and C-2

PURPOSE OF MEETING: Federal Facility Agreement (FFA) Working Meeting (See Agenda, Attachment A)

PARTICIPANTS: See List of Participants (Attachment B)

SUBJECTS DISCUSSED:

- Old Issues

  A representative for Westinghouse Savannah River Company Environmental Protection Department (WSRC-EPD) opened the meeting and gave a synopsis of the status of action items from previous meetings. (See Attachment C.)

  The representative stated that the Savannah River Site (SRS) submitted a letter on October 10, 1991, to the Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) regarding delays being caused by a Department of Energy Headquarters (DOE-HQ) audit.

  The parties decided that SCDHEC will coordinate the distribution of corrected Resource Conservation and Recovery Act (RCRA) permit pages during the April 1992 renewal process.

  An EPA representative inquired whether the Work Plan for the Miscellaneous Chemical Basin to be submitted in late December 1991, will contain the details of the proposed technology demonstration. A WSRC Environmental Restoration (ER) representative indicated that EPA and SCDHEC will be receiving correspondence in the near future regarding scheduling for this operable unit. The technical demonstration will be a part of the Phase II Work Plan.

- Tritium in Georgia

  A representative of WSRC-EPD gave a presentation regarding tritium discovered in groundwater in Georgia. (See Attachment D.) During routine monitoring, the Georgia Department of Natural Resources detected tritium in a drinking water well. The well, located in a trailerpark, is in Georgia across the Savannah River from the SRS. The well is screened in the Tertiary aquifer. The State of Georgia issued a letter stating that the presence of tritium does not pose a health threat. An EPA representative requested a copy of that letter. The WSRC-EPD representative stated that if a person drank two liters of water from the well every day for 125 years, the dose would be equivalent to the dose received in one chest x-ray. The concern is the mechanism of transport. DOE is currently funding a $6 million study (over a five year period) through the USGS of the Cretaceous aquifer (below the Tertiary

aquifer) under the Savannah River to analyze the potential for migration and to use the information for modeling in the future. When a report is issued, a copy will be forwarded to the EPA.

SRS representatives noted two transport scenarios that are considered by SRS to be more likely causes of the observed contamination than migration of the contaminants under the Savannah River. The first of these scenarios is that the well's casing has deteriorated and tritium in the surface soil has contaminated the groundwater. Alternatively, the contamination may be the result of contaminated rainfall percolating through the soil to the water table. The latter scenario matches rainfall patterns in the area and would correspond to airborne contamination present in the 1960s and 1970s. Not all of the airborne contamination at that time was attributable to the SRS. Weapons testing and natural radiation contributed to the world inventory of airborne radioactive contamination.

DOE-HQ has provided the State of Georgia with $800,000 funding and technical assistance to study this matter in more detail. The EPA representative requested a copy of the State of Georgia's Scope of Work for this study. He stated that EPA may be interested in the information this study generates.

- F- and H-Area Project Status

A representative from WSRC-ER gave a presentation regarding the status of the F- and H-Area Seepage Basin groundwater project. (See Attachment E.) The RCRA corrective action that has been taking place at this unit is geared toward remediation of groundwater. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial action concerns groundwater as well as soil and the potential risks associated with both. The cleanup alternatives evaluated thus far concern contaminated groundwater without source control of the contaminated soil. These alternatives are expensive and provide little protection since the contaminated soils continue to contribute to groundwater contamination.

SRS is proposing an Interim Proposed Plan which will require institutional control and continued monitoring. Alternate Concentration Levels (ACLs) and South Carolina standards regarding the mixing zone will be maintained during this interim period. In the mean time, SRS will fully characterize the subsurface and revise the risk assessment accordingly. Treatability and groundwater studies will continue. Based on this additional information, a Feasibility Study will be written which evaluates viable technological alternatives. These alternatives may have to be developed for this unit. A Final Proposed Plan for groundwater and soils would be issued.

The WSRC-ER representative ndicated that the ACL and Mixing Zone Demonstrations will be stand-alone documents and should be submitted in January of 1992. The contaminants of concern are aluminum, sodium, lead, nitrate, and low pH.

EPA and SCDHEC representatives expressed concern that it is difficult to assure institutional controls for thousands of years. They went on to say that there is no precedent. Another WSRC-ER representative agreed that SRS is unique, but went on to suggest that similar issues are being addressed at Maxi Flats and at a Department of Defense/Department of Energy (DOD/DOE) site. Another EPA representative reminded the parties that the National Contingency Plan (NCP) states that institutional controls cannot be used as a substitute for remediation. SRS

representatives acknowledged this position and indicated that this is the reason why SRS will continue to evaluate innovative technologies.

A meeting is to be held the week of November 18 to discuss the interim proposed plan. After this meeting, SRS will have a better idea of the schedule. An EPA representative stated that the interim proposed plan should be submitted as soon as possible and should contain the schedule of future events.

- Document Review Protocol

A representative of DOE-SR/ERD gave a presentation concerning new DOE-HQ requirements involving document review. All primary, secondary, and National Environmental Policy Act (NEPA) documents will be reviewed by DOE-HQ. In addition, any document which sets or implements policy must have Leo Duffey's personal approval. SRS is currently working with HQ to provide concurrent reviews before the documents are submitted to the regulators. The reviews are necessary to provide for consistency among DOE facilities and to assist in the budgeting process.

An EPA representative inquired as to when EPA would received the draft Timetables and Deadlines for 1992. The DOE-SR/ERD representative indicated that this document should be transmitted within 30 days.

The DOE-SR/ERD representative went on to say that the independent cost review of environmental restoration activities by DOE-HQ was complete, but that the results are pending. On December 2, 1991, the Office of Management and Budget (OMB) will conduct a review of regulatory compliance. The Corps of Engineers will conduct the interviews for OMB. Specific items of concern will include (1) the scope of each Activity Data Sheet (ADS), (2) whether the cheapest alternative was selected -- if not, why, and (3) overhead rates. EPA representatives indicated that they participated in a similar exercise for the Oak Ridge Reservation. They requested that SRS provide them with the necessary backup materials they will be needing for this review.

The DOE-SR/ERD representative stated that the Inspector General's Office as well as the General Accounting Office were also conducting audits regarding cost and the prioritization of cleanup activities.

- M-Area RCRA/CERCLA Issues

A WSRC-EPD representative led a discussion regarding M-Area RCRA/CERCLA issues. An EPA representative stated that the RCRA Permit Renewal Application will be the vehicle by which activities in M-Area will be integrated. He went on to state that EPA is currently reviewing the CERCLA Interim Action Proposed Plans for this unit. The in-situ bioremediation study will trigger a treatability study demonstration to evaluate offgas treatment technologies. Because EPA does not want contamination moved from one media into another instead of implementing a permanent treatment (i.e., air stripping organics from the groundwater to release them into the air, untreated), RCRA Subpart AA (air emissions) may be considered an Applicable or Relevant and Appropriate Requirement (ARAR). The WSRC-EPD representative replied that SRS has already submitted the appropriate air permit application to SCDHEC for approval.

EPA representatives indicated that they were interested in receiving copies of the air permit application as well as the work plan for the in-situ bioremediation study demonstration so that EPA may make comments in a timely manner and determine if additional documentation is required. EPA had previously received the Bioremediation Plan in April 1991, and chosen not to comment at that time.

EPA representatives suggested that the Interim Action Proposed Plans (IAPPs) be modified for the sake of completeness to include a reference to the treatability study demonstration. They went on to suggest that the IAPPs state that this demonstration will incorporate off-gas treatment.

A WSRC-ERD representative inquired whether the treatability study demonstration would be delayed while EPA reviewed the air permit application package and the treatability study demonstration work plan. SRS has intended to proceed upon issuance of the air permit from the SCDHEC. An EPA representative stated that EPA does not intend to hold up the demonstration, but is only interested in supplying comments before SRS gets too far into implementation.

The Parties agreed that they should hold a separate meeting to discuss M-Area integration issues and what documents should be included in the permit renewal application. The Parties want to make the Part B application for this area as complete as possible. SRS will coordinate the arrangements for this meeting.

- Grace Road Site Proposed Plan

A representative of WSRC-ER gave a presentation regarding the Grace Road Site Proposed Plan. (See Attachment F.) He stated that the original schedule slipped because of the 2-month delay in EPA's review of the Work Plan (from September to November) and because of the new DOE-HQ requirements for document review.

An EPA representative stated that the review times should be minimal since this is a simple document. He went on to remind SRS that SCDHEC has not reviewed the Work Plan at this date. He stressed the necessity for both regulatory bodies to approve the Work Plan before going forward. The EPA representative stated that EPA will, however, review the Baseline Risk Assessment which is due at the beginning of February 1992.

A SCDHEC representative stated that the state has obtained interim funding and is in the process of hiring personnel to perform oversight duties.

- Mixed Waste Storage Tank (S-32)

A representative of WSRC-ER gave a presentation regarding the Mixed Waste (MW) Storage Tank (S-32). (See Attachment G.) This tank was operated as a RCRA interim status unit. This tank which contained radioactive and solvent wastes never leaked, but was taken out of service by a state-negotiated RCRA Certified Clean Closure. The Parties agreed that this unit could be further addressed, if appropriate, by including it with the Burial Ground Complex. Consequently, this unit and its associated documents will be removed from Appendices C and E of the FFA (List of Units and Timetables and Deadlines, respectively).

REQUIRED ACTIONS:

1. SRS will send EPA and SCDHEC a copy of the USGS proposed underflow study.

2. SRS will send EPA and SCDHEC a copy of a letter received from the State of Georgia which states that there is no health threat at this time associated with the tritium found in the groundwater.

3. SRS will provide EPA and SCDHEC a copy of the Scope of Work submitted by the State of Georgia regarding a proposed tritium study.

4. SRS will provide EPA and SCDHEC specific long-term plans for F- and H-Area remediation as soon as possible, so that this information can be incorporated into the Proposed Plan if necessary.

5. DOE-ER will provide EPA with background information regarding the OMB review.

6. SRS will provide EPA with the M-Area Air Permit Package so that EPA may review it to determine if additional documentation is necessary. In addition, SRS will resubmit to EPA the M-Area in-situ bioremediation study for comment.

7. SRS will coordinate a meeting among SRS, EPA and SCDHEC to discuss the contents and expectations for the April RCRA Permit Renewal Application.

8. SRS will submit a letter to EPA and SCDHEC listing document submittal priorities.

9. Because of Federal budgetary considerations, the parties agreed that in the future the working meeting will be held from 10:00 a.m. until 2:00 p.m. so that the participants will not need to stay overnight. The next meeting is tentatively scheduled for January 16, 1992.

ATTACHMENTS:

Attachment A - Agenda
Attachment B - List of Participants
Attachment C - Action Items
Attachment D - Tritium in Georgia
Attachment E - F- and H-Area Seepage Basin Groundwater Project
Attachment F - Grace Road Site Proposed Plan
Attachment G - MW Storage Tank (S-32)

ATTACHMENT A

AGENDA

FINAL AGENDA

FOR

FRIDAY, NOVEMBER 15, 1991

EPA/SCDHEC/SRS FFA WORKING MEETING

North Augusta Community Center
Room: C-1 and C-2
9:30

9:30 - 9:45	Gerry Stejskal	Introductions/Old Issues
9:45 - 10:00	Lew Goidell	Document Review Protocol
10:00 - 10:15	Greg Norrell	Tritium in Georgia
10:15 - 10:45	Tom Butcher	F/H Area Project Status
10:45 - 11:00	Break	
11:00 - 11:15	Howard Hickey	Grace Road Site Proposed Plan
11:15 - 11:30	Bob Aylward	MW Storage Tank (S-32)
11:30 - 11:45	Chris Bergren	M-Area RCRA/CERCLA Issues
11:45 - 12:15	Gerry Stejskal	Closing

ATTACHMENT B

LIST OF PARTICIPANTS

ATTACHMENT B

LIST OF PARTICIPANTS

NAME	ORGANIZATION
W. C. Whitaker	DOE-SR/ED
L. C. Goidell	DOE-SR/ERD
L. K. McClain	DOE-SR/ERD
S. R. Surovchak	DOE-SR/ERD
D. Taylor	DOE-SR/ERD
K. L. Arthur	HALLIBURTON NUS
G. C. Fanning	HALLIBURTON NUS
S. R. Moreno	WSRC
C. Bergren	WSRC-EPD
G. T. Norrell	WSRC-EPD
G. Stejskal	WSRC-EPD
R. Thomas	WSRC-EPD
M. Wilson	WSRC-EPD
R. Aylward	WSRC-ER
B. T. Butcher	WSRC-ER
J. Clark	WSRC-ER
M. A. Ebra	WSRC-ER
H. M. Hickey	WSRC-ER
W. D. Hoffman	WSRC-ER
J. Horvath	WSRC-ER
J. Immel	WSRC-ER
W. F. Johnson	WSRC-ER
O. B. Wheat	WSRC-ER
J. Haselow	WSRC-ESS
R. Campbell	EPA-Region IV
J. Crane	EPA-Region IV
V. L. Weeks	EPA-Region IV
K. Collinsworth	SCDHEC-RCRA Hydrogeology
A. Coffey	SCDHEC-RCRA Permitting
L. R. Bedenbaugh	SCDHEC
C. Gorman	SCDHEC
D. Wilson	SCDHEC

ATTACHMENT C

ACTION ITEMS

ACTION ITEMS
FROM
September 26, 1991 MEETING

- **SRS TO SUBMIT SCOPE OF WORK FOR BENTONITE MAT DEMONSTRATION**

  To be submitted mid to late December 1991

- **SRS WILL INVESTIGATE OBTAINING SUPPORT FOR EPA OFFICE ON-SITE**

  Discussion held between DOE-SR and EPA-IV
  Action complete

- **SRS TO SUBMIT M-AREA INTERIM ACTION PROPOSED PLAN**

  Submitted 9/30/91 with the Met Lab IAPP
  Action complete

ACTION ITEMS
FROM
September 26, 1991 MEETING
(CONTINUED)

- **SRS TO PRESENT GIS MAPPING SYSTEM PRESENTATION**

  Per discussion with EPA this item will be presented at a later date.

- **SRS PROVIDE THE CURRENT SITE SPECIFIC PLAN TO EPA**

  Action complete - 9/27/91

- **SRS TO SUBMIT DETAILS OF TECHNOLOGY DEMONSTRATION AT MISC. CHEM. BASIN**

  To be submitted mid to late December 1991

ACTION ITEMS
FROM
September 26, 1991 MEETING
(CONTINUED)

- **SRS TO INFORM EPA AND SCDHEC IN WRITING OF AUDIT BEING CONDUCTED BY DOE-HQ**

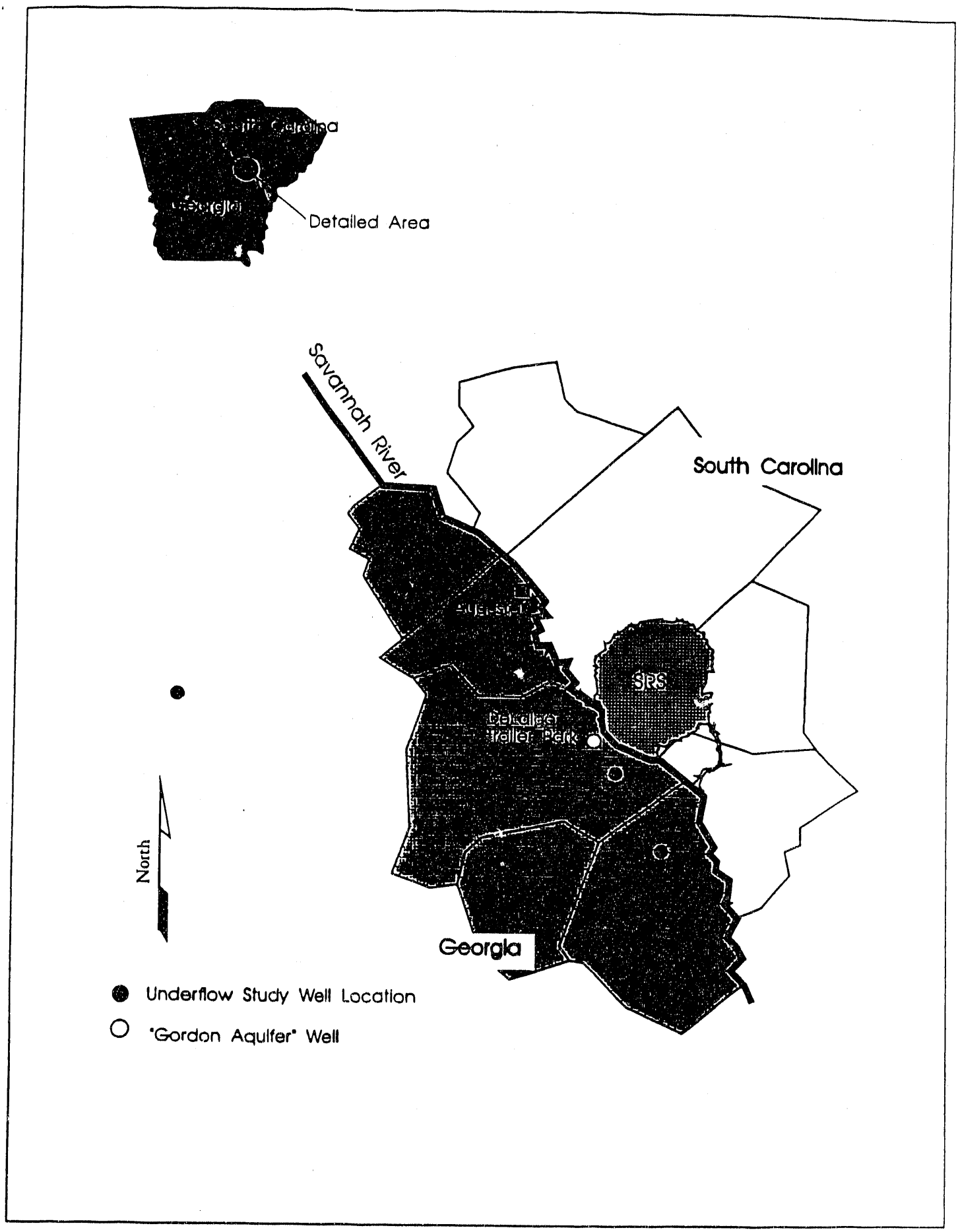
- **SRS TO PROVIDE A MAP OF THE SITE WITH LOCATIONS OF RCRA/CERCLA UNITS MARKED**

  Facilities and Services have all the waste units identified on their systems map. We are expecting a commitment from them shortly.

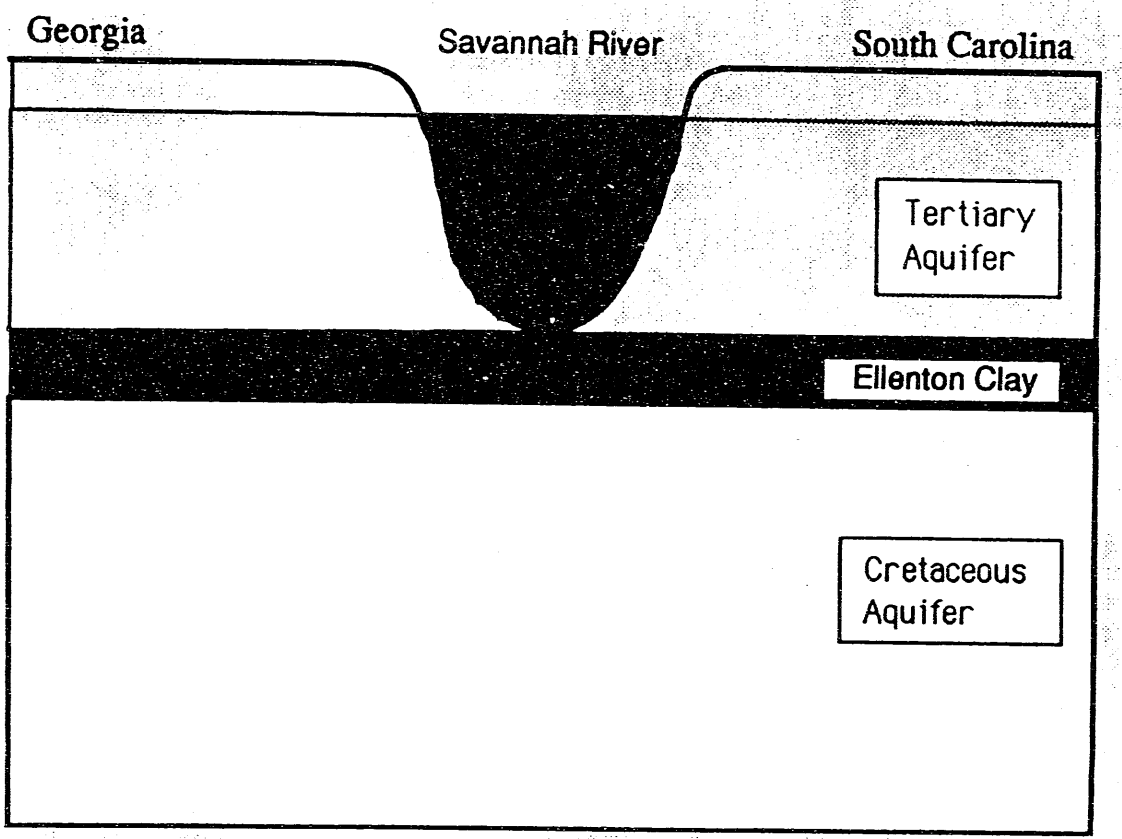
- **EPA TO PROVIDE CORRECTED RCRA PERMIT PAGES**

ATTACHMENT D

TRITIUM IN GEORGIA


South Carolina
Georgia
Detailed Area
Savannah River
South Carolina
SRS
Georgia
North
Underflow Study Well Location
"Gordon Aquifer" Well

CORRELATION OF LITHOSTRATIGRAPHIC AND HYDROSTRATIGRAPHIC NOMENCLATURES


Georgia
Savannah River
South Carolina
Tertiary Aquifer
Ellenton Clay
Cretaceous Aquifer

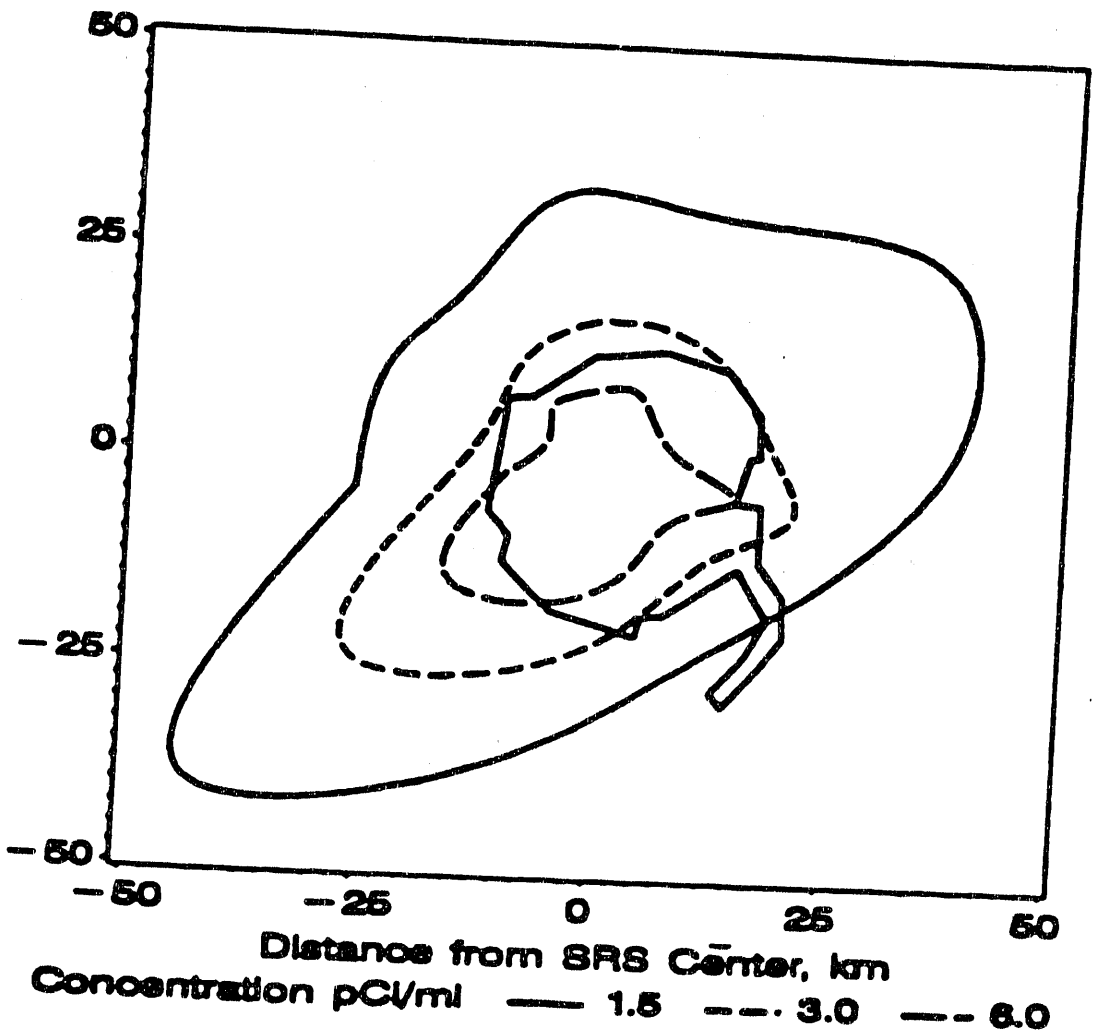


Figure 2.7. The Distribution of Tritium in Rainwater Around SRS (1982-1986)

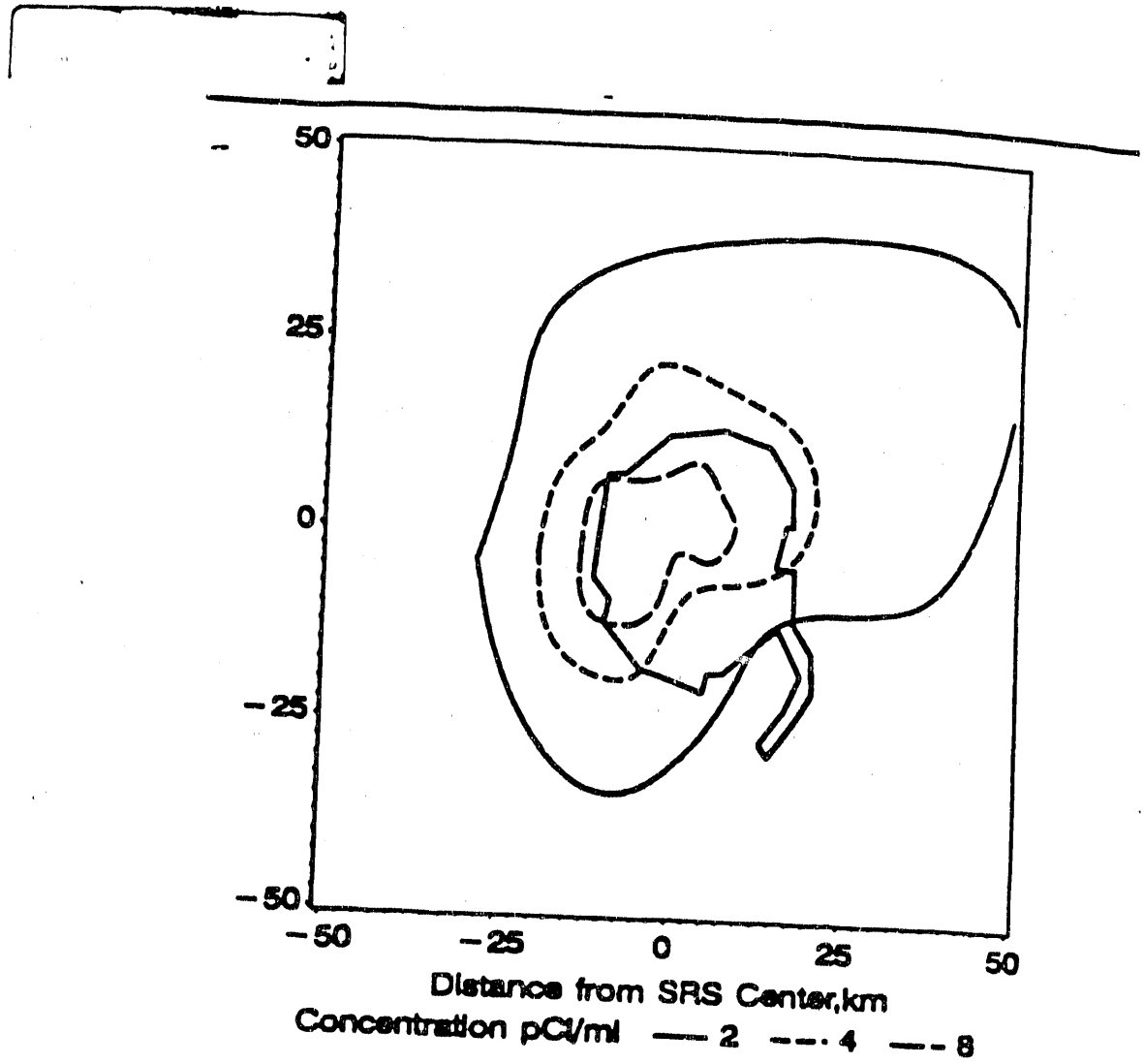
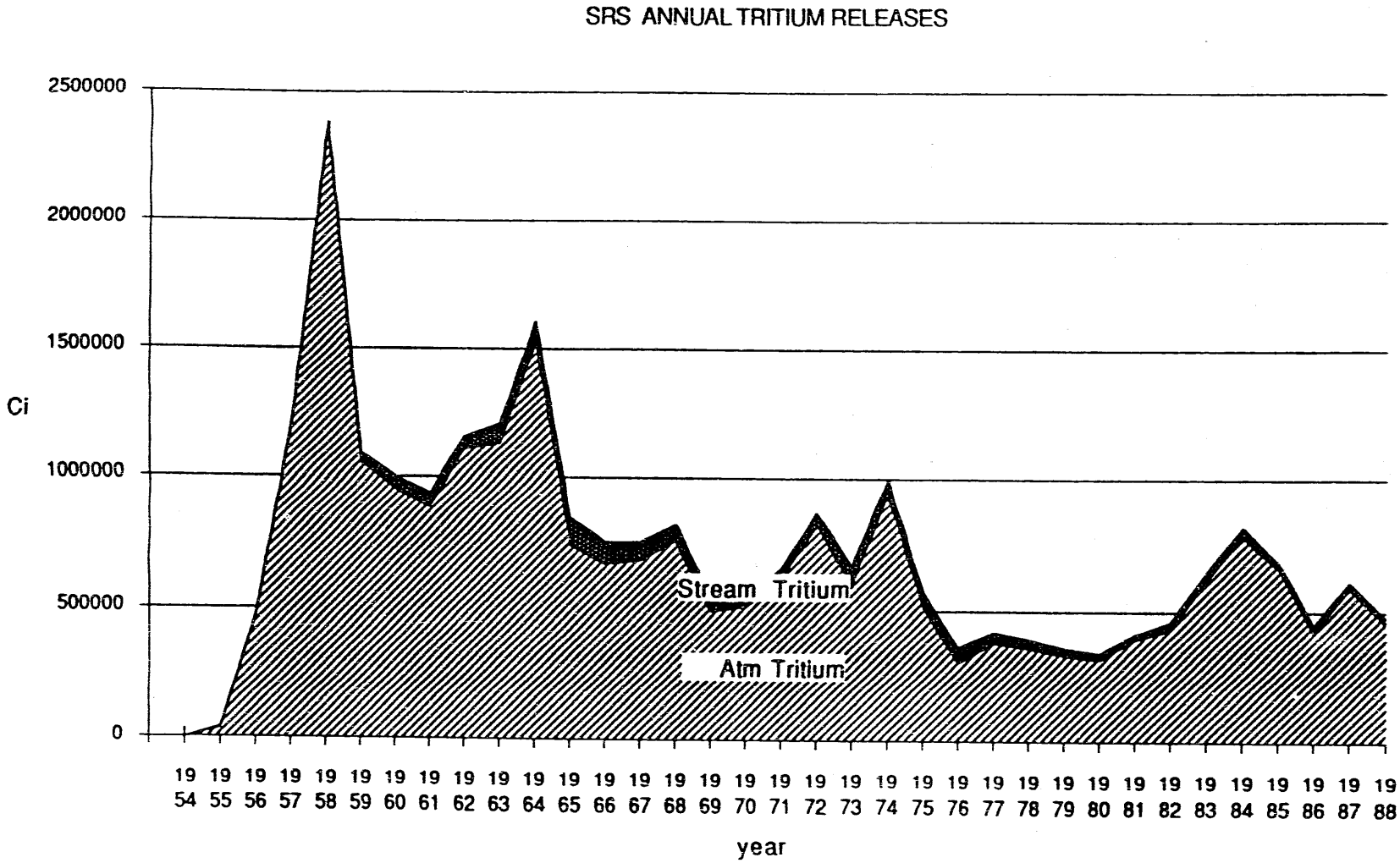


Figure 2.12. The Spatial Distribution of Tritiated Water in Vegetation in the Vicinity of SRS


SRS ANNUAL TRITIUM RELEASES
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1500000
1000000
500000
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Atm Tritium
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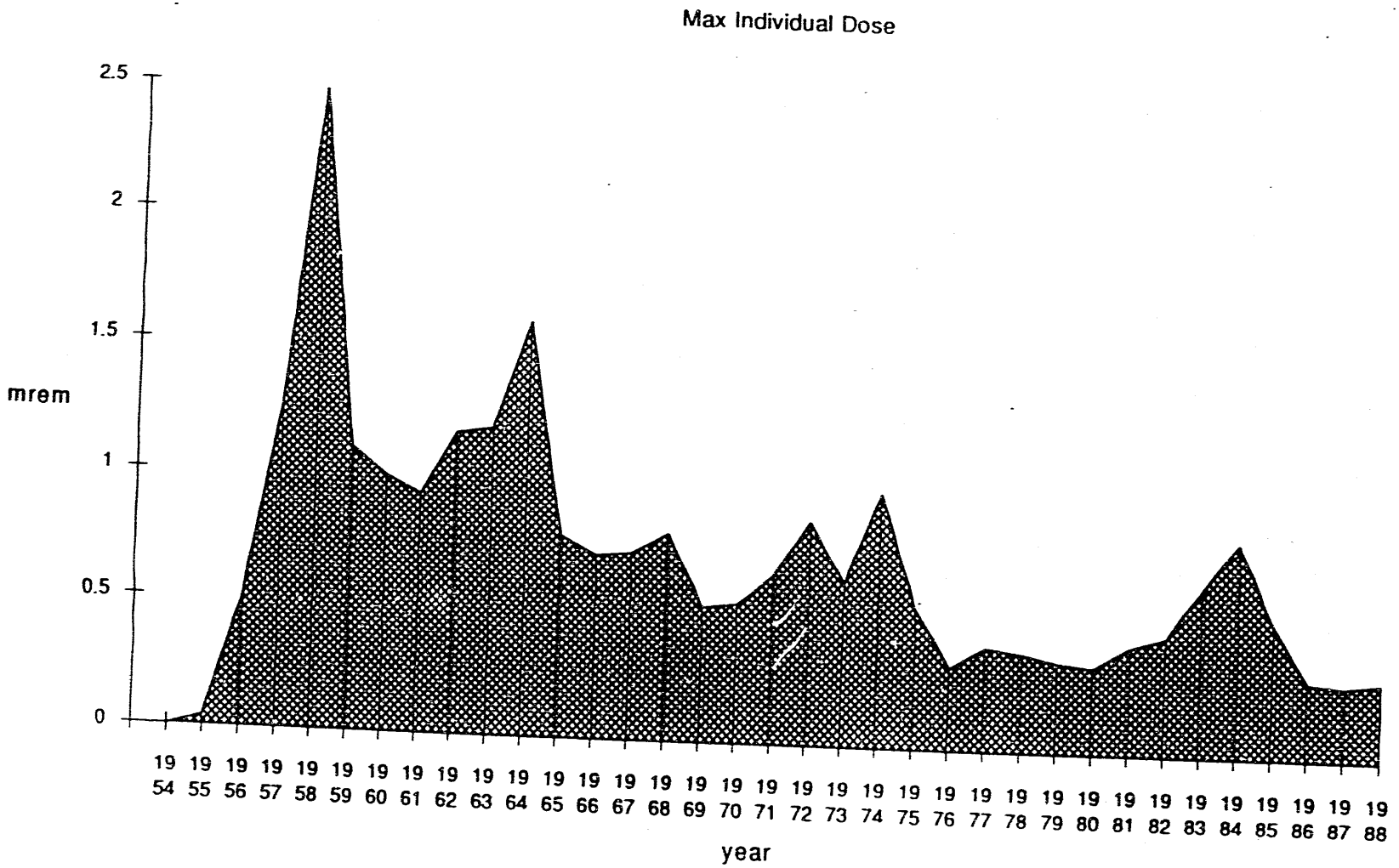
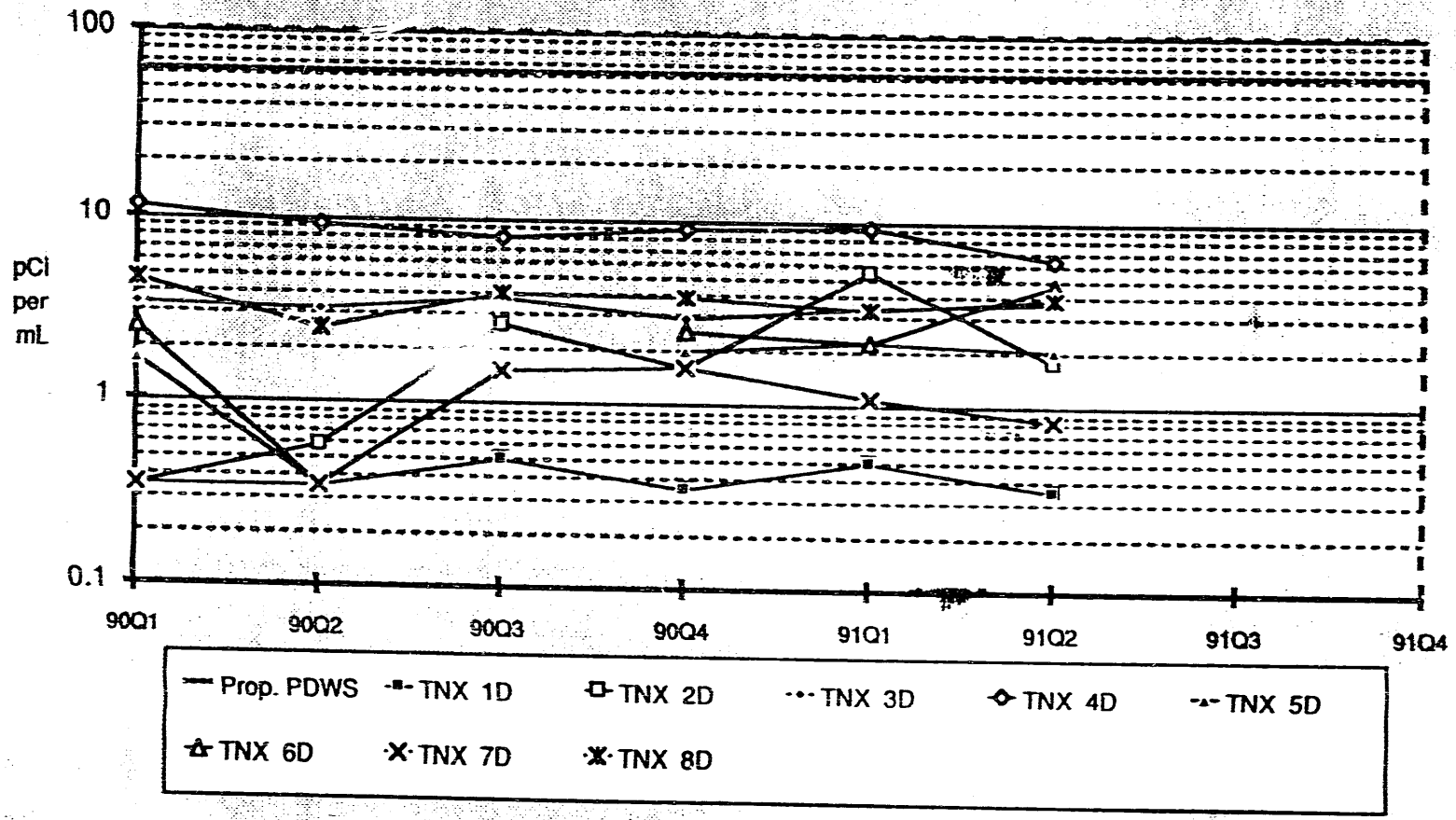
year


Max Individual Dose
2.5
2
1.5
1
0.5
0
mrem
1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988
year

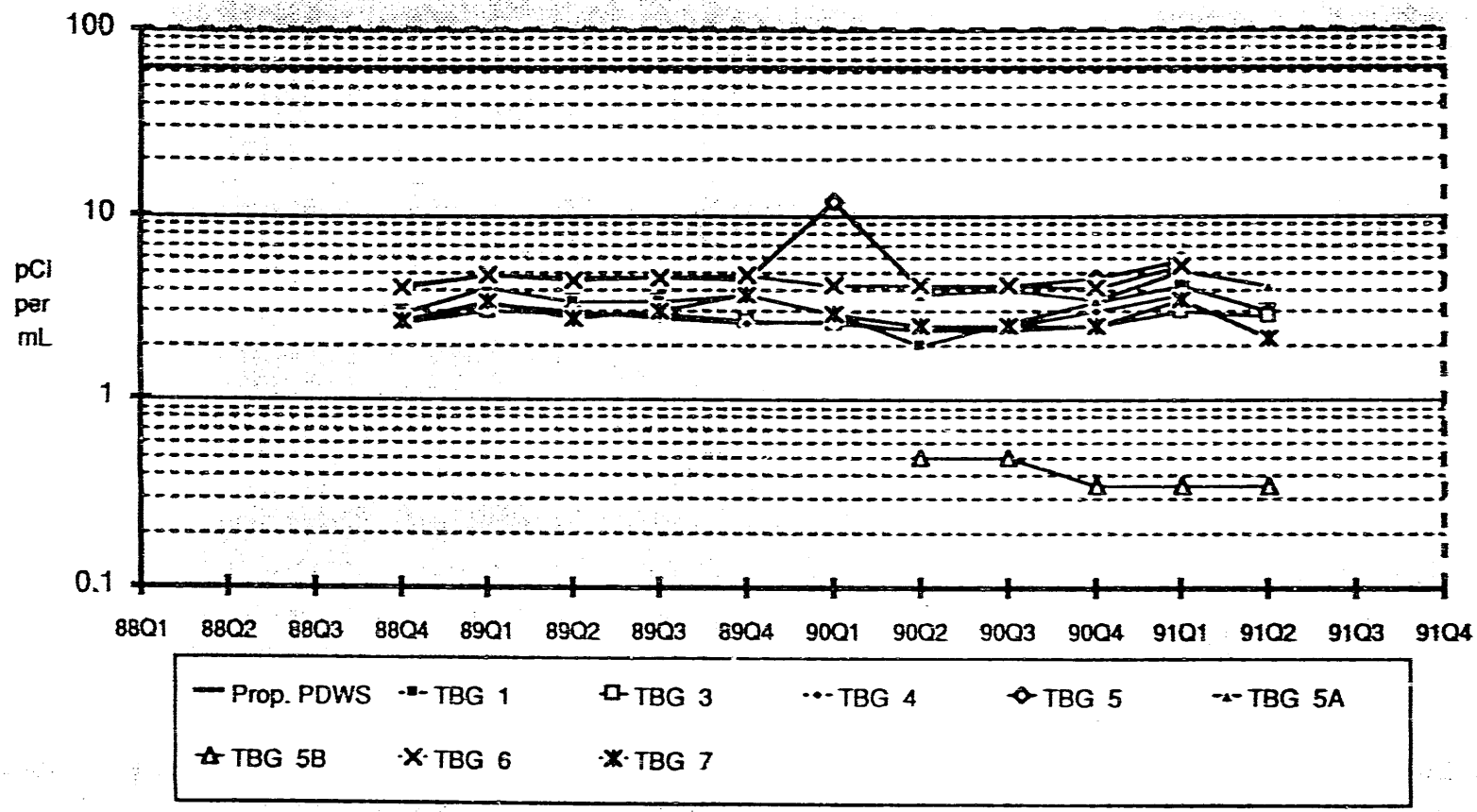
TNX

Tritium in the TNX-Series Monitoring Wells



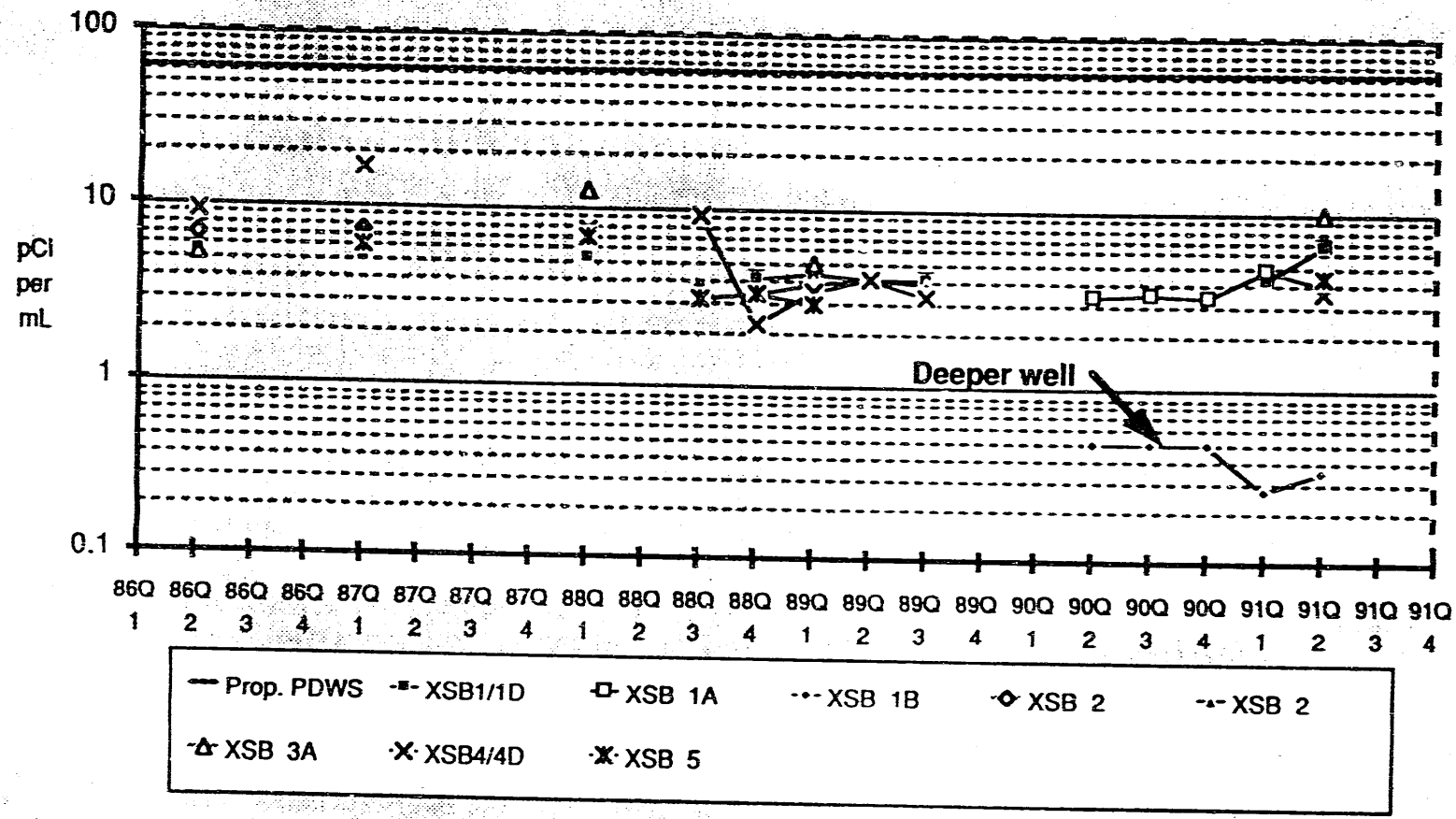
TNX

Tritium in the TBG-Series Monitoring Wells



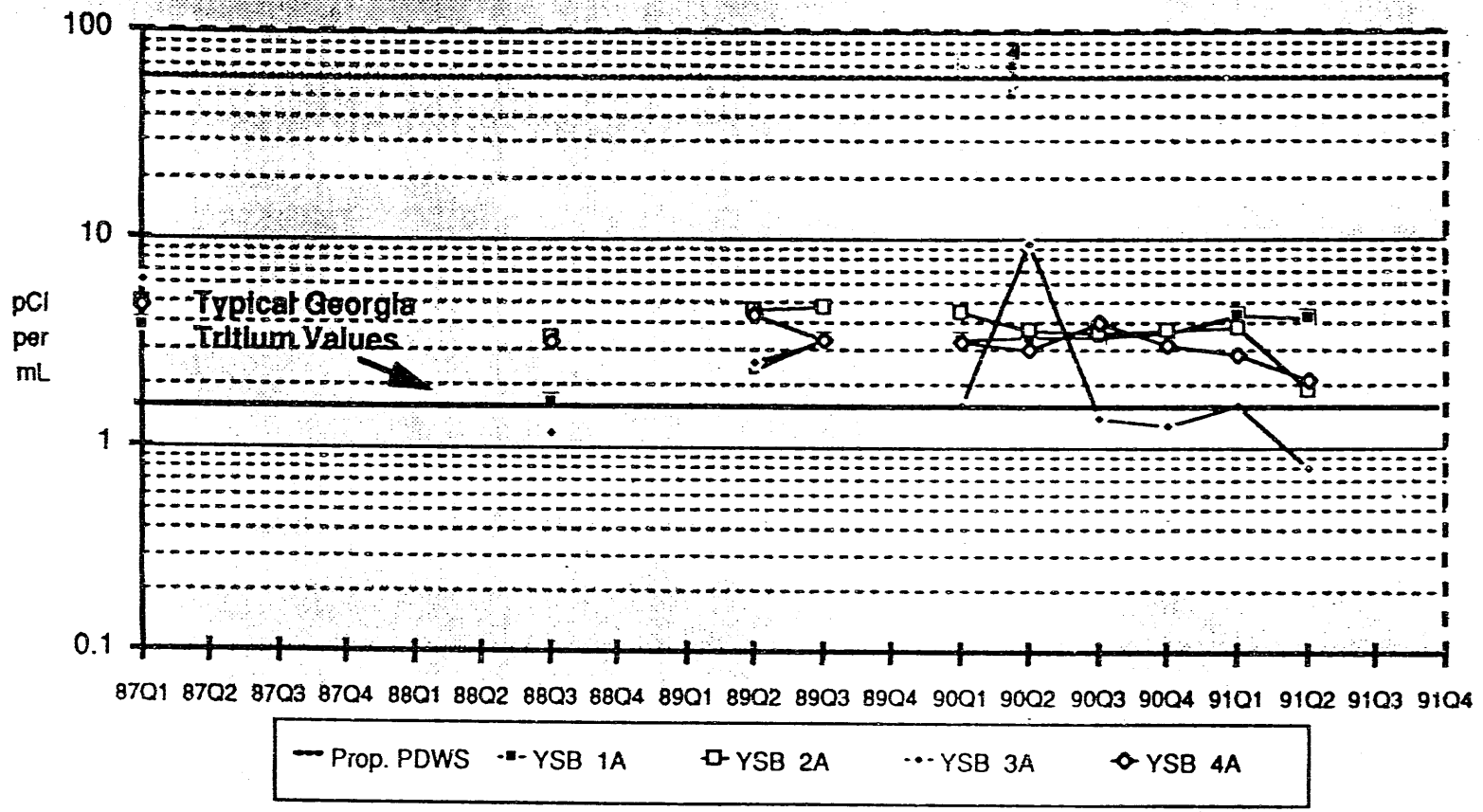
Old TNX Basin

Tritium in the XSB-Series Monitoring Wells

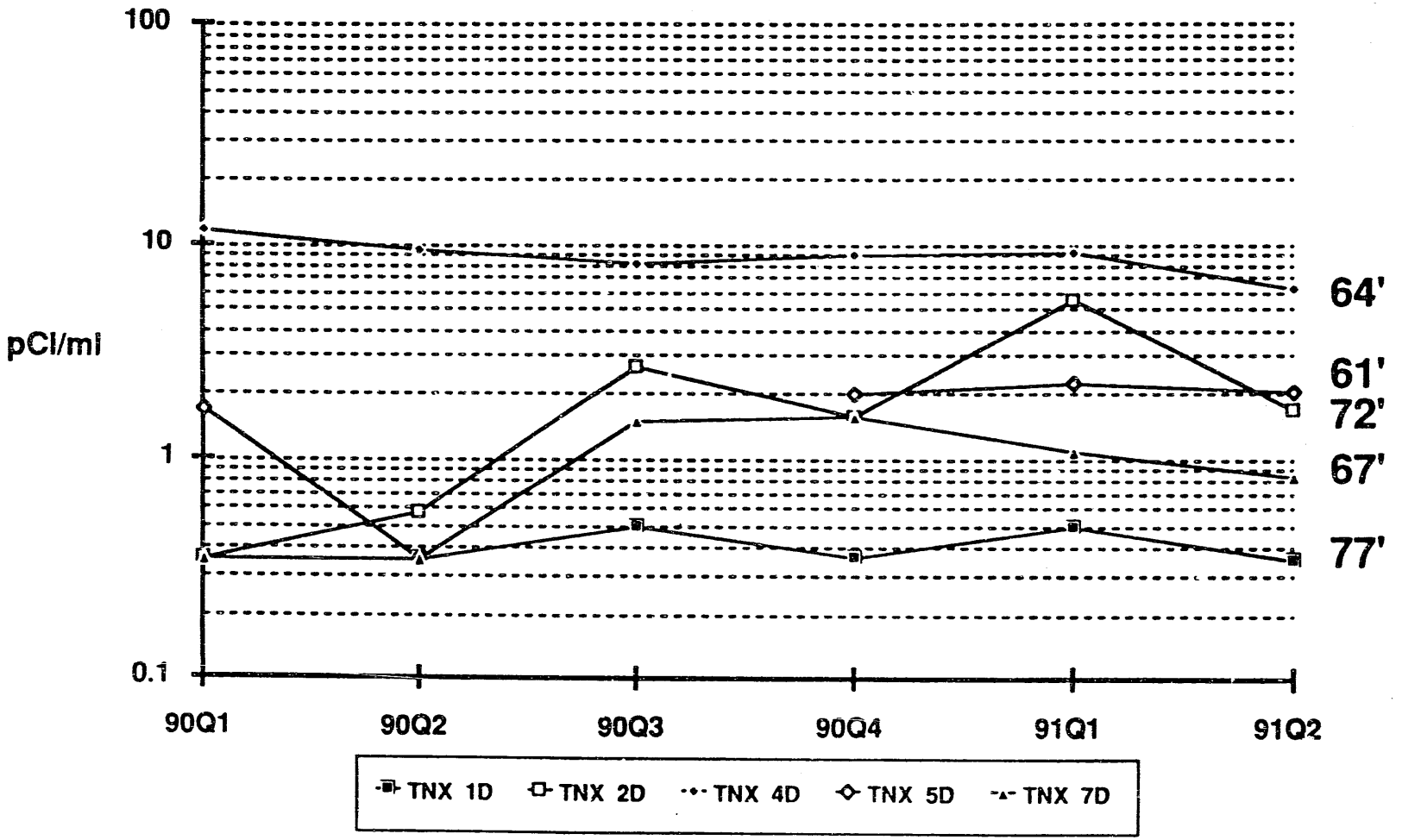


New TNX Basin

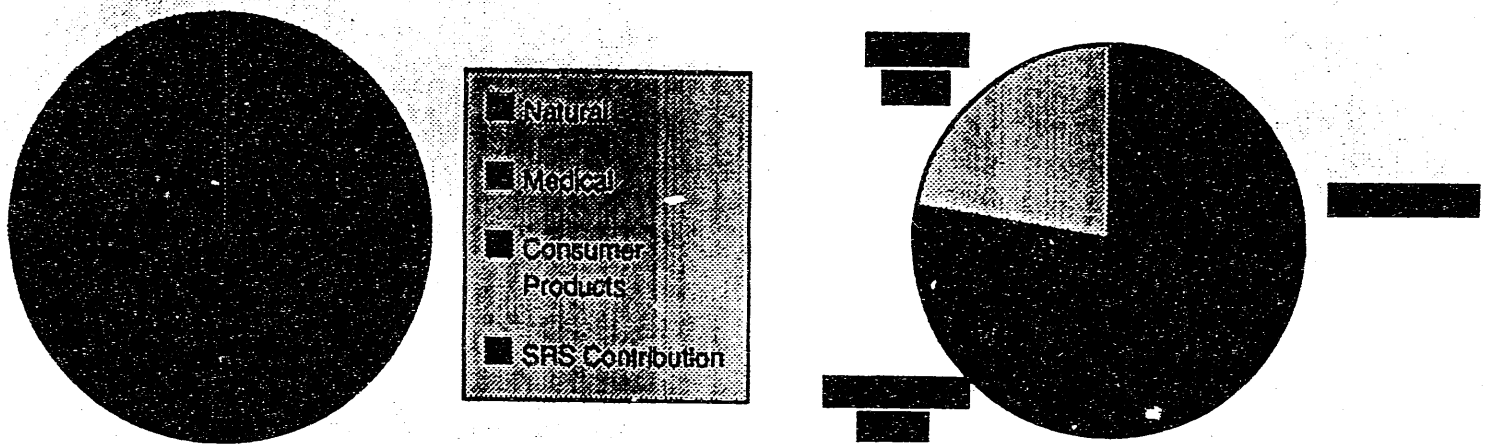
Tritium in the YSB-Series Monitoring Wells



TNX


100
10
1
0.1
pCi/ml
64'
61'
72'
67'
77'
90Q1
90Q2
90Q3
90Q4
91Q1
91Q2
TNX 1D
TNX 2D
TNX 4D
TNX 5D
TNX 7D

Maximum Contributions from SRS Releases Versus Other Radiation Sources



Preliminary Conclusion

- Observed elevated tritium in Georgia is apparently spatially widely distributed. Groundwater contamination resulting from plume migration would not be expected to have a wide distribution. The distance between wells with elevated tritium in Georgia is larger than the distance across any single groundwater contaminant plume at SRS.

- Observed elevated tritium levels in Georgia are consistent with overall trend of decreasing tritium values with distance from the center of SRS.

- Currently, no viable mechanism is known by which groundwater contamination in the shallow (Tertiary) aquifers on the SRS could migrate across the Savannah River into shallow aquifers in Georgia. The presence or absence of groundwater migration beneath the Savannah River in the deep (Cretaceous) aquifer is the subject of current investigations.

Preliminary Conclusion (Con't)

- No tritium levels above normal rainfall concentrations have been observed. If infiltrating rainfall is the source of the slightly elevated concentrations in Georgia, then tritium levels in rainfall provide an upper limit of possible values in groundwater. If consistent, confirmed tritium values are obtained which exceed representative rainfall tritium concentrations, this explanation will be refuted.

- Georgia Power has collected piezometric data from the Georgia side of the Savannah River. These data are reported to indicate that groundwater flow potentials in Georgia are, as expected, from the aquifers toward the river. SRS has requested a copy of the report with this information.

Future Work

- **SRS has agreed to fund an investigation by Georgia to determine the nature and extent of tritium in Georgia groundwater near the Savannah River. SRS has offered to provide technical assistance in planning and conducting the project. This project will be coordinated from the Georgia Drilling Project, which is currently underway.**

ATTACHMENT E

F- AND H-AREA SEEPAGE BASIN GROUNDWATER PROJECT

F & H Seepage Basin Groundwater Project

November 15, 1991

B. T. Butcher
Environmental Restoration Department
Westinghouse Savannah River Co.

Outline

RCRA Corrective Action
- Project Path
- Treatment Process
- GW/Treatability Studies

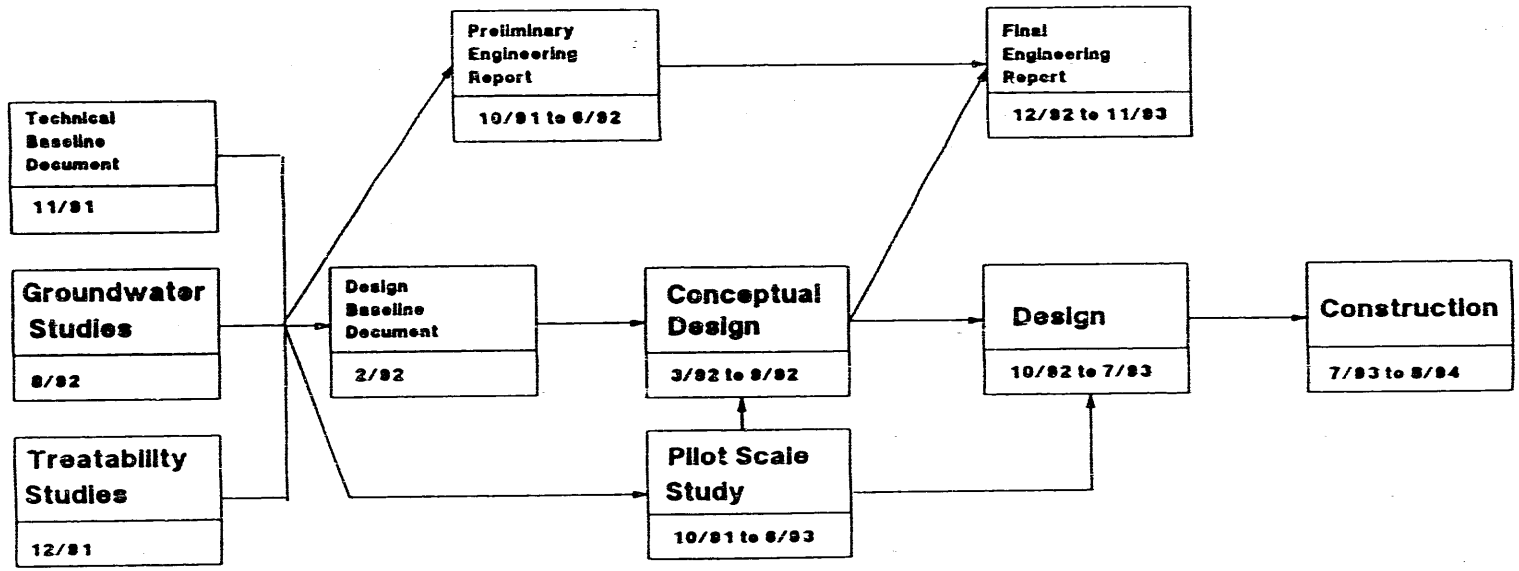
RCRA/CERCLA Integration
- Integrated Document
- Further Site Characterization
- Alternative Treatment Technologies

Summary

RCRA CORRECTIVE ACTION

F & H Ground-Water Remediation Flowchart

RCRA Path



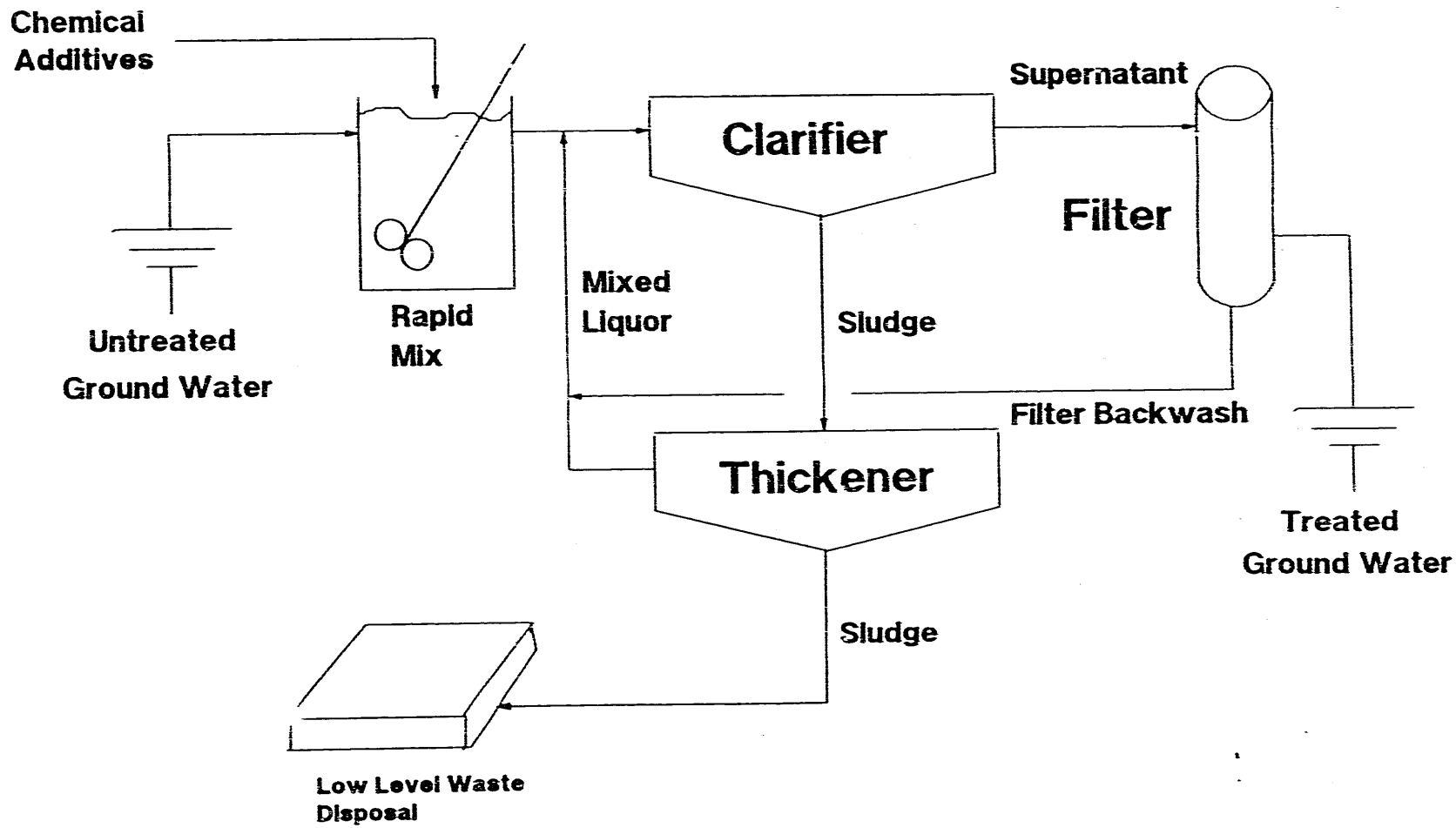
Team Members on the F&H Seepage Basins Ground-Water Remediation Project

J.	Adams	FGHIJKLN	
R.	Baena	A	ER
J.	Bhutani	ABCGK	SE
J.	Bibler	A	SRL/IWT
T.	Butcher	A	ERT
J.	Cook	A	SRL
R.	Daniel	A	SE
A.	Freitag		E&PD/DE
T.	Gaughan	BC	ERA
H.	Golshir		ML
L.	Haselow	E	ER
J.	Haselow	CDE	TES
R.	Hiergesell		EM
R.	Johnson		
S.	May	A	Bechtel
B.	Mukherjee	A	DE
D.	Nix	DO	ER
G.	Norrell	A	EPS
L.	Palumbo	E	SE
W.	Pidcoe	BCDF	ERT
M.	Poirier	A	SRL
T.	Rehder	A	SE
V.	Rogers	E	TES
W.	Sadler	BCD	SE
K.	Scallon	A	SE
B.	Schappell		SE
L.	Schroeder		DE
S.	Serkiz	ABCD	SE
M.	Sholley		Bechtel
W.	Specht	E	SRL
R.	Stenzel	A	Bechtel
R.	Strom	E	TES
A.	Suer	A	ERT
M.	Thompson	AG	SE
O.	Wheat	M	ER
A.	Yu	A	SRL

* : Task Team Designations

A : Treatability
B : Groundwater Recovery
C : Groundwater Injection
D : Groundwater Modeling
E : Wetland Remediation
F : Subcontractor Overview and Direction for Entire Program
G : Wastewater Treatment Engineering Report
H : NEPA
I : HAD/SAD/SAR
J : FPR
K : FDC
L : Preliminary PHR
M : Radiological Information Document
N : Site Use/Site Clearance
O : Risk Assessment

Proposed F & H Ground-Water Treatment Scheme



Treatability Studies

	Sch.Compl.
Benchscale Chemical Additives Study	**10/31/91**
- GW Before and After Treatment	
- Optimum Precipitation Conditions	
- Sludge Settling Behavior	
Benchscale Filter Study	**12/02/91**
- Four Kinds of Filters	
- Filter Efficiency on Treated GW	
Secondary Waste Study	**12/31/91**
- Sludge Thickening Requirements	
- Comparison of Disposal Options	

Groundwater Studies

	Sch.Compl.
Recovery Test	5/92
- Well Installation and Pump Test	
- Hydraulic Conductivity, Storitivity, Transmissivity	
Injection Test	8/92
- Same as Recovery Test Plus	
-Geochemical Interactions	
-Clolloidal Clay Dispersion Studies	
Groundwater Modelling	8/92
- GSA Flow Model Update	
- F&H Flow and Transport Models Update	
- Optimize Recovery/Injection Well Network	

RCRA/CERCLA INTEGRATION

RCRA/CERCLA Integrated Document

Section E of the Part B (Geology Section)

Baseline Risk Assessment

Feasibility Study

Alternative Concentration Limits

Mixing Zone Demonstration

Conclusions

No Imminent Off-Site Risk

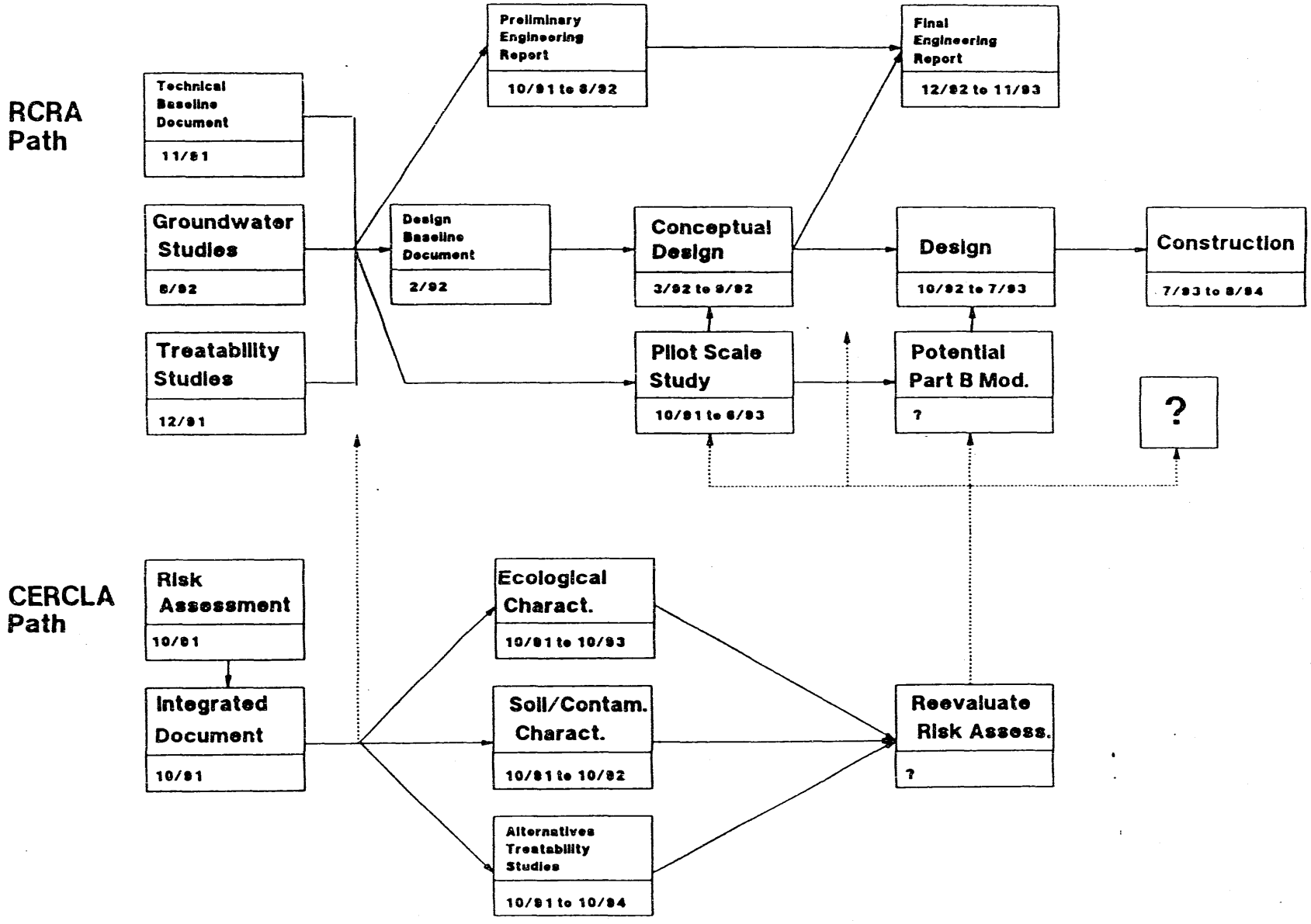
Risk to Worker and Trespasser in Acceptable Range

Hypothetical On-Site Resident Potentially at Risk

RCRA Remedial Action Marginally Effective
- Risk Reduction
- Contaminants of Concern

Lessening of Impacts
- Groundwater Monitoring
- Modelling
- Ecological Field Observations

F & H Ground-Water Remediation Flowchart



Feasibility Study

Technologies Were Initially Proposed Considering Only GW Protection Standards as Specified in RCRA Permit

Several Levels of Evaluation Reduced Number of Technologies Being Considered from Ten to Three

- **Institutional Control/Monitoring**
- **Surface Treatment/Discharge**
- **Surface Treatment/Reinjection**

Risk Evaluation of the Remaining Three Alternatives Was Used as Input for CERCLA Nine Criteria Evaluation

Results and Recommendations

Surface Treatment Alternatives Appear to be Marginally Effective in Contaminant Removal and Risk Reduction

Recommend Interim Institutional Control With Continued Monitoring

- Confirm Recovery of Wetlands
- Further Subsurface Characterization
- Alternative Technology Demonstration

SITE INVESTIGATIONS & ALTERNATIVE TECHNOLOGIES

Ecological Characterization of Recovery at Seepline

New Growth Observed in Die-Back Areas Since Basins Capped.

A SRL Soil Flushing Study Indicated that Multiple Flushings with Natural Rainwater Reduced Toxic Constituents Sufficiently to Allow Germination of Sensitive Species.

A Proposal to Conduct Field Studies of Regrowth Is Being Reviewed. Approximately two years to complete.

Further Subsurface Characterization

Areas of Investigation

- Source Term Refinements
- Contaminant Profile in Soil Column
- Soil Partitioning Coefficients

Data From These Studies to be Used as Input for Evaluation of Alternative Technologies and Reevaluation of Risk

Alternative Treatment Technologies

Optimization of Surface Treatment Technology

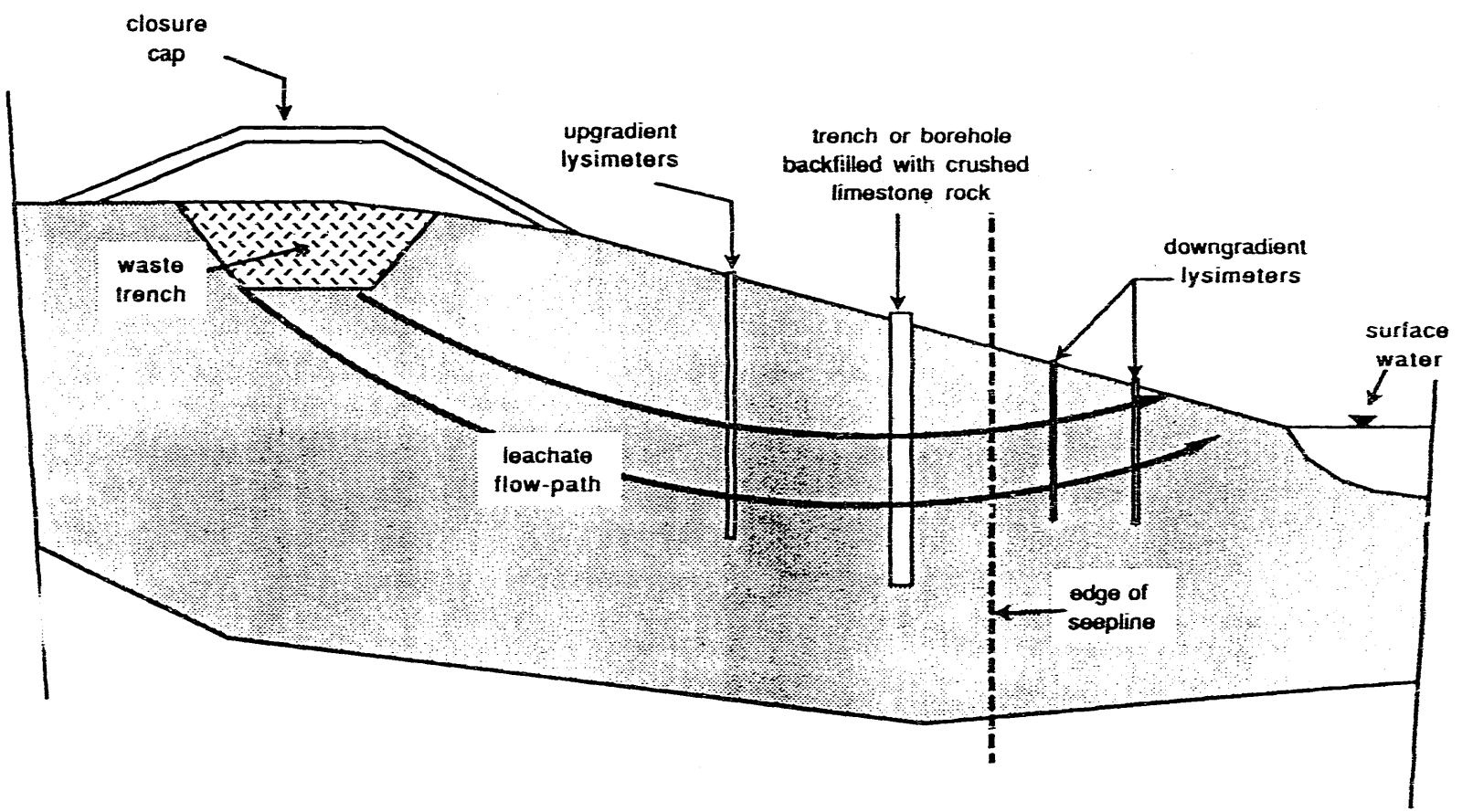
- Cost
- Secondary Waste

Treatment of Contamination in the Soil Column

- Subsurface Investigation
- Mobilize/Immobilize/Combination

Accelerate Recovery of the Wetlands

SEEPLINE REMEDIATION TEST



OBJECTIVE: Enhanced or Accelerated Ecological Recovery at Seepline

Summary

Prepare an Interim Record of Decision

During Interim Action Period
- Alternate Concentrations Limits - RCRA
- Mixing Zone - SC Waste Classification Standards

At End of Interim Action Period
- Revised Risk Assessment - Subsurface Investigation
- Feasibility Study - Alternative Technology
- Final Proposed Plan

ATTACHMENT F

GRACE ROAD SITE
PROPOSED PLAN

Background Information

- RFI/RI Work Plan submitted to the EPA in January 1991. No Further Action recommendation made in WP

- Accelerated schedules submitted to the EPA in March 1991. Grace Road schedule among those submitted

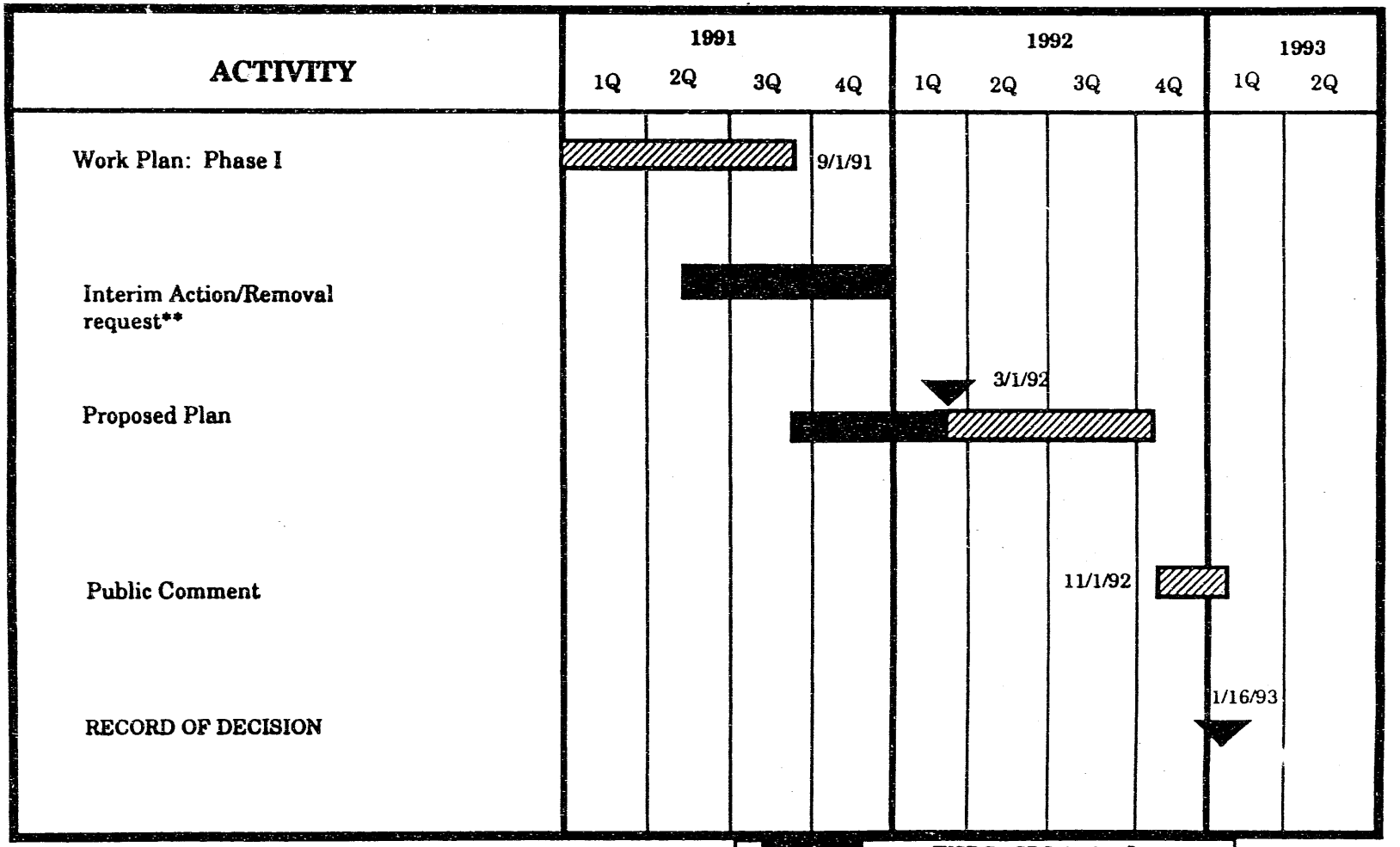
- Tentative schedule submission date for Proposed Plan March 1993

- Response due from EPA in September 1991

- November 4, 1991 letter accepting Work Plan and NFA recommendation obtained from the EPA. The EPA requested the Proposed Plan and Risk Assessment in 90 days

March 13, 1991 Rev. 0
July 24, 1991 Rev. 1

RI/FS TENTATIVE SCHEDULE
GRACE ROAD UNIT: NFA ROD



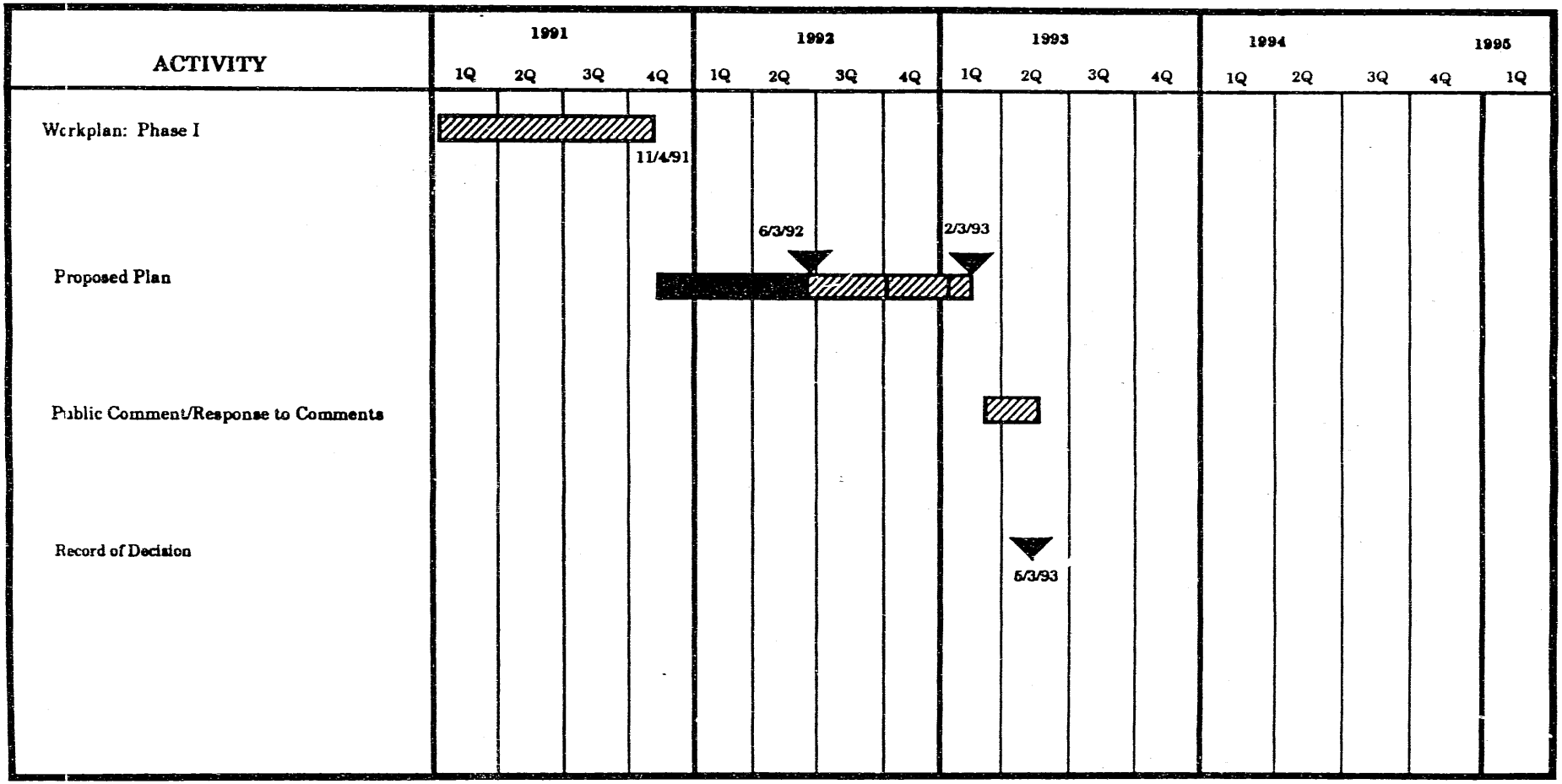
* Schedule Subject to Regulatory Approvals

**Assuming no interim action/removal ROD needed

Assumption: No Risk Assesment Required

RI/FS TENTATIVE SCHEDULE
GRACE ROAD UNIT: NFA ROD

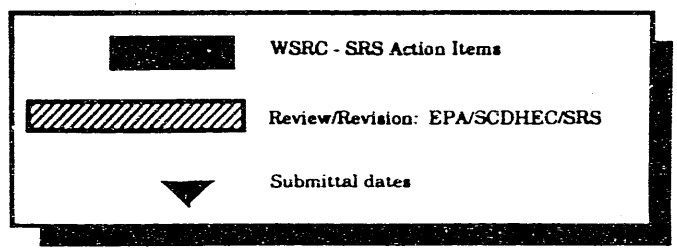
DRAFT



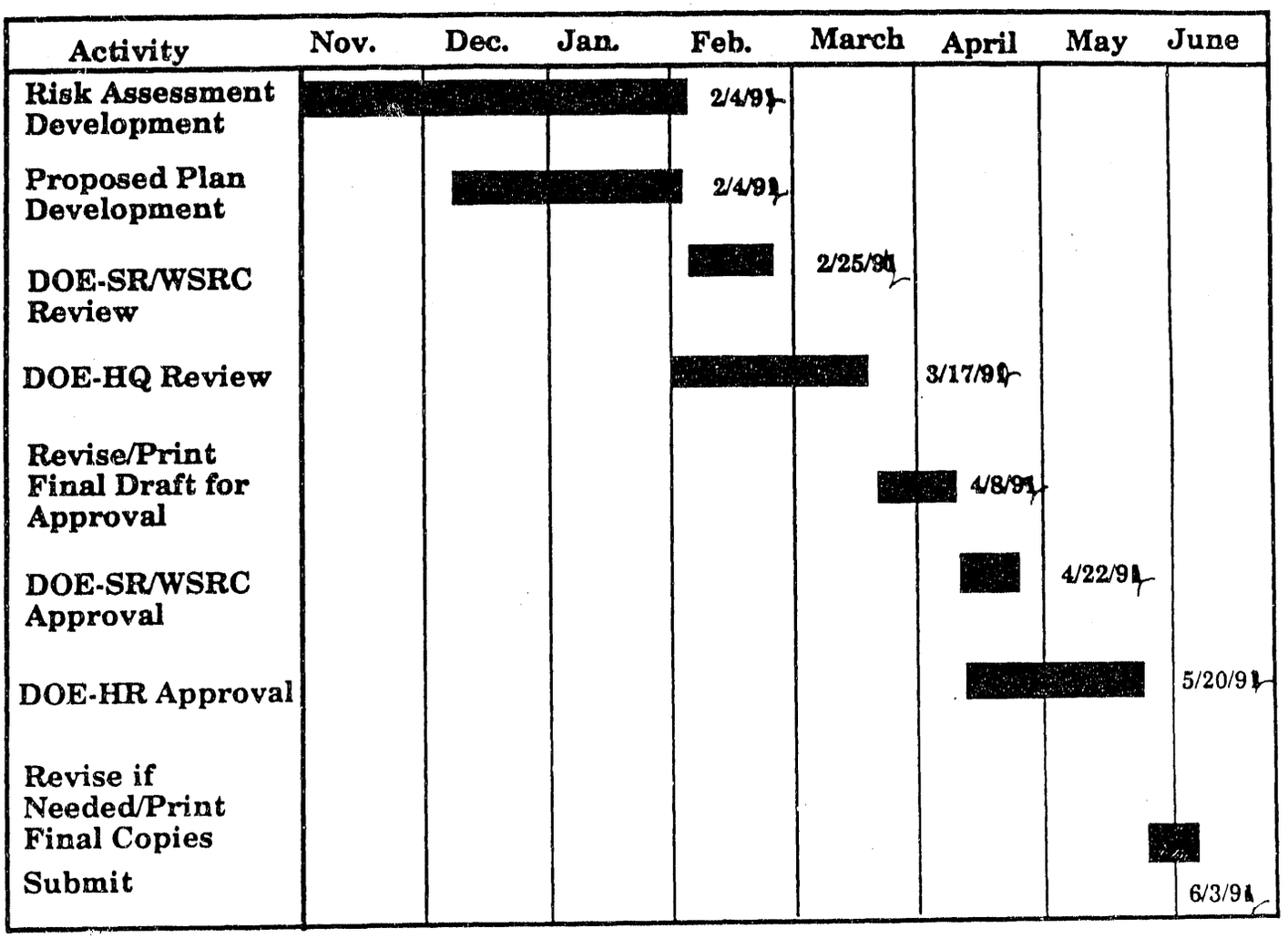
* Schedule Subject to Regulatory Approvals

**Assuming no interim action/removal ROD needed

Assumption: No Risk Assessment Required



Proposed Schedule for the Development of the Baseline Risk Assessment and the Proposed Plan for the Grace Road Unit



Baseline Risk Assessment will include Human Health Risks and Ecological Risks based upon existing data

Nov. 15, 1991

ATTACHMENT G

MW STORAGE TANK (S-32)

WASTE OIL STORAGE TANK S-32

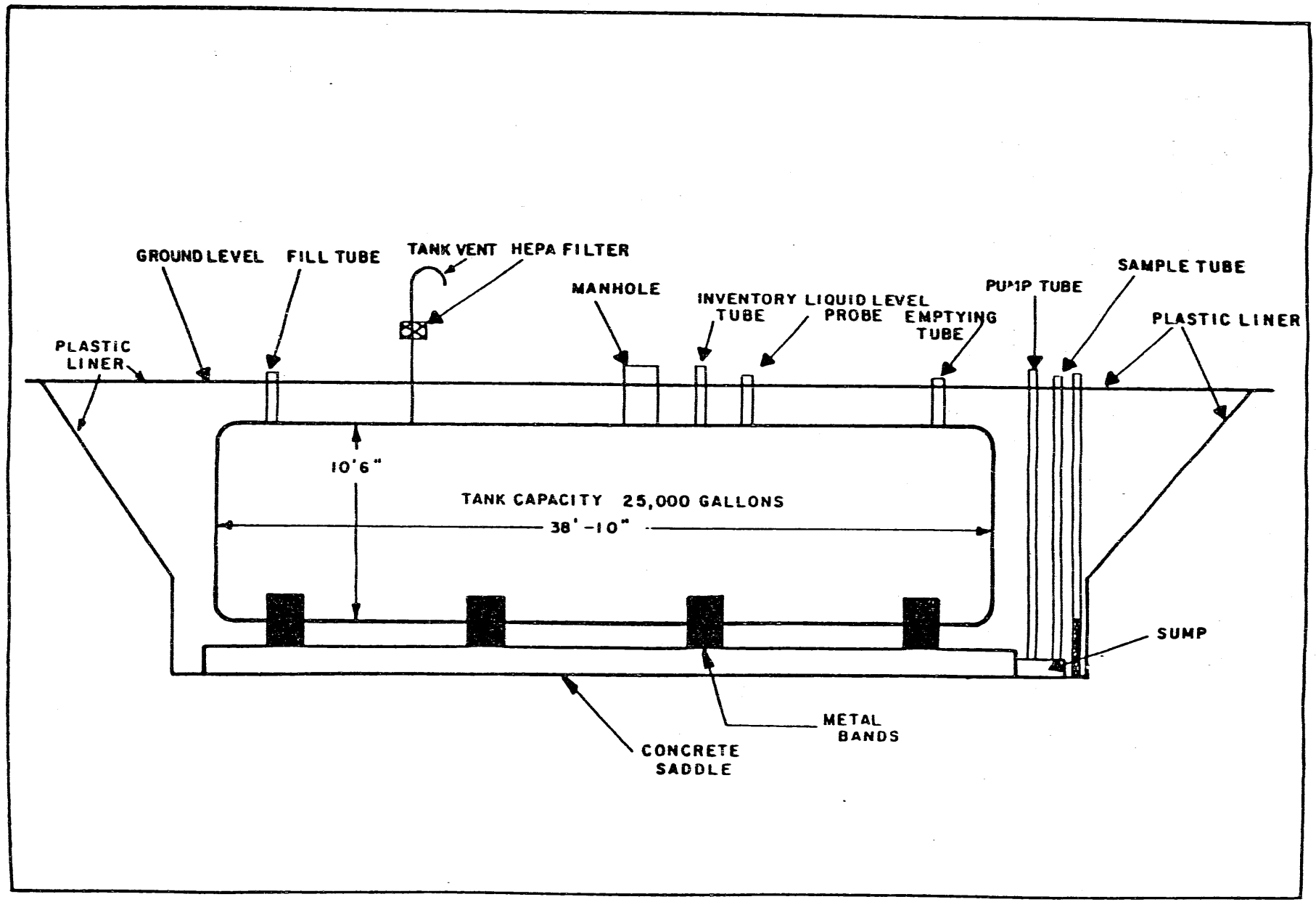
- Received tritiated waste oil - 1983 through 1987
- Closure Plan submitted - 2/87
- Closure Plan approved - 8/87
- Closure completed - 7/88
- Closure consisted of:

  - removing waste
  - cleaning tank with steam and hot water
  - filling tank with concrete
  - grouting sump and riser piping
  - cutting and capping piping below grade

FEDERAL FACILITIES AGREEMENT
APPENDIX E

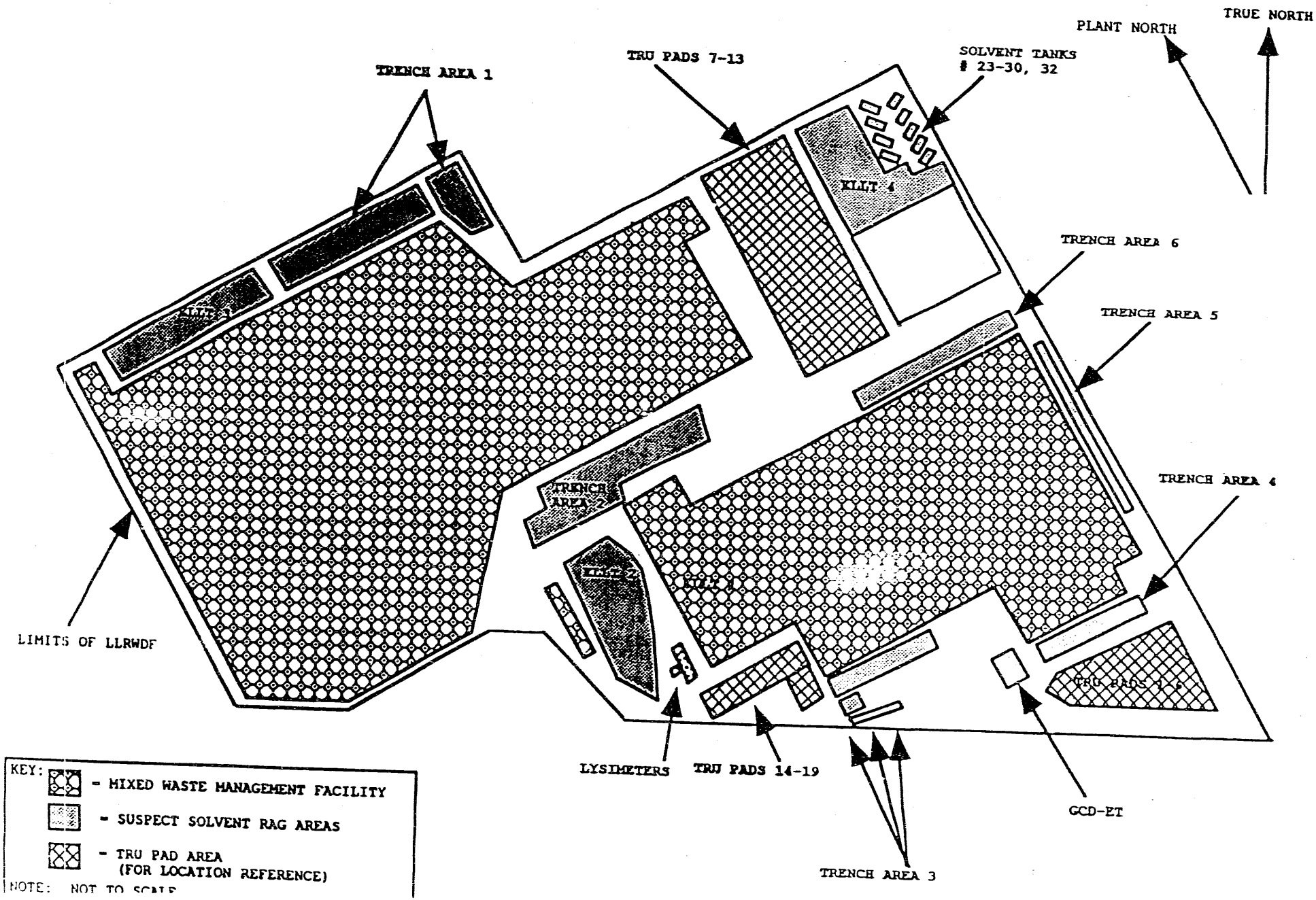
- **Draft Preliminary Characterization Summary/ Preliminary Risk Assessment Report - 11/91**

- **Proposal: Include S-32 under assessment of the Burial Ground Complex**



Waste Oil Storage Tank (S-32)

LLRWDF CLOSURE AREAS, MWMF CLOSED AREAS, WMO OPERATIONAL AREAS



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5/13/92