MEMORANDUM
SITE SPECIFIC ADVISORY BOARD

TO: Distribution

FROM: Mark Donham
Vicki Jones

DATE: November 26, 1996

SUBJECT: **NOVEMBER 21, 1996, MEETING MINUTES**

Attached are the subject meeting minutes. There will not be a December meeting due to the Christmas Holiday. Please review and provide comments or changes to Mark Donham at (618) 564-3367 or Vicki Jones at work at (502) 441-5058 or home at (502) 876-7067 by December 20, 1996. If no comments are received, minutes will be issued as approved. Have a safe and happy holiday season!!!

SSAB Distribution List
Nola Courtney
Mark Donham
Tommy Fletcher
David Fuller
W. G. Harvey, Sr.
Vicki Jones
William L. Kressenberg
Ronald Lamb
Linda Long
Connie J. Sykes
Gregory Waldrop

Ex Officio Distribution List
Wayne Davis
Carl Froede, Jr.
Annette Hayden
Jimmie C. Hodges
John A. Volpe

SITE SPECIFIC ADVISORY BOARD (SSAB)

Meeting Minutes

November 21, 1996

The November 21, 1996, SSAB meeting took place in the Department of Energy (DOE) Site Office conference room at 6:00 p.m.

The following board members were present: Nola Courtney, Mark Donham, David Fuller, W. G. Harvey Sr., Vicki Jones, Ronald Lamb, and Connie Sykes. Ex Officio members present were: Todd Adams, Carlos Alvarado, Wayne Davis, Carl Froede Jr., and Annette Hayden. Also present were: Jeannie Brandstetter, Teresa Fields, Missy Howell, John Jenkins, and Todd Mullins.

The agenda for this meeting was read and discussed.

The meeting minutes from the October 24, 1996, meeting were read and approved by consensus.

Jeannie Brandstetter reported that Dennis Hill was working to finalize Steve Kay's contract with hopes of it being in place by the first of the year.

The next item was to discuss whether or not to cancel the December meeting due to the holidays. It was decided by consensus that the December meeting should be canceled.

Nola Courtney reported on the Membership Drive. She has gone back to the applications to try to find applicants that would fill the areas needed. The areas needing to be filled were Public Official from McCracken County, Public Official from Ballard County, Organized Labor Unions other than Oil, Chemical, and Atomic Workers (OCAW), and Contractor and Subcontractors not in management. It was suggested to do a story in the local paper to get information out on what the SSAB is and to specify what categories needed to be filled. Rev. Harvey offered to help with finding a McCracken County Official.

The next item for discussion was the committee appointments and they were as follows:

Committee	Members
Nominations/Membership	Nola Courtney, Rev. Harvey, and David Fuller
Community Outreach	Connie Sykes, Carl Froede, Annete Hayden, Ronnie Lamb, and John Volpe
Budget and Finance	Jimmie Hodges, Wayne Davis, and Vicki Jones
Policy and Personnel	Mark Donham
Training and Programs	Jimmie Hodges, Annette Hayden, Carl Froede, and John Volpe

Following the committee appointments the Federal Register Requirements were discussed. It was decided by consensus that the meeting minutes will be approved at the next monthly meeting and then be sent to EM-22. It was also discussed that notices of the monthly meetings should be sent in to be published in the Federal Register. The need for an Administrative Record (AR) was then discussed. It was decided that the AR should be kept at the document center in Kevil and the Paducah Public Library. Jeannie will take action to get the AR together.

The next item on the agenda was budget and finance. It was stated that Steve Kay's contract should be in place by the January meeting. There will be more discussion on the budget in the January meeting.

The next agenda item was meeting locations. It was decided that the Paducah Public Library would be the next meeting place. Location rotation was discussed including the West Kentucky State Vocational Technical School, the Fish and Wildlife Clubhouse, DOE Office, and Lockheed Martin Energy Systems Kevil Office. It was decided that the January meeting would have the Rocky Flats Advisory Committee on the agenda.

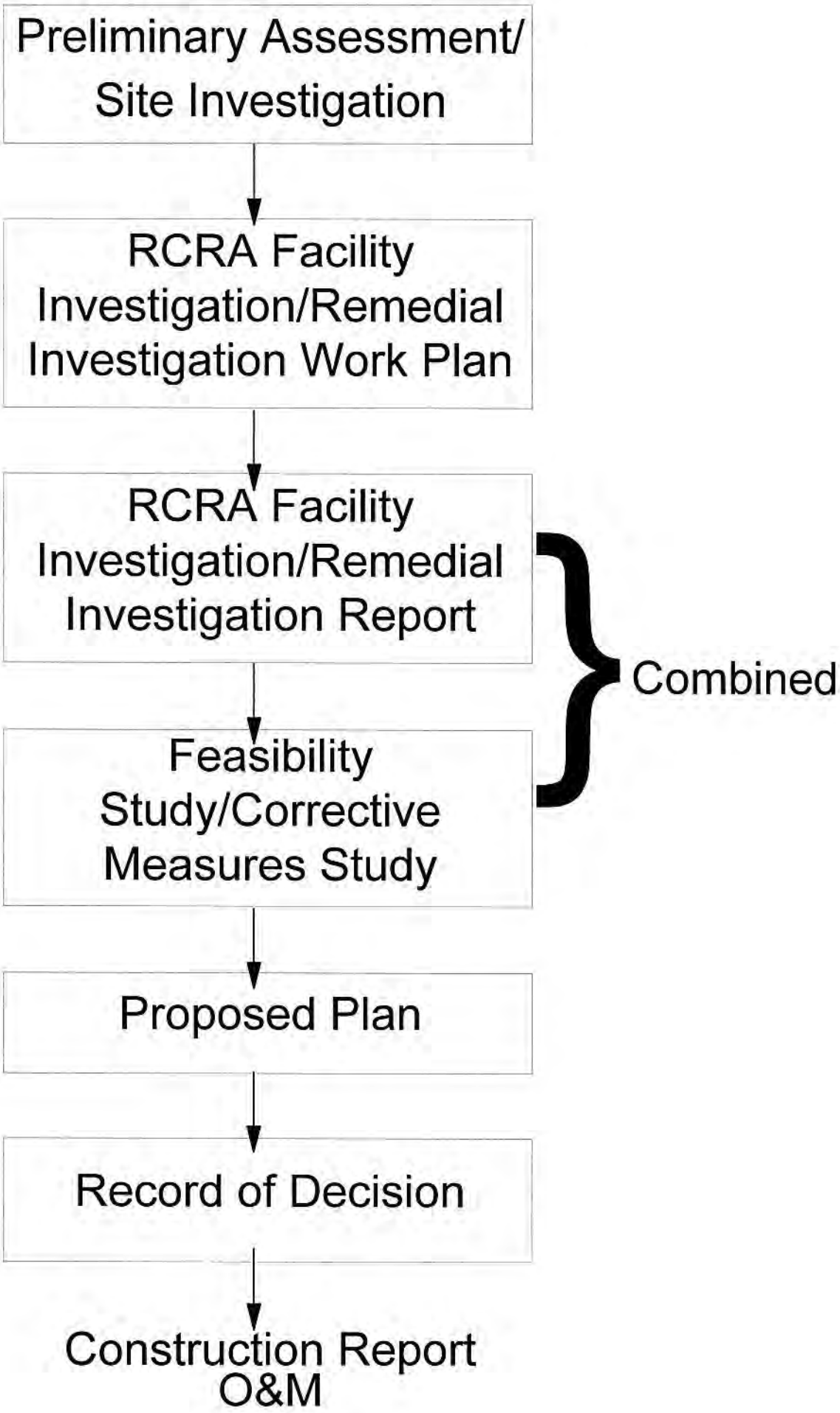
Due to time constraints, a presentation was made by Diane Cutler who is the community relations specialist for the company EN SAFE. Ms. Cutler distributed a questionnaire to the board members regarding the community relations plan as part of the Federal Facilities Agreement (FFA). The community relations plan will be released 180 days after the FFA is finalized.

The ESD on the NW Plume Treatment Facility was discussed with members deciding to meet on December 2, 1996, at the DOE Site Office from 6:00 p.m. to 8:00 p.m. The purpose of the meeting will be to comment on the ESD. Mark Donham will request an extension of the comment review period. There will be a short presentation made by DOE.

The meeting was adjourned. There was a discussion about the different stages of a CERCLA document by Carl Froede for those attendees who could stay longer. A flow chart of this is attached.

Tentative Agenda for January 16, 1997, meeting:

Rocky Flats visitors
Update on membership drive
Steve Kaye's contract
WAGs 1 & 7 presentation
Budget
Status of FFA
Feedback of December 2, 1996 subcommittee meeting


Preliminary Assessment/
Site Investigation
RCRA Facility
Investigation/Remedial
Investigation Work Plan
RCRA Facility
Investigation/Remedial
Investigation Report
Feasibility
Study/Corrective
Measures Study
Combined
Proposed Plan
Record of Decision
Construction Report
O&M

PADUCAH GASEOUS DIFFUSION PLANT SITE SPECIFIC ADVISORY BOARD
U.S. DEPARTMENT OF ENERGY
ENVIRONMENTAL MANAGEMENT & ENRICHMENT FACILITIES
PROJECT UPDATE
NOV. 21, 1996

ENVIRONMENTAL RESTORATION

Northwest Plume Interim Remedial Action

More than 105 millions gallons of water have been treated at the Northwest Plume Groundwater Treatment Facility since operations began Sept. 1, 1995. The facility operates to contain a high contamination zone of the degreaser trichloroethylene and the man-made radionuclide technetium-99.

October 1996 activities include continued remedial operations (water extraction and treatment) and routine operation and maintenance of facility. A parallel ion exchange column experiences a breakthrough in October. Upon results of samples indicating the breakthrough, the system pumping rate was reduced to allow the column which had broken through to be taken offline. New resin has been loaded and the system is back in normal operations. Effluent discharge did not exceed 900 pCi/L during this time frame.

Development of an Explanation of Significant Differences (ESD) to the July 1993 Record of Decision and discussions with the Kentucky Department for Environmental Protection and EPA will continue.

The ESD is being developed to make three modifications to the Record of Decision: (1) elimination of the activated carbon filters, (2) reversal of the sequence of two treatment units (ion exchange unit and air stripper) and (3) elimination of the iron filings treatability study. The document explains the circumstances and the need for these modifications.

The ESD is in a public comment period through Dec. 4.

Northeast Plume Interim Remedial Action

The Northeast Plume project involves the installation of extraction wells in the northeast quadrant of DOE property with an underground pipeline running to the existing PGDP cooling towers as part of a treatment system now under construction.

This regional gravel aquifer's contamination comes solely from the degreaser trichloroethylene.

A planned technical demonstration of an in-site air stripper has been postponed, and will not be included in this project. The Operations and Maintenance Plan for this treatment system was submitted to the regulatory agencies in November, and a briefing on the system and the Operations and Maintenance Plan was provided Nov. 19.

Lasagna demonstration

The Lasagna soil remediation technology now being tested at PGDP works by using buried

electrodes to move water through contaminated soil. Applied current drives the water an inch a day from a positive to a negative electrode. Along the way, the water picks up contaminants from the soil.

Phase IIA installation was completed in August 1996 and the process now underway will be active through February 1997, when final sampling is planned. In March 1997, DOE will evaluate Phase II results to determine if full-scale remediation is feasible.

If undertaken, the remediation will be funded by EM-40, which funds the remainder of Paducah's Environmental Restoration and Waste Management program. A proposed plan and Record of Decision schedule is in development, with a final Record of Decision targeted for September 1997 if a decision for full-scale remediation is made. An overview of that schedule will be provided to the SSAB when finalized.

Waste Area Groups 1 & 7/C-746-K Landfill, Kentucky Ordnance Works
WAG 1 consists of a fire training area, the plant sewage treatment facility and a known trichloroethylene spill site inside the PGDP security fence. WAG 7 consists of five underground storage tanks at the plant water treatment facility, and an inactive sanitary landfill outside the security fence. Three SWMUs are connected with the former Kentucky Ordnance Works (KOW) and are now located on the DOE reservation. They are the KOW sewage treatment facility, a known Toluene spill site and a burn area.

The original proposed plan included the preferred alternative of a constructed wetland system to treat leachate at the landfill, which contains fly ash and other miscellaneous materials. The Kentucky Division of Water disagreed with the treatment option based on the treatment of leachate in the waters of the Commonwealth.

The public comment period for the new proposed plan which includes continued groundwater monitoring and deed restrictions in the preferred alternative will be Jan. 13-Feb. 26, 1997. A public meeting, if requested by Feb. 7, will be held Feb. 13. A cancellation notice will run in the Feb. 11 Paducah Sun if no meeting is requested.

The Record of Decision for this project is planned for April 1997.

Waste Area Group 6/Trichloroethylene spill site
The C-400 TCE spill site is a major source of TCE in the groundwater and soil. The Industrial Hydrogeologic Study focused on piping, utility and building foundation in the C-400 building area to determine how these man-made structures and systems influence groundwater infiltration and flow.

The date from this investigation was utilized to prepare a WAG 6 Remedial Investigation Work Plan, which was submitted to the regulatory agencies in August, 1996, which focus on contaminant distribution and movement. Regulatory agency review of the work plan is now complete, and DOE is in the process of addressing regulatory agency comments. A Treatability Study Program Plan to identify needed treatability studies to collect data necessary to remediate

contaminants expected to be found during the investigation is being developed, and will be submitted to the regulatory agencies by Nov. 26, 1996.

Waste Area Group 17/Rubble piles

The piles of concrete rubble that make up Waste Area Grouping 17 have been investigated for contamination. The rubble, derived from demolition of sidewalks, parking lots and other concrete structures at PGDP during the 1970s, was used as construction material in the Ballard County Wildlife Management area, McCracken County Wildlife Management Area and on Department of Energy property.

It was determined that no further action was required on six piles in the Ballard County area, which allows the Corps of Engineers to proceed with its mitigation project for the Olmstead Lock and Dam. About 30 cubic yards of soil at another area were removed in July, and additional sampling indicates elevated radiation levels are still present. DOE is discussing plans for further removal in that area with the Kentucky Radiation Control Branch.

A Remedial Investigation Report was submitted to the state and EPA on Nov. 9, and a briefing was given to regulatory agencies Nov. 20. The DOE position, based on the results, is no further action at the remaining rubble piles.

Waste Area Group 22/Burial grounds

This project includes the investigation of burial grounds in the northwest corner of the plant (SWMUs 7 & 30) and in the west-central portion of the plant (SWMU 2). Original plans included installation of a cap at SWMU 2, the C-749 Uranium Burial Ground, but investigation activities have determined that the buried material was saturated in the water table, indicating a cap would have limited value.

Results from investigation activities are being compiled into a Preliminary Characterization Summary Report, which will be reviewed with the regulatory agencies to develop a plan for this unit. The development of a Remedial Investigation Report is ongoing at SWMUs 7 & 30, the C-747-A Uranium Burial Ground and C-747-A Burn Area. This RI report is to be submitted to the regulatory agencies in July, 1997.

Waste Area Group 23/Polychlorinated Biphenyls (PCBs) Spill Sites

PCB use is now being phased out at PGDP, but past use and subsequent accidental spills and leaks of oils that contain PCBs caused surface soil contamination at several Solid Waste Management Units inside the PGDP security fence.

A Proposed Plan was issued in June 1996 for a 45-day public comment period. The preferred option in that plan was the excavation and treatment of the soil containing PCBs greater than 25 ppm using a thermal treatment technology known as vitrification. This process destroys organics, such as PCBs, and produces a glass which will tie up any radioactive compounds.

DOE has proposed a PCB soil cleanup of 25 ppm for WAG 23, which is consistent with Environmental Protection Agency guidance for industrial sites and is within the acceptable risk

range approved under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). However, the Commonwealth is attempting to impose a more stringent cleanup level than EPA by including requirements to place a 10-inch cover on areas having PCBs greater than 1 ppm.

This action would increase the scope and costs at WAG 23, and would significantly increase the number of low-risk areas at PGDP requiring remediation. Upon final resolution of the remedial level between EPA, DOE and the state, additional work may be required if a lower cleanup level is selected, or the interim action will be made final if the 25 ppm level is chosen as the remedial level.

WASTE MANAGEMENT

Vortec

PGDP was selected in March 1995 as the host site for a commercial-scale demonstration of the Vortec Corporation's vitrification technology for treatment of low-level and mixed wastes. DOE's Morgantown Energy Technology Center is funding the design, construction and processing of waste for the 30-day pilot study.

Construction is now underway with a targeted demonstration date of September 1997. The process has the potential to treat approximately 80 percent of PGDP legacy waste, and, if successful, could be dismantled and transported to other DOE sites.

ENRICHMENT FACILITIES

Cylinder Refurbishment/Cylinder Yard Construction

A major consequence of the gaseous diffusion process is the accumulation of a significant amount of depleted uranium hexafluoride (DUF_6), a white, crystalline solid similar in consistency to rock salt.

About 30,000 10-14 ton cylinders of DUF_6 are stored at PGDP. To date, 1,300 cylinders have been cleaned and coated as part of an aggressive cylinder maintenance program at the site in accordance with recommendations from the Defense Nuclear Facilities Safety Board.

In addition, new cylinder yards are under construction at the Paducah site, and cylinders previously stored on gravel yards are being moved to concrete yards and stored on concrete saddles in a new stacking configuration. The new stacking method increases aisle spacing, provides improved access for cylinder inspections and reduces potential for damage during handling.

Solid Waste Landfill Construction

Construction of a new contained solid waste landfill in the northeast side of DOE reservation, north of existing (now closed) landfill. Construction includes landfill, sedimentation basin, and support facilities (personnel building, equipment storage building, gasoline/diesel storage area, etc.). Upon receipt of the operating permit, the landfill operations are expected to being in late 1996.

NORTHWEST PLUME ESD

Public Briefing

Explanation of Significant Differences for the Northwest Plume

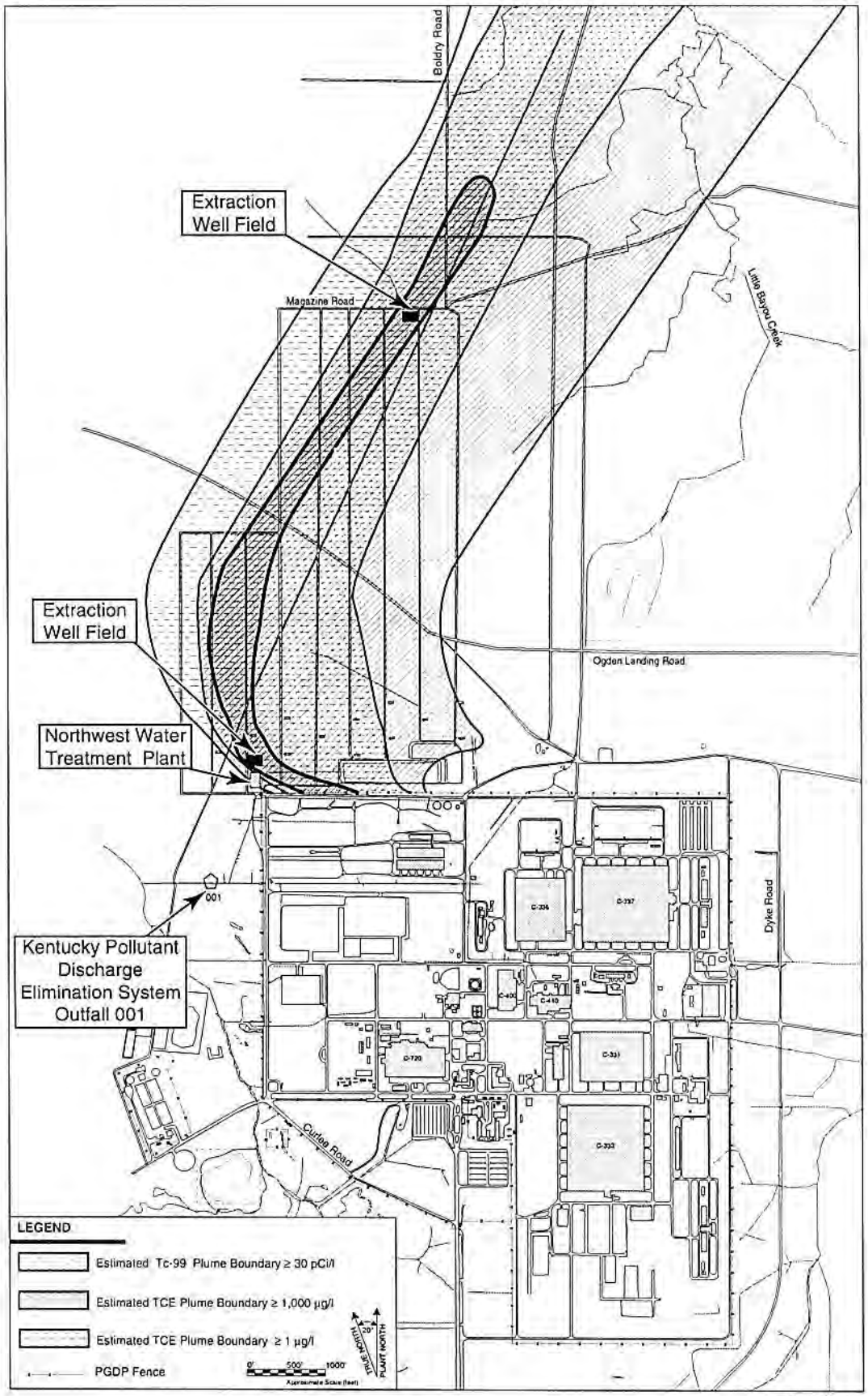
United States
Department of Energy

BACKGROUND/HISTORY

- August 1988 — Volatile organic compounds (VOCs) and radionuclides were detected in private wells north of the PGDP.
- 1993 — Studies reveal that the Northwest Plume contains approximately three billion gallons of contaminated ground water which span approximately 1.9 square miles.
- July 1993 — Record of Decision signed leading to the initiation of hydraulic control of the high concentration portion of the Northwest Plume.
- June 1995 — Construction of the Pilot Treatment Plant completed.
- August 1995 — Pilot Plant became operational and functional.

BACKGROUND/HISTORY

- October 1996 — The Pilot Plant has effectively processed approximately 104,503,340 gallons of water to the target levels specified in the Record of Decision. The target levels for treatment of TCE and ^{99}Tc are 5 ppb and 900 pCi/l, respectively. The KPDES limits are also being met at Outfall 001.
- November 1, 1996 — Issued ESD for public comment in order to propose modifications to the original remedy selected in the ROD.


Boldry Road
Extraction Well Field
Magazine Road
Little Bayou Creek
Extraction Well Field
Ogden Landing Road
Northwest Water Treatment Plant
001
Kentucky Pollutant Discharge Elimination System Outfall 001
Dyke Road
Curlee Road
LEGEND
Estimated Tc-99 Plume Boundary ≥ 30 pCi/l
Estimated TCE Plume Boundary ≥ 1,000 µg/l
Estimated TCE Plume Boundary ≥ 1 µg/l
PGDP Fence
0' 500' 1000'
Approximate Scale (feet)
TRUE NORTH
PLANT NORTH

Requirements for Significant Differences

CERCLA § 117(c) Requires:

- **Publish ESD to document significant changes.**

  Significant changes from a selected remedy are defined as:
  - Incremental changes to remedial action.
  - Do not alter the fundamental approach.
  - Are not minor (i.e., minor changes in cost and/or types of materials, services, supplies, etc.).

- **Publish public notice of availability in local newspaper.**
- **Provide opportunity for public inspection of ESD.**
- **Place ESD in Administrative Record.**

Description of Significant Differences

1. Iron Filings Treatability Study:
   - Original Remedy — The interim action ROD includes a treatability study to evaluate an innovative technology medium (iron filings) for reduction of TCE and ^{99}Tc in ground water.
   - Proposed Modification — Eliminate the iron filings treatability study.
2. Activated Carbon Filters:
   - Original Remedy — The interim action ROD includes the use of activated carbon filters to collect volatile organic compounds (TCE) mobilized by the vapor-phase stripping process.
   - Proposed Modification — Eliminate the activated carbon filters from the treatment process.
3. Modification to the Sequence of Treatment Units:
   - Original Remedy —The interim action ROD defined the treatment sequence as: treatment of ^{99}Tc-contaminated water via an ion exchange unit followed by an air stripper for treatment of TCE.
   - Modification — During design, the sequence of the two treatment units was reversed to ensure the ion exchange resin's effective life span was extended.

Reasons for Modifying the Selected Remedial Action

Elimination of the Iron Filings Treatability Study

- The treatability study would not provide data which would directly support the Northwest Plume's current interim remedial action.
- The cost savings ($925,415) which would result from the elimination of the treatability study can be utilized to fund other DOE remedial actions.

Reasons for Modifying the Selected Remedial Action

Elimination of the Carbon Filters

- The TCE air emissions, with the elimination of the carbon filters, would remain protective of human health and the environment because they are below regulatory limits which are established to be protective.
- Elimination of the carbon filters would reduce the amount of waste generated (100-120 drums per year).
- Elimination of the carbon filters would result in an annual cost savings of approximately $196,000.
- The cost savings which would result from the elimination of the carbon filters can be utilized to fund other DOE remedial actions.

Reasons for Modifying the Selected Remedial Action

Reversal of the Order of Treatment Units

- The ^{99}Tc would have to increase to 400°F in order to volitilize. The current water temperature is 60° to 70°F.
- During design, the sequence of the treatment units was reversed to prevent TCE from accumulating on the resins in the ion exchange columns which would reduce the effectiveness of the treatment process.
- The reversal of the treatment order would minimize waste due to fewer replacements of the exchange resins.
- The cost of frequent replacement of the exchange resins will be saved, allowing these funds to be used for other remedial actions.

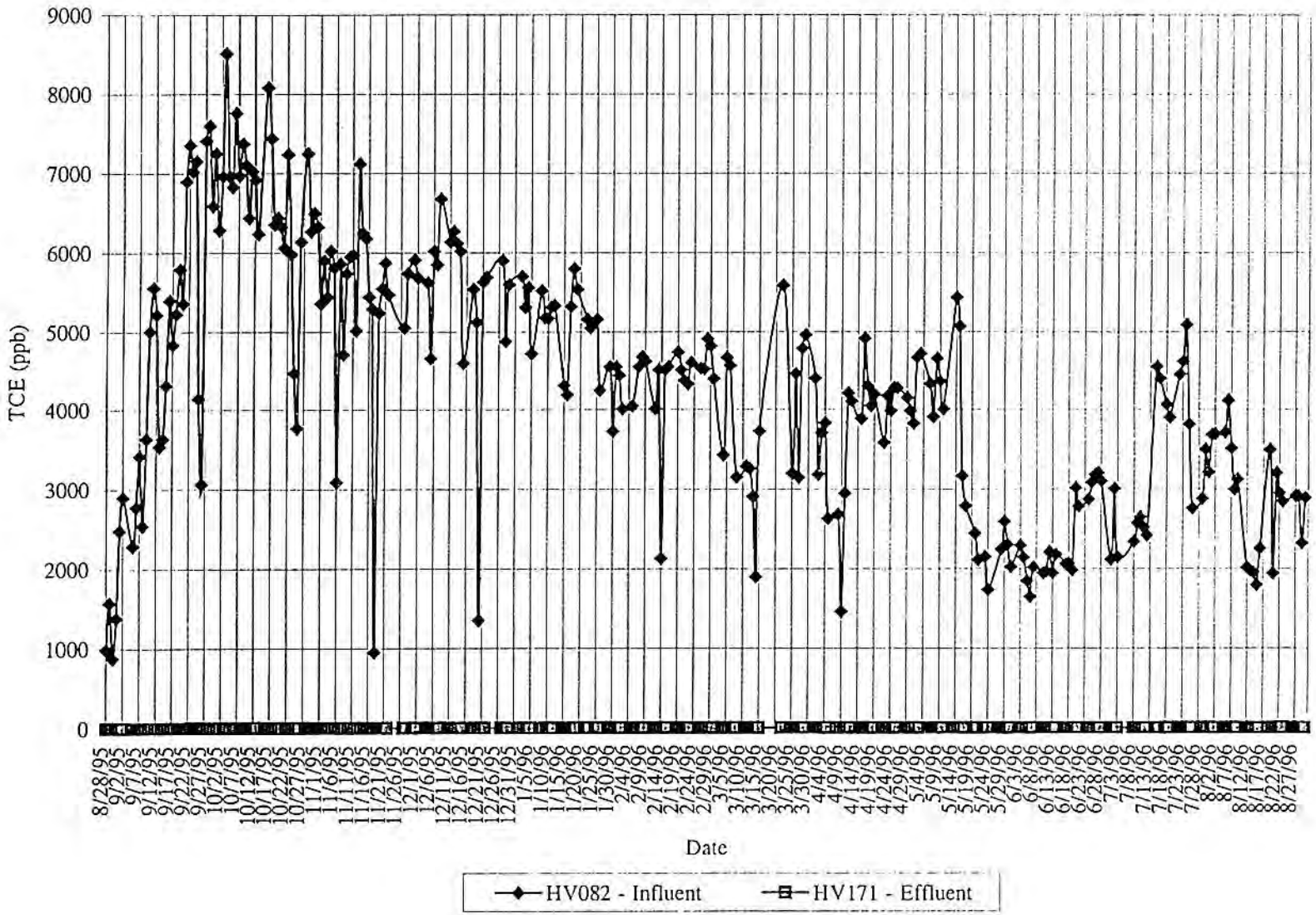
Sampling/Monitoring for TCE

- The calculated emissions under worst case scenarios from both facilities at the Northwest and Northeast Plumes are 1.61 lb/hr.
- The DOE and KDEP agree that the calculated emissions are below regulatory limits.
- The DOE will continue monitoring and reporting to the EPA and the KDEP.
- Results are published in a Quarterly Report.
- Water going into (influent) the air stripper is sampled daily for TCE.
- Water going out of (effluent) the air stripper is sampled weekly for TCE.
- Air emissions (TCE) coming out of the air stripper are sampled quarterly.
- Water discharges at Outfall 001 are monitored daily for TCE and KPDES parameters are monitored annually.

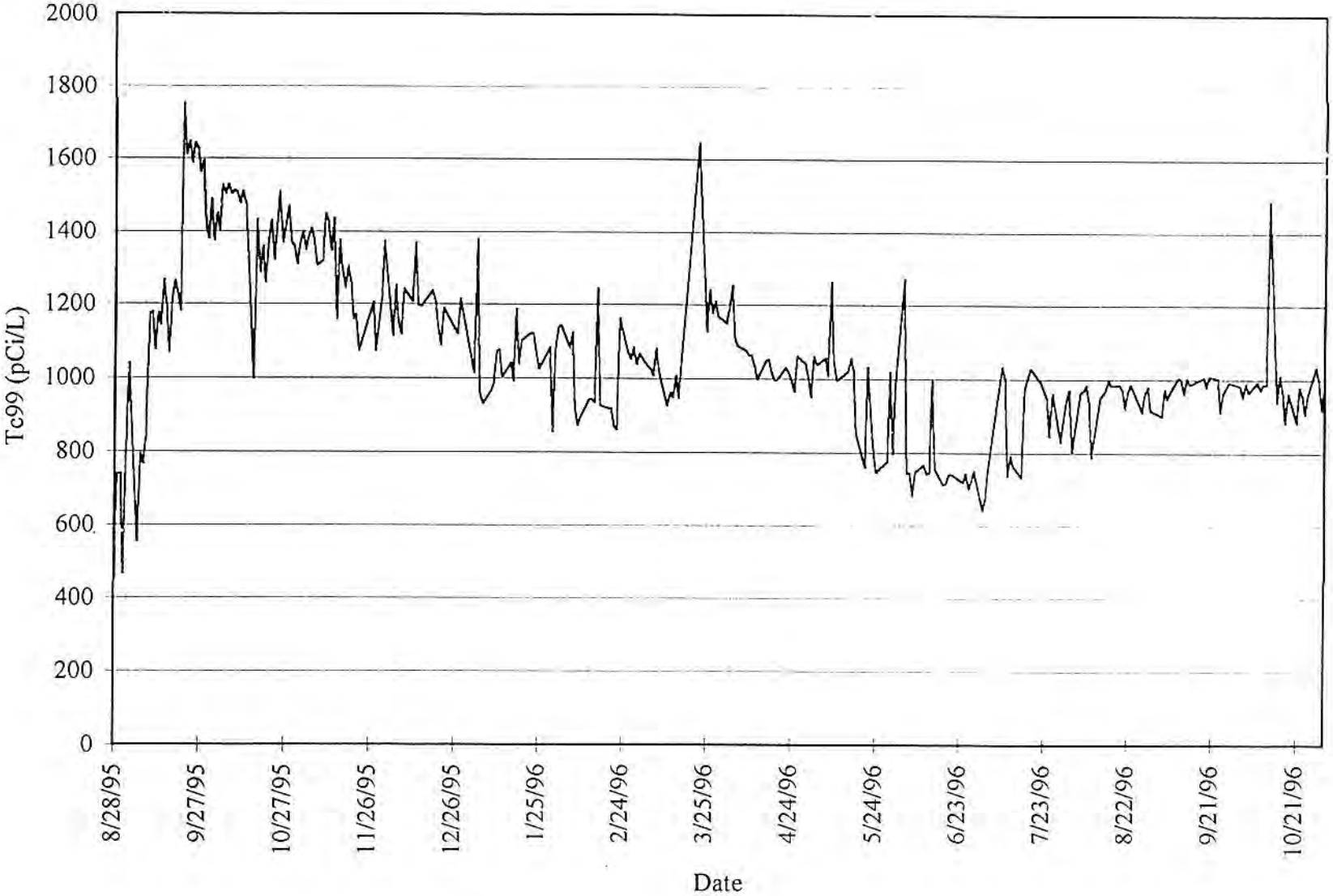
Sampling/Monitoring for ^{99}Tc

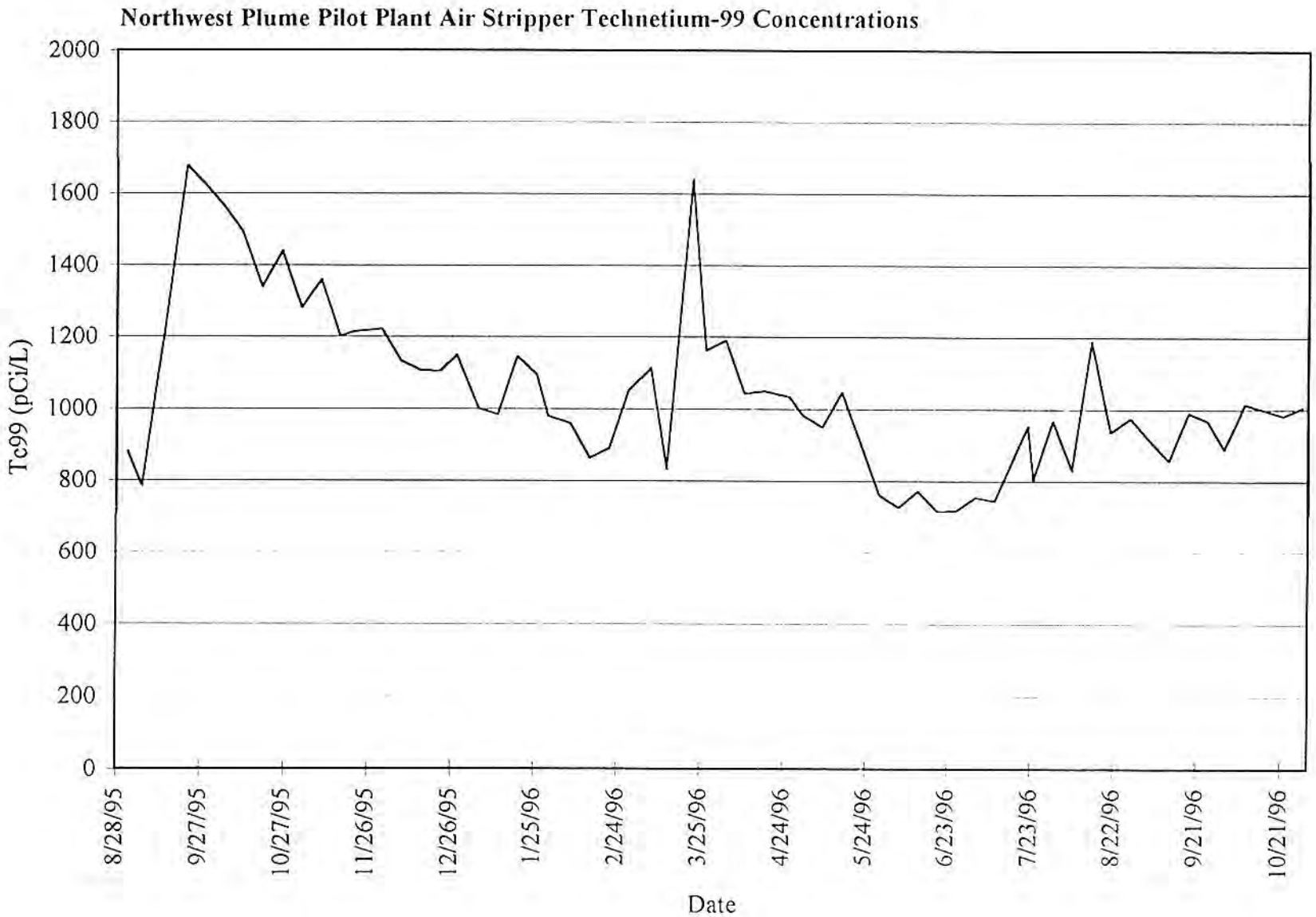
- Sampling has revealed that the ^{99}Tc remains in the water. The ^{99}Tc would need to reach 400°F before it would be released as vapor to the atmosphere.
- The current temperature of the water at the Northwest Plume Treatment Plant is 60° to 70°F.
- The DOE will continue to monitor and model ^{99}Tc emissions from the Northwest Plume facility.
- The results will continue to be reported in the annual NESHAP report.
- Water going into (influent) the air stripper is sampled daily for ^{99}Tc.
- Water going out of (effluent) the air stripper is sampled weekly for ^{99}Tc.
- Air emissions (^{99}Tc) coming out of the air stripper are sampled quarterly.
- Water discharged at Outfall 001 is sampled for ^{99}Tc daily and KPDES parameters annually.

Northwest Plume Pilot Plant Influent and Effluent Trichloroethene Water Concentrations



Northwest Plume Pilot Plant Equalization Tank Technetium-99 Concentrations




Northwest Plume Pilot Plant Air Stripper Technetium-99 Concentrations
Tc99 (pCi/L)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
8/28/95
9/27/95
10/27/95
11/26/95
12/26/95
1/25/96
2/24/96
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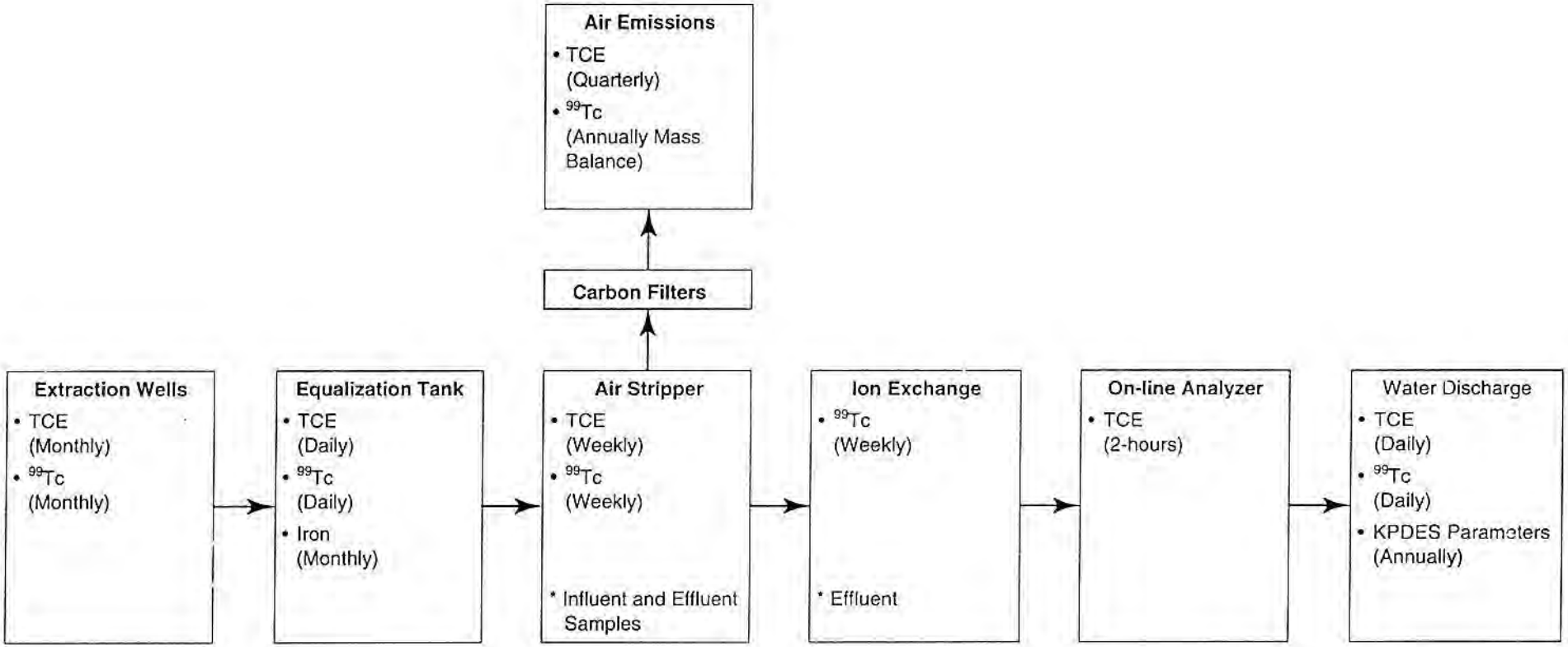
9/21/96
10/21/96
Date

Overview of the Northwest Plume Pilot Plant Sampling