

2227

**TRANSMITTAL OF THE MINUTES FROM THE
JULY 23, 1991 MEETING IN CINCINNATI ON THE
SOUTH GROUNDWATER CONTAMINATION
PLUME REMOVAL ACTION**

09/18/91

**DOE-2130-91
DOE-FSO/USEPA
2
LETTER
OU5**



Department of Energy

Fernald Site Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6319

2227

SEP 18 1991

DOE-2130-91

Mr. James A. Saric, Remedial Project Director
U. S. Environmental Protection Agency
Region V - 5HR-12
230 South Dearborn Street
Chicago, Illinois 60604

Mr. Graham E. Mitchell, DOE Coordinator
Ohio Environmental Protection Agency
40 South Main Street
Dayton, Ohio 45402

Dear Mr. Saric and Mr. Mitchell:

TRANSMITTAL OF THE MINUTES FROM THE JULY 23, 1991 MEETING IN CINCINNATI ON THE SOUTH GROUNDWATER CONTAMINATION PLUME REMOVAL ACTION

Enclosed is a copy of the meeting minutes from the July 23, 1991, meeting held in Cincinnati, Ohio, on the South Groundwater Contamination Plume Removal Action. The meeting was requested to discuss progress toward relocating the proposed Part 2 extraction well field.

If you have any questions, please contact Carlos J. Fermaintt at FTS 774-6157 or (513) 738-6157.

Sincerely,

Jack R. Craig
Fernald Remedial Action
Project Manager

FO:Fermaintt

Enclosure: As stated

cc w/encl.:

R. P. Whitfield, EM-40, FORS
K. A. Hayes, EM-424 GTN
S. Frush, EM-424, GTN
J. Benetti, USEPA-V, 5AR-26
M. Butler, USEPA-V, 5CS-TUB-3
D. A. Ullrich, 5HR-12, USEPA-VD.
R. Schregardus, OEPA-Columbus
K. Davidson, OEPA-Columbus
T. A. Winston, OEPA-Dayton
T. Schneider, OEPA-Dayton
A. Futrell, OEPA
L. August, GeoTrans
R. Quillen, ODH
E. Schussler, PRC
R. L. Glenn, Parsons
D. J. Brettschneider, WEMCO
S. W. Coyle, WEMCO
J. D. Wood, ASI
B. Galbraith, ASI/IT
F. Markert, IT-Pittsburg
J. Falkenbury, OTS/Weston
A R Administrator, M. Crosswaite

2227

WMCO:EMT(OU5):91-072

CONFERENCE MEMORANDUM

Date of Meeting: July 23, 1991

Location: Marriott Hotel, Cincinnati, Ohio

Subject: SOUTH PLUME REMOVAL ACTION WELL FIELD RELOCATION

Notes by: David Brettschneider *DB*

Participants: Jim Saric (USEPA)
Tom Schneider (OEPA)
Andrea Futrell (OEPA)
Mike Proffitt (OEPA)
Shirley Frush (DOE/HQ)
Carlos J. Fermaintt (DOE/FSO)
Jack Craig (DOE/FSO)
David Brettschneider (WMCO)
Bob Galbraith (IT Corp.)
Frank Markert (IT Corp)
John Falkenbury (OTS/Weston)

The meeting was requested by the Fernald Site Office (FSO) to discuss progress toward relocating the subject well field and to discuss concerns which have arisen as a result of this effort.

- 1) Shirley Frush is the program representative at headquarters (DOE/HQ) for Operable Unit No. 5 (OU#5). John Falkenbury is a subcontractor serving as the DOE/HQ technical reviewer for OU#5.
- 2) Mr. Markert presented several overheads to explain the computer modeling effort, which has been performed since the May 22 meeting. The overheads are attached as Figures 1 through 5. Figure 1 shows the modeled present configuration of the groundwater uranium plume.
 - a) The well field location proposed at the May 22 meeting, immediately north of the Texas Gas pipeline easement transversing the Albright and Wilson Americas (AWA) facilities, was determined to be located too near known inorganic groundwater contamination detected at the AWA facility. This contamination would be pulled into a well field at this location.

- b) In order not to pull the inorganics into the well field, or significantly spread the inorganics, the field had to be moved farther north. Figures 2 and 3 show the location which was determined to meet this criteria.
- c) With the well field located as shown in Figure 3, the model runs predicted that the average uranium concentration withdrawn from the field with each of four pumps operating at 500 gallons per minute (gpm) would be as shown on Figure 4. The pounds per year of uranium withdrawn would be as shown on Figure 5.
- d) During the first year of operation of the well field, the computer model predicts that approximately 1200 pounds of uranium would be discharged. OEPA questioned Mr. Markert on the parameters which were used for the computer runs. After some discussion, it was agreed that U.S. and Ohio EPAs would be sent copies of the volumes of the draft Groundwater Report which detail the computer modeling input. (Action - Bob Galbraith)
- 3) OEPA presented preliminary well sampling data taken in the South Plume area by the Paddy's Run Road Site (PRRS) which indicated that organics were in a larger part of the South Plume than was perceived at the May 22 meeting. This situation was not envisioned at the time the Part 2 Work Plan was approved. No one at this time could explain why the organics were as far east as has been detected.
- 4) Mr. Brettschneider then explained in detail the proposed concept to address additional mass of uranium in the well field discharge as a result of relocating the extraction well field. This concept had been briefly described at the May 22 meeting. It was mentioned that this concept was also included as one of the additional removal actions being presented in the ongoing negotiations. The concept is as follows:
- a) The ion exchange columns utilized for the recent proof of process testing for the Advanced Wastewater Treatment (AWWT) Facility are currently being purchased from the vendor. The columns are proposed to be installed in one corner of the Biodentrification Effluent Treatment Facility Building.
- b) Based on a loading rate of 6 gpm/square foot, the 2-30 inch diameter and 1-36 inch diameter columns would have a treatment flow capability of approximately 100 gpm when installed in parallel.
- c) A parallel installation would provide for gross removal of uranium as opposed to a virtually complete uranium removal facility as provided by the 150 gpm IAWWT facility currently being procured. It was explained that gross removal meant that the flow would only pass through one column as opposed to two or more columns in series. As such, the exchange resin may not be loaded to the extent possible with a series

~~XXXXXXXXXX~~
2227

operation. Breakthrough of the resin bed nearing the end of the resin life would allow higher levels of uranium to occur in the discharge. Therefore, only approximately a seventy-five percent (75%) uranium removal efficiency would be achieved by the treatment process.

d) Based on past parameters for the wastewater stream proposed to be treated by this unit, approximately 300 pounds per year of uranium would be removed from current wastewater discharges.

5) Mr. Brettschneider then explained the concerns which have arisen over the equivalent mass concept based on the above discussions. The well field pumping will produce a uranium discharge during the first year of approximately 1200 pounds whereas the sum of the various interim treatment processes will only remove 500 pounds based on the following assumptions:

1990 FMPC Uranium (U) Discharge:	1862#/yr
U Discharge Ceiling in Dispute Resolution:	- 1700#/yr
Agreed to Net U reduction.....	= 162#/yr (A)

IAWWT U Removal :	500#/yr
Convert AWWT Demo to Production Unit:	+ 300#/yr
Gross U Removal Capability.....	= 800#/yr (B)

Gross U Removal Capability :	800#/yr (B)
Net U Reduction :	- 162#/yr (A)
Allowance for Waste Pit and Groundwater Removal Action discharges :	- 138#/yr
Net	= 500#/yr

6) Mr. Brettschneider explained the logic for proceeding with the design of the relocated well field in the location as described by Mr. Markert. The Advanced Waste Water Treatment (AWWT) facility currently in design will provide for organics and uranium removal for FMPC streams. It is currently envisioned that the proposed well field location would collect groundwater containing uranium as the only contaminant of concern. This discharge would eventually be treated in an expansion to the AWWT system. This portion of the South Plume would be referred to as Zone 1.

Eventually, a second extraction well field would be installed which would address the second zone of the plume. This zone would include organics and inorganics, as well as uranium. The extent of this portion of the plume would be determined by the location of the uranium cleanup isopleth as determined using the uranium cleanup level defined by the Record of Decision (ROD) for OU#5. Zone 2 of the plume would be transmitted in a separate pipeline (Part 2 of the South Plume Removal Action Project has already been laid out to accommodate this second forcemain) to a separate expansion of the AWWT facility. The cost for treatment of the organics and

inorganics should be shouldered by the PRRS.

2227

The third zone of the plume, which contains organics and inorganics, but uranium below the level stated in the ROD for OU#5, would be extracted and treated by the PRRS for organics and inorganics only. The FSO would not be involved financially with Zone 3, but this effort would be coordinated with the Zone 1 and 2 pumping.

- 7) All parties agreed that keeping the South Plume Removal Action extraction well field north of AWA makes logical sense. It was, therefore, agreed that the design of Part 2 of the removal action should proceed with the extraction wells located as shown on Figure 3. Mr. Fermainnt advised U.S. EPA and OEPA that the schedule for Part 2 has already been impacted by the well field relocation effort. Further delays will occur to redesign the project to reflect today's decision. (Action - Brettschneider)
- 8) It was proposed by the FSO that, in order to meet the 500 lbs./year uranium discharge resulting from the above actions, the well field discharge be throttled back to keep the uranium discharge level under 500 lbs./year until early 1994 when the AWWT will begin operation. U.S. EPA questioned if the well field would be of significant value if a full barrier were not provided.
- 9) Mr. Brettschneider suggested that, as the permanent AWWT system will be operational in early 1994, the Interim Uranium Waste Water Treatment Systems should not be expanded, as these systems are all "bandaids."
- 10) It was agreed that the following actions will be pursued:
 - a) Computer modeling of the well field at less than full design flow to determine options and effects. (Action - Markert)
 - b) Part 5 of the South Plume Removal Action well be expanded to investigate uranium levels in the area at the relocated well field to verify the accuracy of the computer model generated uranium isopleths. (Action - Galbraith)
 - c) FSO will prepare a new schedule which reflects installation of the relocated well field, Force Main, and Pump House to the north of AWA. (Action - Brettschneider)
 - d) FSO will review interim uranium treatment to see if additional uranium removal capability can be obtained. (Action - Brettschneider)
 - e) A followup meeting will occur once the information in above actions a through d is obtained. (Action - Fermainntt)
 - f) FSO will begin addressing coordination of the Zone 2 plume area extraction & treatment with the PRRS. (Action - Fermainntt)

~~XXXXXXXXXX~~

11) EPA asked if it was possible to accelerate the construction of the AWWT. Mr. Brettschneider stated that it may be possible if the current scope of the AWWT project could be simplified. Currently, the project includes scope to address the concept of "zero " pollutant discharge and recycle and reuse of water as well as radionuclide removal and National Pollutant Discharge Elimination System (NPDES) compliance. The FSO will determine if the AWWT schedule can be accelerated by simplifying the scope of the project.
(Action - Brettschneider)

2227

c: K. A. Broberg, WMCO
D. J. Carr, WMCO
S. W. Coyle, WMCO
J. R. Craig, DOE-FSO
T. L. Crawford, WMCO
C. J. Fermaintt, DOE-FSO
B. Galbraith, ASI/IT
M. J. Galper, WMCO
D. M. Gerrick, WMCO
M. W. Griffin, WMCO
J. P. Hopper, WMCO
J. M. Lacefield, WMCO
F. X. Markert, IT-Pittsburgh
K. Nickel, WMCO
R. Smith, IT-Pittsburgh
P. J. Yerace, WMCO

2

LEGEND:

— 200 — URANIUM CONCENTRATION #9/L. LAYER 1.

▨ BEDROCK

— FAPC SITE BOUNDARY

NOTE:

COMPUTER FILE NAME: 30S0L12-60

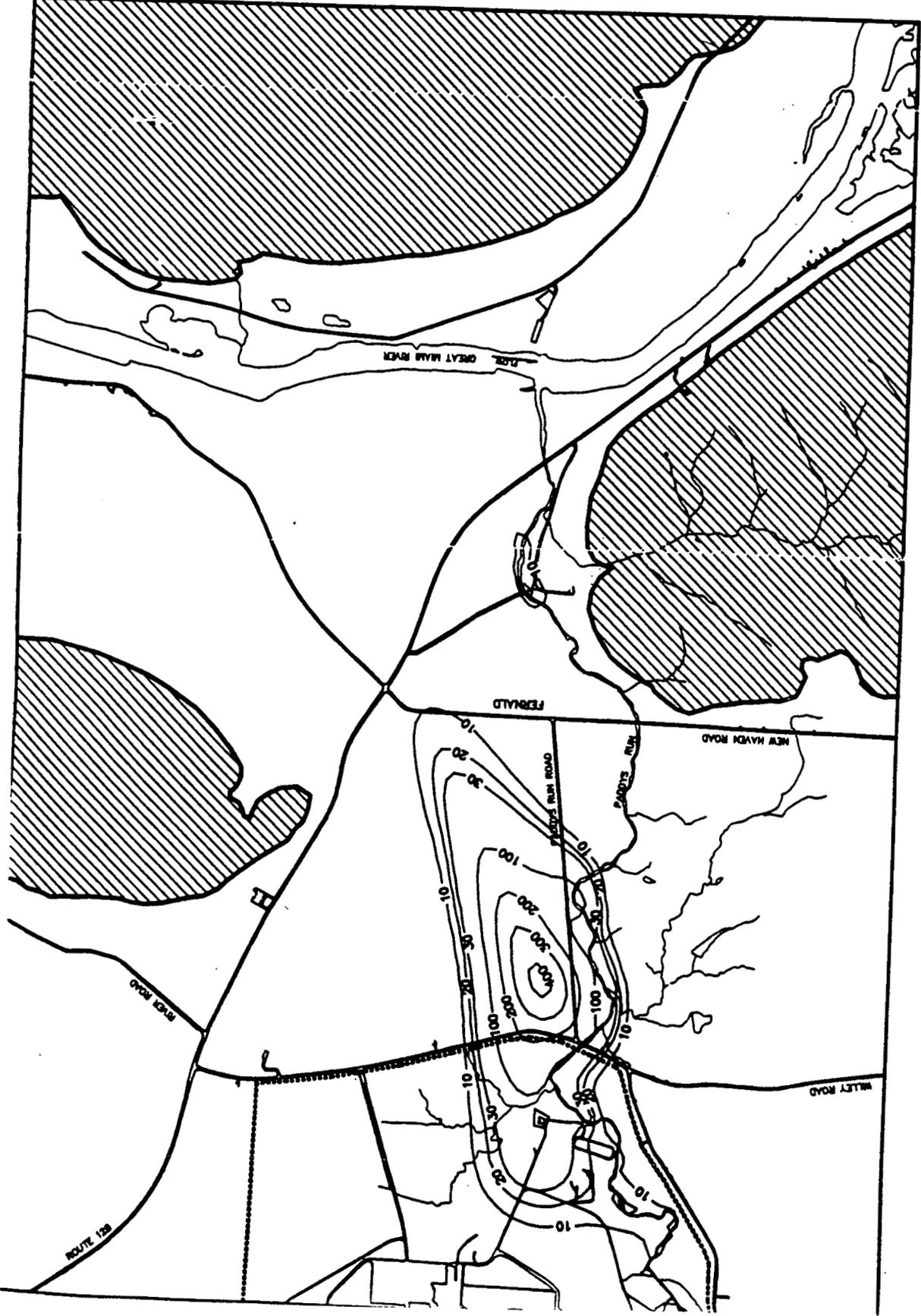
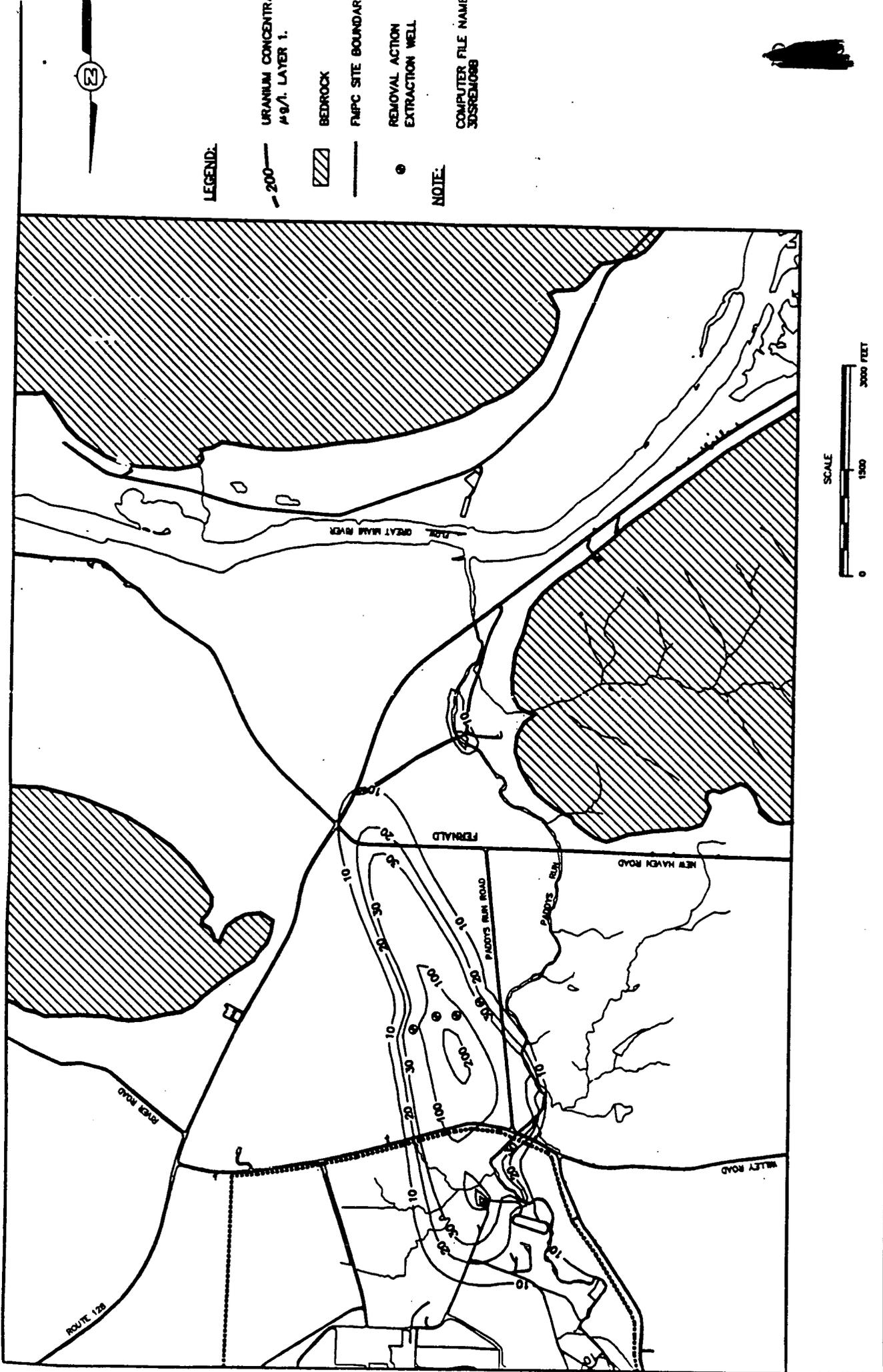


FIGURE 1
SOUTH PLUME REMOVAL ACTION

227



LEGEND:

- 200 — URANIUM CONCENTRATION #9/A LAYER 1.
- ▨ BEDROCK
- PUPC SITE BOUNDARY
- REMOVAL ACTION EXTRACTION WELL

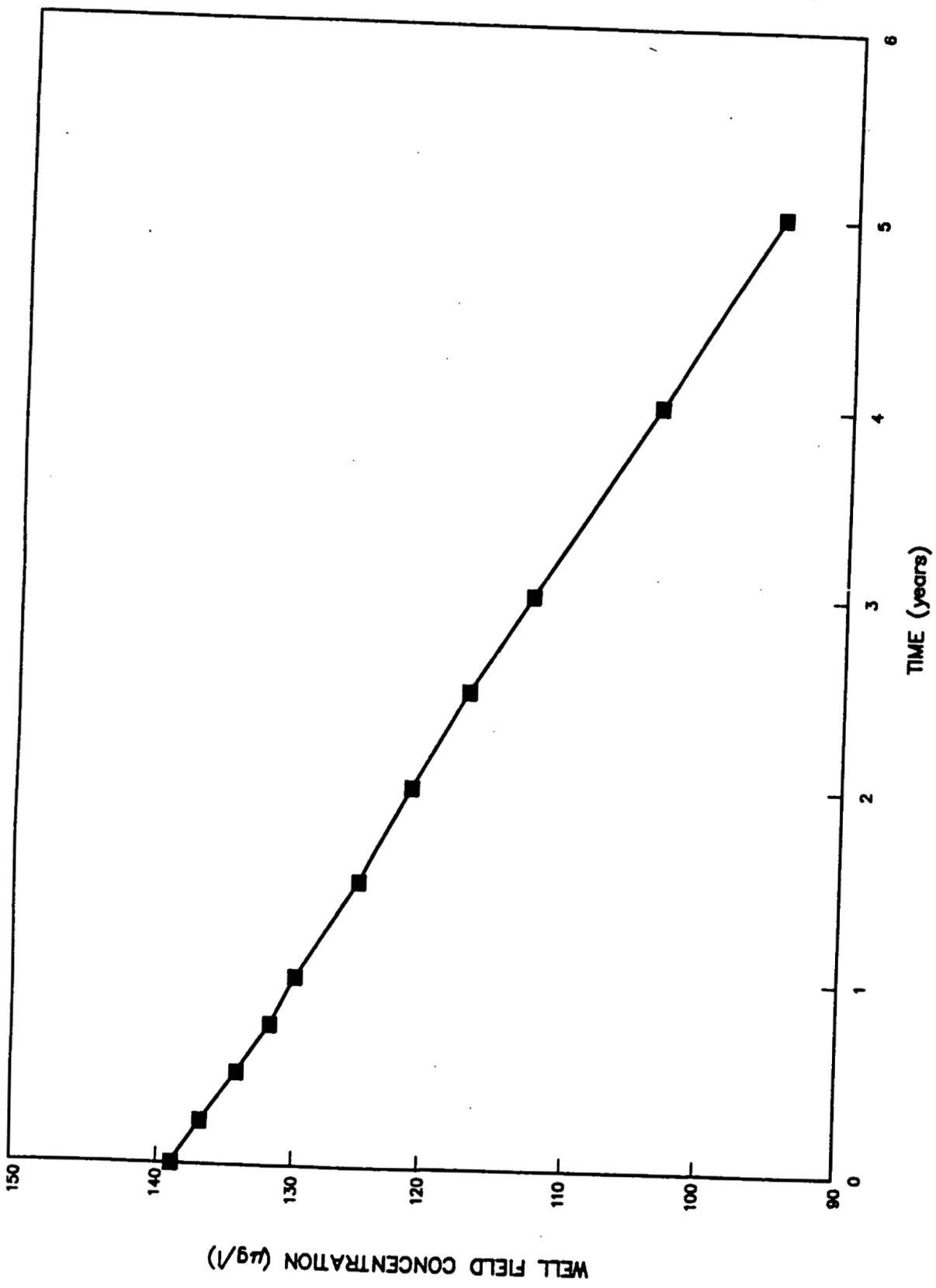
NOTE:

COMPUTER FILE NAME
3D5REH088



FIGURE 2
SMITH DRIFTE DEVIATION ACT

2227

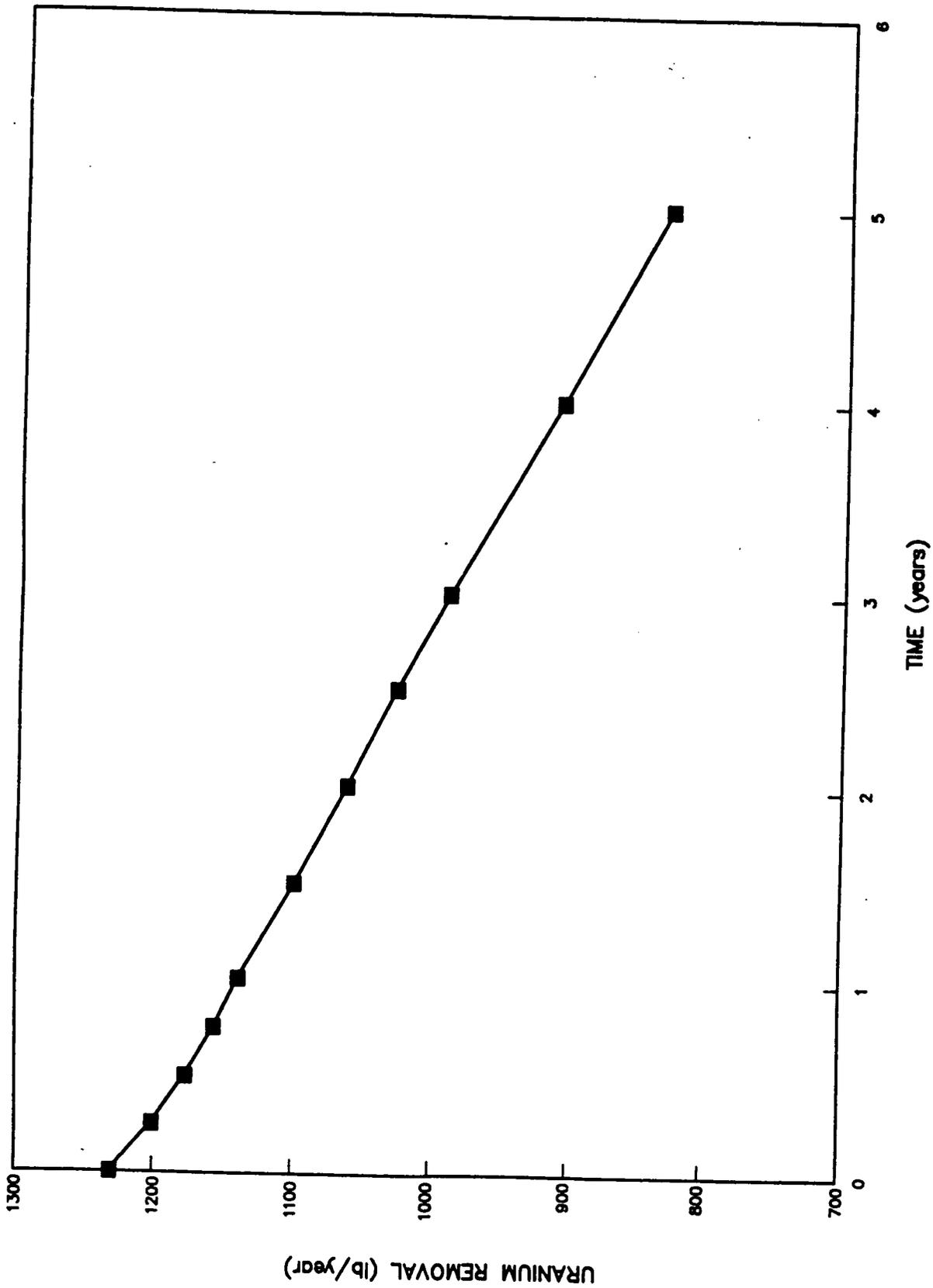


NOTES:

1. TAKEN FROM 305REMOUSE.OUT
2. SEE FIGURE 2 FOR REMOVAL ACTION WELL FIELD LOCATION

FIGURE 4

227



NOTES:

1. TAKEN FROM 30SREM09I
2. SEE FIGURE 2 FOR REMI ACTION WELL FIELD LOC/

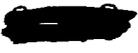


FIGURE 5
SOUTH PLUME REMOVAL ACTI

2227