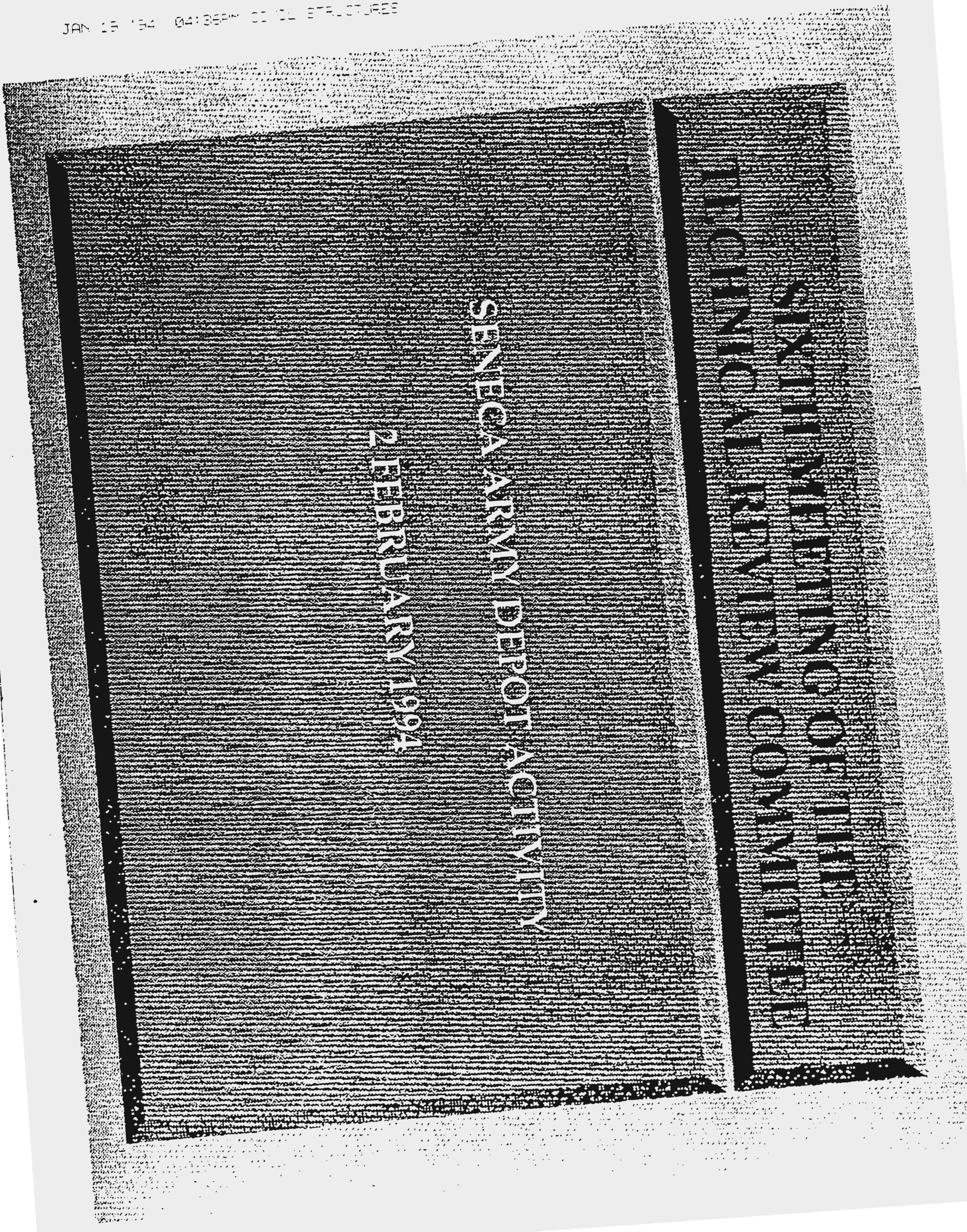
479-17

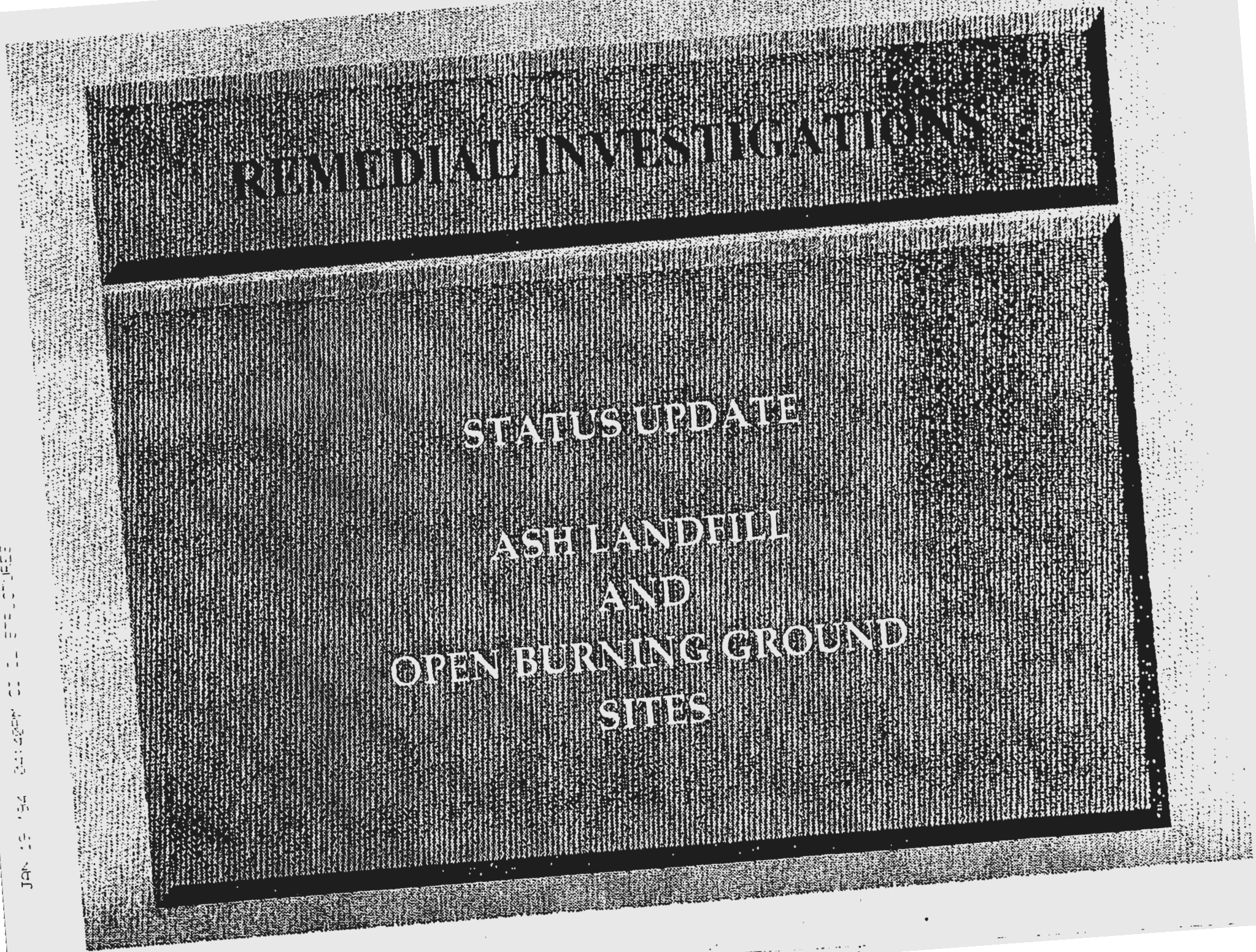
AGENDA
TECHNICAL REVIEW COMMITTEE
MEETING
FEBRUARY 2, 1994

12:30- 12:35	**Welcome** LTC Roy E. Johnson Commander, Seneca Army Depot Activity
12:35- 12:50	**TRC Administration- New Members** Stephen M. Absolom, Seneca Army Depot Activity
12:50 - 1:30	**Site Briefing Status Update** Kevin Healy, Huntsville Division, Army Corps of Engineers
1:30 - 1:45	**Investigation of Other Areas of Concern** Engineering-Science, Inc.
1:45 - 2:00	**Proposed Interim Action-Source Removal and Treatment at the Ash Landfill** Engineering-Science, Inc.
2:00 - 2:15	**Ash Landfill and OB Grounds Overview** Engineering-Science, Inc.
2:15 - 2:30	**Question and Answer Session** Open Discussion
2:45 - 3:00	**Set Date and Agenda for next TRC Meeting** Open Discussion

TECHNICAL REVIEW COMMITTEE
HANDOUTS
FEBRUARY 2, 1994

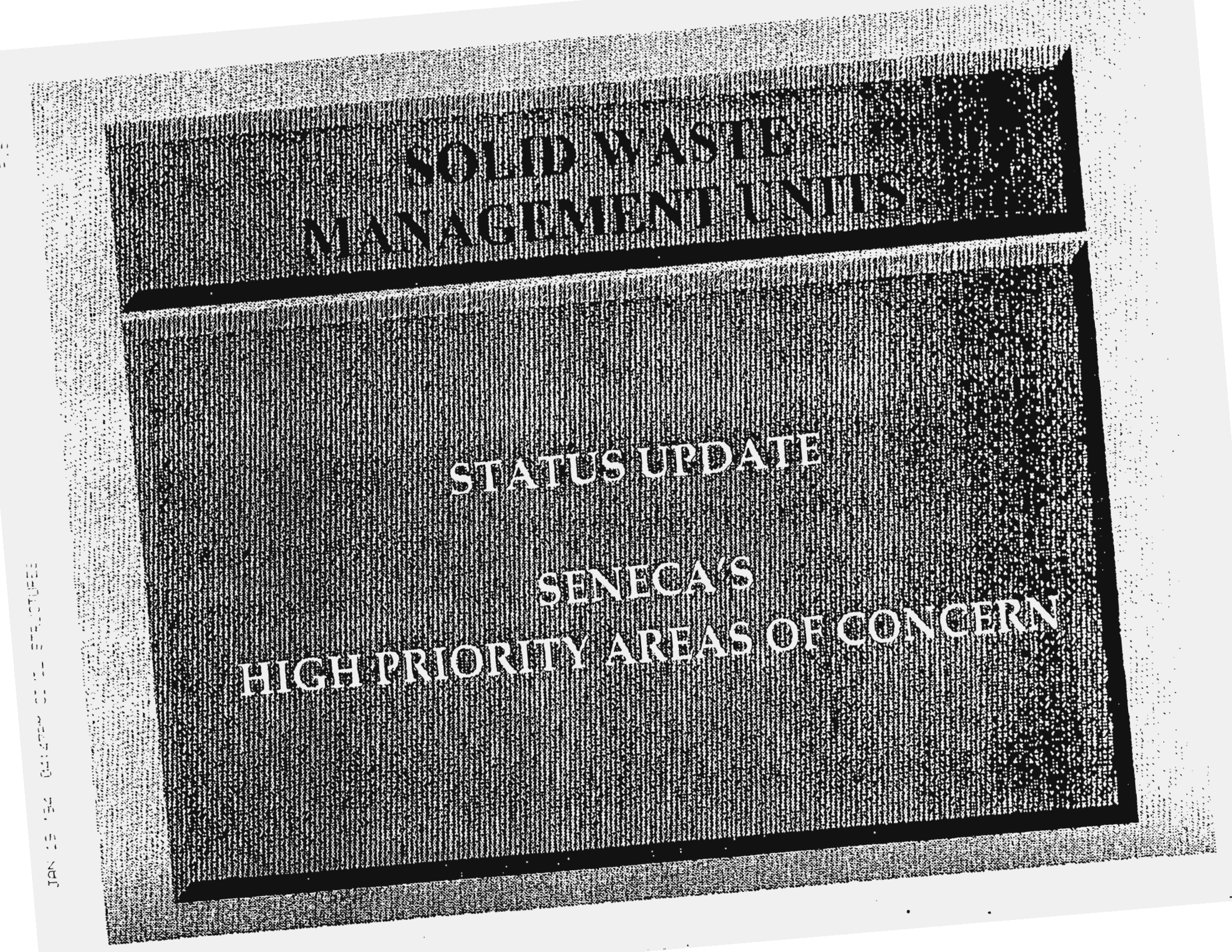
CONTENTS


SENECA ARMY DEPOT ACTIVITY
2 FEBRUARY 1994
SIXTH MEETING OF THE
TECHNICAL REVIEW COMMITTEE


REMEDIAL INVESTIGATIONS
STATUS UPDATE
ASH LANDFILL
AND
OPEN BURNING GROUND
SITES

REMEDIAL INVESTIGATIONS

- RI REPORTS - REGULATORY REVIEW COMMENT RESPONSES BEING PREPARED. DRAFT-FINAL DOCUMENT TO BE PRESENTED SHORTLY.
- FS REPORTS - TO BE SUBMITTED FOR REGULATORY REVIEW.
- RECORDS OF DECISION STILL EXPECTED BY EARLY 1995.


SOLID WASTE
MANAGEMENT UNITS
STATUS UPDATE
SENECA'S
HIGH PRIORITY AREAS OF CONCERN

SITE INVESTIGATIONS

FIELD WORK PREDOMINANTLY
COMPLETE. SOME DELAYS DUE TO
BAD WEATHER. FINAL DATA
COLLECTION IS PROCEEDING.
CONCLUSIONS AND FINAL REPORT
EXPECTED BY SEPTEMBER 1994.

SOLID WASTE MANAGEMENT UNITS

STATUS UPDATE

SENECA'S MODERATE PRIORITY AREAS OF CONCERN

SITE INVESTIGATIONS

- FIELD WORK INITIATED AT SOME...
  - DELAYED AT OTHERS DUE TO BAD WEATHER.
- CONCLUSIONS AND FINAL REPORT
  - EXPECTED BY LATE CY 94 - EARLY CY 95

SOLID WASTE MANAGEMENT UNITS

STATUS UPDATE

FINALIZATION OF THE SWMU CLASSIFICATION STUDY

LIMITED SAMPLING

- FIELD WORK ESSENTIALLY COMPLETE AS PROPOSED. OUTSTANDING ISSUES NEED TO BE RESOLVED. RESOLUTION MAY REQUIRE ADDITIONAL FIELD WORK.

STUDY FINALIZATION

BY SUMMER - WITHOUT ADDITIONAL FIELD WORK

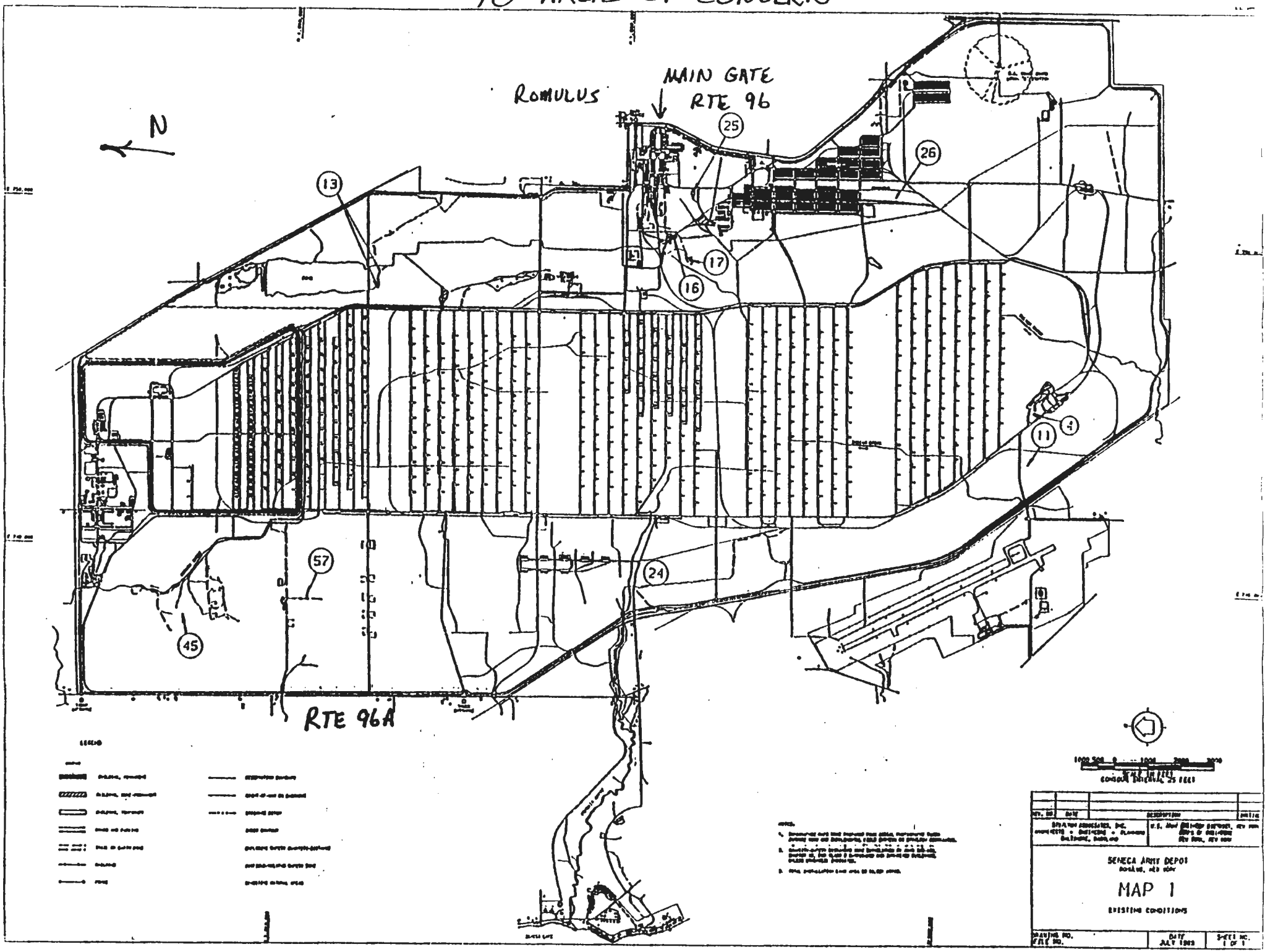
BY FALL - WITH ADDITIONAL FIELD WORK

TEN AREAS OF CONCERN
TO BE ADDRESSED UNDER THE
FIRST SITE INVESTIGATION
WORKPLAN

(Map 1)

SEAD #	DESCRIPTION
4	Munitions Washout Facility Leach Field
11	Old Construction Debris Landfill
13	IRFNA Disposal Site
16	S-311 Abandoned Deactivation Furnace (DF)
17	Building 367 Existing DF
24	Abandoned Powder Burning Pit
25	Fire Training and Demo Pad
26	Fire Training Pit and Area
45	Open Detonation Facility
57	Explosive Ordnance Disposal (EOD) Area

10 AREAS OF CONCERN

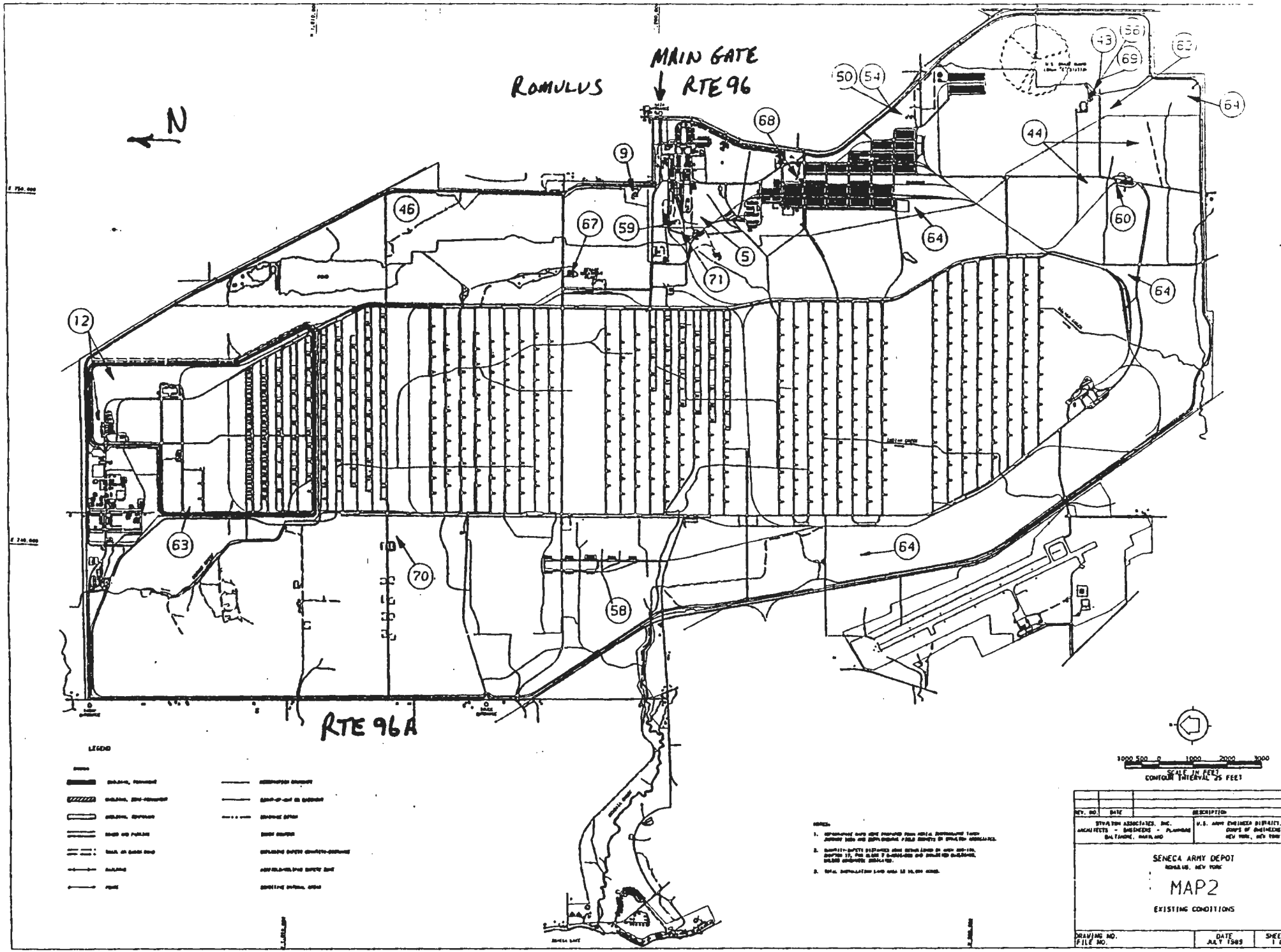


FIFTEEN AREAS OF CONCERN
TO BE ADDRESSED UNDER
THE SECOND SITE INVESTIGATION
WORKPLAN
(Map 2)

SEAD #	DESCRIPTION
58	Booster Station Debris Area
67	Building 4 Dump Site
50,54	Tank Farm, Asbestos Storage *
44	QA Lab
5	Sewage Sludge Piles
59	Fill Area, Building 135
62	Nicotine Sulfate 606/612
63	Miscellaneous Components Burial Site
64	Garbage Disposal Areas
69,43,56	Building 606 Disposal Area, Old Missile Test Facility, Herbicide and Pesticide Storage *
12	Rad Waste Burial Areas
9	Old Scrap Wood Site (Landfill)
60	Oil Discharge Adjacent to building 609
70	Building 2110 Fill Area
71	Alleged Paint Disposal Area

* COMBINED- same geographical area

15 AREAS OF CONCERN



UPDATE ON CURRENT SWMU AND CERCLA INVESTIGATIONS

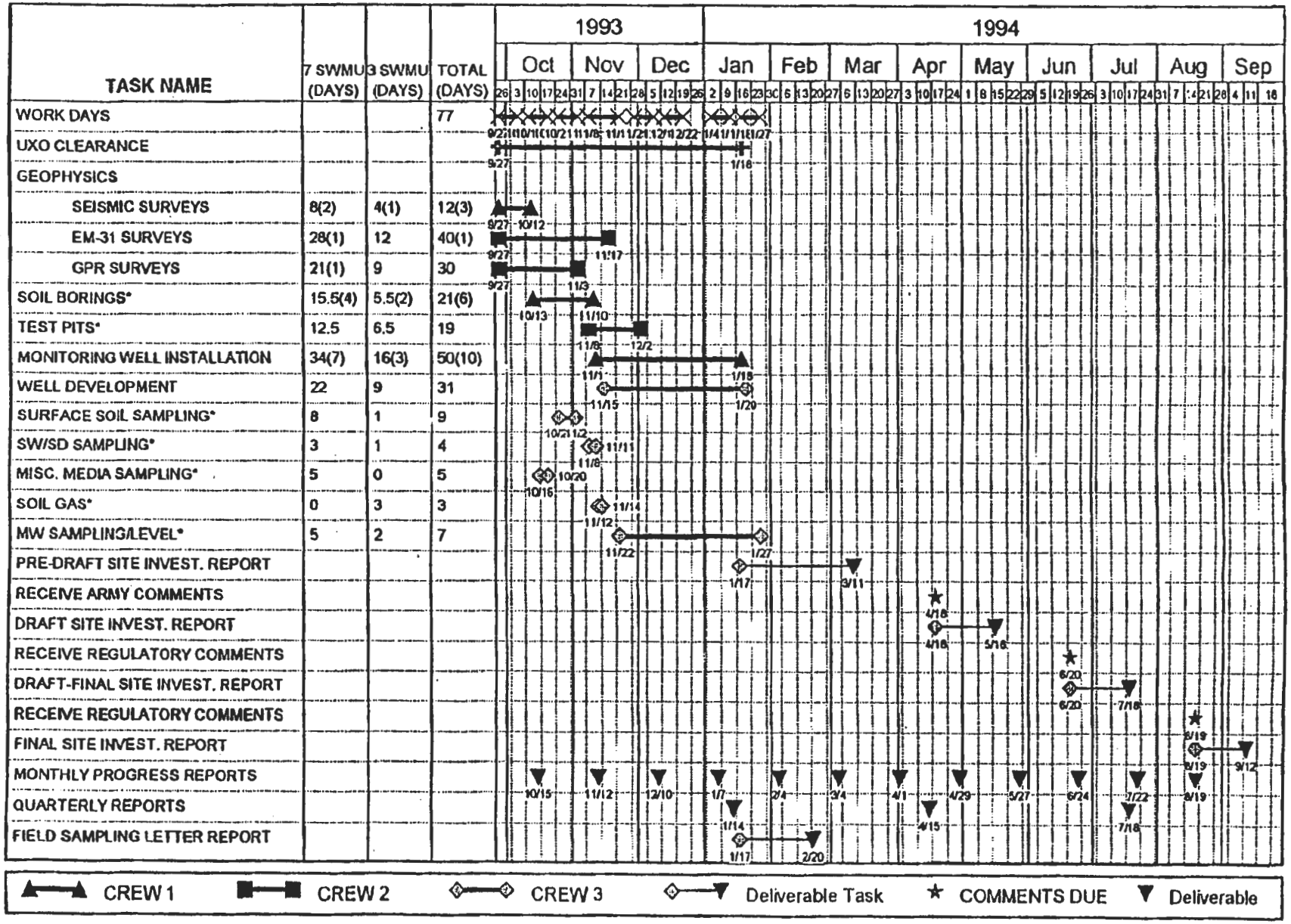
- ☑ Former Open Burning Ground
- ☑ Ash Landfill
- ☑ Action Memorandum (Soil Remediation at the Ash Landfill)
- ☑ High Priority SWMUs (7 Sites)
- ☑ Moderate Priority SWMUs (3 Sites)
- ☑ Low Priority SWMUs (7 Sites)
- ☑ Moderately Low Priority SWMUs (8 Sites)

SEVEN HIGH PRIORITY SWMUs

SWMU Number	Description
SEAD-4	Munitions Washout Fac. Leach Field
SEAD-16	Bldg. S-311 Abandoned Deact. Furn.
SEAD-17	Bldg. 367 Existing Deact. Furn.
SEAD-24	Abandoned Power Burning Pit
SEAD-25	Fire Training and Demon. Pad
SEAD-26	Fire Training Pit and Area
SEAD-45	Open Detonation Area

7/3 SWMU FIELD INVESTIGATIONS

TASK NAME	7 SWMU (DAYS)	3 SWMU (DAYS)	TOTAL (DAYS)
WORK DAYS			77
UXO CLEARANCE			
GEOPHYSICS			
SEISMIC SURVEYS	8(2)	4(1)	12(3)
EM-31 SURVEYS	28(1)	12	40(1)
GPR SURVEYS	21(1)	9	30
SOIL BORINGS*	15.5(4)	5.5(2)	21(6)
TEST PITS*	12.5	6.5	19
MONITORING WELL INSTALLATION	34(7)	16(3)	50(10)
WELL DEVELOPMENT	22	9	31
SURFACE SOIL SAMPLING*	8	1	9
SW/SD SAMPLING*	3	1	4
MISC. MEDIA SAMPLING*	5	0	5
SOIL GAS*	0	3	3
MW SAMPLING/LEVEL*	5	2	7
PRE-DRAFT SITE INVEST. REPORT			
RECEIVE ARMY COMMENTS			
DRAFT SITE INVEST. REPORT			
RECEIVE REGULATORY COMMENTS			
DRAFT-FINAL SITE INVEST. REPORT			
RECEIVE REGULATORY COMMENTS			
FINAL SITE INVEST. REPORT			
MONTHLY PROGRESS REPORTS			
QUARTERLY REPORTS			
FIELD SAMPLING LETTER REPORT			

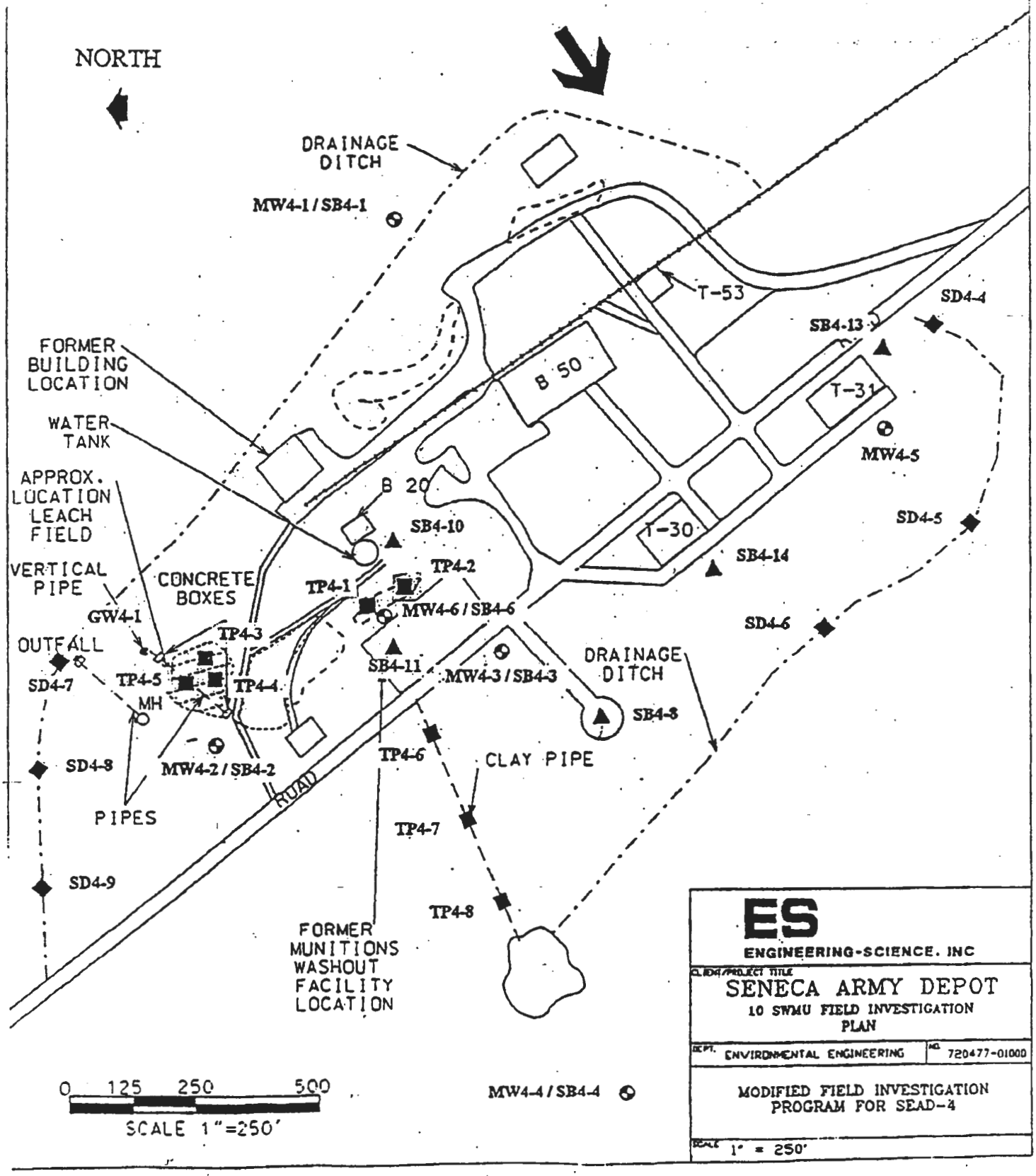


*Sampling

0 Recon/Surveying/Waste Handling/Misc.

FIGURE 3

GROUNDWATER FLOW DIRECTION



ES
ENGINEERING-SCIENCE, INC

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT
10 SWMU FIELD INVESTIGATION PLAN

DEPT. ENVIRONMENTAL ENGINEERING | NO. 720477-01000

MODIFIED FIELD INVESTIGATION PROGRAM FOR SEAD-4

SCALE 1" = 250'

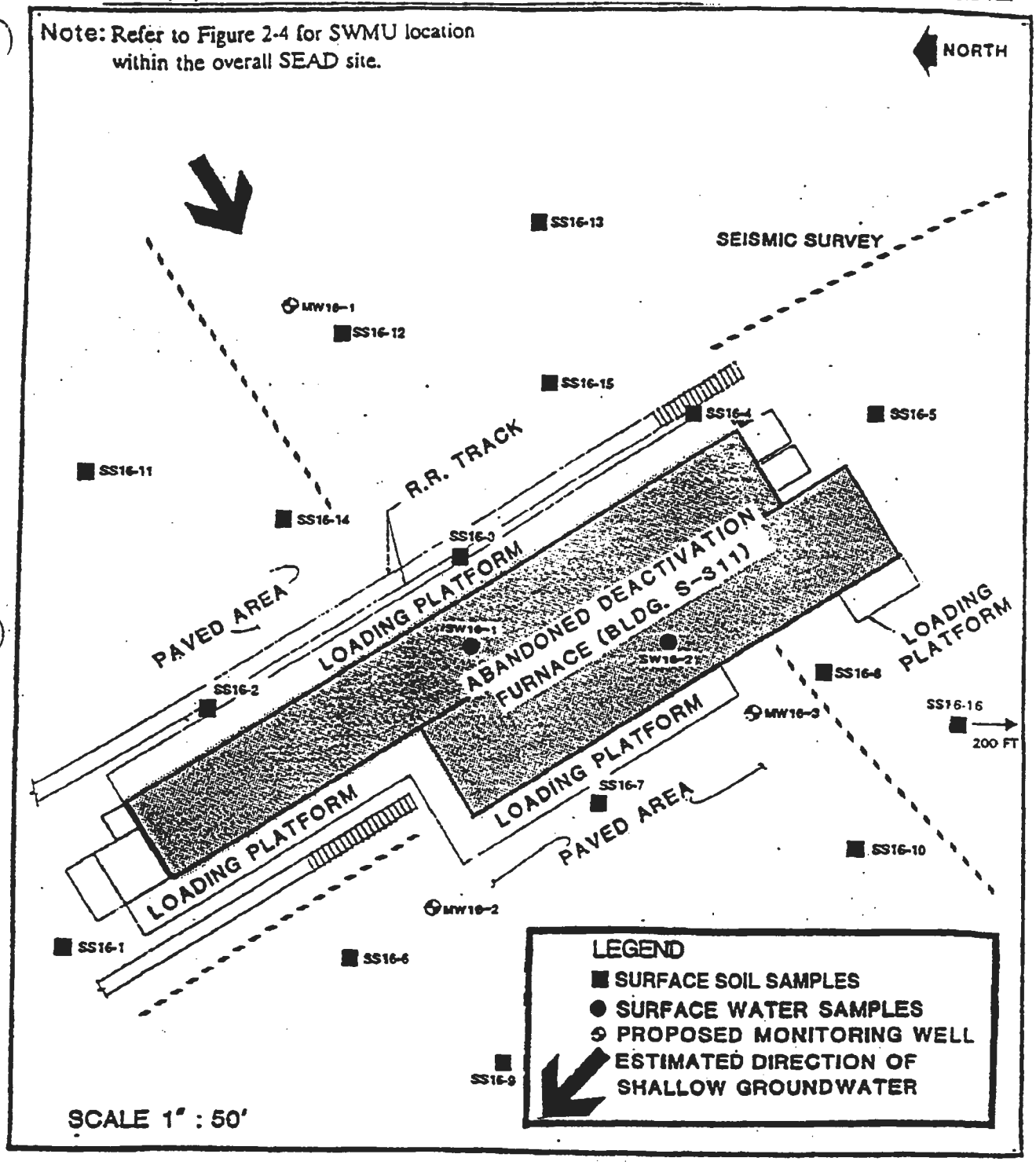


FIGURE 5-4 SAMPLING LOCATIONS FOR SEAD-16: ABANDONED DEACTIVATION FURNACE (BLDG. S-311)

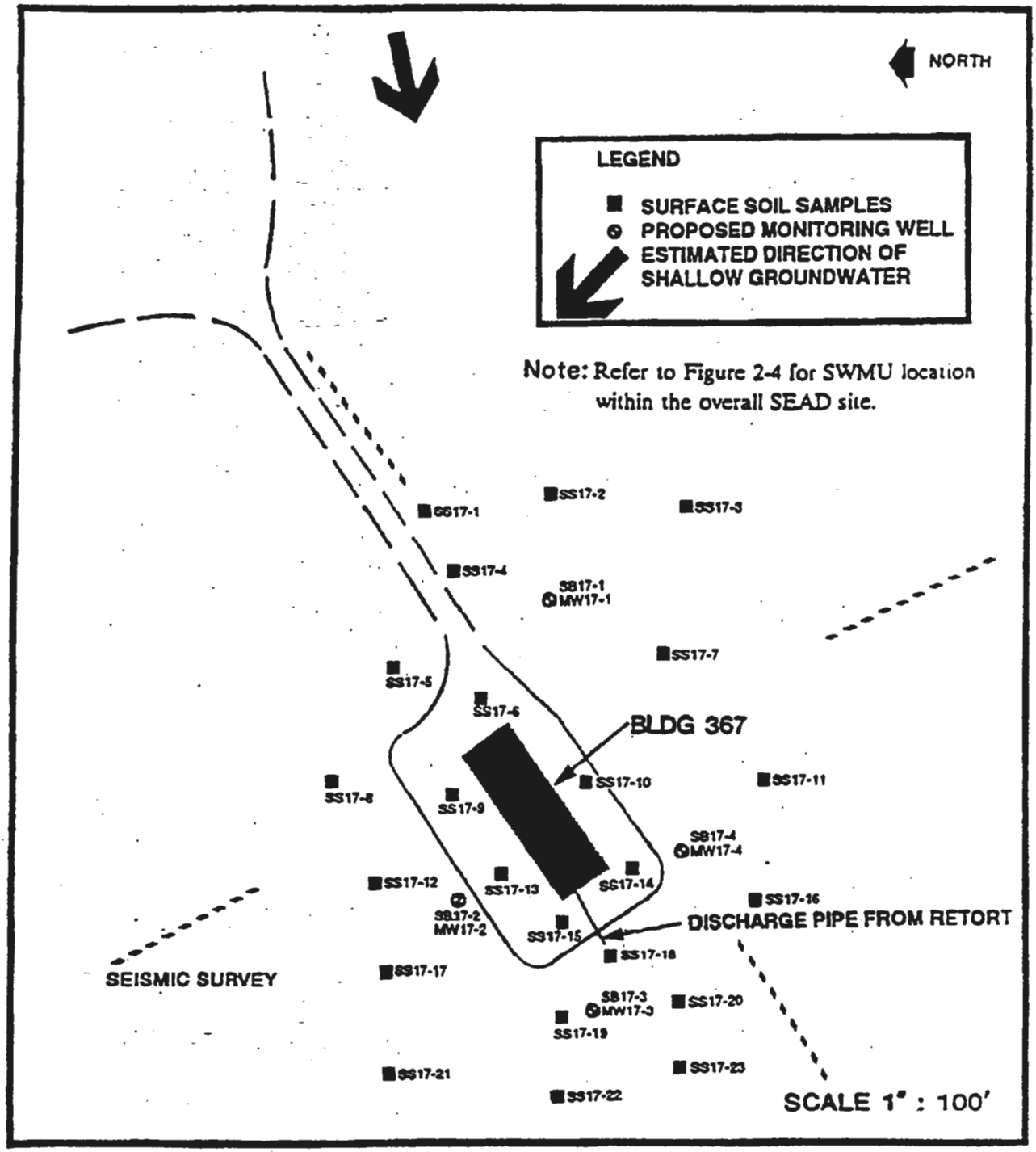


FIGURE 5-5 SAMPLING LOCATIONS FOR SEAD-17: EXISTING DEACTIVATION FURNACE (BLDG. 367)

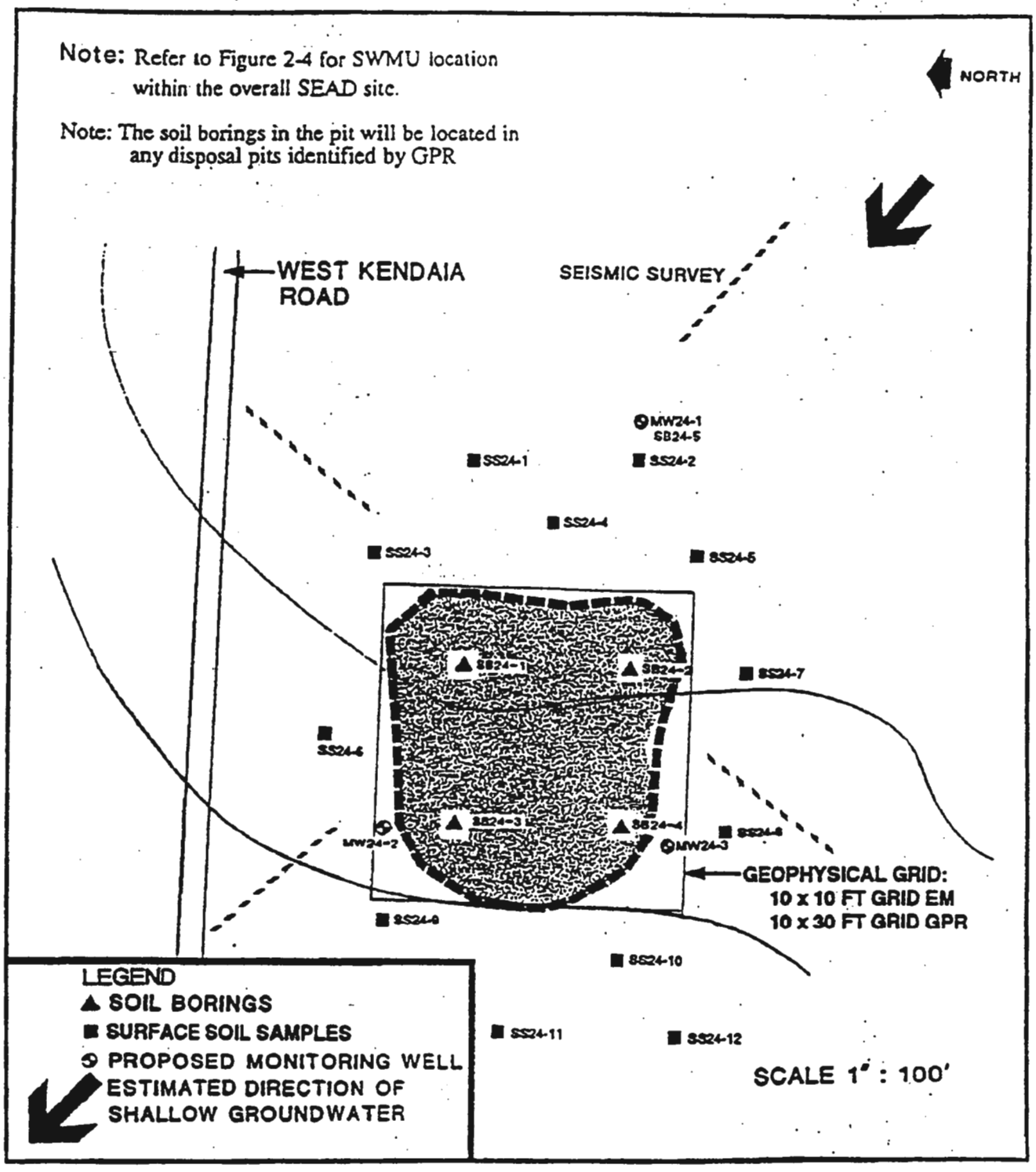


FIGURE 5-6 SAMPLING LOCATIONS FOR SEAD-24: ABANDONED POWDER BURNING PIT

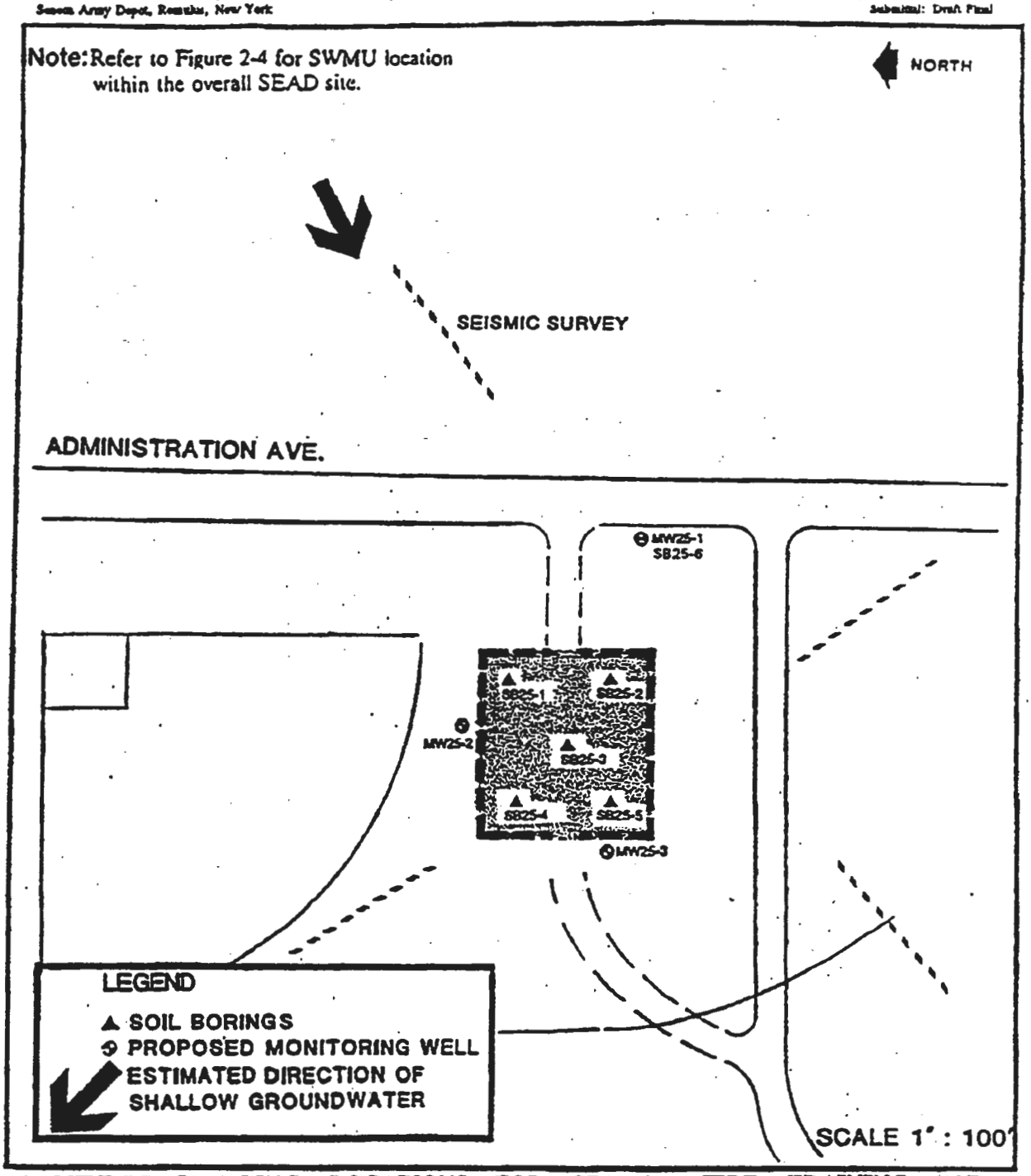


FIGURE 5-7 SAMPLING LOCATIONS FOR SEAD-25: FIRE TRAINING AND DEMONSTRATION PAD

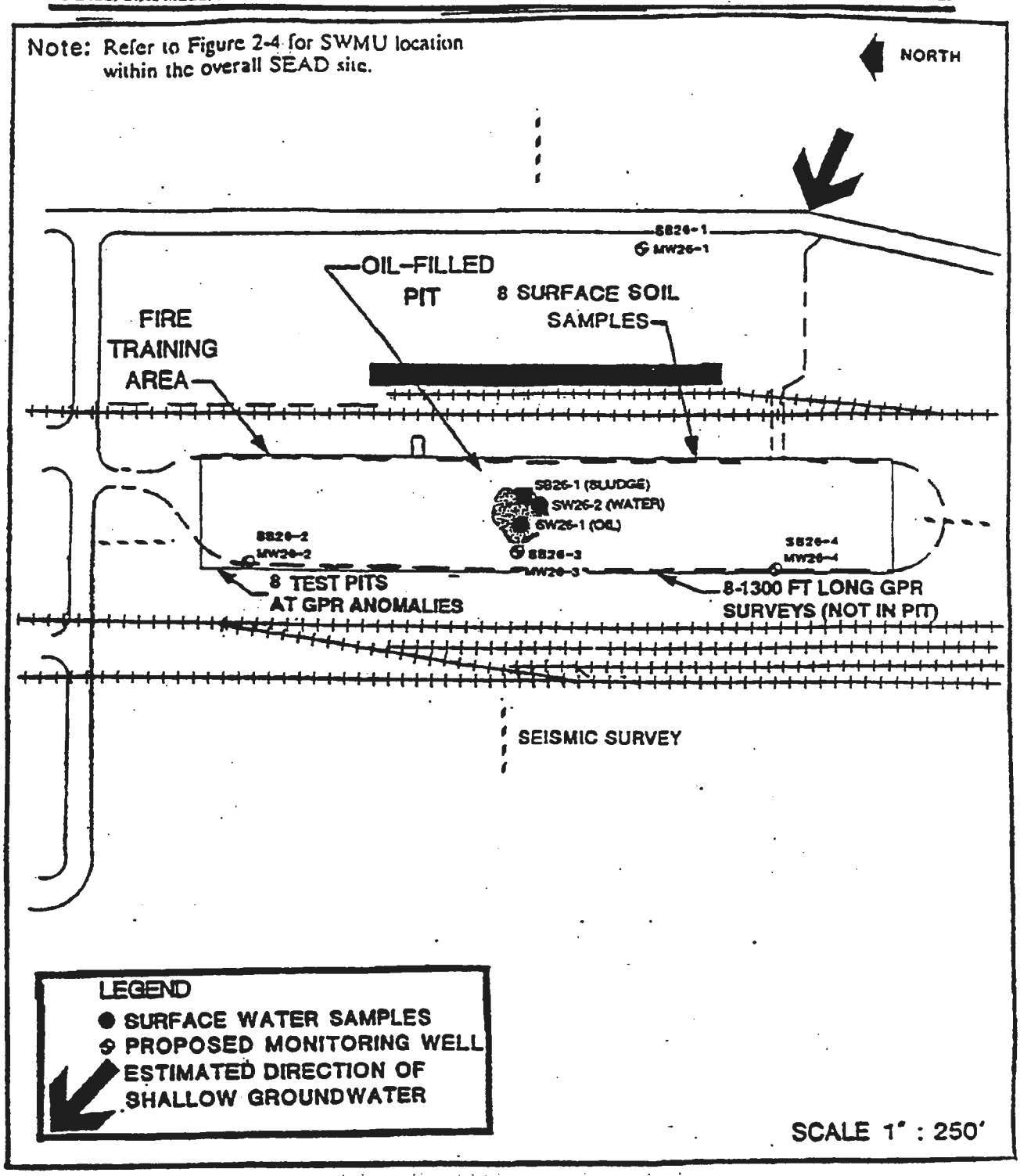
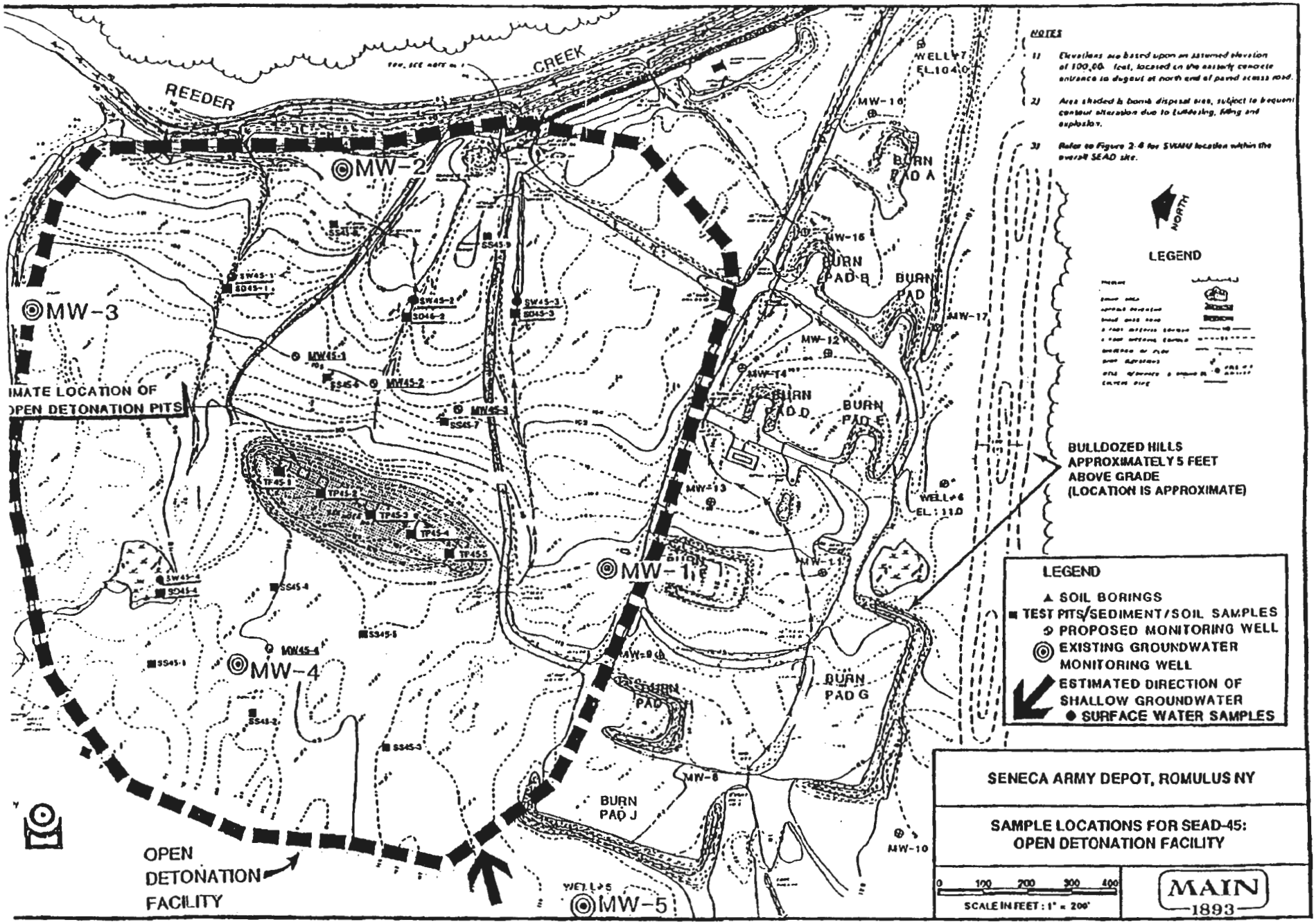


FIGURE 5-8 SAMPLING LOCATIONS FOR SEAD-26: FIRE TRAINING PIT AND AREA

FIGURE 5-9



[redacted]

THREE MODERATE PRIORITY SWMUs

SWMU Number	Description
SEAD-11	Old Construction Debris Landfill
SEAD-13	IRFNA Disposal Area
SEAD-57	Explosive Ordnance Disposal Area

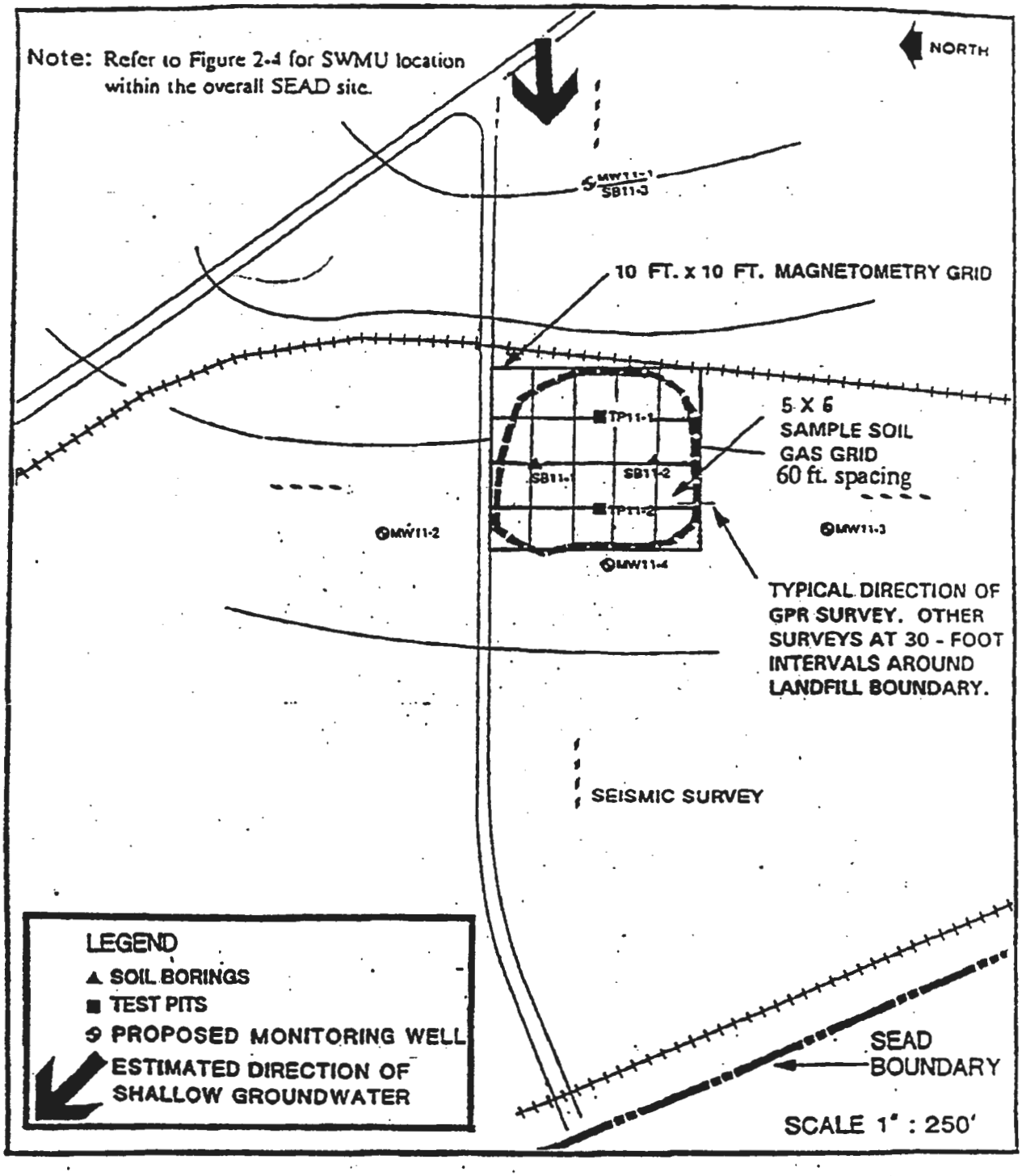


FIGURE 5-2 SAMPLING LOCATIONS FOR SEAD-11: OLD CONSTRUCTION DEBRIS LANDFILL

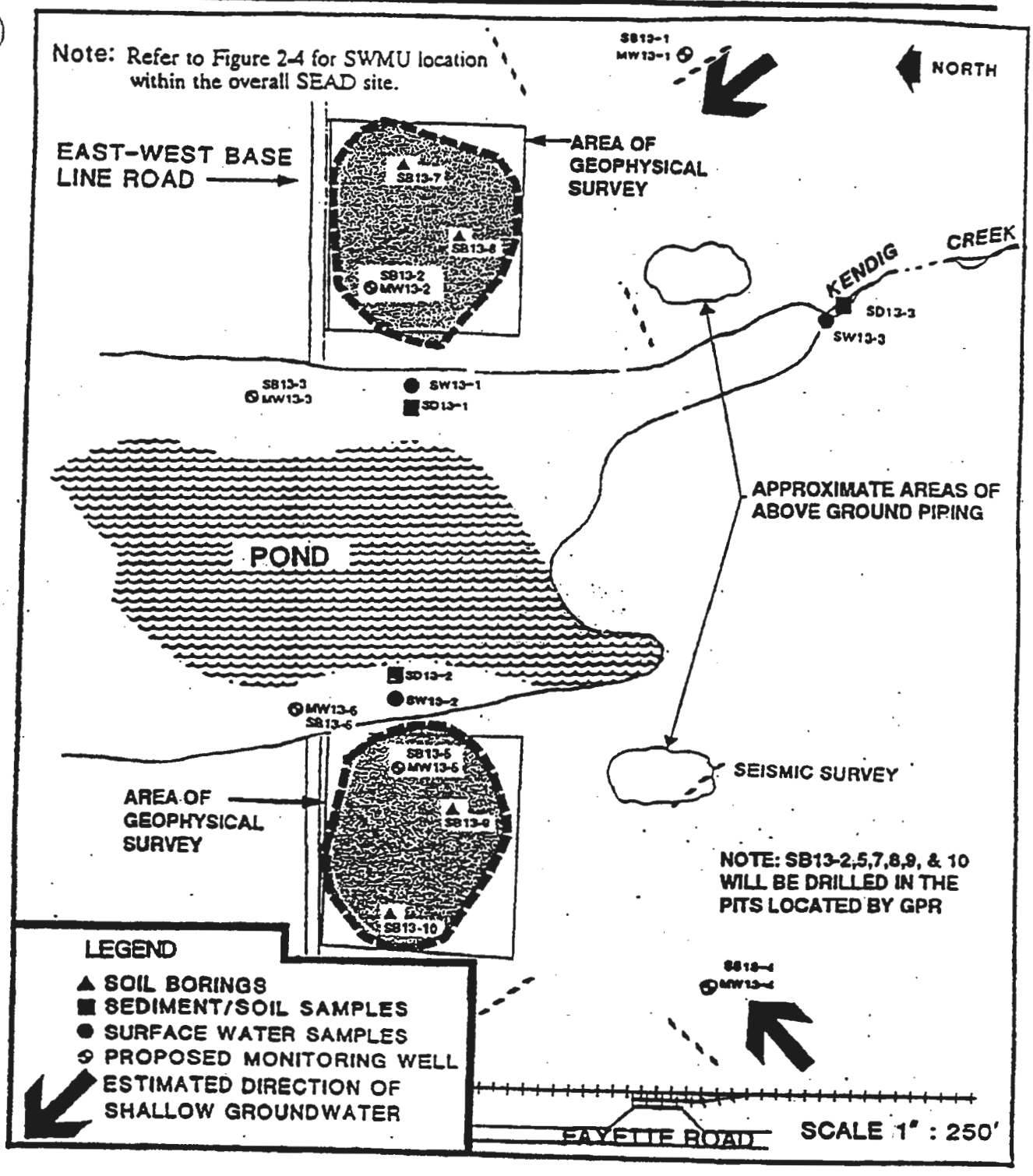


FIGURE 5-3 SAMPLING LOCATIONS FOR SEAD-13: IRFNA DISPOSAL SITE

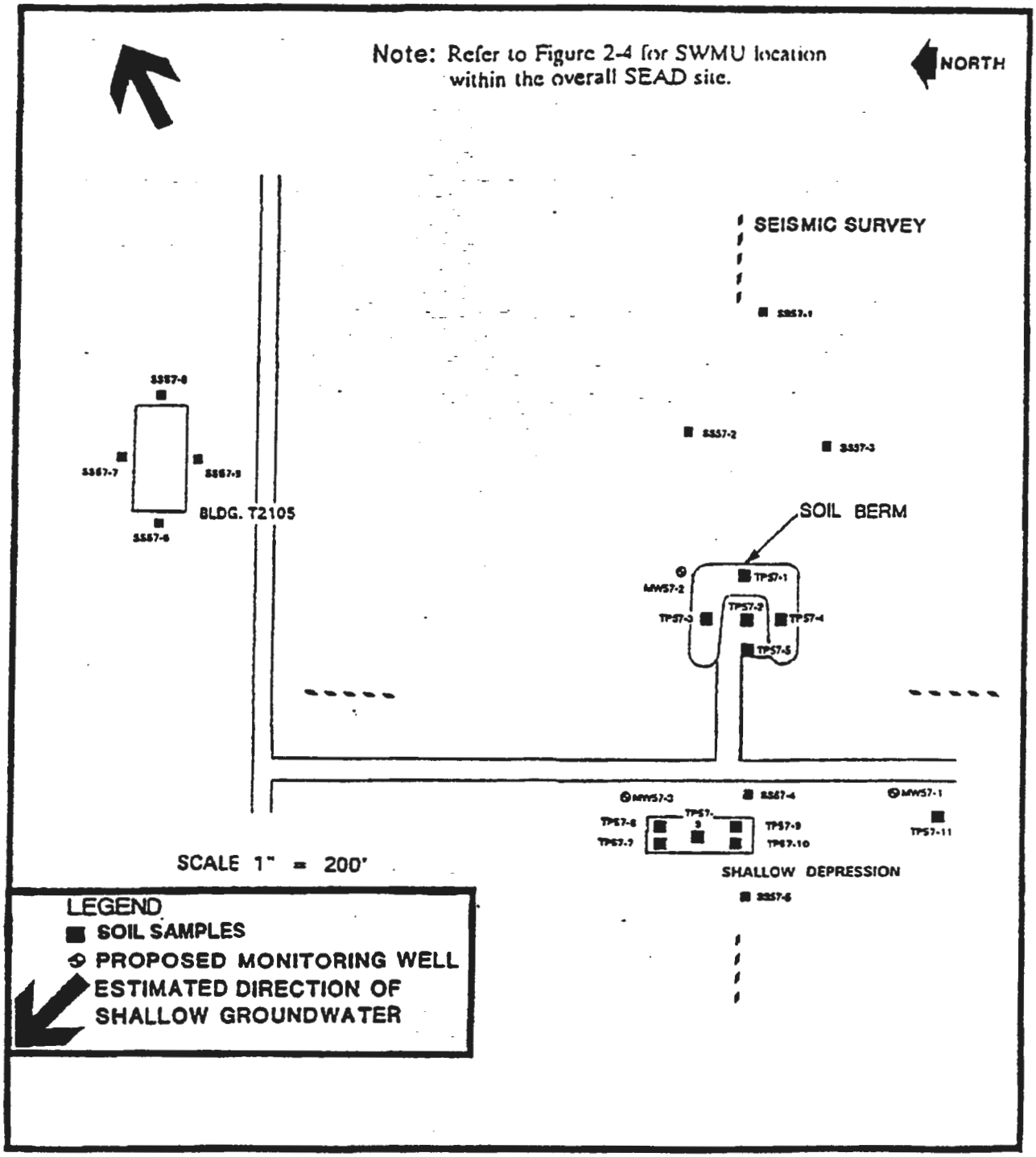
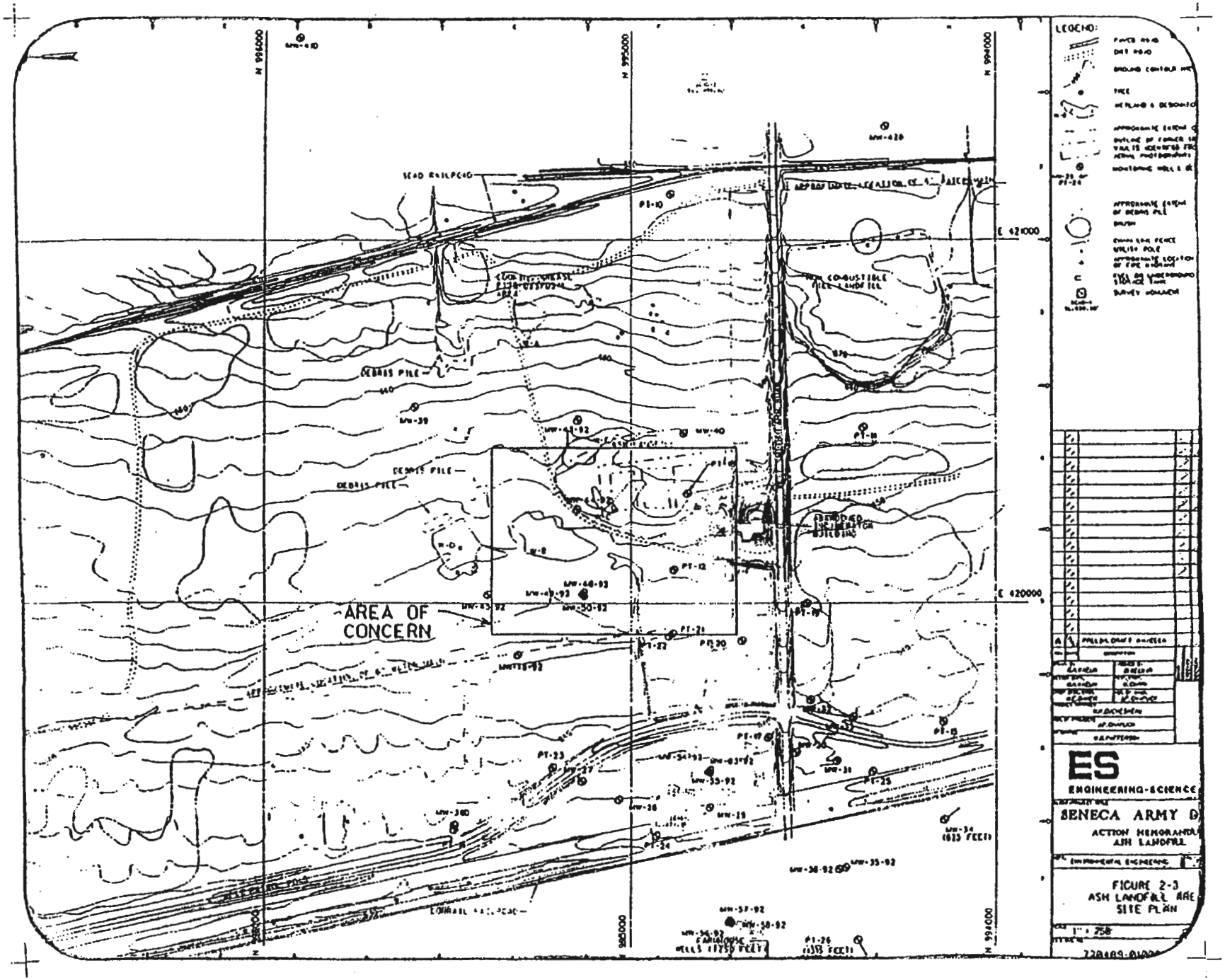


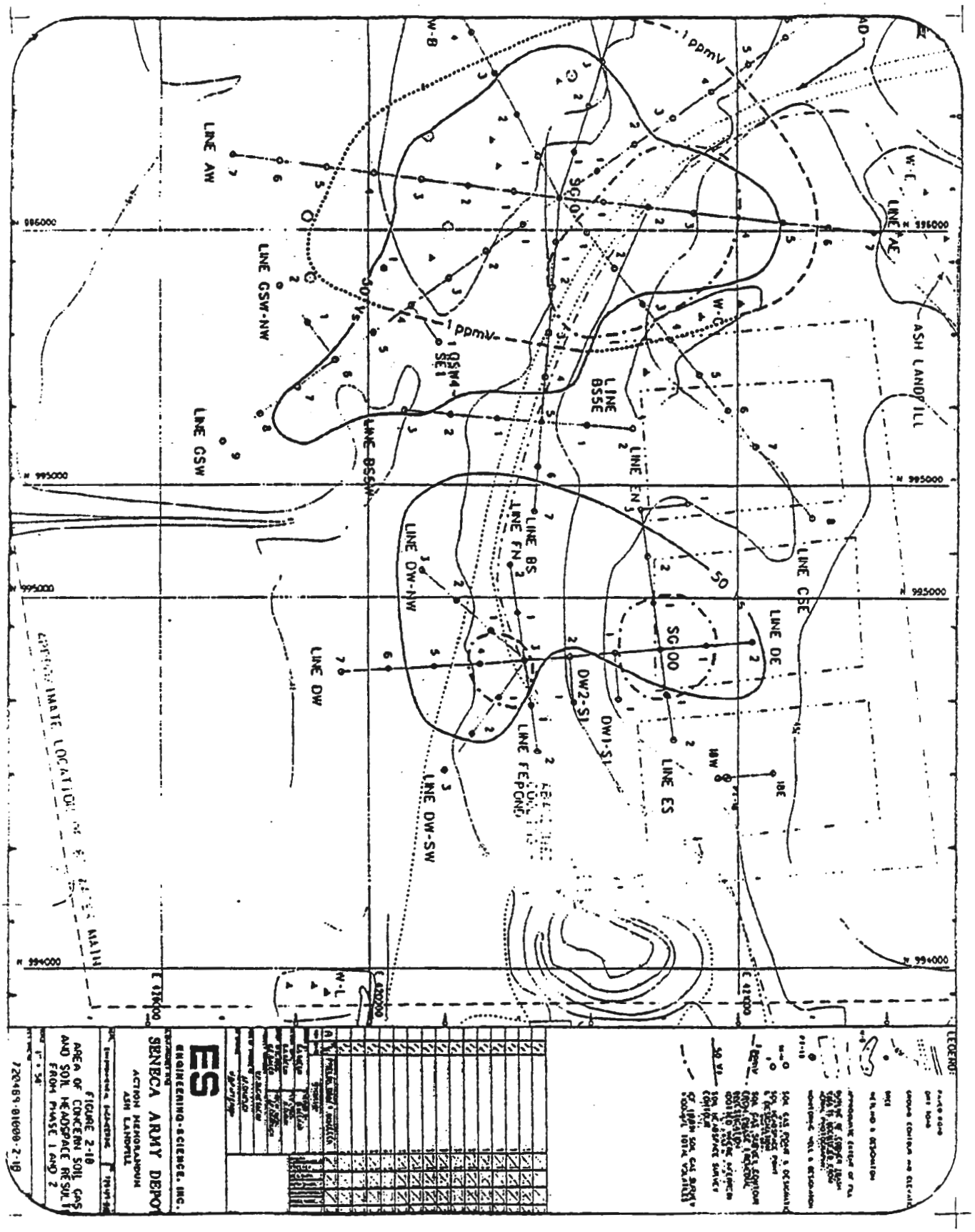
FIGURE 5-10 SAMPLING LOCATIONS FOR SEAD-57: EXPLOSIVE ORDNANCE DISPOSAL

ACTION MEMORANDUM (MILESTONES)

☑ **DRAFT ACTION MEMORANDUM**

- **Submitted for agency review on December 3, 1993. ES awaiting regulatory comments.**


AREA OF CONCERN
DEBRIS PILE
DEBRIS PILE
DEBRIS PILE
CONSTRUCTION DEBRIS LANDFILL
COMBUSTIBLE FILL LANDFILL
DEMOLITION BUILDING
ROAD RAILROAD
CONRAIL RAILROAD
N 994000
N 990000
N 986000
E 421000
E 420000
LEGEND:
ES
ENGINEERING-SCIENCE
SENECA ARMY D
ACTION MEMORANDA
ASH LANDFILL
FIGURE 2-3
ASH LANDFILL ARE
SITE PLAN



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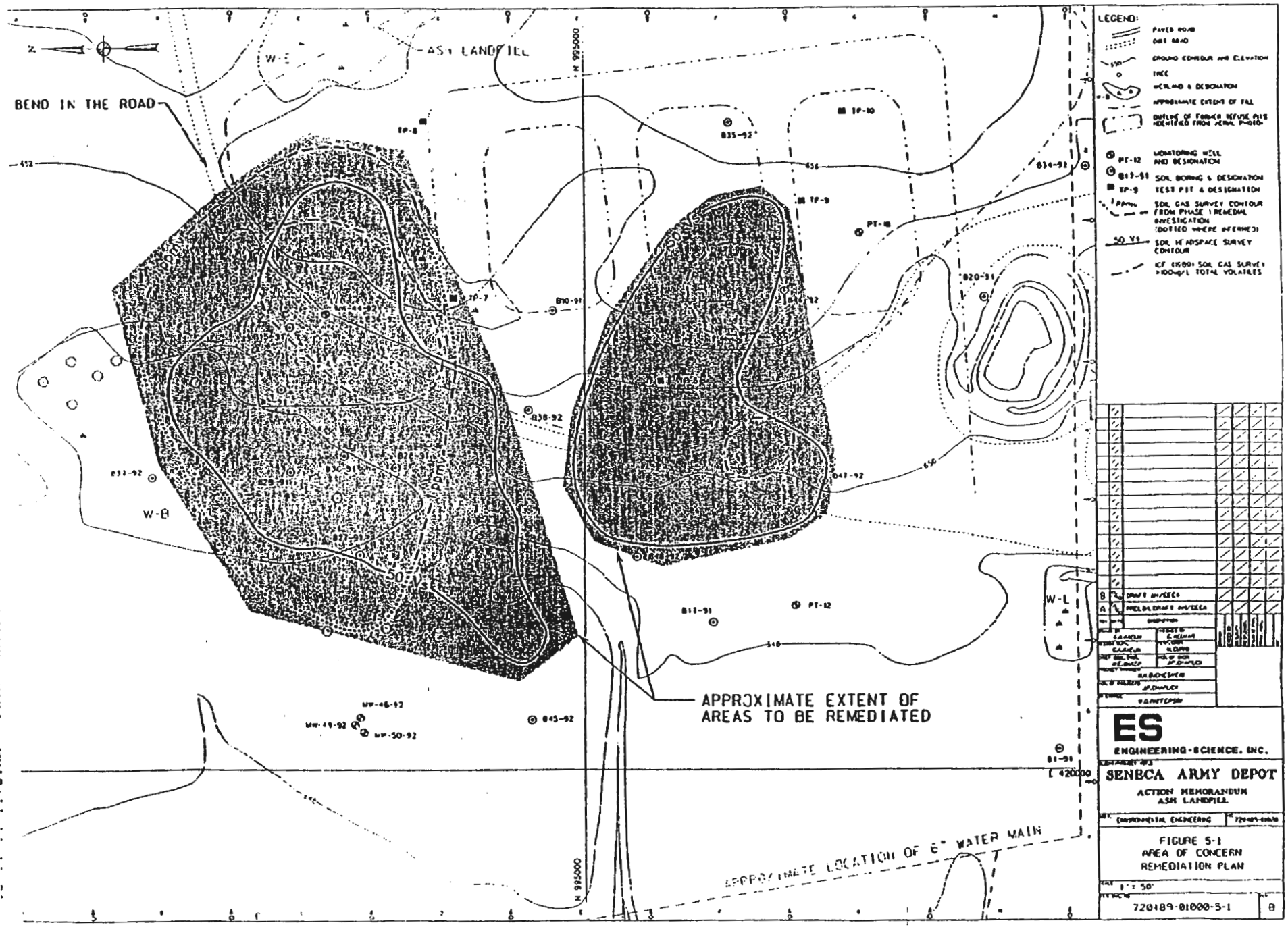
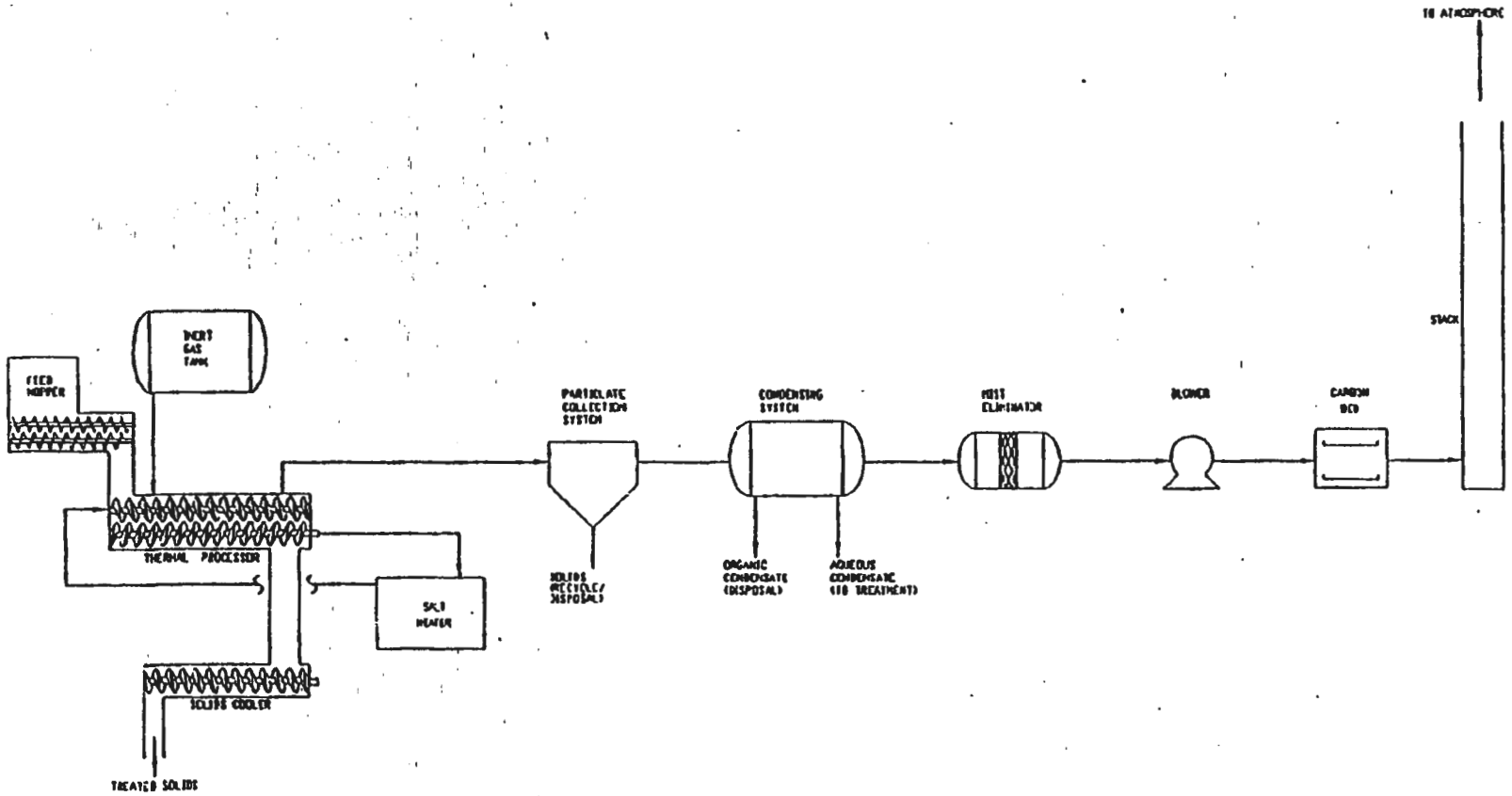
SENECA ARMY DEPOT
ACTION MEMORANDUM
ASH LANDFILL

FIGURE 2-10
AREA OF CONCERN SOIL GAS AND SOIL HEADSPACE RESULTS FROM PHASE 1 AND 2

720469.01000-2.10

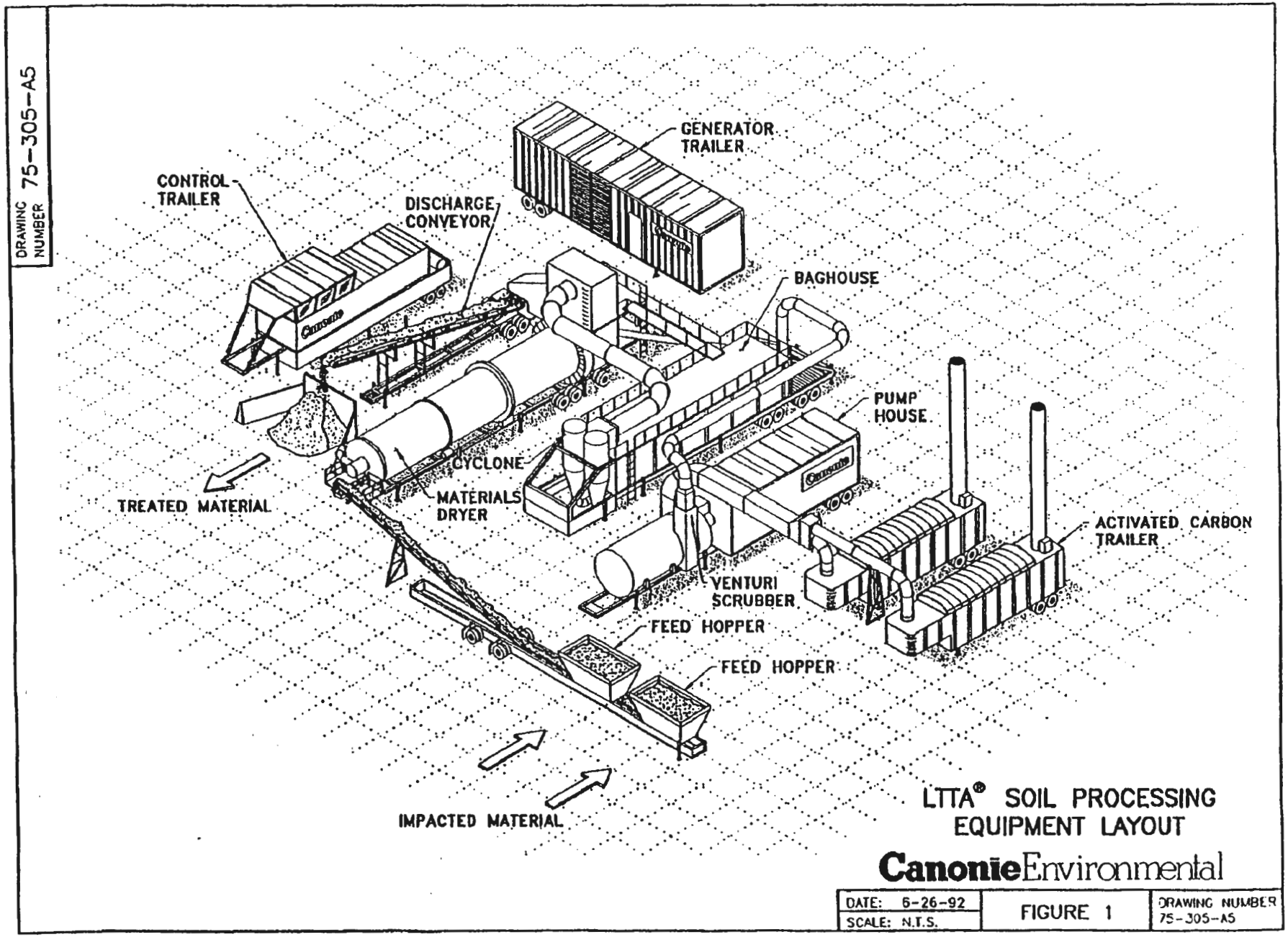

BEND IN THE ROAD
ASH LANDFILL
W-E
W-B
W-L
APPROXIMATE EXTENT OF AREAS TO BE REMEDIATED
APPROXIMATE LOCATION OF 6" WATER MAIN
50 Yr
LEGEND:
SENECA ARMY DEPOT
ACTION MEMORANDUM
ASH LANDFILL
ENGINEERING-SCIENCE, INC.
FIGURE 5-1
AREA OF CONCERN
REMEDIATION PLAN
720189-01000-5-1

REIEC



FLOW DIAGRAM OF THERMAL DESORPTION SYSTEM

FIGURE 3


DRAWING NUMBER 75-305-A5
GENERATOR TRAILER
CONTROL TRAILER
DISCHARGE CONVEYOR
BAGHOUSE
PUMP HOUSE
CYCLONE
MATERIALS DRYER
TREATED MATERIAL
ACTIVATED CARBON TRAILER
VENTURI SCRUBBER
FEED HOPPER
FEED HOPPER
IMPACTED MATERIAL
LTTA® SOIL PROCESSING EQUIPMENT LAYOUT
CanonieEnvironmental
DATE: 6-26-92
SCALE: N.T.S.
FIGURE 1
DRAWING NUMBER 75-305-A5

REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) OF THE ASH LANDFILL (MILESTONES)

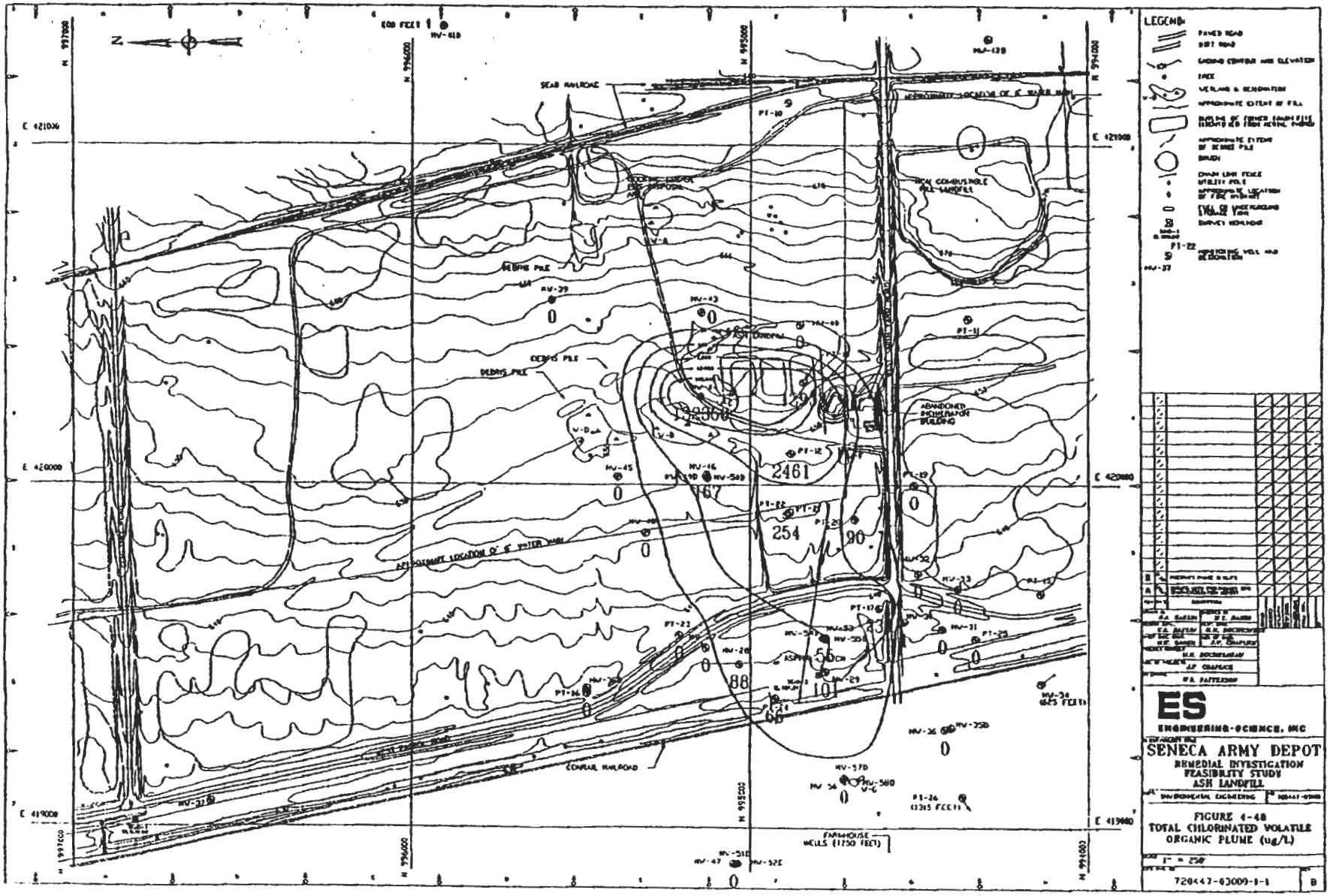
☑ DRAFT ASH RI

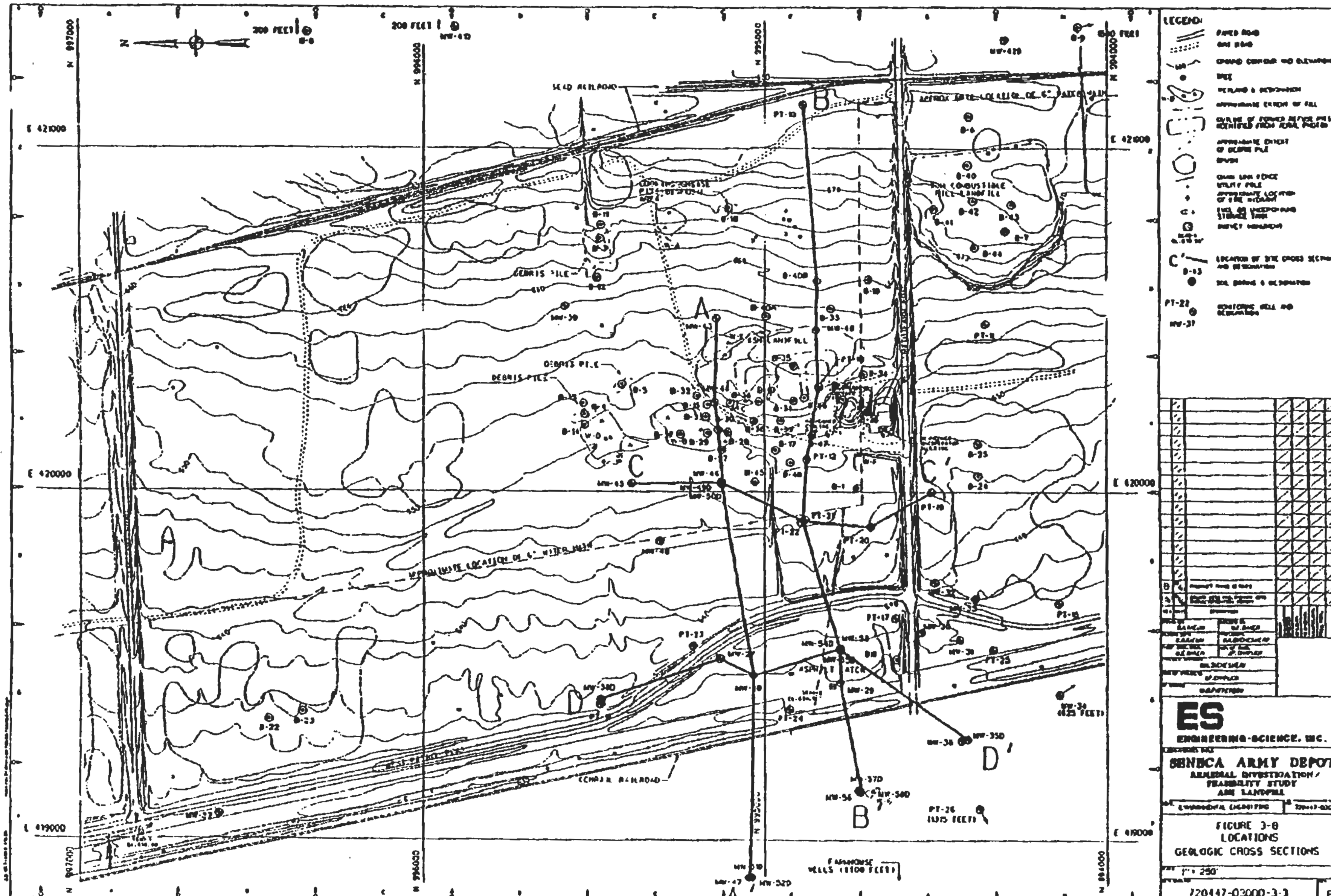
- Chapters 1 through 5 was submitted for agency review on November 10, 1993
- Chapters 6 and 7 (The Baseline Risk Assessment) was submitted for agency review on January 5, 1994
- Received EPA comments on Chapters 1 through 5 on December 3, 1993. Received NYSDEC comments on Chapters 1 through 5 on December 20, 1993. ES is awaiting EPA and NYSDEC comments on Chapters 6 and 7.

REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) OF THE ASH LANDFILL (MILESTONES)

☑ PRE-DRAFT ASH FS

- Submitted for Army review on January 17, 1994. ES is awaiting Army comments.


LEGEND
SEAB RAILROAD
DEBRIS PILE
DEBRIS PILE
ASH DISPOSAL
NON-COMBUSTIBLE FILL-SANITARY
ABANDONED DECONTAMINATION BUILDING
APPROXIMATE LOCATION OF 6" WATER MAIN
CONRAIL RAILROAD
FARMHOUSE WELLS (1750 FEET)
ES
ENGINEERING-SCIENCE, INC
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION
FEASIBILITY STUDY
ASH LANDFILL
FIGURE 4-48
TOTAL CHLORINATED VOLATILE ORGANIC PLUME (ug/L)
1" = 250'
720447-03009-8-1
B


LEGEND:
200 FEET
N 997000
N 996000
N 995000
N 994000
E 421000
E 420000
E 419000
SEAD RAILROAD
APPROX ABTE LOCATION OF 6" WATER MAIN
APPROXIMATE LOCATION OF 6" WATER MAIN
DEBRIS PILE
ASPHALT PATCH
CONRAIL RAILROAD
FARMHOUSE WELLS (1100 FEET)
A
B
C
D
A'
B'
C'
D'
ES
ENGINEERING-SCIENCE, INC.
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION/ FEASIBILITY STUDY
ASH LANDFILL
FIGURE 3-8
LOCATIONS
GEOLOGIC CROSS SECTIONS
1" = 250'
720447-03000-3-3
B

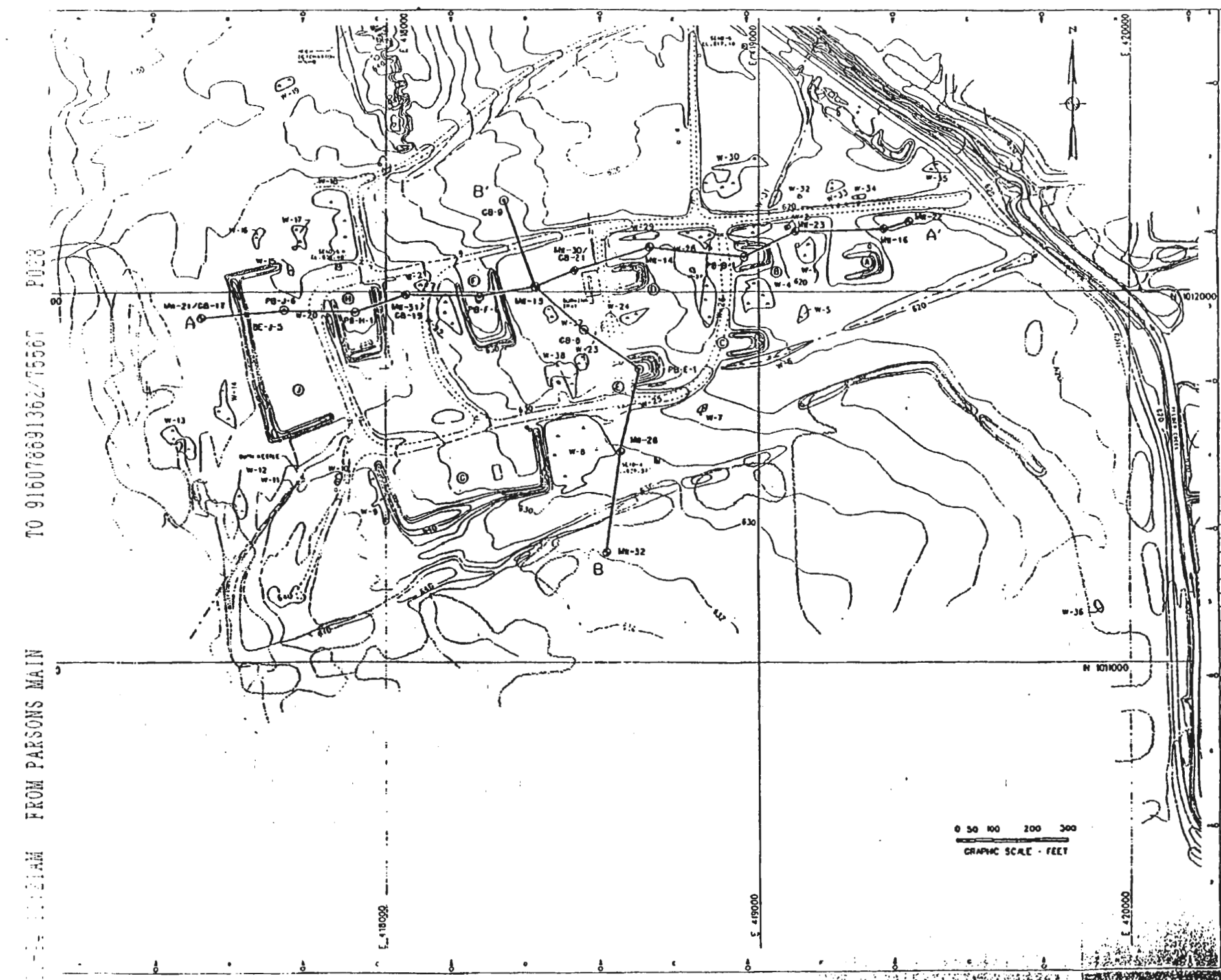
REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) OF THE FORMER OPEN BURNING GROUND (MILESTONES)

☑ DRAFT OB RI

- Submitted for Agency Review on October 21, 1993. Received EPA comments on November 18, 1993. Received NYSDEC comments on December 14, 1993.

☑ PRE-DRAFT OB FS

- Submitted for Army review on December 3, 1994. Received Army comments January 19, 1994.



ES
ENGINEERING-SCIENCE

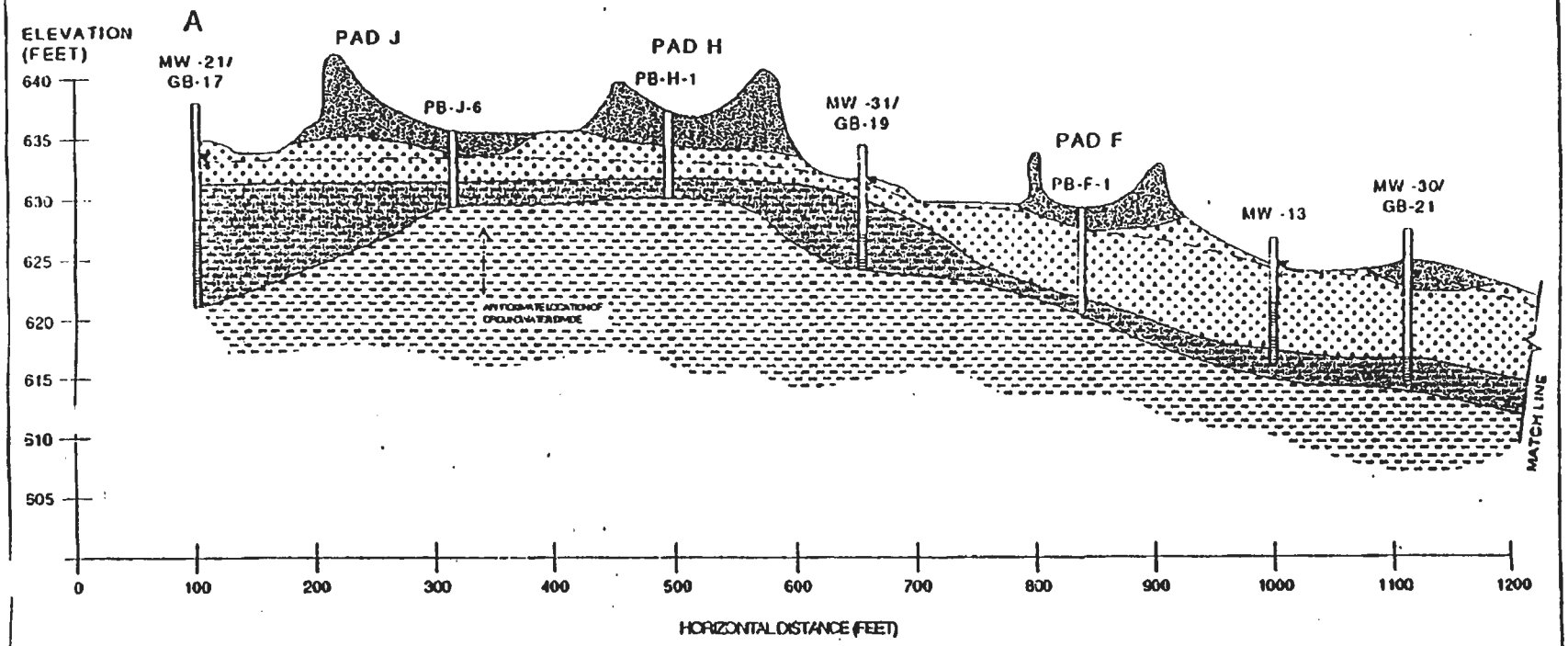
SENECA ARMY D
REMEDIAL INVESTIGA
FEASIBILITY STUD
OPEN BURNING GROU

ENVIRONMENTAL ENGINEERING

FIGURE 3-6
LOCATION OF
GEOLOGIC CROSS SEC

720146-01022-3-6

CROSS SECTION A - A'



LEGEND:

- FILL
- TILL
- WEATHERED SHALE
- COMPETENT SHALE
- GROUNDWATER TABLE

NOTES:

1. Lithologic units are
   descriptions suppli
   Engineering-Scien
   Interpretations are
   extrapolations betv
   spaced boreholes,
   conditions may var
2. Groundwater table
   depth to water mea
   made in January 1

ES
ENGINEERING-SCI

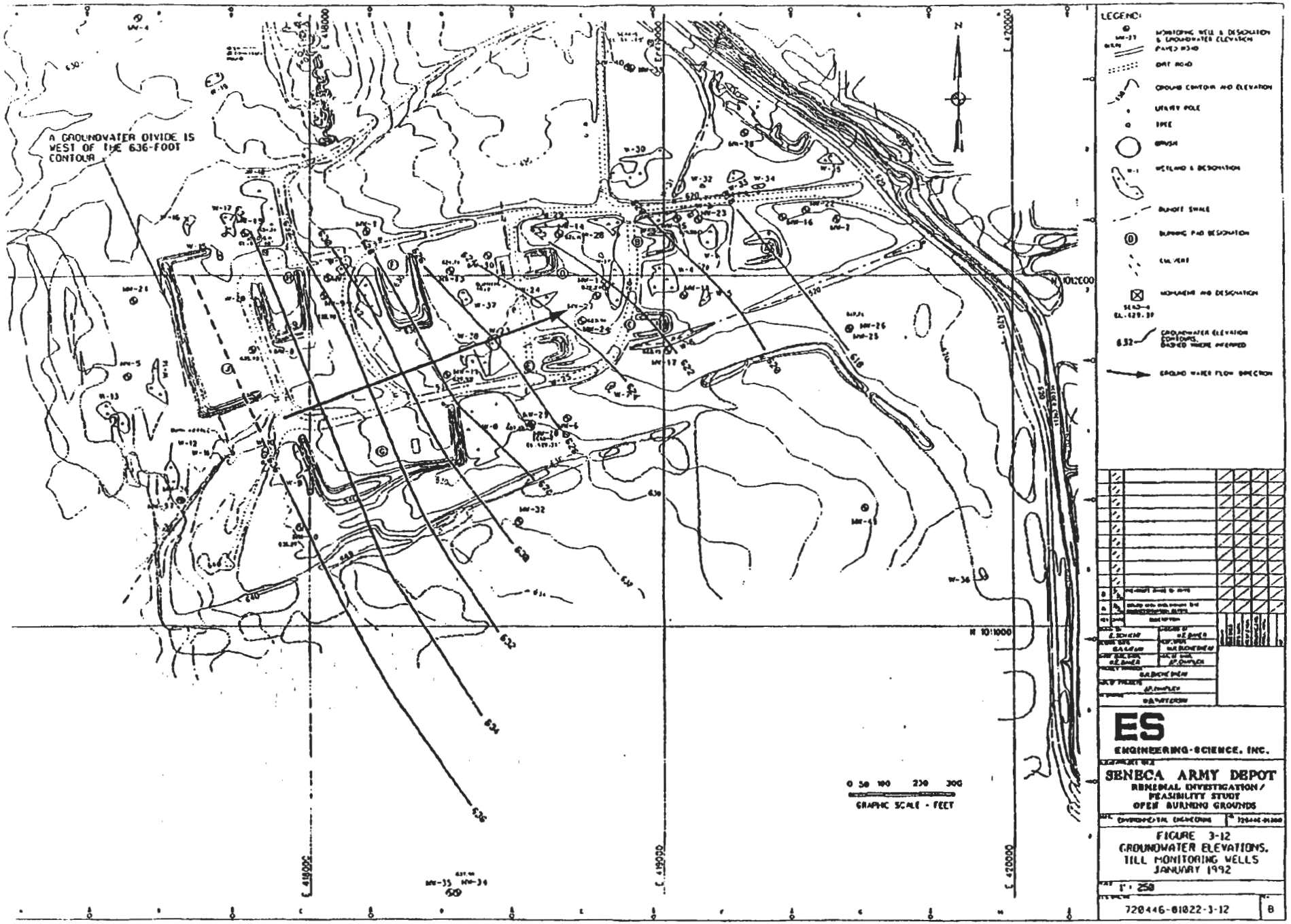
SENECA ARM
REMEDIAL INVESTIGATION/
OPEN BURNING G

ENVIRONMENTAL ENGINEERIN

FIGURE :
CROSS-SECTI

HORIZONTAL: 1" = 100'

720446-01000



LEGEND:

- BURNING PAD DESIGNATION
- BERM EXCAVATION & DESIGNATION
- BOUNDS & DESIGNATION
- GROUND CONTOUR AND ELEVATION
- WETLAND & DESIGNATION
- MONITORING WELL & DESIGNATION
- DIRT ROAD
- UTILITY POLE
- TREE
- SHRUB
- SURFACE WATER/SEDIMENT SAMPLE & DESIGNATION
- ESTIMATED VALUE
- QUESTIONABLE VALUE
- NOT AVAILABLE

BERM EXCAVATIONS

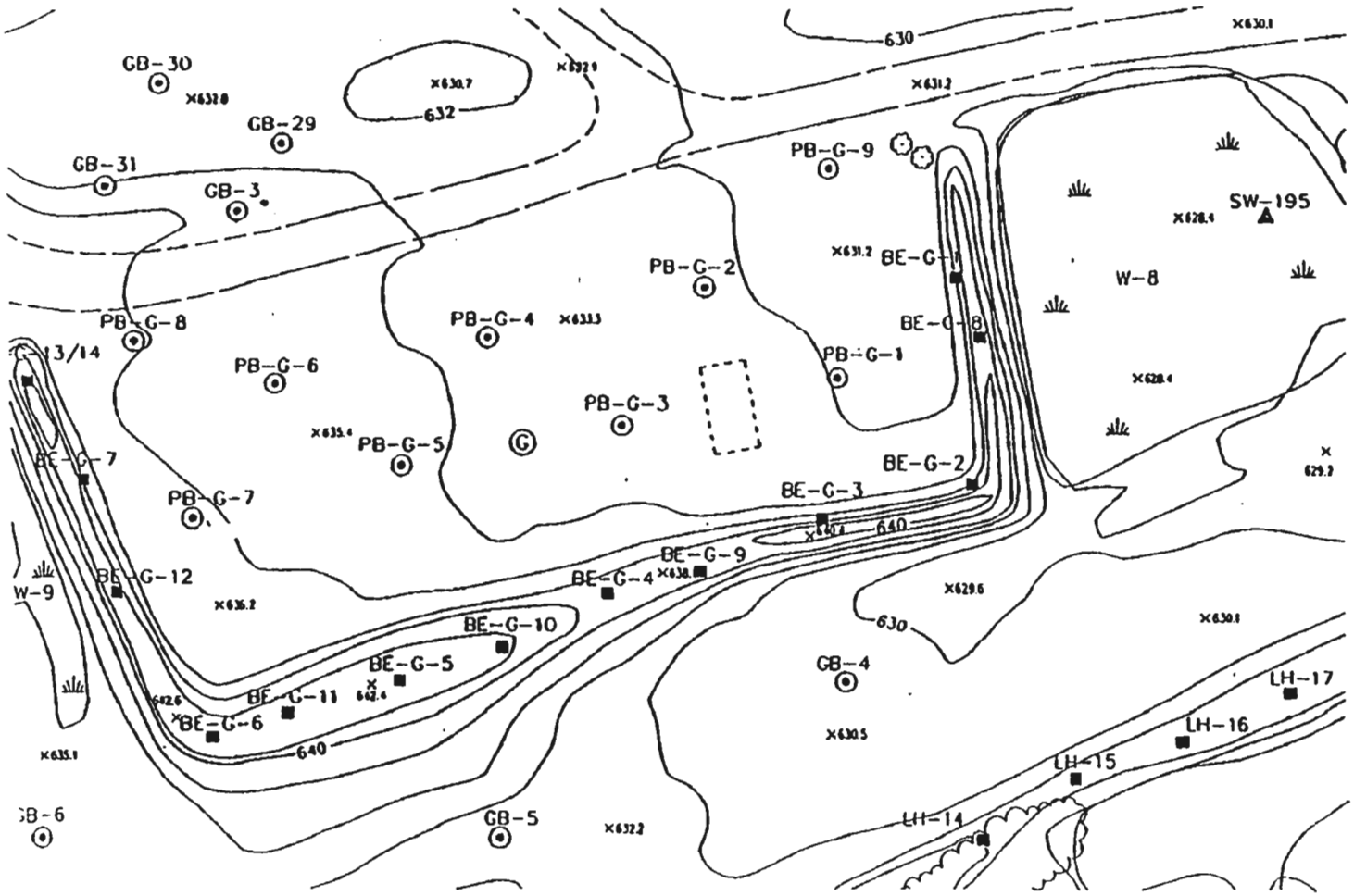
LOCATION	DEPTH	LEVEL II	LEVEL IV			
		Pb	Ba	Cu	Pb	Zn
GAE-G-1	2.0'	NA	190 J	21.6 J	18	108 J
GAE-G-2	2.0'	NA	278 J	316 J	390 J	637 J
BE-G-1	2.5'	103	NA	NA	NA	NA
BE-G-2	4.0'	19700	4740	5300	22400 J	1650
BE-G-3	4.5'	7100	1400	632	7800 J	862
BE-G-4	2.0'	2600	NA	NA	NA	NA
BE-G-5	4.0'	650	NA	NA	NA	NA
BE-G-6	3.0'	7900	2890	998	8710 J	5300
BE-G-7	3.0'	31	NA	NA	NA	NA
BE-G-8	2.0'	57	NA	NA	NA	NA
BE-G-9	2.0'	310	NA	NA	NA	NA
BE-G-10	2.0'	540	NA	NA	NA	NA
BE-G-11	2.0'	4800	1650	918	5450	4040
BE-G-12	2.0'	32	NA	NA	NA	NA
BE-G-13	2.0'	NA	206	66.1	249 J	281

All concentrations in mg/Kg.

PAD BORINGS

LOCATION	DEPTH	LEVEL II	LEVEL IV			
		Pb	Ba	Cu	Pb	Zn
PBG-1	0-6"	NA	709	466	509	1590
	0-2'	14100	NA	NA	NA	N.
	2-4'	2100	8390	1650	3360	515
	4-6'	590	NA	NA	NA	N.
	6-8'	135	NA	NA	NA	N.
	8-10'	23	NA	NA	NA	N.
PBG-2	0-6"	NA	422	108	203	710
	0-2'	1250	681	75.4	7.7	292
	2-4'	18	NA	NA	NA	N.
	4-6'	64	NA	NA	NA	N.
	6-8'	14.8	NA	NA	NA	N.
PBG-3	0-6"	NA	554	688	212	585
	0-2'	330	233	46.3	65.7	172
	2-4'	<10	NA	NA	NA	N
	4-6'	21	NA	NA	NA	N
	6-8'	<10	NA	NA	NA	N
PBG-4	0-6"	NA	359	80.8	639	216
	0-2'	15.9	134	27	43.3 R	93
	2-4'	NA	NA	NA	NA	N
	4-6'	11.7	NA	NA	NA	N
PBG-5	0-6"	NA	167	28	88.5	17
	0-2'	31	161	37.8	50.2 R	129
	2-4'	11	NA	NA	NA	N
	4-6'	17.2	NA	NA	NA	N
	6-8'	28	NA	NA	NA	N
PBG-6	0-6"	NA	511 R	439	291	1560
	0-2'	44	NA	NA	NA	N
	2-4'	31	NA	NA	NA	N
	4-6'	900	354 R	162	37.5 R	795
	6-8'	21	NA	NA	NA	N
PBG-7	0-6"	NA	1660	15500	1700	6380
	0-2'	280	366 R	885	332	737
	2-4'	15.7	NA	NA	NA	N
	4-6'	191	NA	NA	NA	N
	6-8'	22	NA	NA	NA	N
PBG-8	0-6"	NA	153	36.3 R	64.3 J	130
	0-2'	24	114	28.7 R	23.2 J	95.3
	2-4'	<10	NA	NA	NA	N
PBG-9	0-6"	NA	141	23.4 R	24.4 J	77.3
	0-2'	27	122	37.3 R	38.1 J	10
	2-4'	17.3	NA	NA	NA	N
	4-6'	8.6	NA	NA	NA	N
	6-8'	9.4	NA	NA	NA	N

All concentrations in mg/Kg.



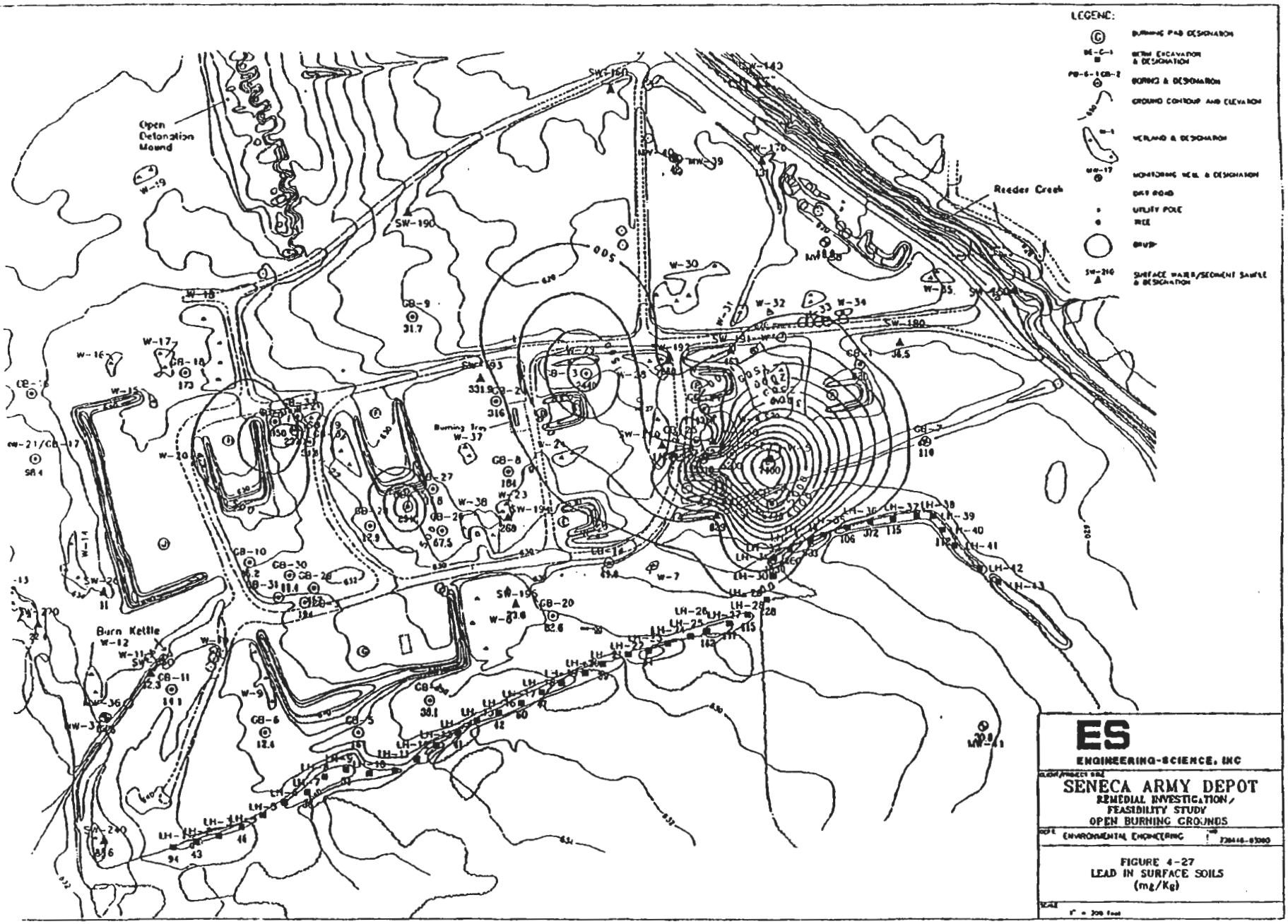
ES
ENGINEERING-SCIENCE,

SENECA ARMY DEP
REMEDIAL INVESTIGATION / FEASIBI
OPEN BURNING GROUNDS

DEPT. ENVIRONMENTAL ENGINEERING

FIGURE 4-18
DISTRIBUTION OF META
OPEN BURNING PAD G

SCALE 1" = 60'


LEGEND:
Open Detonation Mound
Reeder Creek
Burn Kettle
Burning Pan W-37
ES
ENGINEERING-SCIENCE, INC
SENECA ARMY DEPOT
REMEDIAL INVESTIGATION/
FEASIBILITY STUDY
OPEN BURNING GROUNDS
ENVIRONMENTAL ENGINEERING
FIGURE 4-27
LEAD IN SURFACE SOILS
(mg/Kg)

COUNTY OF SENECA
STATE OF NEW YORK

THE SIXTH MEETING OF THE TECHNICAL REVIEW COMMITTEE

HELD AT: Seneca Army Depot
Romulus, New York

HELD ON: February 2nd, 1994

REPORTED BY: PATRICIA A. NELK

LTC. JOHNSON: I am Lieutenant Colonel Roy Johnson, the installation commander. On behalf of all the people at Seneca I would like to welcome you here today. There is a lot of old faces and new faces. I would like to take the opportunity today to introduce myself and make sure that everybody knows who is here in attendance and Steve will take care of those formalities.

For those who were here for the last meeting I said Ground Hog Day would be a good day. Sure enough we didn't have snow today. Something I am eternally thankful for. I am certainly glad to host this meeting. We try to do this on a quarterly basis. It does serve a very important purpose. There is a lot of information and questions and answers that we cover at this forum and so we are very pleased to have the opportunity to host it.

At this time I would like to turn the meeting over to Steve Absolom, our public works director, who will discuss the agenda and also do some introductions.

MR. ABSOLOM: Thank you. Okay. To

start with we have some -- we have at least one new member who is not present. But I want to make sure everybody knows that the town supervisor for Town of Romulus is now Ray Zajack (phonetic) and he will be a member of this committee. Okay. So he will be a new member. He called me at lunch time to say because of certain personal reasons he would not be in attendance but he had planned to be here.

Another thing that was brought up at the last meeting was the concern on staffing levels at Seneca. I wanted to let everybody know that we have received authority to hire two people. I have, in fact, interviewed one and have a project start date. And if nothing goes wrong, I should have additional staff people start working for me prior to the next TRC. Things are moving in that light.

With that what I would like to do is go around the table and make sure everybody introduces themselves so that everybody knows who they are talking to and that sort of thing. If I could start with Kevin?

MR. HEALY: Kevin Healy, lead engineer from Huntsville Division for all clean up work.

MR. SUEVER: Rick Suever, the project manager for Seneca from the Huntsville Division.

MR. DUCHESNEAU: Mike Duchesneau from Engineering Science. I am the project manager for Engineering Science.

MR. CHAPLICK: Jim Chaplick. I am the engineering manager from Engineering Science.

MR. RADDELL: Chris Raddell, program manager with Engineering Science.

LTC. JOHNSON: Lieutenant Colonel Roy Johnson, commander, Seneca Army Depot Activity.

MR. ABSOLOM: I am Steve Absolom, chief of public works.

MAJ. GERMAN: Major John German, U.S. Army Environmental Center.

DR. KATHLEEN BUCHI: Dr. Kathleen Buchi, Army Environmental Center.

CPT. RAIMONDO: Captain Antony Raimondo, Command Judge Advocate.

MR. WHITAKER: My name is Jerry

Whitaker. I am the public affairs officer at Seneca.

MR. ENROTH: Tom Enroth, alternate project manager.

MR. BATTAGLIA: Randy Battaglia, project manager at Seneca.

MS. STRUBLE: Carla Struble, project manager with the United States Environmental Protection Agency.

MS. RAFFERTY: Lani Rafferty, State Health Department.

MR. GERAGHTY: Dan Geraghty, New York State Department of Health.

MR. SHINAL: Joseph Shinal, private citizen.

MR. DOMBROWSKI: Brian Dombrowski, Seneca County Health Department

KAMAL GUPTA: Kamal Gupta, project manager, New York State Department of Environmental Conservation.

MR. MEHTA: Manmohan Mehta, New York State DEC, Avon Office.

MR. SCOTT: Robert Scott, Regulatory Affairs, Environmental Conservation.

MR. STAFFORD: Ken Stafford of the Town

of Varick.

MR. COOL: William Cool, councilman of the Town of Varick and manager of the Soil and Conservation District, Seneca County.

MR. ABSOLOM: Marty, you want to take a bow?

AUDIENCE MEMBER: No.

LTC. JOHNSON: At least introduce yourself.

MR. ABSOLOM: This is Marty Toombs representing the Finger Lakes Times. This is Doris Wolf representing the Rochester Democrat and Chronicle. I am, in fact, passing around a sign in sheet. If everybody would sign in so we just have a record of the attendance it will help. Just a reminder, as you talk please speak up so our recorder can hear you. It is important. And with that I am going to turn it over to Kevin Healy and he's going to start the agenda.

MR. HEALY: Good afternoon. I am sorry we don't have overhead as we normally do but you can easily follow along in your package. I am starting off with the second page of my presentation entitled status update for the

ash landfill at opening burning ground sites. These are the two main sites, the remedial sites. As always we start with those first, the remedial investigation reports. The remedial investigations have been submitted for regulatory review. We received the first set of comments from the regulators and we are in the process now of responding to those comments. As far as the feasibility study report is concerned, it is in the process of being finalized and will be submitted for regulatory review. And the records of decision are still expected in early calendar year 1995. I believe that is consistent with the schedule that we proposed at the last TRC. I don't believe there has been any delays.

The next topic will be a status update of Seneca Army Depot's activities, high priority areas of concerns. These are the sites where we are doing site investigations right now. The field work is predominantly complete at the high priority sites. There have been some small delays due to weather but pretty much on schedule without too much

of a problem. Our conclusions in the final reports are expected by September of '94 and I don't believe that represents too much of a delay based on the schedule we gave you the last time.

The third topic would be status update of Seneca Army Depot's activities, moderate areas of concern. We are also doing site investigations here. The field work at the moderate priority sites was lagging slightly from the high priority sites. So the weather delays had more of an effect on the overall work schedule there. But we are proceeding with field work as best we can. And conclusions and final report would be expected by late calendar year '94 or possibly early year '95. That represents a delay over the last TRC's proposed schedule of roughly two to three months.

The final topic of discussion would be a status update on the finalization of the SWMU classification study. We have -- I believe we discussed the last time the limited sampling being done at several sites. Field work as we originally proposed is essentially

complete. However, we do have some disagreements with the regulators as to how much work will be done at individual sites. We are in the process of trying to resolve those disagreements. And it may involve having to do additional field work depending on how those disagreements are resolved. As far as the finalization of the studies is concerned, it could be finalized by, I believe we said, the next TRC. And that would be assuming there were no substantial problems resolving in disagreements on work to be done at the individual sites. If there were some problems and additional field work was required, it would be more likely by this fall that the study would be finalized. That would represent a delay of approximately four or five months.

That is it for the administrative update. Mr. Duchesneau from Engineering Science will give us a little bit more detail on the work that's been done in the last three months.

MR. DUCHESNEAU: My name is Mike Duchesneau. I am the project engineer for

this project. I would like to start off with an organizational chart. I think many of you have seen this before but for the new people that are here here is our organizational chart that we have established for this program. There will be one slight change here. Gary East has moved on at the corps and he will be replaced by Mr. Rick Suever, who is sitting over here by Kevin. I am roughly the person who is responsible for coordinating a lot of the field work, a lot of the subcontractor people and preparing the documents that are reviewed by the regulatory agencies.

Just to provide you with an update, I will be speaking today about all of these different SWMUs and CERCLA investigations that we have ongoing. The one is the SWMU classification report Kevin has just mentioned that previously we have, in fact, completed the limited sampling. At many of the SWMUs we are looking to collect a bit more information on before we make a decision on whether or not the SWMU would be classified as AOC.

MR. HEALY: Why don't give an explanation of what some of the abbreviations mean?

MR. DUCHESNEAU: Solid waste management. It is a RCRA term. It is a term to identify areas where potential releases could have occurred.

We have identified up to 72 areas called SWMUs. From that list of 72 we grouped the SWMUs into what we call high priority, moderate priority and low priority and moderately low priority to try to set some type of hierarchy as to when and in what order these different SWMUs would be investigated. What you see here is a listing of all of the delivery orders that we currently have ongoing with the Corps of Engineers, the Huntsville Division.

MR. SHINAL: What criteria did you use for determining?

MR. HEALY: Based --

MR. BATTAGLIA: As far as the initial site investigations, we had some information about most of the sites as to what the site was strictly used for and that gave us enough

indication to pick what would be the higher priority or worst to investigate first. Because it was mainly based on funding requirements we need to necessarily know if they were going to fund the whole amount of the investigations that we had to do.

MR. SHINAL: If we had more money, we could probably have more than 72 areas?

MR. BATTAGLIA: No. Seventy-two areas are all the areas that we know of that potentially could be investigated as a site.

MR. DUCHESNEAU: We have approximately 30, 35 SWMUs that are of no action SWMUs. The ones that you see here, the 25, the 10 and the 15 are the ones that we are planning on performing site investigation studies on. The top two represent actually six SWMUs. We combined five SWMUs with the ash landfill because of proximity. These two are actually in the RI/FS process. They have jumped from the site investigation process into the RI/FS process and maybe my next slide will provide more information.

MR. SHINAL: I am familiar with them.

MR. DUCHESNEAU: The remedial

investigation feasibility study -- it is a termed used in CERCLA -- means to perform and conduct investigations. And the follow-up feasibility analysis lists several remedial options for cleaning up the site. Okay.

The one that I haven't mentioned here is something that we were talking about last time that I want to give a little bit more information on. That is the action memorandum. The Army is proposing to perform an expedited soil remediation at the ash landfill in an area of soil impact with some of the chlorinated organic solvents we believe is the source of a discovered groundwater plume there.

CERCLA is the term used for Super Fund. We are getting to a point in the process where I think it is important to step back a minute and look at what is identified in the IAG, Inter-Agency Agreement, between EPA, NYSDEC and the Army. This is a flow chart that we have prepared to try to outline the process that we have been discussing here. It begins with the SWMU classification where a SWMU is identified. We talked about doing

some limited sampling in determining at one point whether or not it is an AOC, an area of concern, or a no action SWMU. If it is determined that it is an area of concern -- in other words, limited sampling or the historical use of that SWMU lead us to believe that there is a potential threat -- we move into the site investigation phase.

I had mentioned earlier 25 different SWMUs that we are actually currently performing a site investigation study on. The results of the site investigation study are then evaluated to determine whether a threat to the environment or human health exists. If it is determined, yes, that is true, there is a threat, the Army has an option to perform a removal action to eliminate that threat. And a removal action is regarding the action memorandum where you implement some type of remedial program to eliminate a threat. Or you can move right into the remedial investigation feasibility study phase. This is more an indepth study. It actually involves human health risk assessment. Once that is the prepared you

evaluate various remedial options in terms of how it would attain your goals and attain your risk. You follow through the RI/FS/CERCLA, prepare a remedial action plan and record of decision for those particular sites. You actually would implement a remedial action. I think you get the idea here that there are basically three phases. One leads to the next which leads to the next. And as you move across, the investigation becomes more involved and encompassing.

The SWMUs that we have classified as high priority SWMUs are seven in number. I list them here. They basically involve facilities at the depot where activities were performed that would lead us to believe that there could be a threat of a release, including the munitions washout facility where materials were washed out of old projectiles and whatnot, abandoned powder burning pit areas, fire demonstration pads and fire training pit. I will get into a little more detail shortly as to what our plans are for investigating those particular

SWMUs.

To provide you with a little bit more dates to show you where we stand on these high priority SWMUs, this plan was approved on July 30th and we initiated field work October 1st. And we met the task in all of the work plan that was approved by EPA and NYSDEC. It involves a fairly extensive amount of sampling including asbestos sampling, test pits. We performed some soil gas surveys at a couple of landfills. Generally when we start off we perform a large amount of geophysical investigation to try to get an indication or direction of groundwater flow, slope of the bedrock, the existence of any type of buried tanks, that kind of stuff. We obtain a lot of quick and cost effective information doing geophysics. We also prepare photogrammetric survey maps to help us define what is going on in the location of our wells accurately.

What needs to be done? We have installed upwards of 45 monitoring wells. Each one of those monitoring wells has developed the geology. At this locale it

does not yield a lot of water and so the development process has been rather slow. And in addition to the fact that the weather has been particularly cold and it is difficult to deal with water and that kind of stuff with pumps when you are trying to develop wells we have basically completed the well development as of last week and are well under way into the well sampling and should be completed within the next week or so. We have received data from the laboratory and we are in the process at this point of preparing evaluation reports for that data and summary tables that will be included in our reports. We expect the field work to be completed in a couple of weeks, by mid February.

The schedule that we had presented to you last time is what's up on the screen here. I wanted to point out where we planned on being and where we actually are. The well sampling that we just talked to you about was to be completed by January 27th. We are slipping that by a couple weeks largely due to what I was saying earlier; that the weather has been particularly cold and Mother

Nature does not yield a lot of water in these wells. Its been a little bit longer than we expected to develop the wells. Overall I think we have pretty much stuck to this schedule and we are planning on meeting the milestones in the future.

This is an oversight view of what we call SWMU four, Solid Waste Management Unit Number Four. It is the former munitions washout facility. These buildings were used. Some of them aren't here anymore. But the buildings that you see here, the former locales, are used in the process of obtaining a shell of some sort. Steam cleaning the inside to remove whatever residual propellant or explosive material was in there. That material was processed and recovered and used in other applications. The discharge water was discharged to a leach field approximately in this area. We have performed test pit sampling, geophysics. We have identified the locale of a clay pipe that went out to a small holding pond here. We have done test pitting in the pipe and underneath the pipe; established soil borings at strategic

locations around the facility to find if there had been any release to the wells; monitoring wells to see if the material had been released and has it impacted the groundwater. We have an upgradient monitoring well located in this area as well as some of the sediment sampling in the drainage ditch that moves away from the site here.

COMMITTEE MEMBER: You want to show them where on the overall map these facilities are?

MR. DUCHESNEAU: The munitions washout facility is located approximately in this area right here. Just for your bearing, here is the air field. This is Route 96-A. Seneca Lake on this side. Okay. Cayuga Lake would be up here. The main gate for the facility is here and 96 would run -- Route 96 would run somewhere along here. We are located right up in this area here. At this point it is way down.

MR. BATTAGLIA: In the back of the handout there is a list of all the site investigations.

MR. DUCHESNEAU: Right. All this work has been done. We are in the final stages of sampling some of these wells. The overburden material, the material of soil above the bedrock, is fairly thin at this site. It is very dense till. Till is an unsorted geological material deposited by a glacier, fairly compact and dense and doesn't yield a lot of water. We are having longer than expected time frames to sample these wells largely because we have a lot of turbidity in the wells. It takes us a lot longer time to make sure we can eliminate that from our samples.

This is a SWMU or SEAD 16. It is the abandoned deactivation furnace. This facility is located right about in here. This is the main gate. This is here. It is not far from where we are now. This is an abandoned facility. This was the facility we had actually sampled asbestos inside the facility. We have taken surface water samples from the standing water in the building and have collected quite a large amount of surficial soil samples. The idea

was if something had been released we want to know how widespread that was.

These lines that I identify here as hatch lines refer to the seismic survey that we do at every SWMU. This is a standard operating procedure. We perform seismic surveys on all four sides of the SWMU to better get an idea of the groundwater elevation. If we can't find the water surface, if the water table has dropped close to the bedrock, that allows us information as to where we can place our upgradient and downgradient monitoring wells and give us an idea where we can set our well streams.

Moving on to the next SWMU. This is what we call SEAD 17. It is the existing deactivation furnace. I might just qualify that. Although it is an existing facility it is currently not operating. We are in the process at this point of trying to attain a RCRA permit to allow this facility to operate. It would essentially do the same processes that went on at the abandoned furnace. Mainly deactivating small arms. It is a small rotary kiln in where the

projectiles would detonate in a small tube. We are collecting once again surficial soil samples at this facility.

This is SEAD or SWMU 24, the abandoned powder burning pit. Pretty much the same scenario applies here with geophysics or surface soil samples. The soil borings which we identified as the main body of the SWMU as well in this one. We are doing quite a bit more geophysic work because it is a pit. We are interested in finding out if there was anything buried in the pit; what kind of materials were there. We performed two types of geophysical investigations. One which is called EM, which is electromagnetic survey, which is trying to find the presence of metal, steel or buried objects. Which the ground penetrating radar could help us find non-metal objects which could be buried there. This work has all been completed.

SEAD 25 is the fire training and demonstration pad. That is located approximately in this area here. Not far from we are now. This was a pad that used to be where fire training activities were

performed. We have done some monitoring wells and some soil borings in the pad.

This is a SEAD 26. It is a fire training pit and the demonstration area. That facility is located over in this area. Again here is the main gate. Not too far from where we are now. This was a large -- it was a lagoon that has oil in it. It is bentonite lined; a clay lined bentonite which prevents the oil from penetrating into the subsurface. We have sampled the sludge and sediment that was below the oil. We have placed monitoring wells what we consider downgradient of the oil area. We have also placed monitoring wells at two different locations along this elevated filled area. This whole -- this area here is elevated approximately 10, 15 feet around the surrounding area and it is comprised mostly of fill materials such as bricks, rocks and things of that nature. Essentially what was done here is material like this oil was occasionally lit on fire and people trained as to how best to put it out. We have done quite a bit of geophysical work here. We

have done eight thirteen foot long ground penetrating radar surveys along this platform or elevated area to try to determine if there were any buried objects of interest. In the test pits we did find some geophysics, ground penetrating anomalies. We did six test pits and one or two over here and essentially found nothing. Essentially found buried fill material. No buried drums that we can determine. There is nothing here that would lead us to believe that there was a release in that area. Again we have performed our seismic survey to help us locate upgradient and downgradient monitoring wells. The data from this survey is currently coming in. We are in the process of evaluating it. I think at the next TRC we will have more information to present to you. I am presenting to you essentially cuts from the work plan and describing to you the work that we have already performed.

This is SWMU 45. It is located adjacent to the open burning pad that we have investigated as part of the RI/FS process. This is an active facility that has also been

applied for RCRA status under sub part X. What is performed here is the safe detonation of munitions under this large mound of material. Essentially what happens is a series of approximately 10 pits are excavated into this mound. Ammunitions are packed in this mound and buried with soil to keep the noise and explosive force down and are essentially detonated to destroy the ammunitions. It is the safest, most cost effective way the Army has to deal with this. We have sampled the soil from test pit samples of the mound itself, placed three downgradient monitoring wells, collected surface water and sediment samples from some of the drainage ditches that discharge from this area and also established an upgradient monitoring well and collected some upgradient soil samples here. We have a pretty good idea where the groundwater is flowing, which comprises approximately 40 wells. We are fairly sure we know which way groundwater is flowing there.

Moving on to three moderate priority SWMUs, which are SEADS 11, 13, 57,

construction debris and IRFNA, inhibited red fuming nitric acid. It was used as a rocket propellant back in the 50's and apparently some of that material was stored here in the explosive ordnance disposal area.

This is SEAD 11, the old construction debris landfill. As the name implies, it is the landfill where lots of the construction debris from the base operations was buried. We have performed our seismic survey, installed our monitoring wells, performed test pits. The test pits and the soil borings that were done actually in the landfill were linked to the geophysical work that we did, which was ground penetrating radar as well as soil gas sampling. And soil gas sampling involves extracting a small amount of the gas in the landfill itself and doing an on site analysis using a gas chromatograph to determine the presence of volatile organics. It is helpful in locating the optimum places in the landfill to locate test pits and soil borings. The results of the soil gas survey indicated -- I think we had one hit approximately in the middle.

Which when I say a hit, I mean elevated number. More in background, I believe the value was approximately 10 parts per million total volatile organics in this landfill, which implies there was some potential material in there that we are interested in sampling. The monitoring wells will give us a better handling if that material has impacted the groundwater at all. That area, by the way, is -- I think it is down right here in this locale.

COMMITTEE MEMBER: Down by the air field.

MR. DUCHESNEAU: This is the IRFNA disposal. That is over by the duck pond in this area here. Here is the main gate and Route 96. We are approximately here right now. This facility was the area where pits were dug. The red fuming -- inhibited red fuming nitric acid was discharged in some of the pits. The pits were lined with lime stone. And lime stone was essentially used to neutralize the acid to render it in inert. We have performed geophysics to help identify the location of the pits and then done our

monitoring wells installation and other soil borings in the locales that indicated the presence of where the pits were. This is all pretty much grassed over right now. You can't walk out and obviously see where the locale of that is. This area on the other side of the duck pond contained pipes and shower stalls that were used, we think, in the operation of this area here. So we actually included some sampling and geophysical work in this area to see if there was any releases in this area. We have collected surface water samples and sediments from the pond itself.

The last SWMU that we are going to be talking about details on today is 57. This is the explosive ordnance disposal area. It is a bermed area with a small pad in the middle of it. The open detonation burning ground is over in this area here. That would place it right about over in here. Here is the open burning open detonation ground and SWMU 57 is right about here. There is a building here -- basically a wood barn -- that we also collected some soil samples

around to determine if there was any releases as this process was going on; if material was stored and possibly released. And we were interested in that. We performed test pits, did our geophysical surveys, as I have already mentioned, and sampled test pits in what we found was a shallow depression in this area.

Moving on to the action memorandum. As I mentioned, the action memorandum is a process by which the Army can implement an expeditious -- expedite a remedial action process. And this draft action memorandum was submitted for Agency Review on December 3rd and we are currently awaiting regulatory comments. I understand from Carla, the person representing EPA, that we will be receiving comments shortly from this. The action memorandum is intended to eliminate an area that we had identified during our remedial investigation of the ash landfill. The ash landfill is in approximately this area. This is the abandoned incinerator building. The non-combustible landfill. Seneca Lake is down in this area and Route 96

is approximately over in here. The area of concern that we are interested in that we will be performing this action memorandum remedial action on is what we call the bend in the road. The bend in the road is aptly named because the road takes a bend right where the area of the most concern is. We identified that area largely based on the work we had done during our ride on soil gas survey that was performed here. Here is the bend in the road. Something like that. We did our soil gas survey and we found several hits in here. And we went back and did more points to try to delineate the extent of this area. And also found another area next to it.

MR. SHINAL: You refer to the area as most of concern. Why do you call it the area of most concern?

MR. DUCHESNEAU: Because we would like to perform a remedial action quicker than the others, the other areas. We are also investigating the ash landfill, the non-combustible landfill, which I showed you earlier, which was in that area.

MR. SHINAL: That appears to be arbitrary. What factual information would make it an area of most concern?

MR. DUCHESNEAU: We believe the material that we find in the soil here is the same material --

MR. SHINAL: What is the chemical?

MR. DUCHESNEAU: Trichloroethlyene and dichloroethylene, otherwise known as TCE and DCE. Then small amounts of vinyl chloride. Based on that --

MR. SHINAL: Do you have any amounts?

MR. DUCHESNEAU: Yes. The highest value that we have in here was approximately -- was it 200 ppm, 300 ppm?

MR. SUEVER: In the soil.

MR. DUCHESNEAU: About 200 ppm.

MR. SHINAL: Trichloroethlyene?

MR. DUCHESNEAU: Yes.

MR. SHINAL: What about the dichloroethylene?

MR. DUCHESNEAU: I can't remember the number.

MR. SHINAL: How about the vinyl chloride?

MR. DUCHESNEAU: Once again I think it was maybe ten ppm range because the chlorinated material is TCE, trichloroethlyene,

COMMITTEE MEMBER: Highest was 120 ppm. Dichloroethylene was 60 or 70 ppm.

MR. SHINAL: What did you use for determining this? What instrumentation?

MR. DUCHESNEAU: Gas chromatic mas-ca-trop-ca-pe (phonetic). Otherwise known as GCMS. We followed New York State CLP protocols, Contract Laboratory Program, analytical protocols established by the State of New York which are currently being used by New York State at several other Super Fund sites. The level of QAQC on these protocols are the highest that you can get. So we are fairly certain that the numbers are correct.

We did the soil gas survey. We are finding a lot of these hits here and we went back in Phase II and delineated this area. As you can see, we set up a star pattern. And based on that information we then went back and collected some soil boring samples in this area of greatest impact and also

here. We tried to quantify how high these soil values were. We believe that -- I will show the plume in a minute -- it emanates from this area and moves westward towards the lake but doesn't reach the lake. So the area that we are looking at to remediate is essentially the areas I just showed you which comprises of approximately 20,000 cubic yards of material here. What were placed here were some borings. As you can see, we have done a monitoring well in the hot spot. That is what we call it. This well is the most contaminated well on the site. As we expected.

The technology that we have decided to utilize here is low temperature thermal desorption. Essential what that is is a large rotating drum. In this case, molten salt is allowed to come into contact with the soil. The volatile material is allowed to come in contact with the salt and is placed through the air processes. The molten salt is placed in a series of screw augers. The soil is placed in and allowed to mix with the heated screw augers and that is how the heat

transfer takes place between the heat source and the soil. There are several vendors that provide this service. Here is another vendor. This is Canonie. It is placed in hoppers, put on a conveyor belt, allowed to rotate in this dryer. But it is essentially a low thermal desorption. The burner is on this side. You can do it concurrently or counter-currently depending on the vendor. They could do it concurrently. The soil is moved down this tube. The tube has the chemical in it and augers and that allows the soil as it tumbles to come into contact with each other. And it is inclined. As the soil tumbles there it moves down into this area here. The lot gas is collected and this particular process uses a cyclone to remove the particulates and a bag house to lose smaller particulates and a scrubber to remove any hydrochloric acid and then in goes into some carbon units.

MR. SHINAL: What's the maximum absorption rate that you anticipate with that unit?

MR. DUCHESNEAU: Maximum absorption of

the carbon?

MR. SHINAL: Of the pollutants.

MR. DUCHESNEAU: A hundred percent. There is another carbon here to remove all of the pollutants so there would be no air discharge.

COMMITTEE MEMBER: How many months does it take to do a 120 cubic yards? Do you get topsoil on it or get vegetation to grow on it? Do you have to add something to the soil?

MR. DUCHESNEAU: We actually thought about this quite a bit. We were talking about taking the heated soil and putting it back in the hole that it came out of. We were leaning not do that and place it intentionally in the non-combustible landfill next to it. If we placed the soil back into the hole, we would -- we are looking to create some type of a leach field so that we could flush the groundwater and create some kind of groundwater divide or mound so we could eliminate clean water from coming into the site. This whole thing of what we do with the soil -- the clean soil is related.

We wanted to integrate. That is in terms of how we are planning on constructing our groundwater treatment plant. We are still not clear what the final outcome will be but, yes, it will be placed back to the soil -- back to the ground and probably covered with some kind of topsoil covering.

COMMITTEE MEMBER: How long will it take to do 20,000?

MR. DUCHESNEAU: Two to three months.

COMMITTEE MEMBER: We are going to try it, obviously, during the summertime if we could for several reasons; one, the groundwater level is extremely low at that time.

MR. SHINAL: I am sure there is some kind of financial agreement, contract, in all this. Does it state anywhere that you will remove 100 percent of this material? Is there any warranty that we will get our money's worth; that you will remove 100 percent of the material?

COMMITTEE MEMBER: We are not going to be the contractor who actually implements this.

MR. SHINAL: You are going to go ahead and advise them or advise us or advise somebody. Are you going to advise them they are going to have to remove 100 percent of the material?

MR. DUCHESNEAU: We are planning on doing follow-up.

MR. SHINAL: I would like to have something in writing from whoever gets that.

MR. ABSOLOM: Excuse me. Time out. Time out. One of the things -- keep in mind this is an interim action. This does not say this is the only thing we are going to do at the site. We have identified the source. We are going to get the source out of the ground so we don't continue to contaminant the groundwater. We still have to decide at what level are we going to clean up the surrounding area and the groundwater. That comes after this activity.

MR. SHINAL: Regardless of when it comes we want to make sure the job is done perfectly just as is stated here. A hundred percent clean up, right?

MR. ABSOLOM: That is my point.

MR. SHINAL: Let's use this.

MR. ABSOLOM: There are guidelines that we have that determine what level we have to clean up any site.

MR. SHINAL: All right. What are your guidelines?

MR. ABSOLOM: They are created --

MR. BATTAGLIA: Federal regulations.

MR. SHINAL: What are they? What level of purity, doctor? When do we say this stuff is no longer? I can find pollution in your backyard.

COMMITTEE MEMBER: And how clean is clean? I cannot give you an answer. It is dependent on the site. It is dependent on the risk.

MR. SHINAL: Depends upon the contaminant. This is what we are after.

COMMITTEE MEMBER: There are currently no firm guidelines in soils. New York State has guidelines that are to be considered.

MR. SHINAL: Whose are we going to follow then?

MR. BATTAGLIA: As far as the groundwater is concerned, primary contaminant

level that you clean down to is strictly water standards.

MR. SHINAL: What are the standards?

MR. BATTAGLIA: Maximum five ppb.

COMMITTEE MEMBER: We are doing what is feasible and using the best available technology.

MR. SHINAL: Technical feasibility is a gamble. We are wasting our money if we are going to talk that way.

COMMITTEE MEMBER: If we are using proven technology --

MR. SHINAL: What level did we use with the proven technology?

COMMITTEE MEMBER: The levels that we are reaching in the report.

MR. HEALY: Huntsville will be the one that writes the contract. There are State level guidelines and there are air guidelines that need to be applied. We will not make any efforts to run this system unless we know we are going to meet those guidelines.

MR. SHINAL: We have no guidelines right now?

MR. HEALY: Yes.

COMMITTEE MEMBER: We can get you copies of the guidelines.

MR. SHINAL: What are the guidelines we are going to use? I can find guidelines.

MR. DUCHESNEAU: In our opinion when we wrote this document we used the New York State TAGM Guidelines and they are Technical Administrative Guidelines Memorandum. And they list all of the pollutants that we are interested in here and they give us the numbers; what they consider clean up numbers.

MR. SHINAL: Is that what is going to be used?

MR. HEALY: It will be in the contract and the report. It will be in both.

MR. SHINAL: I haven't heard any mention of it up until now.

MR. DUCHESNEAU: I am just trying to follow-up with his question. The value for TCE in this is TAGM's. For soil it is several parts per billion. We are using that as our guidelines as to where we want to get below.

(Whereupon there was brief recess taken.)

MR. ABSOLOM: Before we go any farther,

one of the things I would like to make clear is that we are doing this as a technical review committee meeting. It is not -- it is intended to provide information to everyone of what we are doing. We will be glad to entertain questions. I am going to ask, so we can continue through this, that any questions that you have please write them down and hold them so that we can answer them for you. We have a time for a question and answer period after the agenda and we will be glad to entertain all questions at that time. Otherwise we will not be able to keep the report straight as to what is said.

MR. SHINAL: What you are telling me is I can't ask a question at this meeting?

MR. ABSOLOM: No, sir. I am not telling you that at all. What I am trying to say is I have to have accurate documentation of what transpires here at this meeting. I have to be able to have control. You have a tendency to not allow people to finish their answer before you ask your next question.

MR. SHINAL: I am sorry.

MR. ABSOLOM: I --

MR. SHINAL: If I stop you at any time when you are not finished, let me know. I am here for the information. I am not with you everyday and I don't have all these reports.

MR. ABSOLOM: All these reports we talk about will be, if they are not already, in the administrative record in the Romulus Town Hall. You are more than welcome to read them. That will be the appropriate place to look for information if you are concerned.

MR. DUCHESNEAU: It is strictly for the stenographer. We need to be a little bit more careful as to how and when we say things.

Just to move on. Here is an actual photograph of a site that I was involved in. This was a Super Fund clean up in Maine called the McKinn (phonetic) site. What you see is the low temperature thermal process in operation here. It is kind of blurry. Here is the rotary kiln, the hoppers, the soil being discharged into the kiln. This is a bag house, the scrubber and then the stack exhaust gas here. So I have personal firsthand knowledge that this process is in

fact reliable and will work.

Just another example. This technology is fairly widespread at this point and becoming more recognized as an appropriate technology. It is the same kind of process. Same kind of a screen. Here is the kiln. It is the backside. The bag house is over here. You find this process used quite a bit for petroleum contaminates. It has application for the chlorinate as evidenced by the McKinn site, which was contaminated by the identical material.

MR. HEALY: Why not for everyone's benefit simply state what we hope to accomplish when that IRM is complete?

MR. DUCHESNEAU: Our goals clearly are to eliminate the source of groundwater contamination at the ash landfill. And that is our intent with this action memorandum and interim action, to eliminate continued leaching of these materials into the groundwater and thereby decrease the length of time that we will need to treat groundwater and eliminate the potential for the plume to move further. Stated in a

nutshell, I guess.

MR. HEALY: Yes. As of right now with the source still sitting there, every time the groundwater raises it takes a little more TCE solution into the groundwater. If you remove the source, you won't have that happening anymore.

MR. DUCHESNEAU: We are now waiting to recover the TCE in the groundwater. When we now where it is and approximately how much is there, we can get at it and eliminate that problem.

Moving onto the RI and FS for the ash landfill and OB ground. Just to bring you up to speed where we stand on those. We talked about this extensively in the past but I would like to bring you up to speed where we are. We moved ahead quite a bit since our last TRC. We have issued the draft RI. These were chapters one through five on Agency Review. On November 10th chapters six and seven were separated out from that document because the Army wanted to review the Baseline Risk Assessment, which is chapter six. Prior to submission to the

Agency chapters one through five were information regarding site maps, the extent of some of the summary tables, the extent of impacts that we found, a transport analysis to keep the process moving. We broke this particular document up into those two aspects. We received EPA comments on chapters one through five December 3rd. And NYSDEC comments on December 20th. Currently we are waiting for EPA and NYSDEC comments on the Baseline Risk Assessment, which would be chapter six, and summary and conclusion section, which is chapter seven. When we receive those comments, we will incorporate those comments into the risk assessment and re-issue the documents as a whole, chapters one through seven, within probably a month or so.

MR. HEALY: For those who are not familiar with the Baseline Risk Assessment, a baseline risk means nothing will be done with the site. We use that as a baseline. We compare all the other alternatives. That is what Baseline Risk Assessment is.

MR. DUCHESNEAU: It is essentially the

decision item that requires us to go and to do some type of remedial action. An unacceptable risk value would require us to do something to make that result in an acceptable level. We have, in fact, completed what we call the pre-draft feasibility study. And the feasibility study would be to look at several other remedial options based on the risk assessment that we have performed. We have submitted that to the Army for review on January 17th and we are currently awaiting comments.

Just to provide you with a little background into the ash landfill, we did do a two phase program. I think you have seen this overhead before. The constituents of concern are the volatile organic, which we have talked about. We have soil gas work and fracture trace analysis to look at in the bedrock system, install some cluster monitoring wells in the upper portions of the bedrock and also into the deeper portions of the bedrock to find out if any of these materials are in the bedrock. We have packer tests.

This is the extent of the groundwater plume based on the information that was collected from the RI. The bend in the road area is right there. Right at ground zero. Here is MW 44. MW 44 is the most impacted area on the site. We have placed wells around the boundary of the plume so we have a fairly complete picture as to the lateral and vertical horizontal extent of this groundwater. The good news is the plume does not migrate. We found the end of the plume. It does migrate past -- a little bit past the boundary near the railroad tracks here. It does not move much this way nor that way and it is pretty much what we expected to find. There is no surprises here.

COMMITTEE MEMBER: What are the numbers in the middle? What are the highest values?

MR. DUCHESNEAU: MW 46, which is the overburden well and the well that was screened into the till material. There was a cluster. We have a deep bedrock well and a very deep bedrock well. Those two bedrock wells that you will see in a minute are clean which is very good news. This monitoring

well here in the overburden is 167 parts per billion of total volatile organics again mostly TCE, a little bit of DCE and no vinyl chloride in these wells here. The only time we find vinyl chloride is up in MW 44, up in the source area. This value is 254 parts per billion. Here we have 90. This one here is 101, 88, 66. All in the same approximate ballpark. This here is BDL, below detectable limits. Essentially zero. We feel fairly certain that we have defined the extent of this problem.

What I am going to show you now is some cross section cuts that we have prepared that shows you the penetration of this groundwater plume. I will be showing you the cross section on the AA prime axis and BB prime axis. The AA axis shows the bend of the road. The BB goes over to the area that we showed you before, if you recall. The two areas of soil impacts that we are interested in doing something about with the action memorandum. I prepared a kind of schematic here to show you our rendition of how the plume actually exists in a cross section

slice. This is MW 44. This is the bend of the road area. We have identified that as red to identify an area greater than 100,000 micrograms per liter. It was this locale that I was just discussing with you earlier. We have the overburden well which is 167 parts per billion. The bedrock well goes from here to here. It is nondetectable. We found no pollutants. The deep bedrock well screens from here to here. There is no impacts there. The good news is the competent shale, which is the bedrock, is not transmitting water vertically from the upper areas of the till down deep into the rock. That is a great relief to us because people derive their water from the bedrock in some of the areas around here. We are fairly happy that is the case.

Just the other slice, the BB prime cut, the area over here. PT 18 was a little less bit impacted. Approximately 11,000 parts per billion. Again the same type of picture. The material is essentially in the weathered shale and in the till and again a bedrock well cluster and we have not detected the

presence of chlorinate organics in these wells in this area.

MR. SHINAL: Can I ask a question? What levels do you show there? I can't see from there. Can we get copies of those slides?

MR. DUCHESNEAU: I didn't make copies of that because they are color and I didn't have a chance to make copies. We have two numbers. We have the Phase I and the Phase II number. The Phase I number is 11,580 parts per billion. That is total chlorinate organics. And the Phase II number was 19,900 -- 13,000. I can't even see. Thirteen thousand nine hundred fifty three. That is as we move towards the downgradient slope of the bedrock. The Phase I number for PT 12 is 374. The Phase II number was a little higher at 2,651. Again parts per billion of total chlorinate organics. The Phase I value for the deeper PT 21 was -- Phase I value was 184 and the Phase II was 254. The Phase I value for the shallower screen well, PT 22, was 18. And Phase II value was 17. MW 53, which is the overburden well, the shallow well, was 55 parts per

billion. And the deeper well, MW 5D was essentially nondetect, no values detected. And likewise for the deeper MW 55 well.

MR. SHINAL: You talk about total organics. There are so many things called organic. There are -- so many things are organic. We are talking about toxic organic?

MR. DUCHESNEAU: When I say chlorinate organic, I refer to the three that we talked ability earlier. There are no other animals or compounds that we're interested here. It is TCE, DCE and vinyl chloride. There is no vinyl chloride in any of these wells. The only time we found vinyl chloride is in MW 45.

MR. SHINAL: Vinyl chloride naturally tends to polymerize. It is something inert, inactive. So I think it is time for you to address it. Did you notice vinyl chloride got lesser as we went along?

MR. DUCHESNEAU: We suspect that as the volatile --

MR. SHINAL: Is TCE volatile?

MR. DUCHESNEAU: TCE is liquid. As room temperature drops, TCE and vinyl chloride

polymerize. The mechanism -- the reason we don't find it in these wells from the source is due larger to the volatile nature of that -- I think I am right in that -- as opposed to polymerization.

Kevin just asked me to mention briefly there is a well documented series of breakdown products starting from TCE to DCE to vinyl chloride which has been well documented into literature, which is exactly what we find here. It is not surprising to us that we find TCE decreasing. And, in fact, in some of these wells the DCE value actually is going up a little bit. We suspect that is largely due to a biological action of the soil and the TCE breaking it down into its component breakdown products. It is a well documented sequence of de-chlorination steps that occur and we believe that is exactly what is happening.

MR. HEALY: The fact that you have all three present is not necessarily due to the fact that all three were dumped at separate incidents. It means that TCE was dumped once and it broke down to DCE and broke down to

VC, vinyl chloride.

MR. DUCHESNEAU: Just to move onto the open burning ground. Again we are involved in the remedial investigation feasibility study. If you recall way back, one of my first slides gave us our three groups of phases of this whole process; these two sites, the ash landfill and the open burning -- former open burning ground which was on the RI/FS phase which is down here on the chart. It has pretty well moved along on the process. We submitted the draft OB RI for Agency Review on October 21st; on or about October 21st. Received the EPA comments on November 18th. And received NYSDEC comment on December 14th. EPA comments received on the 18th of November. The pre-draft OB FS was submitted for internal Army review on December 3rd and we received Army comments on January 19th. We are in the process at this point of trying to assimilate the risk issues associated with the OB RI. And before we proceed forward too far on the OB FS and some of that information we need to talk a little bit more with the

State about that.

The investigation that we had done here was again a two phase approach. Here we use a lot of screening of the soil samples to decrease the cost of the investigation, make it more cost effective yet not lose track of the intent of the investigation, which is to provide data to delineate any impacts. We used quite a bit of remote control drilling for the obvious reason of unexploded ordnances at this site and we had done quite a bit of penetrating radar and technical techniques.

This is the open burning ground. What you're seeing here is the pads detonation area, which is over here. The geology here is very familiar to the ash landfill. I will show you in a second what that geology pretty much looks like. It is not unusual to find glacial till up in this area overlaying an area of weathered shale and then the competent shale. Pretty much identical at the ash landfill. We placed our monitoring wells in particular regions and borings along this geological strata to identify if there

has been any releases. What you see here is an exaggerated vertical profile of the pads and how they are built of fill on the top of the original till material. The slope of the rock essentially slopes towards Reeder Creek which governs essentially the direction of groundwater flow towards the river. Results of our investigation indicated that groundwater flow was pretty much how we expected it. As we just showed you that cross sectional slice, it slopes generally towards the stream. In fact, when we do our groundwater elevation measures we find a pattern of movement towards the stream. That's not to be unexpected.

In terms of the impacts to the soil, I think I provided you a lot more information the last time. I am not going to go through all the details. I picked this one as an example. We sampled quite a bit of the pads, pad borings, some berm excavation. These are berms that surround each of the pads. We performed some surface water sampling and some of the wetland area that was basically man made from the bulldozing operations. We

find elevated levels of some lead. Some of the heavy metals are mostly in the berm areas here, which was all included in our analysis of risk.

As we move off of the pads, we find a situation that is fairly consistent with what our conception of the understanding of the site was. And that is some of the material may have washed down into the low lying areas and we find, you know, some indications of lead. This is lead and surface soils down into the low lying areas of the site. Essentially what must be happening here is material is washed off of the site during a rainstorm and tends to pond in the low lying areas. The sediment that is carried by the movement of the rain over land flow creates little areas of water and it tends to accumulate to the low lying areas, which is in fact what this area represents.

At this point I think that is pretty much the end of what I had to say. Any questions?

MR. SHINAL: What form was that lead and what concentration?

MR. DUCHESNEAU: That is total lead.

MR. SHINAL: Metallic lead.

MR. DUCHESNEAU: Total metallic lead. You want the concentration?

MR. SHINAL: Whatever you got.

MR. DUCHESNEAU: Seven thousand four hundred and fifty parts per million.

MR. SHINAL: Seven thousand four 1hundred and fifty parts per million.

MR. DUCHESNEAU: Right. That is ppm. That is the status where we stand on these issues. Thank you.

COMMITTEE MEMBER: Is there a procedure for the remediation that is planned?

MR. HEALY: As the soil comes out of the testing, the air will be tested. To make sure it is tested they will be testing constantly throughout the process to make sure anything we do is resulting in what we plan to achieve and hope to achieve. There is all kinds of testing involved to make sure what happens is what we said we would do.

MR. ABSOLOM: Are there any other questions or general comments that anyone would like to be addressed?

MR. SHINAL: Let's get into the finance of this. What does the Engineering Science and contract work consist of financially?

MR. HEALY: What's the nature of it?

MR. SHINAL: What's the total? Is there a value set on this contract?

MR. HEALY: There is a limit. I guess what you are referring to is how much has been spent to this point in time?

MR. SHINAL: Good idea.

MR. HEALY: Okay. Each of the two RI/FS's -- I am not sure I am allowed to give out this information. Each of the two RI/FS's is 2.1 million dollars.

MR. DUCHESNEAU: That includes subcontractor costs, which is substantial.

MR. HEALY: From start to finish.

MR. SHINAL: You are the primary contractor?

MR. HEALY: He's the contractor and I am the one that puts out the contract.

MR. SHINAL: So far it is 4.2 million?

MR. HEALY: Roughly, from completely finished.

MR. SHINAL: How much do we have left to

the fund?

MR. DUCHESNEAU: The Super Fund?

MR. SHINAL: Whatever we have in this work for Seneca Army Depot.

MR. HEALY: There is not a pot of money sitting around. As we need the money -- as we negotiate it, then our higher ups in our headquarters approve it and give it to us piecemeal. It is not as there is one big pot.

MR. SHINAL: There is no boundaries listed?

MR. HEALY: No.

COMMITTEE MEMBER: The Army and Environmental Center is the program manager for the Army sources that can be spent across the country on any environmental restoration program. The people that are doing the work here at Seneca give us an estimate of what they think they need. That information I can't really give out because that gives the contractors sort of an idea of what we think it is going to cost. And we would like to be able to negotiate contracts without them having have an idea what it might cost.

MR. SHINAL: I take that as open ended.

COMMITTEE MEMBER: No. We only have a certain amount of money that Congress allocates us each year. Within the Army we must distribute that money to all the installations that may require funds across the country. We cannot fund all the requirements that the Army has each year. We have established a priority system and we give them funding based on priority. Seneca's priority is very high. They normally will get the funding that they are asking for but they are scrutinized by my agency to make sure everything is being done in accordance with Army policy and guidance. We do everything consistently across the country. And we look at how the money is being used. For the stuff that is exceedingly expensive, first we look at what are our gains versus the amount of money that we are expending on this. We are very aware we are stewards of the taxpayer's dollars. We have to protect the environment. We have to see the taxpayer's dollars are being spent properly.

MR. SHINAL: Then you don't have any timetable as to how much you can spend each time and what results you can expect right now? And that information financially is of public knowledge. How much is appropriated?

COMMITTEE MEMBER: The amount -- what is appropriated by the Defense Department money is a line item in the congressional budgets. It is the Defense Environmental Restoration Account.

MR. SHINAL: Do you know what that amount is?

COMMITTEE MEMBER: The Army's portion is six hundred ninety-three million dollars and currently Seneca is getting most of what they asked for but not all of it because some of what they have asked for is not -- is not allowing it on their priority list.

MR. SHINAL: Who makes the requests?

COMMITTEE MEMBER: The installation makes the request.

MR. ABSOLOM: I do.

MR. SHINAL: Have there been any requests lately?

MR. ABSOLOM: I update by request.

MR. SHINAL: What's the amount?

MR. ABSOLOM: I can't divulge that because that will give the contractors an undue advantage.

MR. SHINAL: You have estimates. You can't say what they are?

MR. ABSOLOM: I can't give you dollar value.

MR. SHINAL: Right now we can consider it open ended?

MR. ABSOLOM: If you want to look at it that way.

MR. SHINAL: We have to. We have no choice.

MR. ABSOLOM: It is based on the project and what it takes to follow the process step-by-step and we identify projects for each of those steps.

MR. SHINAL: It goes on to ad infinity?

MR. ABSOLOM: Whatever you want to do.

LTC. JOHNSON: Why do you want to say it goes on ad infinity?

MR. SHINAL: It goes on as we need it. I can't draw any conclusion from that comment.

MR. ABSOLOM: It goes on each step in the process I identify a project for. I identify a project to do a remedial investigation feasibility study. I identify a project to do an interim remedial action. I will identify a project to do the actual remediation on the project for the overall site. I will identify a project to do follow-up monitoring after the remediation is accomplished. At this point I do not know what the exact remediation is going to be. I can only estimate. It is used for temporary budget purposes. And based on that I can only estimate what my follow-up monitoring requirements are going to be and that is again an estimate based on my knowledge.

MR. SHINAL: What's your best estimate that this project will take? Off the record.

LTC. JOHNSON: There is no such thing as off the record. This is public law.

MR. SHINAL: This is an estimate.

LTC. JOHNSON: No, sir. We are covering this; procuring this. This is not trying to hide everything. What happens here is a step-by-step sequence where you identify the

problem, you take remedial action and we contract for that remedial action to begin. Based upon studies such as this, we do an independent government estimate. We request moneys to do this work. Contracts are let competitively. The Huntsville Office and contractor comes in and cleans up Seneca Army Depot property. That is the process. But we are only in that process. We are not at the end of it right now. It is based upon studies that gather information and data.

MR. SHINAL: In the process that you are at now how much has been let out in contracts financially and how much do you plan on letting out in the near future?

LTC. JOHNSON: I can't speak to that

MR. HEALY: The part I started to say before, roughly 4.2 on the two RI/FS's and on the 25 SI's I would say around 1.5 million. That is what has been spent to this point in time. Plus there are some peripherals as far as the future work is concerned, even in the very near future. I am not at liberty to talk about it. It is against the integrity of procurement and I go to jail. We have

contractors here. It is not right to give a specific contractor an advantage above others.

MR. SHINAL: Mr. Healy, we are not naive about what maybe going on for public purposes. But I am asking how much you will spend. And you spent 4.2 million so far?

MR. HEALY: On two sites.

MR. SHINAL: You spent 1.5 on what?

MR. HEALY: On the 25 site investigations.

MR. SHINAL: You talk about the asbestos program. Was that the 4.2 million?

MR. HEALY: The asbestos?

MR. DUCHESNEAU: We haven't mentioned that.

MR. HEALY: We have done some samples for asbestos. He did that for, I think, a site because asbestos was there. The asbestos program in general is not in under this.

MR. SHINAL: Was that funded?

MR. HEALY: Not under the same funds.

MR. BATTAGLIA: Asbestos removal is funded out of the base operations.

MR. SHINAL: Not a part of this?

MR. BATTAGLIA: No.

MR. DUCHESNEAU: We did the asbestos sampling out of that one particular unique SWMU only to see if there was any asbestos issues related to that one site. So far we have expended 6.7 million.

MR. HEALY: No. 5.7 million.

MR. SHINAL: 4.2 and 1.5. That is over the last five years?

COMMITTEE MEMBER: In this year's annual report to Congress we are pointing to 5.2 million to the expenditure of '93.

MR. SHINAL: Does that include the 5.7?

MR. BATTAGLIA: The site investigation ended '93. The report for Congress was fiscal year '93. 4.2 million was fiscal year '93. Some of the year happened to carry over after October 1st. This will be included in the fiscal year '94 to report to Congress as to where the money was spent.

MR. HEALY: It would be safe to say the 5.7 represents what has been contracted for but since we spend it as we go we have not necessarily laid out all 5.7 million.

MR. SHINAL: I understand.

MR. ABSOLOM: Any other questions, comments?

MR. BATTAGLIA: One comment. The reason the government estimate is not released is if we tell them our estimate is two million dollars, they are going to say two million dollars on the proposal. That is where the competition occurs when the contracting phase starts. That is where the competition occurs as to getting the best price. What happens is we start a project and we know we have to investigate such and such a site. That goes through the Army priority system as to basically what sites in the country gets the money first. I identify a project and it goes through the Army system. The Army Environmental Center has a priority system that prioritizes all the sites that the Army has in the country. Basically you compete against the other sites.

MR. ABSOLOM: Sir, you asked who writes the proposal. Are you saying the proposal for the contract?

MR. SHINAL: Yes.

MR. ABSOLOM: That is the Huntsville Division. Are there any other comments or questions? If not, what I would like to do is establish the date for the next TRC.

MR. BATTAGLIA: May 4th.

(Whereupon there was a discussion about the next meeting date.)

MR. ABSOLOM: Does anyone have any problems reconvening on the 18th of May? That is a Wednesday. Okay. We will reconvene the 18th of May at twelve thirty at this same location.

I would like to thank you all for coming. Again I hope this was helpful and beneficial to everybody. And the next one we will have more information. Thank you very much.

* * *

C E R T I F I C A T I O N

I, Patricia Ann Nelk, hereby certify that I reported in stenotype shorthand the proceedings had on the 2nd day of February, 1994, in the matter of the Sixth Meeting of the TRC.

And that the foregoing transcript, herewith numbered pages 2 through 68, is a true, accurate and correct record of those stenotype shorthand notes.

Patricia A. Nelk

Patricia Ann Nelk

DATED AT: Rochester, New York

this 13th day of February, 1994.

DEPARTMENT OF THE ARMY
SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK 14541-5001

REPLY TO
ATTENTION OF

SDSTO-SEI-PE 08 APRIL 94

MEMORANDUM FOR:

Ms. Carla Struble, P.E., Project Manager, Federal Facilities Section, Room 2930, Region 2, U.S. Environmental Protection Agency, 26 Federal Plaza, New York, N.Y. 10278

Mr. Kamal Gupta, Project Manager, Federal Projects Section, Bureau of Eastern Remedial Action, Division of Hazardous Remediation, NYS Department of Environmental Conservation, 50 Wolf Road, Albany, NY 12233-7010

Subject: Quarterly Report

1. The emphasis of this quarterly report is on the events occurring between January 1, 1994 and April 8, 1994.

2. In accordance with para 26.1 of the Interagency Agreement (IAG) between the Army, United States Environmental Protection Agency (EPA), and New York State Department of Environmental Conservation (NYSDEC), the following quarterly report is submitted:

a. Minutes From Formal Meetings Held During the Reporting Period.

On February 2, 1994, the sixth meeting of the Technical Review Committee (TRC) was held at the Seneca Army Depot NCO Club. The recorded proceedings from the sixth TRC are enclosed as Appendix 1.0. This TRC meeting was preceded by a quarterly meeting of the project managers. The minutes from the project managers meeting are enclosed as Appendix 2.0.

b. Milestones Met on Schedule, Explanation of Milestones Not Met on Schedule.

(1) <u>IAG Milestones:</u>

(a) IAG Schedule 5.0: A proposed revision to Attachment 5.0 by Seneca Army Depot Activity (SEDA) has yet to be resolved. The "interim" milestones in the revised Attachment 5.0 were removed by SEDA. The NYSDEC tentatively accepted the revised Attachment 5.0, however, requested that the "interim" milestones that included schedules for High and Medium Priority AOC's Site

Investigations be included in Attachment 5.0. As the EPA does agree with SEDA, this issue needs to be resolved.

(b) In order to include 2 additional groundwater monitoring wells in the non-combustible fill area of the Ash Landfill site, an extension for the submission of the Ash Landfill Draft-Final RI, Draft FS, and Draft-Final FS has been requested by SEDA.

(2) Ash Landfill RI/FS Milestones:

A report prepared by Engineering Science (ES), Inc., describing field activities at the Ash Landfill Site for the fourth quarter of 1993 that was received during the reporting period is enclosed as Appendix 3.0.

(3) Open Burning Grounds RI/FS Milestones:

A report prepared by ES describing the field activities at the Open Burning Grounds (OB) site for the fourth quarter that was received during the reporting period is enclosed as Appendix 4.0.

(4) Solid Waste Management Unit Investigation Milestones:

(a) The First Quarterly Report and the Monthly Field Activities Reports prepared by ES that were received during this reporting period for the ten High Priority AOC's are enclosed as Appendix 5.0 through Appendix 5.3. (Note: These sites are noted in the reports as 7 High Priority SWMU's and 3 Medium Priority SWMU's respectively.)

(b) Fieldwork began at the fifteen Medium Priority AOC's. Access to the sites and work on the sites often required additional efforts as the weather this winter included below normal temperatures and significant snowfall that persisted throughout this reporting period. The quarterly reports prepared by ES that were received during this reporting period describing field activities at these sites are enclosed at Appendix 6.0 and 6.1. (Note: These sites are noted in the reports as 8 Moderately Low Priority and 7 Low Priority CERCLA Site Investigations respectively.)

c. Inspection Reports, Audits and Administrative Information.

FY-94 Funding Status:

Funding for the projects identified in the FY 94 Obligation Plan is now available for the support of the CERCLA program and is identified in the last revision of the approved FY 94 DERA Workplan. Problems with the Workplan can be traced to HQ who was not responsive to SEDA's request to amend the Workplan. The changes were necessary in order to have the appropriate projects listed on an approved plan. Funding for projects are not released unless the project is on an approved Workplan. The Obligation Plan and the Workplan projects now match and the necessary funding is available for release.

d. Permit Status as Applicable.

There was no change in Seneca Army Depot Activities's RCRA facility permit status during this reporting period.

e. Personnel Staffing Status

(1) SEDA Staffing Update:

One of the two additional environmental employees that Seneca was granted the authority to hire arrived on March 7, 1994. Janet Fallo, an environmental engineer, transferred to SEDA from a BRAC listed Department of Defense installation. Ms. Fallo will be working on CERCLA projects exclusively, assisting in project management and funding.

The other position is for an environmental protection specialist and is expected to be filled in early May.

(2) Training:

In February, the Department of Defense Environmental Restoration Program Workshop was held in Atlanta, Georgia. This conference presented technical sessions, training support information, legal/regulatory issues, and case studies which all pertained to the restoration program as it is executed at installations throughout the Defense Department. This workshop was attended by Randall Battaglia and Thomas Enroth.

f. Community Relations Activity Update

(1) Ash Landfill Administrative Records Milestones:

Seneca Army Depot Activity is currently updating the Ash Landfill Administrative Record File. A revised index is not available at this time.

(2) OB Grounds Administrative Records Milestones:

Seneca Army Depot Activity is currently updating the OB Grounds Administrative Record File. A revised index is not available at this time.

(3) SEAD Administrative Record Milestone:

Seneca Army Depot Activity has created this new category to include documents and reports associated with the CERCLA program for subject matter that does not fit into the above categories. This category will also include information pertaining to the overall site investigations at the AOC's. Should any of these sites require additional studies, separate categories will be created as necessary.

3. Point of contact for additional information is Thomas Enroth, telephone number 607/869-1450.

FOR THE COMMANDER:

Stephen M. Absolom
Chief, Public Works

Encls

CF:

Legal Office, SEDA

Commander, U.S. Army Corps of Engineers, Huntsville Division, Attn: CEHND-PE-E (Mr. K. Healy), P.O. Box 1600, Huntsville, AL 35807

Mr. Michael Duchesneau, P.E., Engineering Science, Inc., Prudential Center, Boston, MA 02199

Commander, U.S. Army Depot Systems Command, Attn: AMSDS-IN-E (Mr. J. Biernacki), Chambersburg, PA 17201-4170

APPENDIX 2.0

MINUTES FROM THE

PROJECT MANAGERS MEETING

PROJECT MANAGERS' MEETING MINUTES 2 FEB 94

ATTENDEES:
R.Battaglia, SEDA
T. Enroth, SEDA
CPT Raimondo, SEDA (legal)
K. Healy, CEHND
R. Suever, CEHND
Dr.Buchi, AEC
MAJ John German, AEC (legal)
C. Struble, EPA
K. Gupta, DEC
D. Geraghty, DOH
L. Rafferty, DOH
J. Chaplick, Eng-Sci
M. Duchesneau, Eng-Sci
Chris Raddell, Eng-Sci

Finalization of the SWMU Classification Report (SCR):

•DEC maintained that the Exclusion Area Fence Line (SEAD 57) should be an AOC, with a minimum of limited sampling. SEDA maintained that the fence line is managed under SEDA's Pest Management Program as a herbicide-controlled area under FIFRA. SEDA proposed to provide the Material Safety Data Sheet for Boracil IV, which is used in this area, SEDA's Pest Management Plan which describes herbicide use on site, and a review of the Ecological Study for the OB Grounds/ Reeder Creek (which drains half of this area) in lieu of sampling to resolve this difference.

Conference Call -

Mr. Jim Doyle, EPA (legal)
Mr. Larry Tannenbaum, EPA (toxicologist)

<u>TAGM's vs. ARAR's Issue</u>:

•Dr. Buchi started the conference call, referencing MAJ German's letter regarding the Army's position that state TAGM's are not ARAR's. Mr. Gupta agreed that TAGM's are "To Be Considered" (TBC's), and not ARAR's. MAJ German stated that for TBC's, no waiver is required for "no action" at a site, where a waiver would be required for an ARAR.

<u>Future Use Issue</u>:

• The Army's position for future use scenarios for CERCLA sites is that the future use of a particular site is the current use for the particular site. EPA emphasized residential future use; the Army's response was that the Army considers what the "reasonable land use" would be, and that residential use of an industrial area (specifically the Open Burning/ Open Detonation (OB/OD) Grounds) would not be a reasonable future use scenario.

•MAJ German stressed that BRAC does not necessarily mean future use. The Army will be liable, and the reasonable future use is related to land use around the installation, such as residential, agricultural, and versus the reasonable demand for residential use of Army property. Mr. Doyle responded that no decisions will be made here today.

Risk Assessment Issues:

• NYSDOH comments stated conservative assumptions regarding lifetime exposures, childhood exposures, etc.

• Mr. Duchesneau stated that by using these assumptions in EPA's model, unrealistic risk values will result since EPA's model does not use assumptions that are this conservative.

• Ms. Rafferty stated that the NYSDOH wants a better guarantee that the land will not be used for residential use, such as a Deed Notification, performed for property transfers. SEDA will provide Environmental Baseline Study guidance in response to concerns of future risk scenarios versus excessing property under BRAC or non-BRAC. (This may be a factor which may resolve the DOH risk assumption versus EPA's methodology.)

Lead contamination Issue:

• Mr. Tannenbaum stated that the lead numbers at the OB Grounds exceeded the action limits in 12% of the samples (90 total).

• Mr. Duchesneau responded, stating that by using the Students' T-Statistic, by comparing this to the upper 95th percentile (confidence limit), the lead does not statistically differ from background. Therefore, although some values exceed the action limits, the lead contamination found was not statistically significant and that there is no plume is determinable at the site.

• Mr. Tannenbaum responded that the T-test was not standard for risk assessment at Superfund sites.

• Mr. Duchesneau responded that we used the RCRA T-test since there was no standard for this under CERCLA.

• Mr. Tannenbaum stated that there is a supplement coming the H-statistic for comparison of contaminant values to background.

• Mr. Duchesneau stated that this was discussed with the previous risk assessment person, Mark Manolani, who had agreed that it was appropriate to use RCRA groundwater monitoring standards when no corresponding CERCLA standard existed.

• The federal action level for lead is 15 ppb; this is derived due to the lack of health based standards. The NYSDOH standard for drinking water is 15 ppb. The NYSDEC action level is 25 ppb.

UNRESOLVED ISSUES:

- Residential versus Industrial future use scenarios; specifically for the OB Grounds, and in general for Army policy and subsequently all sites.

- The T-test, or rather the means to compare contaminant values to background concentrations, was "summarily discussed".

- EPA risk assessment versus NYSDOH risk assessment-

- Lead values over action levels versus statistical significance with respect to background levels.

- Mr. Tannenbaum stated that the Army should propose in writing its position regarding these issues.

APPENDIX 3.0

ASH LANDFILL FIELD ACTIVITIES

ENGINEERING-SCIENCE, INC.

Environmental Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax (617) 859-2043

February 10, 1994

Mr. Gary East
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, Alabama 35807

SUBJECT: Delivery Order 10, Ash Landfill Remedial Investigation/Feasibility Study Ash Fourth Quarterly Report

Dear Mr. East:

This quarterly report summarizes the activities that have been performed for the Ash Landfill RI/FS from September 1993 to January 1994.

Field activities associated with the Phase 2 remedial investigation are complete. The fieldwork was part of the contract modification required to complete the Phase 2 field program.

The following summarizes the SOW field and report tasks that have been performed:

SOW Task 1 The workplan addendum was completed in November, 1992.
SOW Task 2 Completed all 5 test pits in the Ash Landfill,
SOW Task 3 Completed all 5 test pits in the Non-Combustible Fill Landfill (NCFL),
SOW Task 4 Completed all 8 soil borings in the Ash Landfill, 4 additional borings had been added as part of the modification,
SOW Task 5 Completed all 5 soil borings in the NCFL,
SOW Task 6 Installed all 8 overburden wells, one of these monitoring wells has been added as part of the contract modification.
SOW Task 7 Completed the Photo-Lineament Analysis.
SOW Task 8 Completed the Fracture Trace Analysis.
SOW Task 9 The Very Low Frequency (VLF) geophysical survey has been completed.
SOW Task 10 The downhole geophysics has been deleted as part of the cost modification, instead, this task has been replaced with a soil gas survey, which has been completed.
SOW Task 11 The installation of bedrock wells are completed. Four (4) bedrock monitoring well clusters have been installed, each cluster included a shallow bedrock well and a deep bedrock well.
SOW Task 12 Sampling of the groundwater wells, including well development, are complete.
SOW Task 13 Aquifer Characterization, including "Packer Tests" has been completed as part of the bedrock well installation. Slug testing on the overburden and shallow bedrock wells were performed in July.
SOW Task 14 All surface water/sediment samples have been collected.
SOW Task 15 Surveying has been completed.

SOW Task 16 Soil sample data from all on-site soil borings and the surface water/sediment samples have been received from Aquatec Inc.,

SOW Task 17 Groundwater samples were submitted to Aquatec Inc. as of July 15, 1993. All laboratory data was received by August 31, 1993.

SOW Task 18 Monthly field activity reports: Completed.

SOW Task 19 Quarterly Reports: In progress.

SOW Task 20 Field Sampling Letter Reports Completed.

SOW Task 21 The preparation of the contaminant fate and transport section of the draft RI report has been completed.

SOW Task 22 The Baseline Risk Assessment has been completed as part of the draft RI report. It discusses 1) identification of contaminants of concern, 2) exposure assessment, 3) toxicity assessment, 4) risk characterization, and 5) ARARs.

SOW Task 23 The draft RI report has been completed. EPA/NYSDEC comments have been received for Chapters 1 thru 5. ES is awaiting comments for Sections 6 and 7.

SOW Task 24 The draft Treatability Study Requirements Assessment has been completed.

SOW Task 25 The draft Feasibility Study has been completed. The study discusses 1) remedial action objectives and 2) alternative remedial actions.

SOW Task 26 The pre-draft FS Report has been completed and was issued to the Army on January 27, 1994.

The following summarizes some of the conditions under which the later SOW Tasks were completed. The pre-draft RI was due to the Army on Oct. 12, 1993 and the draft RI was due to EPA on Nov. 12, 1993, however, EPA requested that this date be changed so that their contractor TRC, Inc. would be able to review the document and provide comments before the contract date of Dec. 2, 1993. Accordingly, it was decided and confirmed at the Technical Review Committee, held at the Seneca Army Depot on Oct. 13, 1993, that the pre-draft RI, without Section 6, the Baseline Risk Assessment and Section 7, the Summary and Conclusions, would be issued to all Army reviewers and EPA and NYSDEC. This allowed EPA's contractor to review the document prior to contract termination. Sections 6 & 7 will be issued to the Army reviewers and would be included with the draft-final submittal to all reviewers. The draft RI was submitted to EPA/NYSDEC on October 27, 1993. The draft Baseline Risk Assessment was issued to EPA/NYSDEC separately from the draft RI report on January 5, 1994. The pre-draft Feasibility Study (FS) was issued to the Army on January 17, 1994.

During the October 13, 1993 Technical Review Committee meeting the issue of Investigation Derived Waste (IDW) was discussed. Previously, ES had submitted a letter to EPA and NYSDEC dated August 28, 1993 which presented a proposed strategy to be used to determine which drum materials would be left on-site and which would be disposed of as hazardous waste. During the TRC, NYSDEC indicated that the approach was acceptable, EPA has tentatively agreed with the approach but will need to confirm this with the section chief. A letter has been issued by NYSDEC approving the proposed IDW drum disposal strategy. To date no response has been received from EPA. ES is proceeding assuming that the approach is acceptable and has performed a drum survey of this site. Based upon the IDW approach, previously mentioned, ES will provide, on a drum by drum basis, a description of the classification of the drum contents and which drum will be disposed of on-site and which drum materials will be managed as hazardous waste. This letter will be submitted to EPA and NYSDEC prior to the drum management task for concurence.

If you have any questions regarding this or any other project, please, do not hesitate to call me at 617-859-2492.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau, P.E.
Project Manager

D#11

cc: Mr. Kevin Healy, COE Huntsville
Mr. Randall Battaglia, SEAD
Mr. John Biernacki, DESCOM
Mr. Kieth Hoddinott, USAEHA
Ms. Wilson, CETHA-IR-S
Commander, CEMRD-EP-C

APPENDIX 4.0

OPEN BURNING GROUNDS FIELD ACTIVITIES

ENGINEERING-SCIENCE, INC.

[illegible]ntial Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax (617) 859-2043

February 10, 1994

Mr. Gary East
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, AL 35805

SUBJECT: **Delivery Order 9, Open Burning Grounds Remedial Investigation/Feasibility Study, Fourth Quarterly Report**

Dear Mr. East:

This quarterly report describes the activities that have been performed for the OB Grounds RI/FS from September 1993 to January 1994.

Field activates associated with the Phase II remedial investigation are complete.

The following summarizes the SOW field and report tasks that have been performed:

SOW Task 1	The RI/FS workplan addendum was completed in November 1992.
SOW Task 2	UXO Site Clearance was completed at the OB Grounds for the RI.
SOW Task 3	Completed 28 berm excavations in various berms on the site.
SOW Task 4	Completed 6 borings on the burning pads.
SOW Task 5	Completed installation of 14 grid borings.
SOW Task 6	Completed 23 low-lying hill excavations.
SOW Task 7	Completed the installation of 4 till (overburden) and 2 weathered shale wells.
SOW Task 8	Completed groundwater well measurements in 36 wells on-site.
SOW Task 9	Completed the collection of 13 surface water and sediment samples.
SOW Task 10	Completed an aquatic biota assessment in an intermittent ditch draining from wetland W-6.
SOW Task 11	Completed a surface water run-off delineation along the western boundary of the site.
SOW Task 12	Completed downwind soil sampling.
SOW Task 13	Completed the installation of 2 borings for background soil sampling.
SOW Task 14	Completed groundwater sampling of 33 monitoring wells.
SOW Task 15	Completed the analysis of soil samples.
SOW Task 16	Completed the analysis of water samples.
SOW Task 17	Monthly field activity reports: completed.
SOW Task 18	Quarterly reports: in progress.
SOW Task 19	Field Sampling letter reports: completed.
SOW Task 20	Completed an analysis of the fate and transport for the site.
SOW Task 21	Completed a Baseline Risk Assessment. The assessment included 1) identification of contaminants of concern, 2) exposure Assessment, 3) toxicity assessment, 4) risk characterization, and 5) ARARs.
SOW Task 22	Completed a draft remedial investigation report.

SOW Task 23 Completed a Phase I Feasibility Study. The study included 1) remedial action objectives, 2) alternate remedial actions and 3) screening of remedial action alternatives, and 4) detailed analysis of remedial action alternatives.
SOW Task 24 Completed Treatability Study requirements assessment.
SOW Task 25 Completed a pre-draft Feasibility Study report.

The RI (which included the risk assessment) was issued on September 3, 1993. Following an abbreviated two (2) weeks COE review period, an internal review session was held in Boston on September 20 and 21, 1993 to discuss the comments and resolve any remaining comments. Attending the meeting was Mr. Randall Battaglia from the Seneca Army Depot, Mr. Keith Hoddinott from the Army Environmental Hygiene Agency (AEHA) and yourself from the Corps of Engineers,(COE), Huntsville Division. Comments were received and discussed from the project's technical manager, Mr. Kevin Healy from the COE, Huntsville Division, the COE, Missouri River Division (MRD), Dr. Kathleen Buchi, PhD, from the Army Environmental Center (AEC) and other army reviewers. The meeting was successful in satisfactorily resolving all the comments. The draft RI report was issued to the EPA and NYSDEC on October 6, 1993.

The risk assessment identified heavy metals, specifically Ba, Cu, Pb and Zn, and Polynuclear Aromatic Hydrocarbons (PAHs) as constituents of concern. These metals were present at elevated levels in the surface soils of the former burn pads, the berms surrounding the pads and in some of the low lying areas at the Open Burning grounds and contributed to the majority of the risk. Groundwater was not considered as a significant pathway for any exposure scenario other than future on-site residential use.

Three (3) exposure scenarios were considered. Two (2) were current exposure scenarios and one (1) was a future scenario. Of the two (2) current exposure scenarios, the calculated total site carcinogenic and non-carcinogenic risk for was the highest for the on-site worker who was exposed due to dermal contact with on-site soils, inhalation of dust and ingestion of soils. The value for the carcinogenic risk was determined to be $1.6x10^{-5}$. The non-carcinogenic risk was 0.3. The EPA target range for carcinogenic risk is $1x10^{-4}$ to $1x10^{-6}$,which we are within. For non-carcinogenic risk the EPA target value is to be below 1.0, which in this case we are below.

During the October 13, 1993, Technical Review Committee meeting at Seneca, the NY State Department of Health (NYSDOH) representative, who apparently will also be the person who will review the Baseline Risk Assessment, indicated that although the EPA target range is $1x10^{-4}$ to $1x10^{-6}$, the NYSDOH target value is to be less than $1x10^{-6}$, which we are not below. Army representatives, Dr. Kathleen Buchi and Mr. Keith Hoddinott, indicated that the army may not be willing to accept $1x10^{-6}$ as the target risk value since it is such a conservative value in addition to the conservative nature of the risk exposure scenarios themselves. For example, Massachusetts uses $1x10^{-5}$ as the value as well as other Superfund projects that I have been involved with. Further, to accept this risk value will mean that every individual contributor of risk will need to be below the $1x10^{-6}$ value, since the $1x10^{-6}$ target is a total site risk. The decision to accept this lower risk value will likely depend on consideration of other factors, such as the additional cost associated with the lower risk value and the difference in the amount of material which would need to be remediated as well as the need to implement a more complex technology.

The future risk scenario involved consideration of the conservative residential exposure for the OB grounds. As expected, this scenario produced the highest risks, both non-carcinogenic and carcinogenic,

since it included all the current exposure scenarios in addition to ingestion of on-site groundwater. The carcinogenic risk value is $4.8x10^{-5}$, which is within the EPA target range but above the NYSDOH target value, and the non-carcinogenic risk value is 1.7, which is above the EPA non-carcinogenic value of 1.0. Since the non-carcinogenic risk is above the target value of 1.0, it indicates that some type of remedial action will be required. Unless carcinogenic target risk value is $1x10^{-4}$, the carcinogenic risk would indicate the need to remediate.

The question of lead and the impact that this metal may have on the risk assessment was not included in the baseline risk assessment because no EPA reference dose or slope factor exists. This metal was considered separately from the risk assessment using the EPA Biokinetic Uptake Model (BKU). This model considers lead exposure to children and the resulting affect on the concentration of lead in the blood. The target value for lead in blood is 10 ug/dL. Using the 95th Upper Confidence Level (UCL) for soil, dust and water from the existing database, the estimated blood levels for this site are approximately 20 ug/dl, about twice as much as what would be acceptable. It would appear that some remedial action would be required based upon this analysis. The EPA target values for lead in soil, based upon the BKU model is between 500 to 1000 mg/Kg. The 95th UCL for lead at the OB ground is approximately 2000 mg/Kg.

Comments on the RI were received from EPA and NYSDEC on November 18 and December 14, 1993 respectively, and received a short time thereafter. The response to these comments is in preparation.

Preparation of the Feasibility Study (FS) began in October 1993. The volumes of material required to be remediated will be considered from the associated decrease in site risk levels. From this volume analysis, the risk verses the volume of material and the cost to remediate this material will be determined. The pre-draft FS was issued on December 3, 1993.

Much of the issue regarding risk assessment and site clean-up will be discussed in the near future at the upcoming TRC meeting, scheduled for February 2, 1994 at SEDA.

Please feel free to contact me at 617-859-2492 if you have any questions regarding this matter.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau, P.E.
Project Manager

cc: Mr. Kevin Healy, COE Huntsville
Mr. Randall Battaglia, SEAD
Mr. John Biernacki, DESCOM
Mr. K. Hoddinott, USAEHA
Ms. Wilson, CETHA-IR-S
CEMRD-EP-C

D#11

APPENDIX 5.0

10 HIGH PRIORITY AOC'S

MONTHLY FIELD ACTIVITY REPORT
(7 SITES)

ENGINEERING-SCIENCE, INC.

Prudential Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax: (617) 859-2043

January 24, 1994
720478-01000

Mr. Gary East
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, Alabama 35807

SUBJECT: **Monthly Field Activity Report, Delivery Order 6, The Investigation of the 7 High Priority SWMUs**

Dear Mr. East:

This monthly report describes the recent activities which have occurred at SWMUs included as part of Delivery Order 6. The following activities were completed during the last monthly period covering the weeks ending December 3, 10, 17, 24, and 31, 1993. No field work was performed for the Christmas week ending December 24 and 31, 1993.

SEAD-4

Six sediment samples were collected (9 completed of 9 total).
One water sample from a leachfield pipe was collected (1 completed of 1 total).
Six soil borings were completed (8 completed of 8 total).
Four monitoring wells were installed (6 completed of 6 total).
Four monitoring wells were developed (6 completed of 6 total).
Six test pits were completed (8 completed of 8 total).

SEAD-16

Two surface water samples were collected from inside the building (2 completed of 2 total).
Eight samples of solid materials inside the building were collected (10 completed of 10 total).

SEAD-17

Three monitoring wells were developed (4 completed of 4 total).

SEAD-24

One monitoring well was installed (3 completed of 3 total).
One monitoring well was developed (3 completed of 3 total).

SEAD-25

One monitoring well was installed (3 completed of 3 total).
One monitoring well was developed (3 completed of 3 total).

SEAD-26

No activity was performed during this period.

SEAD-45

No activity was performed during this period.

Well development and groundwater sampling resumed the first week of January 1994. The flyover of the sites was also performed during the month of December 1993. The aerial photographs will be photogrametrically reduced to produce the topographic base maps for each site. Surveying of sampling locations was performed in late December 1993 and will resume in early January 1994.

If you have any questions please do not hesitate to call me at (617) 859-2492.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau, P.E.
Project Manager

MD/cmf/D#10

Response Requested __Yes _x_No
Date Requested _____

APPENDIX 5.1

10 HIGH PRIORITY AOC'S

QUARTERLY REPORT
(7 SITES)

ENGINEERING-SCIENCE, INC.

Commercial Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax: (617) 859-2043

February 3, 1994
720447-01000

Mr. Gary East
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, AL 35807

SUBJECT: **Delivery Order 6**
7 High Priority Solid Waste Management Units (SWMUs)
First Quarterly Report

Dear Mr. East:

This quarterly report summarizes the activities that have been performed for the 7 High Priority SWMU Site Investigations (ESI) from September 1993 to January 1994.

Field activities associated with the ESI are complete. Groundwater sampling was completed on February 6, 1994; however, some follow-up surveying is required. The field work includes the contract modification required for the 7 SWMUs.

The following summarizes the SOW field tasks that have been performed:

SEAD-4: **Munitions Washout Facility and Leach Field**

Several aspects of the field investigation sampling program were modified due to site conditions that were different from the original site maps. These differences were identified during the initial phases of work. The samples were redistributed to address the new site conditions, although the number of samples was kept the same. The changes were outlined in a November 15, 1993 letter to NYSDEC and EPA. The changes were approved by both agencies.

SOW Task 1.1	Completed the approximately 7800 feet of ground penetrating radar and 7800 feet of electromagnetic surveys and 480 feet of seismic refraction surveys.
SOW Task 1.2 (modified)	Completed the installation of 8 soil borings.
SOW Task 1.3 (modified)	Completed 8 test pit excavations.
SOW Task 1.4	Completed the installation of 6 groundwater monitoring wells.
SOW Task 1.5 (modified)	Completed the collection of 2 surface water and 9 sediment samples.
SOW Task 1.6	Completed the groundwater sampling.
SOW Task 1.7	Completed the collection of 7 surface soil samples.

SOW Task 1.8	Chemical analyses have been performed on some of the data and results have begun to arrive at Engineering-Science. Chemical analyses are still being performed.

SEAD-16: **Abandoned Deactivation Furnace**

SOW Task 2.1	Completed the geophysical investigation which consisted of 480 linear feet of seismic refraction surveys.
SOW Task 2.2	Completed the collection of 15 surface soils samples.
SOW Task 2.3	Completed the installation of 3 monitoring wells.
SOW Task 2.4	Completed the collection of 2 surface water samples.
SOW Task 2.5	Completed the collection of 3 groundwater samples.
SOW Task 2.6	Completed the collection of solid materials (2 samples of furnace scale and 8 samples of residual material on the floor of the building, and 10 samples of pipe insulation).
SOW Task 2.7	Chemical analyses are being performed.

SEAD-17: **Existing Deactivation Furnace**

SOW Task 3.1	Completed a geophysical survey consisting of 480 linear feet of seismic refraction.
SOW Task 3.2	Completed the installation of 3 monitoring wells.
SOW Task 3.3	Completed the collection of groundwater samples.
SOW Task 3.4	Completed the collection of 23 surface soil samples.
SOW Task 3.5	Chemical analyses are still being performed.

SEAD-24: **Abandoned Powder Burning Pit**

SOW Task 4.1	Completed the geophysical investigation which consisted of 2100 linear feet of ground penetrating radar, 5400 feet of electromagnetic surveys and 480 linear feet of seismic refraction surveys.
SOW Task 4.2	Completed the installation of 4 soil borings.
SOW Task 4.3	Completed the installation of 3 monitoring wells.
SOW Task 4.4	Completed the collection of groundwater samples.
SOW Task 4.5	Completed the collection of 12 surface soil samples from around the abandoned pit.
SOW Task 4.6	Chemical analyses are on-going.

SEAD-25: **Fire Training and Demonstration Pad**

SOW Task 5.1	Completed a geophysical investigation consisting of 480 linear feet of seismic refraction surveys.
SOW Task 5.2	Completed the installation of 5 soil borings.
SOW Task 5.3	Completed the installation of 3 monitoring wells.
SOW Task 5.4	Completed the collection of groundwater samples.
SOW Task 5.5	Chemical analyses are on-going.

SEAD-26: **Fire Training Pit and Area**

SOW Task 6.1	Completed geophysical investigation consisting of 480 linear feet of seismic refraction surveys and 10,400 linear feet of ground penetrating radar.
SOW Task 6.2	Completed the installation of 4 monitoring wells.
SOW Task 6.3	Completed the collection of 1 surface water sample and 1 sludge sample; no floating oil was present and no sample of this medium was collected.
SOW Task 6.4	Completed the collection of groundwater samples.
SOW Task 6.5	Completed the performance of 8 test pits and sampling from each pit.
SOW Task 6.6	Completed the collection of 3 soil samples from each of the 4 boreholes.
SOW Task 6.7	Chemical analyses are on-going.

SEAD-45: **Open Detonation Facility**

SOW Task 7.1	Completed geophysical investigations consisting of 40,000 linear feet of electromagnetic and 20,000 linear feet of ground penetrating radar surveys.
SOW Task 7.2	Completed the performance of 5 test pits in which soil samples were collected. Also completed the excavation of 10 test pits at anomalies identified by the geophysical surveys.
SOW Task 7.3	Completed the installation of 4 monitoring wells.
SOW Task 7.4	Completed the collection of 4 surface water and 4 sediment samples.
SOW Task 7.5	Completed the collection of groundwater samples.
SOW Task 7.6	Completed the collection of 9 surface soil samples.
SOW Task 7.7	Chemical analyses are on-going.

REPORTS

SOW Task 8	The monthly field activity reports for November was issued on November 19, 1993.
SOW Task 9	This is the first quarterly reports.
SOW Task 10	The field sampling letter report has not been submitted since all the data has not been received.

The sites have been flown for photogrametric purposes so that site base maps can be prepared. Site base maps are in preparation. Data from the site aerial fly-overs is being photogrametrically reduced to produce site base maps. Most of the sampling points on each SWMU have been surveyed. Analytical data received by ES is being formatted onto data tables and validated.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau
Project Manager

MD/cmf/D#11

APPENDIX 5.2

10 HIGH PRIORITY AOC'S

MONTHLY FIELD ACTIVITY REPORTS (3 SITES)

ENGINEERING-SCIENCE, INC.

Prudential Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax: (617) 859-2043

January 24, 1994
720478-01000

Mr. Gary East
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, Alabama 35807

SUBJECT: **Monthly Field Activity Report, Delivery Order 4, The Investigation of the 3 Moderate Priority SWMUs**

Dear Mr. East:

This monthly report describes the recent activities which have occurred at SWMUs included as part of Delivery Order 4. The following activities were completed during the last monthly period covering the weeks ending December 3, 10, 17, 24 and 31, 1993. No fieldwork was performed for the Christmas weeks ending December 24 and 31, 1993.

SEAD-11

Four test pits were completed (4 completed of 4 total) - (Two test pits replaced two proposed soil borings in the landfill).
One monitoring well was developed (4 completed of 4 total).

SEAD-13

Four soil borings were completed (6 completed of 6 total).
Four monitoring wells were installed (6 completed of 6 total).
Two monitoring wells were developed (4 completed of 6 total).

SEAD-57

Seven test pits were completed (11 completed of 11 total).
Three monitoring wells were installed (3 completed of 3 total).
Two monitoring wells were developed (2 completed of total).

Well development and groundwater sampling resumed the first week of January 1994. The flyover of the sites was also performed during the month of December 1993. The aerial photographs will be photogrametrically reduced to produce the topographic base maps for each site. Surveying of sample locations was performed in late December 1993 and will continue in early January 1994.

If you have any questions please do not hesitate to call me at (617) 859-2492.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau, P.E.
Project Manager

MD/cmf/D#10

Response Requested __Yes __No
Date Requested _____

APPENDIX 5.3

10 HIGH PRIORITY AOC'S

QUARTERLY REPORT
(3 SITES)

ENGINEERING-SCIENCE, INC.

[illegible] Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax (617) 859-2043

February 8, 1994
720447-01000

Mr. Gary East
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, AL 35807

SUBJECT: **Delivery Order 4**
3 Moderate Priority Solid Waste Management Units (SWMUs)
First Quarterly Report

Dear Mr. East:

This quarterly report summarizes the activities that have been performed for the 3 Moderate Priority SWMU Expanded Site Investigations (ESI) from September 1993 to January 1994.

Field activities associated with the ESI are complete. Groundwater sampling was completed on February 6, 1994, however, some follow-up surveying is required. The field work includes the contract modification task required by the EPA/NYSDEC for the 3 SWMUs. This modification was approved by the USACOE on September 22, 1993.

The following summarizes the SOW field tasks that have been performed:

SEAD-11: **Old Construction Debris Landfill**

One aspect of the field investigation program was modified because of unexploded ordnance (UXO) safety concerns at the landfill. The two soil borings proposed for the landfill were changed to test pits, however, the number of samples remained the same. This modification was approved by both USEPA and NYSDEC.

SOW Task 1.1	Completed 12,000 linear feet of electromagnetic surveys and 6,500 feet of ground penetrating radar and 480 feet of seismic refraction.
SOW Task 1.2	Completed a soil gas survey at the landfill.
SOW Task 1.3	Completed the installation of 4 monitoring wells.
SOW Task 1.4	Completed the collection of groundwater samples form the wells.
SOW Task 1.5 (modified)	Completed the installation of 1 soil boring.
SOW Task 1.6 (modified)	Completed the excavation of 4 test pits.
SOW Task 1.7	Chemical analyses are on-going.

SEAD-13: **IRFNA Disposal Site**

SOW Task 2.1	Completed 11,000 linear feet of ground penetrating radar, 11,000 feet of electromagnetic surveys and 480 linear feet of seismic refraction surveys.
SOW Task 2.2	Completed the installation of 6 monitoring wells.
SOW Task 2.3	Completed the collection of 2 sediment and 2 surface water samples.
SOW Task 2.4	Completed the collection of groundwater samples.
SOW Task 2.5	Completed the installation of 4 soil borings.
SOW Task 2.6	Chemical analyses are on-going.

SEAD-57: **Explosive Ordnance Disposal Area**

SOW Task 3.1	Completed 2,000 linear feet of electromagnetic 1000 linear feet of ground penetrating radar and 480 feet of seismic refraction surveys.
SOW Task 3.2	Completed the excavation of 5 test pits for soil sampling and 10 test pits to investigate only geophysical anomalies.
SOW Task 3.3	Completed the installation of 3 monitoring wells
SOW Task 3.4	Completed the collection of groundwater samples.
SOW Task 3.5	Completed the collection of 5 surface soils.
SOW Task 3.6	Chemical analyses are on-going.

The sites have been flown for photogrametric purposes so that site base maps can be prepared. Data from the site aerial fly-overs is being photogrametrically reduced to produce site base maps. Most of the sampling points on each SWMU have been surveyed. Analytical data received by ES is being validated.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau
Project Manager

MD/cmf/D#11

APPENDIX 6.0

15 MEDIUM PRIORITY AOC'S

QUARTERLY REPORT
(8 SITES)

ENGINEERING-SCIENCE, INC.

Prudential Center • Boston, Massachusetts 02199 • (617) 859-2000 • Fax (617) 859-2043

March 11, 1994

Mr. Rick Suever
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, Alabama 35807

SUBJECT: **Delivery Order 019, Quarterly Report for 8 Moderately Low Priority CERCLA Site Investigations**

Dear Mr. Suever:

This quarterly report summarizes the activities that have been performed for the 8 Moderately Low Priority CERCLA Site Investigations from September 1993 to February 1994. The sites are SEAD-5, SEAD-9, SEAD-12A and 12B, SEAD-43/56/69, SEAD-44A and 44B, SEAD-50, SEAD-58, and SEAD-59.

Seismic geophysical surveys are ineffective when the ground is frozen, therefore, ES requested that epa and NYSDEC approve that portion of the workplan before the entire workplan approval was obtained in order to allow this work to be performed as soon as possible. The installation of wells cannot be performed until the seismic work has been completed because the seismic data is used to determine the direction of groundwater flow. Approval for the seismic portion of the investigation was obtained verbally from EPA and in writing from NYSDEC on November 8 and October 8, 1993, respectively. Field activities were begun in December, 1993 with the performance of seismic surveys to determine groundwater flow direction at some of the SEADs. Due to the frozen ground, the seismic surveys at the remaining SEADs were postponed until the Spring of 1994. Also, in December 1993, UXB International set survey monuments at some of the SEADs. The photgrametric survey flyover occurred during the week prior to the Christmas holiday.

EPA approval for the remainder of the work for the Site Investigations were obtained on January 27, 1994. NYSDEC approval was given on October 8, 1993 in the Draft comment letter of the workplan providing the changes described in the comment letter were instituted. Following final approvals, the field program was resumed on February 14, 1994. The details of the task completed are presented below.

A complete list of all of the SOW tasks is presented below. The bold text following the SOW task description explains the work that has been completed to date.

8 SWMUs:

SOW Task 0.5 Seismic Refraction Surveys. **Seismic refraction surveys have been performed at SEAD-5, SEAD-9, SEAD-43/56/69, SEAD-44B, SEAD-50, and SEAD-59.**

SEAD-5:

SOW Task 1.1 Collection of Soil Samples from waste piles. **Completed sampling 5 soil samples from a total of 5 waste piles using a backhoe.**
SOW Task 1.2 Installation of Monitoring Wells. Have not been performed.
SOW Task 1.3 Collection of Groundwater Samples. Have not been performed
SOW Task 1.4 Chemical Analyses. **Ongoing.**

SEAD-9 Old Scrap Wood Site:

SOW Task 2.1 Geophysical Investigation. Have not been performed.
SOW Task 2.2 Performance of Test Pit Sampling. Have not been performed.
SOW Task 2.3 Installation of Soil Borings. Have not been performed.
SOW Task 2.4 Installation of Monitoring Wells. Have not been performed.
SOW Task 2.5 Collection of Groundwater Samples. Have not been performed.
SOW Task 2.6 Chemical Analyses. None have been performed.

SEAD-12 Radioactive Waste Burial Sites:

SEAD-12A:

SOW Task 3.1.1 Geophysical Surveys. Have not been performed.
SOW Task 3.1.2 Performance of Test Pits. Have not been performed.
SOW Task 3.1.3 Installation of Soil Borings. Have not been performed.
SOW Task 3.1.4 Installation of Monitoring Wells. Have not been performed.
SOW Task 3.1.5 Collection of Surface Water and Sediment Samples. Have not been performed.
SOW Task 3.1.6 Collection of Groundwater Samples. Have not been performed.
SOW Task 3.1.7 Chemical Analyses. None have been performed.

SEAD-12B:

SOW Task 3.2.1 Performance of Test Pits. Have not been performed.
SOW Task 3.2.2 Installation of Soil Borings. Have not been performed.
SOW Task 3.2.3 Installation of Monitoring Wells. Have not been performed.
SOW Task 3.2.4 Collection of Groundwater Samples. Have not been performed.
SOW Task 3.2.5 Chemical Analyses. None have been performed.

SEAD-43/56/69:

SOW Task 4.1	Geophysical Surveys. Have not been performed.
SOW Task 4.2	Test Pit Sampling. Have not been performed.
SOW Task 4.3	Surface Soil Sampling. Have not been performed.
SOW Task 4.4	Installation of Soil Borings. **Completed 1 boring out of a total of 10 to be completed.**
SOW Task 4.5	Collection of Surface Water/Sediment Samples. Have not been performed.
SOW Task 4.6	Installation of Monitoring Wells. Have not been performed.
SOW Task 4.7	Collection of Groundwater Samples. Have not been performed.
SOW Task 4.8	Chemical Analysis. **Ongoing.**

SEAD-44 QA Test Labs:

SEAD-44A:

SOW Task 5.1.1	Berm Soil Sampling. **Completed 9 berm excavations and collected 9 soil samples out of a total of 9 to be completed.**
SOW Task 5.1.2	Collection of Surface Soil Samples. Have not been performed.
SOW Task 5.1.3	Collection of Surface Water/Sediment Samples. Have not been performed.
SOW Task 5.1.4	Installation of Monitoring Wells. Have not been performed.
SOW Task 5.1.5	Collection of Groundwater Samples. Have not been performed.
SOW Task 5.1.6	Chemical Analyses. **Ongoing.**

SEAD-44B:

SOW Task 5.2.1	Collection of Surface Soil Samples. Have not been performed.
SOW Task 5.2.2	Collection of Surface Water/Sediment Samples. Have not been performed.
SOW Task 5.2.3	Chemical Analyses. None have been performed.

SEAD-50 Tank Farm:

SOW Task 6.1	Collection of Surface Soil Samples. **Completed the collection of 15 surface soil samples out of a total of 15 to be completed.**
SOW Task 6.2	Collection of Surface Water/Sediment Samples. Have not been performed.
SOW Task 6.3	Chemical Analyses. **Ongoing.**

SEAD-58 Debris Area Near Booster Station 2131:

SOW Task 7.1	Geophysical Investigation. Have not been performed.
SOW Task 7.2	Performance of Test Pit Sampling. Have not been performed.
SOW Task 7.3	Installation of Soil Borings. Have not been performed.
SOW Task 7.4	Installation of Monitoring Wells. Have not been performed.

SOW Task 7.5	Surface Water and Sediment Sampling. Have not been performed.
SOW Task 7.6	Collection of Groundwater Samples. Have not been performed.
SOW Task 7.7	Collection of Soil Samples. Have not been performed.
SOW Task 7.8	Chemical Analyses. None have been performed.

SEAD-59 Fill Area West of Building 135:

SOW Task 8.1	Geophysical Investigations. Have not been performed.
SOW Task 8.2	Performance of Test Pit Sampling. Have not been performed.
SOW Task 8.3	Installation of Soil Borings. **Completed the installation of 1 soil boring out of a total of 5 to be completed.**
SOW Task 8.4	Installation of Monitoring Wells. Have not been performed.
SOW Task 8.5	Collection of Groundwater Samples. Have not been performed.
SOW Task 8.6	Chemical Analyses. **Ongoing.**

Other Tasks:

SOW Task 9:	Preparation of Report. Have not been performed.
SOW Task 10:	Project Management. **Ongoing.**

If you have any questions regarding this or any other project, please do not hesitate to call me at 617-859-2492.

Sincerely,

ENGINEERING-SCIENCE, INC.

Michael Duchesneau, P.E.
Project Manager

MD/cmf/D#11

cc: Mr. Kevin Healy, COE Huntsville
Mr. Randall Battaglia, SEAD
Mr. John Biernacki, DESCOM
Mr. Keith Hoddinott, USAEHA
Ms. Wilson, CETHA-IR-S
Commander, CEMRD-EP-C

APPENDIX 6.1

15 MEDIUM PRIORITY AOC'S

QUARTERLY REPORT
(7 SITES)

ENGINEERING-SCIENCE, INC.

Prudential Center • Boston Massachusetts 02199 • (617) 859-2000 • Fax (617) 859-2043

March 11, 1994

Mr. Rick Suever
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
106 Wynn Drive
Huntsville, Alabama 35807

SUBJECT: Delivery Order 018, Quarterly Report for 7 Low Priority CERCLA Site Investigations

Dear Mr. Suever :

This quarterly report summarizes the activities that have been performed for the 7 Low Priority CERCLA Site Investigations from September 1993 to February 1994. The sites are SEAD-60, SEAD-62, SEAD-63, SEAD-64A through D, SEAD-67, SEAD-70, SEAD-71.

Seismic geophysical surveys are ineffective when the ground is frozen, therefore, ES requested that epa and NYSDEC approve that portion of the workplan before the entire workplan approval was obtained in order to allow this work to be performed as soon as possible. The installation of wells cannot be performed until the seismic work has been completed because the seismic data is used to determine the direction of groundwater flow. Approval for the seismic portion of the investigation was obtained verbally from EPA and in writing from NYSDEC on November 8 and October 8, 1993, respectively. Field activities began in December 1993 with the performance of seismic geophysical surveys to determine groundwater flow direction at some of the SEADs. Due to the frozen ground, the seismic surveys at the remaining SEADs were postponed until the Spring of 1994. Also, on December 3 and 4, 1993, UXB International set survey monuments at some of the SEADs. The photgrametric survey flyover occurred during the week prior to the Christmas holiday.

EPA approval for the remainder of the work for the Site Investigations were obtained on January 27, 1994. NYSDEC approval was given on October 8, 1993 in the Draft comment letter of the workplan, providing the changes described in the comment letter were instituted. Following final approvals, the field program was resumed on February 14, 1994. The details of the tasks completed are presented below.

A complete list of all of the SOW tasks is presented below. The bold text following the SOW task description explains the work that has been performed to date.

7 Low Priority SEADs:

SOW Task 0.5 Seismic Refraction Surveys. **Seismic refraction surveys were completed for SEAD-64A, SEAD-64B and SEAD-71.**

SEAD-60 Oil Discharge Area Adjacent to Building 609:

SOW Task 1.1	Installation of Soil Borings. Have not been performed.
SOW Task 1.2	Installation of Monitoring Wells. Have not been performed.
SOW Task 1.3	Collection of Groundwater Samples. Have not been performed.
SOW Task 1.4	Collection of Surface Water and Sediment Samples. Have not been performed.
SOW Task 1.5	Chemical Analyses. None have been performed.

SEAD-62 Nicotine Sulfate Disposal Area:

SOW Task 2.1	Geophysical Investigation. Have not been performed.
SOW Task 2.2	Test Pit Sampling. Have not been performed.
SOW Task 2.3	Chemical Analyses. None have been performed.

SEAD-63 Miscellaneous Components Burial Site:

SOW Task 3.1	Geophysical Surveys. Have not been performed.
SOW Task 3.2	Performance of Test Pits. Have not been performed.
SOW Task 3.3	Installation of Soil Borings. Have not been performed
SOW Task 3.4	Installation of Monitoring Wells. Have not been performed.
SOW Task 3.5	Collection of Surface Water and Sediment Samples. Have not been performed.
SOW Task 3.6	Collection of Groundwater Samples. Have not been performed.
SOW Task 3.7	Chemical Analyses. None have been performed.

SEAD-64 Garbage Disposal Areas.

SEAD-64A:

SOW Task 4.1.1	Geophysical Surveys. Have not been performed.
SOW Task 4.1.2	Performance of Test Pits. Have not been performed.
SOW Task 4.1.3	Installation of Soil Borings. Have not been performed.
SOW Task 4.1.4	Installation of Monitoring Wells. Have not been performed.
SOW Task 4.1.5	Collection of Groundwater Samples. Have not been performed.
SOW Task 4.1.6	Chemical Analyses. None have been performed.

SEAD-64B:

SOW Task 4.2.1	Geophysical Surveys. Have not been performed.
SOW Task 4.2.2	Performance of Test Pits. Have not been performed.
SOW Task 4.2.3	Installation of Soil Borings. Have not been performed.
SOW Task 4.2.4	Installation of Monitoring Wells. Have not been performed.
SOW Task 4.2.5	Collection of Surface Water and Sediment Samples. Have not been performed.

SOW Task 4.2.6 Collection of Groundwater Samples. Have not been performed.
SOW Task 4.2.7 Chemical Analyses. None have been performed.

SEAD-64C:

SOW Task 4.3.1 Performance of Test Pits. Have not been performed.
SOW Task 4.3.2 Collection of Groundwater Samples. Have not been performed.
SOW Task 4.3.3 Chemical Analyses. None have been performed.

SEAD-64D:

SOW Task 4.4.1 Geophysical Surveys. Have not been performed.
SOW Task 4.4.2 Performance of Soil Gas Survey. Have not been performed.
SOW Task 4.4.3 Performance of Test Pits. Have not been performed.
SOW Task 4.4.4 Installation of Soil Borings. Have not been performed.
SOW Task 4.4.5 Collection of Surface Soil Samples. Have not been performed.
SOW Task 4.4.6 Installation of Monitoring Wells. Have not been performed.
SOW Task 4.4.7 Collection of Groundwater Samples. Have not been performed.
SOW Task 4.4.8 Chemical Analyses. None have been performed.

SEAD-67 Dump Site East of Sewage Treatment Plant:

SOW Task 5.1 Geophysical Investigation. Have not been performed.
SOW Task 5.2 Test Pit Sampling. Have not been performed.
SOW Task 5.3 Collection of Surface Soil Samples. Have not been performed.
SOW Task 5.4 Collection of Surface Water/Sediment Samples. Have not been performed.
SOW Task 5.5 Installation of Monitoring Wells. Have not been performed.
SOW Task 5.6 Collection of Groundwater Samples. Have not been performed.
SOW Task 5.7 Chemical Analyses. None have been performed.

SEAD-70 Fill Area Adjacent to Building T-2110:

SOW Task 6.1 Geophysical Investigation. Have not been performed.
SOW Task 6.2 Performance of Test Pits. Have not been performed.
SOW Task 6.3 Installation of Soil Borings. **Installed 3 soil borings out of a total of 3 to be completed.**
SOW Task 6.4 Installation of Monitoring Wells. Have not been performed.
SOW Task 6.5 Surface Water and Sediment Sampling. Have not been performed.
SOW Task 6.6 Collection of Groundwater Samples. Have not been performed.
SOW Task 6.7 Chemical Analyses. None have been performed.

SEAD-71 Rumored Paint and Solvent Pit:

SOW Task 7.1 Geophysical Investigation. Have not been performed.
SOW Task 7.2 Performance of Test Pits. Have not been performed.

SOW Task 7.3	Installation of Monitoring Wells. Have not been performed.
SOW Task 7.4	Collection of Groundwater Samples. Have not been performed.
SOW Task 7.5	Chemical Analyses. None have been performed.

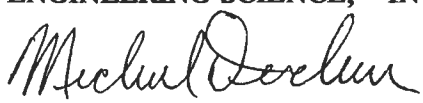
Other Tasks:

SOW Task 8:	Preparation of Report. Have not been performed.
SOW Task 9:	Project Management. **Ongoing.**

If you have any questions regarding this or any other project, please do not hesitate to call me at 617-859-2492.

Sincerely,

ENGINEERING-SCIENCE, INC.



Michael Duchesneau, P.E.
Project Manager

MD/cmf/D#11

cc: Mr. Kevin Healy, COE Huntsville
Mr. Randall Battaglia, SEAD
Mr. John Biernacki, DESCOM
Mr. Keith Hoddinott, USAEHA
Ms. Wilson, CETHA-IR-S
Commander, CEMRD-EP-C